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Business Performance and Sustainability in Cultural and Rural Tourism Destinations

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Abstract: This study analyzes business performance through efficiency score estimation in two sustainable tourism models: cultural tourism and rural tourism. The study uses microeconomic data (microdata) of Spanish firms with different characteristics in terms of size, region, location and financial variables. Using multistage modeling (Data envelopment analysis, DEA, non-parametric frontier and non-parametric tests), the main results show that the average efficiency is higher for rural tourism destinations than for cultural tourism destinations. Similar to other tourism industries, efficiency results by geographical and regional destination confirm that location is a driver of the efficiency levels in rural and cultural tourism destinations. Furthermore, the results do not support the scale economies hypothesis: the average efficiency is higher for very small firms compared to other firm sizes, although the average efficiency for large firms is higher than that for medium-size firms. Regarding dynamic efficiency, the results reveal slight variations among the years examined, but the differences are not statistically significant. Finally, the study sheds light on the link between the efficiency of rural tourism and sustainable practices as the investment in environmental protection developed by regions during the period.



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Keywords: business performance; non-parametric DEA models; tourism firms; rural and tourism destinations; sustainable tourism.

1. Introduction

Tourism is a key sector for worldwide economies: over the past six decades, tourism has undergone continuous expansion and diversification, becoming one of the largest and fastest-growing economic sectors in the world [1]. Despite occasional shocks, international tourist arrivals have recorded virtually uninterrupted growth. In 2019, tourism was the leading industry in the Spanish economy, contributing to 11% of the Spanish national gross domestic product (GDP).

In Europe, and particularly in Spain, rural tourism has grown intensively in recent years [2,3]. However, the demand has not been stable; in some periods, the tendency has been exponential, and in other periods, the tendency slightly decreases or encounters stagnation due mainly to the average stay and occupancy rates [3,4]. Recently, the COVID-19 pandemic has severely affected the economy worldwide, including the travel, tourism and hospitality industries. The pandemic has caused severe disruption in traditional business models and tourism firms need to adapt their businesses and seek new innovative strategies to survive in a global economy. The COVID-19 crisis can provide an opportunity to go a step further for sustainable tourism.

Since the end of the 1980s, national and international institutions (e.g., United Nations Commission on Sustainable Development, the World Tourism Organization, the OECD Tourism, among others) have promoted the concept of sustainable tourism and academia has helped to develop the basis for its implementation [5–7]. The World Tourism Organization (UNWTO) [1] argues that “the principles of sustainability refer to the environmental, economic, and socio-cultural development of tourism”. To this end, it is desirable that

there is a balance between these three dimensions to ensure sustainability in the long term. The European Union [8] also states that sustainability is a condition for the competitiveness of a destination. In fact, firm sustainability initiatives are increasingly being promoted in the tourism industry by different agents. Therefore, sustainability in the tourism industry is a crucial research question nowadays.

Tourist activities generate important economic and social benefits in many countries, but they do not often have “zero” impact on the environment and the natural and cultural resources of the destinations [9]. The dynamic nature of the tourism industry with new business models and constant adaptations and innovations requires a suitable balance between the positive and negative impacts [7]. Therefore, it is important to detect deficiencies and design corrective measures. Only with the participation of all the agents is it possible to truly develop a sustainable touristic model for the long term.

Cultural tourism and rural tourism are alternatives and destination models that could positively affect the sustainable development of many regions and cities in the world, with less environmental impact compared to other forms of tourism [10]. Sustainability in rural and cultural destinations mainly focuses on some factors or dimensions such as ecological, economic, social and cultural [2,11]. Ayazlar et al. [10] argued that rural tourism is key for sustainability. In fact, cultural tourism and rural tourism are in alignment with the Sustainable Development Goals (SDGs): end poverty (objective 1); promote sustained, inclusive and sustainable economic growth, and full and productive employment and work (objective 8); and guarantee sustainable consumption and production modalities (objective 12).

In general, empirical papers have used sustainable indicators to evaluate the sustainability in regions, countries or destinations and firm initiatives and practices adopted to comply with or contribute towards sustainability objectives [2,12–14]. Several studies also examined the effects of environmental and sustainable initiatives on tourism firm performance [5,15]. For example, Singal [15] showed that environmental practices improve future financial performance in a sample of US firms, including hospitality and tourism firms. Leonidou et al. [5] suggested that eco-based competitive advantage positively influences the financial performance of hotel chains. Jackson et al. [16] found that tourism firms with better financial performance distribute and allocate more resources to comply with environmental objectives.

Recent empirical papers have focused on the relationship between the efficiency index and sustainable practices at the firm level [6] or regional or country level [17,18]. In the empirical strategy, it is common to develop a second stage to assess the efficiency determinants [6,17,18]. The competitiveness and business success of rural destinations with a sustainable perspective have been addressed in several papers [19,20] as well as the efficiency evaluation in cultural destinations [21–23].

However, some authors consider that there is still room for improvement. Parte and Camacho [24] argued that there is still a way to achieve truly socially responsible firms and disregard merely marketing labels. Indeed, Guix et al. [25] showed that sustainability reporting is more related to a box-ticking or legitimization exercise than valuable information for stakeholders. Shahgholian [26] also argued that the relationship between environmental performance and firm performance requires more effort because the results could be conditioned for the data and methodology.

The current study provides a business performance analysis with microeconomic data for cultural and rural tourism firms using a sample of 2753 Spanish touristic firms that includes non-financial and financial information over the period 2012–2016. First, we estimate efficiency scores for cultural and rural tourism firms using non-parametric frontier Data envelopment analysis (DEA) model. Second, we test if there are differences in efficiency scores by economic and geographical variables. Specifically, we examine the efficiency scores across 15 Spanish regions and 45 provinces and two other factors: the period analyzed because it is characterized by growth years (2015–2016 period) and years affected by the 2008 financial crisis (2012–2014), and firm size. The Mann–Whitney U test

and the Kruskal–Wallis test are used to examine the differences in efficiency scores by the factors mentioned. Finally, the study explores the relationship between efficiency scores in rural tourism and sustainable practices as the investment in environmental protection developed by regions during the period. In this stage, the non-parametric Mann–Whitney U test is used.

Evaluating the efficiency of cultural and rural tourism destinations is important because it provides empirical evidence on whether firms are competitive and the levels of inefficiency, and it contributes to understanding the efficiency in both destinations. Although there is a growing interest in examining efficiency in the tourism industry at different segments and levels, there are still few studies to date focusing on cultural and rural tourism destinations.

The rest of the paper is structured as follows: Section 2 reviews the existing literature with several perspectives (sustainability as well as cultural and rural tourism). Section 3 presents the sample, method and variables, Section 4 discusses the results and, finally, Section 5 summarizes and concludes the study.

2. Literature Review

2.1. Firm Efficiency with a Sustainability Perspective

International organizations and social demand require tourism businesses to be more responsible with the environment and its stakeholders [27]. It is fundamental to reduce the global impact of tourism and travel, which accounts for 5% of carbon emissions worldwide: the reduction in costs and the increasing efficiency in the consumption of resources could improve the competitiveness of tourism firms [28]. Hence, many clients of tourism services consider environmental and social responsibility as an essential part of the quality of a tourist destination, beyond the satisfaction of the service or the tourist experience.

Zientara and Zamojska [29] focused on the environment and citizens' organizational behavior in a sample of hotels in Poland. The evidence reveals that employee engagement and green organizational climate positively influence organizational citizenship behavior regarding the environment, but most hotels show weak organizational behavior which implies a lack of organizational emphasis on ecological practices. Quality standards require good environmental practices and prevention of environmental impact in tourism companies that will achieve a sustainable quality. Some companies have opted for an international distinctive "Cradle to Cradle" (C2C). This certification could allow companies to distinguish more environmental products and processes.

Specifically, C2C contemplates that the water, the energy and all the raw materials used in the construction and rehabilitation of a hotel can be recycled when the property is obsolete. Llorach-Massana et al. [30] analyzed the C2C certification for the differentiation of environmentally preferable products. The authors also identified which types of C2C-certified products achieve a reduction in environmental impact. Although the investment is more expensive at the beginning, in the medium term, it is profitable and reduces costs.

C2C emerges as an alternative to the eco-efficiency concept based on life cycle assessment (LCA); however, both concepts are different. The main objective of eco-efficiency is to reduce the negative environmental footprint of activities, while C2C tries to increase the positive impact. Bjørn and Hauschild [31] analyzed the strengths and weaknesses of both concepts (C2C and eco-efficiency based on LCA evaluation) and included some proposals to overcome the current limitations of these concepts. For example, they argued that the positive message and the simplicity of the C2C principles may be preferable in the context of small and medium-sized enterprises (SMEs) with limited resources. It remains a challenge to reduce the complexity of LCA as a tool in order to favor its accessibility without compromising its validity.

Energy eco-efficiency plans are also an opportunity for cost reduction; in addition to energy and water, it is important to reuse materials: everything that is used in an establishment must be recyclable [32]. Circular economy is a challenge for all industries, including tourism firms.

Extended research has examined sustainable practices in the hotel industry from several perspectives: the implementation of voluntary environmental practices and strategies [12,13], or the potential benefits for firms, customers and the global hotel industry [6,12,15,18]. For example, Singal [15] found that investment in environmental programs improves future financial performance (measured by the credit rating of the following year) in a sample of 16,325 US firm-years (624 firm-years correspond to hospitality and tourism firms) over the period 1991–2011. The results also reveal that hospitality tourism firms, on average, invest more in environmental programs and have marginally fewer environmental strengths (beneficial products and services, pollution prevention, clean energy and recycling, among others) and fewer concerns (emissions of toxic chemicals, noncarbon emissions and controversies such as noncompliance with regulations, climate change allegations, among others) compared to non-hospitality firms.

Zhang et al. [13] focused on the implementation of voluntary eco-certifications in a sample of 2893 US hotel properties in the year 2011. The results show that eco-certified hotels achieved more operational efficiency and higher customer-driven resource efficiency compared to non-eco-certified hotels. The positive effect is sharpest in lower-tier properties because customer efficiency is most visible in these properties compared to upper-tier properties. Segarra-Oña et al. [12] examined 2116 Spanish hotels that have adopted an environmental management strategy, measured by the implementation of the ISO 14001 standard. The evidence shows that the performance of urban and beach hotels with certification is different compared to hotels without certification. In contrast, the results do not remain the same for small rural hotels. In addition, the evidence reveals that size and organizational factors are drivers for performance. In an interesting study, Guix et al. [25] examined sustainability reporting in a sample of 50 large hotel groups worldwide, considering the stakeholder-related practices. The results suggest that sustainability reporting is more related to a box-ticking or legitimization exercise than valuable information for stakeholders.

Several papers studied the relationship between efficiency scores and sustainable practices at the firm level or country level [6,14,17,18,33]. Kularatne et al. [6] explored the eco-friendly practices in day-to-day operations in environmentally sustainable hotels. They employed a double-stage DEA modeling approach analyzing efficiency indicators and the incidence of explanatory variables. They focused on three sustainable variables: energy-saving, water-saving and waste management practices. The results reveal that hotel efficiency is associated with energy saving and water saving. The main strength of the study is the inclusion of eco-friendly variables as efficiency determinants. Despite the limitation of the small sample size, the authors found a relationship between firm performance and sustainable practices. Managerial and practical implications for sustainable management confirm that initiatives aimed at the adoption of sustainable practices in hotel companies have a positive impact on hotel efficiency. However, Shahgholian [26], focusing on a complete review of the literature, argued that the relationship between environmental performance and firm performance is not still clear because the data and methodology can infer the results and their replicability.

The hotel location and its relationship with sustainability practices provide an interesting research question. For example, Reid et al. [14] examined the sustainable hotel practices in a sample of Asia-Pacific hotels, including three locations: urban hotels, coastal hotels and other hotels. Based on green building certification programs for two years and 594 sustainability practices, they found that urban hotels report a greater number of sustainable practices than coastal and other hotels, while coastal hotels, on average, report a greater number of sustainability practices in their award applications compared with the other modalities. Since sustainability practices and active adoption of sustainability practices produce economic benefits and are aimed at improving environmental impacts and sustainability results, the conclusions of this study support the evidence of other previous studies, for example, Segarra-Oña et al. [12]. However, the evidence should be

interpreted carefully and exclusively in the context of the sample analyzed in the paper: the case of the hotels that submit requests for awards in the Asia-Pacific.

The rapid growth of the tourism industry in some regions produces a great environmental pressure, promoting a conflict between environmental sustainability and the tourism economy. In the empirical context of Chinese coastal cities, Liu et al. [17] developed their research with the aim of evaluating the quality of tourism sustainability from the field of efficiency analysis. They focused on the eco-efficiency of 53 Chinese coastal cities during the period 2003–2013. In the first step, the DEA model indicates that the tourism eco-efficiency of Chinese coastal cities is 0.860, which could be interpreted as there still being opportunities for improvement. In the second step, the tobit model indicates that the tourism eco-efficiency of Chinese coastal cities is positively associated with the economic and ecological indicators and negatively associated with the number of tourists and the use of three major pollutants in the tourism industry. Although the context of the study limits the possibility of generalizing the efficiency results to other regions and countries, a novelty of this study is that authors propose some eco-efficiency indicators based exclusively on two sets of input variables: environmental pollution indicators and resource consumption indicators (water and energy).

Considering an international perspective, Radovanov et al. [18] used a DEA model and a tobit regression model to assess sustainable tourism development at the country level using a sample of 27 EU countries. Specifically, the authors proposed an efficiency analysis at the macroeconomic level of countries. The evidence shows high efficiency indices in 15 countries and that factors such as sustainability of tourism development, share of GDP, tourist arrivals and inbound receipts contribute to increase efficiency. A novelty of the study is the investigation of the efficiency of sustainable tourism development at the international level (Western Balkans) and comparison of the results with the EU countries. However, taking into account the sample and the high sensitivity in the frontier methodologies, these results should be interpreted exclusively in the empirical context of EU countries: a different selection of variables and changes in the characteristics of the database could result in different conclusions.

Using a macroeconomic perspective, Lacko and Hajduová [33] identified a set of drivers that could be linked to environmental efficiency in a sample of EU countries. These authors pointed out that factors related to climate change and socio-economic factors are strongly associated with environmental efficiency and allow achieving a more sustainable growth in European countries. The main results also confirm the possibility to estimate the efficiency with DEA at the macroeconomic level, for example, using a sample of EU countries. In this case, it could be interesting to develop clusters, with the aim of individually implementing, in each country, specific measures to achieve all of the environmental objectives in the EU. The harmonization of public policies, considering cross-country factors and each jurisdiction, is essential to achieve sustainable growth in the EU that is compatible with environmental commitments.

While firm sustainability initiatives and strategies are increasingly being promoted in the tourism industry by different agents, the firm efficiency of sustainable practices is a crucial research question. In this paper, we focus on two tourism modalities: cultural tourism and rural tourism.

2.2. Cultural Tourism

Several studies analyzed the economic and social impacts of the tourist models that emerged after the traditional sun and sea model. The sun and sea model is not sustainable in many areas due to inadequate and inappropriate planning and a high number of buildings, in addition to the greater environmental impact on the landscape and coasts. In contrast, cultural tourism and rural tourism are alternatives and destination models that could positively affect sustainable and regional development in cities, villages and municipalities, with less environmental impact compared to other tourism models [7,9,34]. Cultural tourism is an interesting modality, as we explain below.

According to Richards [35], the “emergence of cultural tourism as a social phenomenon” dated post-World War Two was motivated by travel and people’s movements. The 1960s and 1970s was characterized by an increase in national and international travels and improvements in the consumption of culture. Later, the 1980s allowed consolidating international tourist flows in the major sites and touristic areas, creating an interesting and valuable market [35]. In this decade, academia began to pay attention to the concept of cultural tourism and the UNWTO also established a definition for cultural tourism as a touristic model linked to the knowledge of monuments and historical-artistic places.

Cultural tourism has a positive effect on historical-artistic places, contributing to the maintenance and protection of cultural heritage and the sustainable development of many regions. Bec et al. [36] proposed a conceptual model of heritage conservation in four stages for digital tourism experiences. The authors demonstrated that the integration of history with technological innovations has the potential to preserve and manage heritage, as well as enriching visitors’ experience and their commitment to history. Bui et al. [37] analyzed cultural heritage destinations, focusing on: (i) defining the adaptive renewal cycle, (ii) analyzing the community’s resilience to the spatial-cultural changes of mass tourism, (iii) identifying the characteristics of tourism systems through the control mechanisms of social interactions.

This form of tourism justifies the efforts of maintenance and protection of cultural heritage due to socio-cultural and economic benefits for the regions [38]. The distinctive element in cultural tourism is the approach to local culture, as a differentiated activity of mass tourism. Cultural tourism is a way of contacting the past and protecting it [39]. In this context, the first research on the tourism and culture phenomenon was developed [40,41]. In 2005, the UNWTO observed that the cultural tourism model was being consolidated and, consequently, the following definition was proposed: “the set of people movements to meet the human need for diversity, aimed at raising the cultural level facilitating new knowledge, experiences and meetings” [42]. Nowadays, the UNWTO define cultural tourism as: “a type of tourism activity in which the visitor’s essential motivation is to learn, discover, experience and consume the tangible and intangible cultural attractions/products in a tourism destination” [43].

In relation to displacement, Richards [41] conceptualized cultural tourism as people’s displacement from their usual residence places to cultural interest places with the aim of collecting new information and experiences that meet their cultural needs. Currently, cultural tourism has a broader connotation, since any tourist destination has a particular culture that can motivate tourist movements. Zhang et al. [39] analyzed tourist consumption in intangible cultural heritage destinations and showed that cultural identity has a positive effect on heritage tourism activities. Seyfi et al. [44] explored the factors that contribute to the experience of cultural places and destinations based on a theoretical model of cultural tourism experiences. The authors concluded that there are six key factors that affect cultural tourism experiences: prior knowledge, authenticity, commitment, cultural exchange, culinary attraction and quality of service. In cultural tourism, a crucial issue is the educational interest and the demand for a mental response that develops the active use of the mind [45].

The competitiveness and efficiency evaluation of cultural destinations have been addressed in several papers [21–23]. Guccio et al. [21] examined the influence of cultural participation on tourism destination performance in a sample of Italian regions for the period 2004–2010, using the conditional efficiency approach to control the inference on the role of environmental factors. The results support the importance of cultural participation, that is, a more culturally friendly environment (both pure cultural and leisure activities) positively influences tourism destination performance. The managerial implication of their study is that public policies in cultural settings could be key drivers of efficiency in tourist destinations. Prior results in the efficiency literature show a positive relationship between the cultural environment and the efficiency in tourist destinations (for example, [46], in a sample of hotels and French regions).

Herrero-Prieto and Gómez-Vega [22] focused on the efficiency evaluation of tourist destinations in Spain, considering the regions as territorial units, and considering cultural tourism and tourist flow to be optimized. In the first stage, the performance was calculated through non-parametric methods, and in the second stage, the efficiency determinants were examined, including indicators representing reputation, accessibility, the omnivorous nature of cultural tourism and the scope of the regional cultural sector. Figueroa et al. [23] considered the efficiency evaluation of tourist destinations in Chile over the period 2009–2014. Similar to the previous study, regions were considered territorial units and tourist flow was considered as the variable to be optimized. Using a two-stage model, the DEA model estimated, in the first stage, accommodation capacity and other tourist resources as the main input and tourist flows as the output. In the second stage, they examined the role of cultural resources using bootstrap techniques and truncated regression models.

Prior literature has also focused on the efficiency assessment of cultural spaces or institutions such as museums [40,47], libraries [48] and cultural heritage agencies [49]. Several papers used DEA models in the first step to evaluate the performance of these cultural institutions. For example, del Barrio-Tellado and Herrero-Prieto [47] evaluated the efficiency of 23 museums in Spain through a non-radial approach using a DEA slack-based measure (SBM) network and a truncated regression model to evaluate the efficiency determinants (accessibility, tourism capacity, cultural appeal, museum age and the institutional management model). Prior efficiency analysis in cultural spaces such as museums has taken into account, as input and output variables, all museum activities without considering the interrelationship between the museum activities. The application of DEA SBM network models allows including the relationships between different activities. Finocchiaro-Castro et al. [49] examined, in a first step, the efficiency scores of the conservation activity of nine Sicilian heritage authorities during the period 1993–2005 and, in a second step, the discretionary and non-discretionary variables related to economic, political and managerial factors. Although a small sample size could condition the results obtained in the levels of efficiency, the conclusions of the research could be useful in the design of public policies as well as in the allocation of resources in the context of cultural heritage.

The UNWTO Report on Tourism and Culture Synergies [43] revealed that 89% of national tourism administrations are related to cultural tourism. Furthermore, an increase is expected in the following years. The report also pointed out several challenges for academia: the definition, synergies between tourism and culture, profitability or economic benefits, governance planning, the application of new technologies to cultural tourism experiences, etc. Therefore, the efficiency of this tourism modality is a crucial research question.

2.3. Rural Tourism

Rural areas are historically based on the development of agricultural activities and their importance in economic activity has been progressively reduced. The agricultural model has lost importance and many rural areas have been restructured. Lane et al. [50] analyzed the evolution of rural tourism as an alternative tourism model and a tool for rural regeneration and conservation. Tourism is a major economic activity that has the greatest potential to generate new sources of wealth and employment, improving the economic decline in rural areas. Therefore, rural tourism emerges as crucial tool to achieve long-term sustainability of rural tourism destinations [7].

Rural tourism is an activity that takes place in rural and natural areas, although there is not a unique or acceptable definition [51]. The basis of this tourism is the rural environment, which includes natural, historical-cultural and architectural heritage in a broad sense. Among the reasons that make tourism activity an important driver of rural development processes are: its ability to energize and diversify the economies of rural areas; its value due to the natural and socio-cultural heritage of these areas; and its contribution to increasing the size of the local market as a result of the increase in consumer demand made by visitors [11].

The development of tourism in rural areas positively contributes to the improvement of their economies, acting as a complement of other types of successful business. Rural tourism not only provides income for the owners of rural establishments but also generates multiplier effects towards other productive activities, such as restaurants, bars, small businesses, construction and agricultural and artisanal productions. In rural tourism, the role of SMEs and microenterprises is extremely important, since many businesses are very small and managed mostly by individual owners or families. This aspect contributes to local entrepreneurship in rural areas. Indeed, many rural destinations are interested in considering this activity among their socio-economic development strategies. The need to diversify other types of tourism such as the sun and sea, considering a more sustainable tourism that conserves the natural and socio-cultural resources, has also motivated a growing tendency in recent decades around the world, although each country has a different growth and tendency.

The competitiveness, assessment and monitorization of rural tourism destinations with a sustainable perspective have attracted the attention of academia, professionals, local communities and governments. The existing literature suggests that competitiveness is conditioned to factors such as activities and recreations in natural areas [11,19], tourist facilities and tourist infrastructure [11], the collaboration and networks among firms to enhance and promote strategies [52], tourist loyalty [3], psychological dimension variables [7,53] and local governments and municipalities as facilitators of the process for the development of rural tourism [52,54].

The high competitiveness of tourism markets leads managers to reinvent tourism destinations, seeking sustainable competitive strategies and advantages. An important strategy to achieve sustainable advantages is related to the promotion of tourist loyalty. An understanding of how to build loyalty is a key aspect of competitive advantage. For example, Campón-Cerro et al. [3] found that the image, the quality and destination attribute of satisfaction influence tourist loyalty, using a sample of 464 rural tourists and the partial least squares model. The main contribution of the study is the identification of the factors that contribute to promoting tourist loyalty in the empirical context of Spanish rural tourism. However, this empirical context and the specific characteristics of the database and the sample could make it difficult to generalize the results to other contexts and tourist destinations. Kastenholz et al. [53] analyzed the experience of rural tourism through a scale of tourism experience. The authors identified the relevant factors in different dimensions: education, memorability and esthetics, among other aspects.

The development of sustainable competitive advantages in the hotel industry could be closely related to the image of the tourist destination. Leković et al. [7] introduced a novelty in the study compared to the previous literature in rural tourism by analyzing the components of the cognitive image in the rural tourism destination. They examined three factors related to functional, mixed and psychological components using three methodologies: exploratory factor analysis, confirmatory factor analysis and structural equation modeling. The evidence shows the importance of the cognitive component for the development of rural tourism destinations. Developing an appropriate image can further achieve sustainable strategies in the hotel industry and also in a particular destination.

In an interesting study, Gonzalez-Ramiro et al. [19] focused on identifying the potential factors that contribute to the development of tourism activities in rural areas. Based on six factors: tourism accommodation offer, activities in natural areas, gastronomic offer, cultural activities, bath offer in natural environments and activities in active tourism, they hierarchized the main factors and proposed a detail decomposition. Hernández-Maestro and González-Benito [54] evaluated different financing programs for the development of business activity in accommodation, considering rural tourism establishments. The authors identified the determinants of business success in these establishments for both companies and entrepreneurs. The type of product or service, knowledge and promotional tools are relevant factors for business performance measured by variables such as occupation, prices, sales and profits.

Other research focused on the assessment of different rural tourism firms and destinations and also the efficiency determinants or drivers [20,55]. Guaita Martínez et al. [20] analyzed the impact of the seasonality of rural tourism in comparison with other types of destinations in Spain. In particular, they examined three coastal and urban destinations in Spain. Previous studies that have examined the seasonality in tourist destinations generally used concentration indices of tourist flow variables (e.g., flow of visitors). Considering the seasonality measure, a limitation is that for each selected variable, the seasonality indicator is a partial indicator that could vary in terms of classification, making the practical application and comparability difficult. In order to overcome this limitation, Guaita Martínez et al. [20] proposed, as a measure of the seasonality in tourist destinations, a synthetic indicator based on partial variables representative of the destination seasonality. The evidence shows that the intensity of the seasonality in rural destinations is not high and not far from urban tourism destinations: consequently, rural tourism generates stable profits year by year in the area. In respect to its contribution to sustainable development, the authors concluded that, in some cases, it improves the sustainable development of the area from economic, social and environmental points of view. Managerial implications in this study also indicate that rural tourism encourages a stable activity for regions.

In the field of efficiency in the tourism sector, DEA non-parametric frontier methodologies are frequently used to estimate the efficiency of tourism regions, countries and firms. This methodology allows analyzing efficiency by means of a synthetic index that is calculated with linear programming. Although there is a large body of literature oriented towards efficiency analysis in the hotel sector, the lack of studies that examine efficiency in the tourist apartment and short-stay accommodation sectors motivated the study by Alberca and Parte [55]. This study was aimed at the indicated research gap, by analyzing the efficiency in the tourist apartment sector with microdata and a large sample of tourism firms. In order to analyze the efficiency indicators, the authors used different radial and non-radial DEA models to provide more robust findings. The main results show the most efficient regions and destinations, as well as the explanatory factors. The study provides interesting evidence for management and tourism policies that seek to improve destinations' competitiveness: diversified destinations perform better than non-diversified destinations; and the diversification of tourist destinations, especially based on the cultural and rural touristic dimensions, is a useful strategy with a positive impact on the performance of tourism firms.

Overall, the assessment and monitoring of business performance in cultural and rural destinations with a focus on long-term sustainability emerge as a vital line of research. Although the prior literature has focused on certain factors that enhance or hamper the development of these tourist modalities and also competitiveness and business success [20,52,54,55], the evidence is still scarce.

3. Sample, Method and Variables

3.1. Sample

This study analyzes the business performance and efficiency of two Spanish tourism models: cultural tourism and rural tourism. The study focuses on tourism firms located in tourist destinations with cultural and rural orientations. The economic and financial data were collected from the SABI database (Bureau van Dijk Electronic Publishing). The final dataset comprised 2753 Spanish hospitality firms for the period 2012–2016, and additional variables such as firm location and size available in the database. The sample representativeness was approximately 17.7% compared with the total of Spanish accommodation firms.

For the classification of destinations as rural and cultural, we followed the criteria of the INE (National Institute of Statistics) and the OECD (Organization for Economic Cooperation and Development): a destination or a population could be considered rural if it has less than 10,000 inhabitants. Accordingly, rural tourism is an activity that takes place in rural and natural areas [51]. Otherwise, cultural firms with relevant cultural heritage

are located mainly in cities with more than 10,000 inhabitants. Considering the rural and cultural segmentation, 851 tourism firms were classified as cultural destinations and 1902 tourism firms were classified as rural destinations.

3.2. Method

Methodologically, we used the DEA model to calculate the firm efficiency indicator. DEA is a methodology that analyzes the efficiency through linear programming techniques and determines the best practice frontier with real and virtual units. The DEA methodology was developed by Charnes et al. [56] and it allows determining the relative efficiency of each unit or firm according to the distance to the best practice frontier. DEA non-parametric frontier modeling is applied in the field of studies on frontier assessment alongside stochastic frontier models, and both models are appropriate tools for analyzing operational efficiency. However, the DEA approach is chosen when the research has doubts about the functional form to adopt [57].

The DEA non-parametric mathematical programming technique produces an efficiency score for each firm: the efficiency index is calculated as a ratio between the weighted sum of outputs and inputs. In the case of a process that uses K inputs and produces M outputs:

$$E_o = \frac{\sum_{r=1}^s U_r \cdot Y_{r0}}{\sum_{i=1}^m V_i \cdot X_{i0}} = \frac{U_1 \cdot Y_1 + U_2 \cdot Y_2 + \dots + U_s \cdot Y_s}{V_1 \cdot X_1 + V_2 \cdot X_2 + \dots + V_m \cdot X_m} \quad (1)$$

E_o is the relative efficiency of the firm o ;

U_r and V_i are weightings of the output r and the input i , respectively;

Y_{r0} is the amount of output that firm 0 produces;

X_{i0} is the amount of input i used by firm 0;

X = input vector = $(X_1, X_2, X_3, \dots, X_m)$;

Y = output vector = $(Y_1, Y_2, Y_3, \dots, Y_m)$.

The model developed by Charnes et al. [56] was the first DEA model used in empirical studies; however, this model is based on a restrictive hypothesis considering constant returns to scale. The specification developed by Banker et al. [58] with variable returns to scale (VRS) has been the most widely used, since it allows the type of return to be variable. The VRS model allows us to estimate efficiency without considering the scale effects and thus overcomes the main limitation of the Charnes et al. [56] approach [59–61]. The DEA methodology has been used in several subsectors to assess firm performance [60–62].

3.3. Variables

Implementing the non-parametric frontier method requires selecting inputs (resources or costs) and outputs (goods or services). This selection is a crucial issue for research into efficiency. In practice, data availability and experience in formulating and implementing operating plans are the two primary criteria for selecting inputs and outputs [63]. Input variables for tourism firms include operating costs, personnel, capital and equipment [59,64]. In accordance with previous studies on the tourism industry, the non-parametric frontier model was applied using five variables: total income to represent the output; the total assets to represent the capital investment; the number of employees and labor costs to represent the input; and the cost of sales to represent the consumption of materials.

4. Descriptive Statistics and Results

4.1. Descriptive Statistics

Tables 1 and 2 show the descriptive statistics for cultural and rural tourism firms, respectively. Comparing both descriptive statistics, we can observe that the input and output averages are higher for cultural tourism firms than for rural tourism firms. That is, the total income average is 729.168 for firms located in cultural destinations (Table 1) and 230.436 for firms located in rural destinations (Table 2). The t -test is statistically significant ($p < 0.05$).

Table 1. Cultural tourism: descriptive statistics.

	N	Mean	SD	Min	Max
Total income	851	729.168	2295.845	2.732	26,836.505
Total assets	851	2689.689	11,724.778	7.386	141,310.690
Number of employees	851	9.82	29.828	1	309
Labor costs	851	255.784	1016.931	0.917	10,841.168
Cost of sales	851	146.177	523.623	0.500	5680.201

Table 2. Rural tourism: descriptive statistics.

	N	Mean	SD	Min	Max
Total income	1902	230.436	352.348	0.629	4030.676
Total assets	1902	846.163	2457.865	1.229	39,833.403
Number of employees	1902	3.81	5.905	1	60
Labor costs	1902	78.585	136.743	0.503	1397.685
Cost of sales	1902	59.330	105.488	0.502	1286.974

The total assets average is 2689.689 and 846.163 in cultural tourism and rural tourism, respectively. The *t*-test is statistically significant ($p < 0.05$). Similarly, the descriptive statistic for the number of employees, labor costs and operational costs is also higher in cultural tourism than in rural tourism. The *t*-test is statistically significant in all cases ($p < 0.05$).

Table 3 shows the number of firms by cultural tourism and rural tourism by region. Regions such as Madrid, Andalusia and Castilla-León have a higher number of firms located in cultural tourist locations, while other regions such as Castilla-León, Catalonia and Andalusia have a higher number of firms located in rural tourist destinations. Figures 1 and 2 present the information graphically: number of firms by region (Figure 1) and percentage of firms by region (Figure 2).

Table 3. Cultural tourism and rural tourism by region.

Region	Cultural Firms	%	Rural Firms	%
Andalusia	157	18.4	281	14.8
Aragon	28	3.3	86	4.5
Asturias	9	1.1	35	1.8
Basque Country	28	3.3	27	1.4
Canary Islands	-	-	130	6.8
Cantabria	10	1.2	32	1.7
Castilla-León	99	11.6	366	19.2
Castilla-Mancha	39	4.6	185	9.7
Catalonia	64	7.5	329	17.3
Valencian C.	5	0.6	109	5.7
Extremadura	65	7.6	91	4.8
Galicia	40	4.7	110	5.8
Madrid	274	32.2	80	4.2
Murcia	23	2.7	5	0.3
Navarra	10	1.2	36	1.9
Total	851	100	1902	100

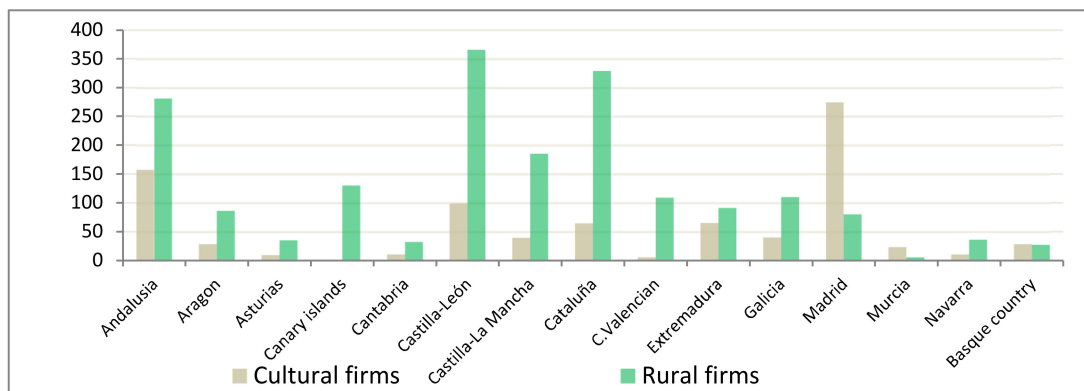


Figure 1. Rural tourism and cultural tourism by Spanish regions (number of firms).

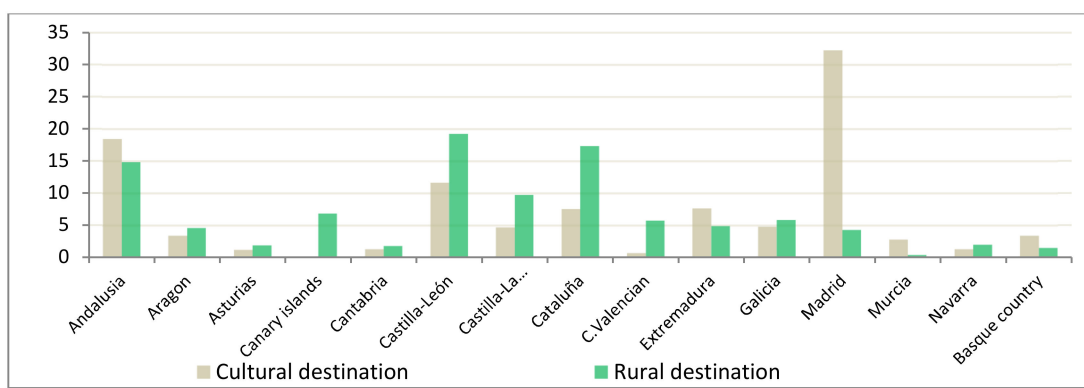


Figure 2. Rural tourism and cultural tourism by Spanish regions (percentage).

Table 4 contains the descriptive statistics of cultural and rural tourism firms disaggregated by size. In this study, we consider four firm sizes: firms with fewer than 5 employees; firms with between 5 and 9 employees; firms with between 10 and 49 employees; and firms with more than 50 employees. It is important to mention that we do not follow the conventional classification because the industry is composed mainly of small firms; consequently, we further divide the conventional classification of small firms in order to better represent the specific features of this study.

Table 4. Firm size description.

Size	Cultural Firms	%	Rural Firms	%	Total Firms	%
1	522	61.3%	1502	79.0%	2024	73.5%
2	151	17.7%	260	13.7%	411	14.9%
3	105	12.3%	97	5.1%	202	7.3%
4	73	8.6%	43	2.3%	116	4.2%
Total	851	100.0%	1902	100.0%	2753	100.0%

Table 4 and Figure 3 indicate that the number of firms is high in size 1 or firms with less than five employees (total firms = 73.5%) compared to the other groups (5–9 employees, total firms = 14.9%; 10–49 employees, total firms = 7.3%; and more than 50 employees, total firms = 4.2%). The results are similar to those of cultural tourism and rural tourism: the number of firms in cultural and rural destinations is high in size 1 (firms with less than five employees) compared to other sizes. However, the number of firms located in rural destinations is high in size 1 or firms with less than five employees (total firms = 79%) compared to firms located in cultural destinations in size 1 (total firms = 61.3%).

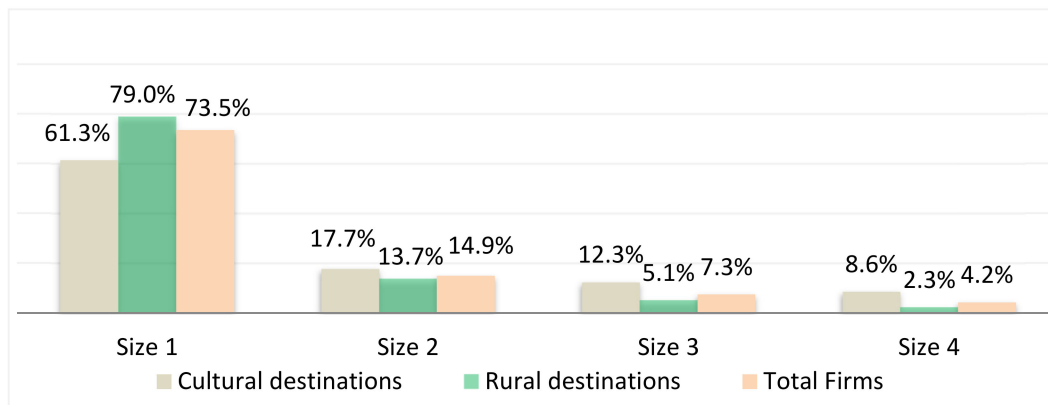


Figure 3. Cultural tourism and rural tourism by size.

4.2. DEA Results

The efficiency results of sustainable tourism destinations reveal changes in efficiency during the period 2012–2016. The average efficiency index of firms located in cultural destinations was 58.7% in 2012 compared with 62.2% in rural destinations. The efficiency score of firms located in cultural destinations increases in 2015, before declining to 56.3% in 2016 (Table 5 and Figure 4). The Kruskal–Wallis test does not show differences that are statistically significant for Year ($p > 0.05$).

Table 5. Efficiency scores by year.

Cultural Tourism	Mean	N	SD	Rural Tourism	Mean	N	SD
Year				Year			
2012	58.7%	150	0.310	2012	62.2%	384	0.316
2013	58.2%	170	0.300	2013	64.2%	369	0.308
2014	58.7%	171	0.292	2014	64.2%	367	0.312
2015	59.8%	189	0.298	2015	64.3%	390	0.315
2016	56.3%	171	0.290	2016	63.5%	392	0.314
Total	58.4%	851	0.297	Total	63.7%	1902	0.313



Figure 4. Efficiency results in cultural tourism firms by year.

Table 5 and Figure 5 reveal that the efficiency score of firms located in rural tourism destinations slightly increased throughout the period 2012–2015, before declining to 63.5% in 2016. The Kruskal–Wallis test does not show differences that are statistically significant for Year ($p > 0.05$). The results of this study (Figures 4 and 5) show that rural tourism destinations perform better than cultural tourism destinations during the period analyzed (2012–2016): 63.7% in rural tourism and 58.4% in cultural tourism. The Mann–Whitney

U test reveals differences that are statistically significant for cultural and rural tourism destinations ($p < 0.05$).

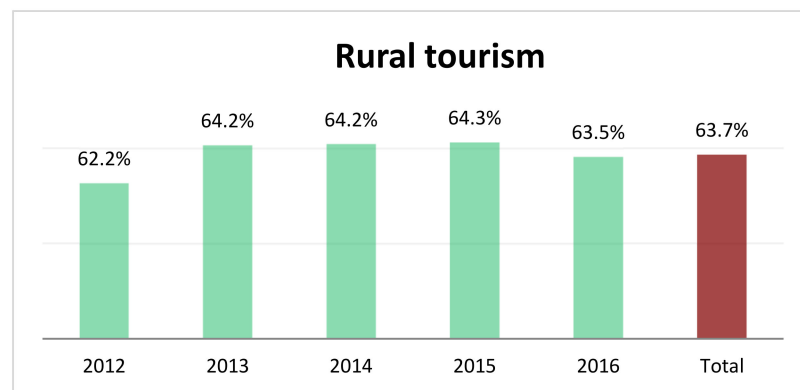


Figure 5. Efficiency results in rural tourism firms by year.

Table 6 and Figure 6 contain the efficiency results in cultural tourism firms and the regional ranking, respectively. Figure 6 shows the superior performance in Navarra, Asturias, Cantabria and Madrid in cultural tourism destinations compared to Aragon, Galicia, Basque Country and Valencian Community. Figure 6 also reveals that there are two regions with high efficiency levels: Navarra (100%) and Asturias (81%); four regions with medium-high efficiency levels: Cantabria (63%), Madrid (62%), Castilla-Mancha (61%) and Murcia (60%); four regions with medium efficiency levels: Castilla-León (57%), Andalusia (57%), Catalonia (55%) and Extremadura (55%); three regions with medium-low average efficiency levels: Aragon (53%), Galicia (50%) and Basque Country (48%); and, finally, one region with low levels of efficiency: Valencian Community (27%). The Kruskal–Wallis test shows differences that are statistically significant for region in cultural tourism destinations ($p < 0.05$).

Table 6. Regional efficiency results in cultural tourism destinations.

Regional Efficiency	Mean	N	SD
Andalusia	0.569	157	0.264
Aragon	0.529	28	0.299
Asturias	0.814	9	0.242
Cantabria	0.635	10	0.275
Castilla y León	0.571	99	0.301
Castilla-Mancha	0.614	39	0.337
Catalonia	0.545	64	0.326
Valencian C.	0.273	5	0.058
Extremadura	0.549	65	0.335
Galicia	0.503	40	0.305
Madrid	0.617	274	0.288
Murcia	0.595	23	0.301
Navarra	1	10	0
Basque Country	0.481	28	0.226
Total	0.584	851	0.297

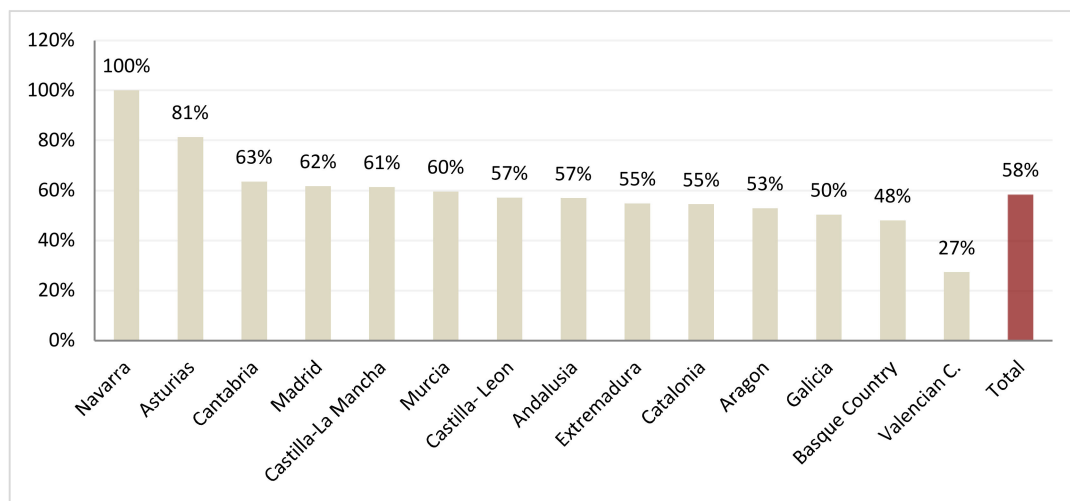


Figure 6. Regional efficiency ranking for cultural tourism.

Table 7 shows the efficiency results by province in cultural tourism firms. The results reveal high differences between the efficiency scores. Several provinces achieve the maximum level (e.g., Lleida and Navarra) but other provinces achieve low levels (e.g., Castellón and Guadalajara). The Kruskal–Wallis test shows differences that are statistically significant for provinces in cultural tourism destinations ($p < 0.05$).

Table 7. Efficiency results by province in cultural tourism destinations.

Province (Above Mean)	Mean	N	SD	Province (Below Mean)	Mean	N	SD
Lleida	1.000	7	0.000	Valladolid	0.578	10	0.370
Navarra	1.000	10	0.000	Ciudad Real	0.568	8	0.276
Jaén	0.900	5	0.224	Salamanca	0.565	26	0.268
Zamora	0.875	4	0.250	Lugo	0.547	16	0.282
Asturias	0.814	9	0.242	Granada	0.511	35	0.255
Teruel	0.805	11	0.192	Córdoba	0.488	26	0.275
Toledo	0.750	2	0.354	Vizcaya	0.481	28	0.226
Cuenca	0.694	18	0.356	Soria	0.479	4	0.349
Albacete	0.658	7	0.325	Ourense	0.474	24	0.322
Cádiz	0.657	4	0.128	Ávila	0.468	21	0.279
Cantabria	0.635	10	0.275	Girona	0.436	18	0.330
Burgos	0.621	21	0.252	Badajoz	0.389	17	0.256
Madrid	0.617	274	0.288	Zaragoza	0.351	17	0.204
Cáceres	0.605	48	0.344	Tarragona	0.291	11	0.238
Barcelona	0.601	28	0.260	Castellón	0.273	5	0.058
Segovia	0.600	13	0.387	Guadalajara	0.199	4	0.039
Murcia	0.595	23	0.301	Total	0.5836	851	0.297
Sevilla	0.594	87	0.255				

Table 8 and Figure 7 provide the efficiency results in rural tourism firms and the regional ranking, respectively. Figure 7 shows high efficiency levels in Galicia, Andalusia, Extremadura and Castilla-Mancha in rural tourism destinations compared to Canary Islands, Cantabria, Navarra and Murcia.

Table 8. Regional efficiency results in rural tourism destinations.

Regional Efficiency	Mean	N	SD
Andalusia	0.711	281	0.316
Aragon	0.632	86	0.297
Asturias	0.587	35	0.301
Canary Islands	0.580	130	0.288
Cantabria	0.528	32	0.260
Castilla-León	0.609	366	0.315
Castilla-Mancha	0.681	185	0.329
Cataluña	0.608	329	0.300
Valencian C.	0.601	109	0.315
Extremadura	0.710	91	0.307
Galicia	0.727	110	0.300
Madrid	0.616	80	0.319
Murcia	0.325	5	0.046
Navarra	0.496	36	0.295
Basque Country	0.608	27	0.338
Total	0.637	1902	0.313

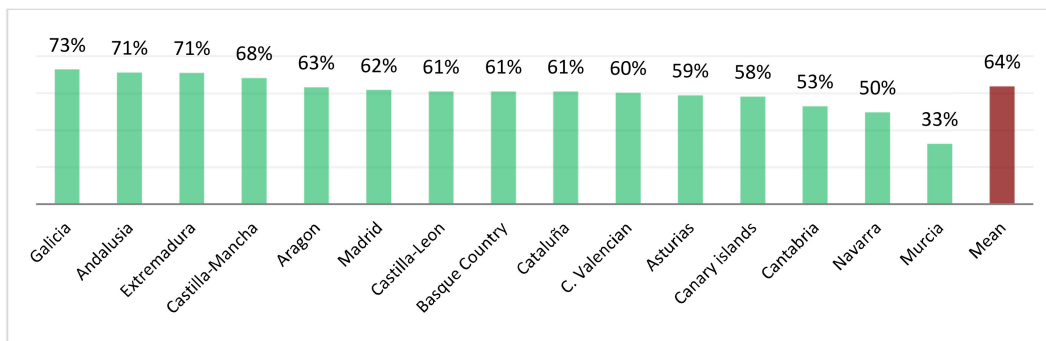


Figure 7. Regional efficiency ranking for rural tourism.

Figure 7 also shows that there are four regions with high efficiency levels: Galicia (73%), Andalusia (71%), Extremadura (71%) and Castilla-Mancha (68%); seven regions with medium efficiency levels: Aragon (63%), Madrid (62%), Castilla-León (61%), Basque Country (61%), Catalonia (61%), Valencian Community (60%), Asturias (59%) and Canary Islands (58%); two regions with medium-low average efficiency levels: Cantabria (53%) and Navarra (50%); and, finally, one region with low levels of efficiency: Murcia (33%). The Kruskal–Wallis test shows differences that are statistically significant for region in rural tourism destinations ($p < 0.05$).

Table 9 presents the efficiency results by province in rural tourism firms. The results reveal high differences between the efficiency scores. Indeed, there is still room for improvement in many provinces. The Kruskal–Wallis test shows differences that are statistically significant for provinces in rural tourism destinations ($p < 0.05$).

The results confirm prior empirical evidence in the tourism industry of location being a main driver of firm efficiency [55,60,64]. It is also noted that market orientation and managerial style influence business performance [5,12,16,55,60,63].

Table 10 and Figure 8 show the efficiency scores of tourism firms by size. Four firm sizes are considered according to the sample used in this paper: firms with fewer than 5 employees; firms with between 5 and 9 employees; firms with between 10 and 49 employees; and firms with more than 50 employees. It should be noted that we do not follow the conventional classification because the industry is composed mainly of small firms; consequently, we further segment the conventional classification of small firms in order to better represent the specific features of this industry.

Table 9. Efficiency results by province in rural tourism destinations.

Province (Above Mean)	Mean	N	SD	Province (Below Mean)	Mean	N	SD
Lugo	0.968	21	0.145	Madrid	0.616	80	0.319
Tarragona	0.892	30	0.205	Zamora	0.611	45	0.325
Ourense	0.887	7	0.299	Girona	0.607	132	0.301
Toledo	0.833	21	0.242	S.C.Tenerife	0.604	111	0.294
Almería	0.805	26	0.303	Ávila	0.596	32	0.300
Guadalajara	0.797	47	0.314	Sevilla	0.594	30	0.305
Granada	0.777	64	0.319	León	0.589	71	0.307
Jaén	0.761	35	0.286	Asturias	0.587	35	0.301
Cáceres	0.757	55	0.308	Málaga	0.585	43	0.304
Córdoba	0.745	25	0.329	Lleida	0.579	52	0.271
Palencia	0.741	19	0.293	Huesca	0.560	50	0.303
Burgos	0.740	24	0.276	Barcelona	0.549	115	0.294
Cádiz	0.739	15	0.335	Alicante	0.541	47	0.279
Vizcaya	0.706	17	0.358	Cantabria	0.528	32	0.260
Ciudad Real	0.697	27	0.338	Valladolid	0.508	31	0.279
Huelva	0.691	43	0.305	Salamanca	0.502	44	0.305
Teruel	0.687	31	0.256	Navarra	0.496	36	0.295
Cuenca	0.678	43	0.338	Albacete	0.490	47	0.281
Valencia	0.677	54	0.325	Guipúzcoa	0.443	10	0.232
a Coruña	0.665	40	0.287	Las Palmas	0.442	19	0.207
Segovia	0.656	67	0.334	Castellón	0.439	8	0.342
Pontevedra	0.639	42	0.302	Murcia	0.325	5	0.046
Badajoz	0.638	36	0.296	Total	0.637	1902	0.313

Table 10. Efficiency results by size.

Size	Cultural Tourism	Rural Tourism	Total Firms
1	69%	72%	69%
2	37%	31%	37%
3	40%	35%	40%
4	49%	32%	49%
Total	58%	64%	58%

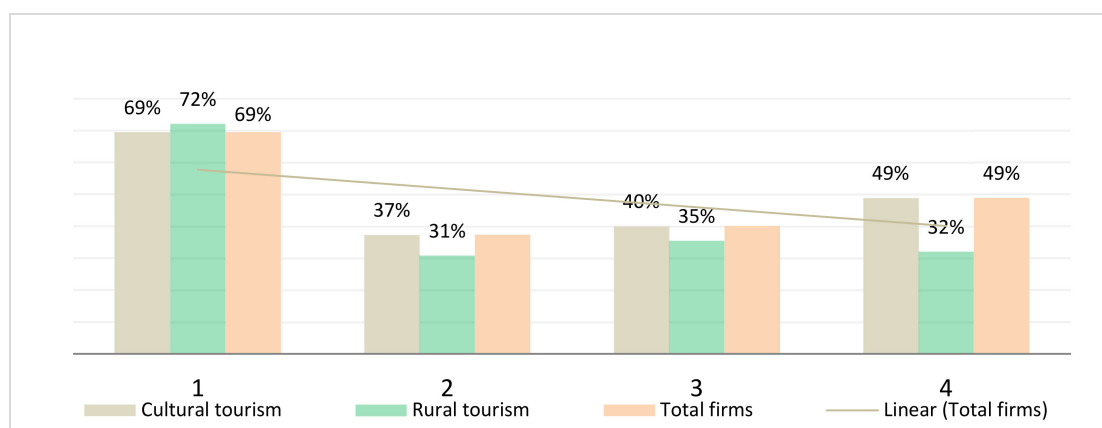


Figure 8. Efficiency results by size.

Table 10 and Figure 8 indicate that the average efficiency is higher in size 1 or companies with fewer than 5 employees (this group represents 72% in rural firms and 69% in cultural firms) compared to others segmentations: tourism firms classified in size 2 or

between 5 and 9 employees (this group represents 31% in rural firms and 37% in cultural firms); tourism firms classified in size 3 or between 10 and 49 employees (this group represents 35% in rural firms and 40% in cultural firms); and, finally, tourism firms classified in size 4 or firms with more than 50 employees (this group represents 32% in rural firms and 49% in cultural firms).

The results obtained in the size variable do not support the scale economies hypothesis: the largest firms do not achieve the best levels of efficiency compared to other firm sizes; that is, the size of the tourism firms does not have a positive impact on efficiency results in both rural tourism and cultural tourism. However, the results also reveal that larger firms perform better than medium-size firms. Overall, the micro-firms and large firms are the most suitable sizes for rural tourism and cultural tourism. Similar to other studies in the tourism industry, the results of this paper remark the importance of firm size [12,55,60,61,64].

4.3. Additional Analysis for Rural Tourism

This section provides an additional analysis for rural tourism. Specifically, we examine the relationship between efficiency scores for rural tourism and the investments in environmental protection developed by regions during the period. The information on the investments in environmental protection by region was obtained from the Instituto Nacional de Estadística (National Statistics Institute—INE). In particular, the INE provides the investments in environmental protection disaggregated in different categories: air and climate protection; wastewater management; waste management; soil, groundwater and surface water protection and decontamination; noise and vibration reduction; biodiversity and landscape protection; and other environmental activities. In this section, we test if the regions that made more effort in environmental protection show high efficiency scores.

Table 11 shows the total investments in environmental protection for the regions during the period 2012–2016. Andalusia and Catalonia are the regions with more effort in environment protection during the period. In contrast, regions such as La Rioja, Baleares and Cantabria show the lowest levels during the period.

Table 11. Investments in environmental protection.

	Total Investment	Air and Climate Protection	Wastewater Management	Waste Management	Soil, Groundwater and Surface Water Protection and Decontamination	Noise and Vibration Reduction	Biodiversity and Landscape Protection	Other Environmental Activities
Andalusia	114,324,705	86,461,770	10,786,091	8,489,281	3,753,445	531,555	1,455,344	2,847,220
Aragon	18,645,844	7,232,462	3,953,116	1,883,302	707,506	1,018,233	2,760,204	1,091,021
Asturias	45,276,644	32,186,771	7,914,704	1,144,883	1,870,637	459,663	1,263,904	436,082
Baleares	2,727,020	1,306,588	247,051	982,407	82,723	11,202	35,969	61,080
Canary	6,752,469	3,794,134	1,527,193	200,814	689,951	193,406	46,435	300,535
Cantabria	4,906,127	2,179,756	1,490,048	710,689	111,880	45,925	164,699	203,129
Castilla-León	33,814,830	14,546,250	5,037,829	5,300,458	1,447,865	850,620	5,085,529	1,546,280
Castilla-La Mancha	37,514,790	22,034,865	6,488,551	1,353,785	3,327,607	144,992	2,617,424	1,547,566
Catalonia	103,589,591	49,942,299	18,574,896	10,936,832	11,405,221	1,504,201	353,105	10,873,037
Valencian C.	46,441,015	16,385,153	6,809,058	3,778,771	7,195,876	688,729	9,675,176	1,908,251
Extremadura	9,222,956	5,783,894	2,090,392	114,946	140,715	23,482	868,267	201,261
Galicia	46,461,507	25,695,942	7,369,000	6,580,003	3,009,902	532,098	1,675,467	1,599,096
Madrid	33,139,731	5,288,286	2,497,829	1,855,031	1,006,421	401,603	21,077,673	1,012,888
Murcia	21,935,398	12,323,588	3,872,599	811,246	885,653	237,336	3,284,524	520,452
Navarra	14,373,450	6,735,665	3,232,067	1,189,446	452,469	282,574	1,838,979	642,250
Basque Country	42,202,055	17,444,624	8,440,287	5,128,015	2,151,664	581,865	6,090,401	2,365,199
Rioja	2,299,648	693,172	480,103	115,484	178,865	60,787	646,679	124,559

Source: INE (Instituto Nacional de Estadística, National Statistics Institute).

Table 12 presents the non-parametric tests (Mann–Whitney U) for efficiency scores in rural tourism and the environmental protection investments by region. The environmental protection variables take the value of 1 when the region is above the median and the value of 0 when the region is below the median. In the sensitivity analysis, we also use the mean for the dummy variables. The Mann–Whitney U tests show significant differences in efficiency scores due to the investments in environmental protection by regions: air and climate protection; wastewater management; soil, groundwater and surface water

protection and decontamination; noise and vibration reduction; biodiversity and landscape protection ($p < 0.05$); and, marginally, the variable other environmental activities ($p < 0.10$). The evidence suggests that the efficiency scores are significantly different according to the investments in environmental protection developed by regions.

Table 12. The non-parametric tests (Mann–Whitney U).

	N	Total Investment %	Mid-Range	z	sig
Low	575	30.23%	910.890	−2.198	0.028
High	1327	69.77%	969.097		
		Air and climate protection			
	N	%	Mid-range	z	sig
Low	476	25.03%	910.000	−1.971	0.049
High	1426	74.97%	965.353		
		Wastewater management			
	N	%	Mid-range	z	sig
Low	642	33.75%	915.526	−2.111	0.035
High	1260	66.25%	969.829		
		Waste management			
	N	%	Mid-range	z	sig
Low	525	27.60%	943.596	−0.401	0.688
High	1377	72.40%	954.513		
		Soil, groundwater and surface water protection and decontamination			
	N	%	Mid-range	z	sig
Low	501	26.34%	896.850	−2.687	0.007
High	1401	73.66%	971.043		
		Noise and vibration reduction			
	N	%	Mid-range	z	sig
Low	625	32.86%	991.738	−2.314	0.021
High	1277	67.14%	931.806		
		Biodiversity and landscape protection			
	N	%	Mid-range	z	sig
Low	882	46.37%	952.773	−0.097	0.922
High	1020	53.63%	950.400		
		Other environmental activities protection			
	N	%	Mid-range	z	sig
Low	592	31.13%	922.052	−1.627	0.10
High	1310	68.87%	964.808		

5. Conclusions and Discussion

This study addresses firm efficiency in rural and cultural tourism destinations in Spain using non-parametric frontier models and the DEA methodology. The concept of efficiency is closely linked to competitiveness and to the actions of economic agents attempting to achieve their objectives through efficient and effective management of productive resources. Cultural tourism and rural tourism can contribute to the sustainable development of many regions around world by reducing the environmental impact compared to other mass tourism modalities such as the sun and beach Spanish tourism model. The COVID-19 pandemic has caused many changes in the lives of people, disruptions in economic activities and new business risks around the world. In this context, the role of cultural tourism and rural tourism, as sustainable tourism models, could not be more relevant.

This paper also aimed to contribute to both efficiency with a sustainability perspective and regional efficiency development. Analyzing firm efficiency and regional results allows us to define the efficient practices of cultural and rural firms. The efficiency results provide the first comparative evaluation from both tourism destinations (cultural and rural) with a

large sample of Spanish tourism firms. These regional results and conclusions could serve as a guide to increase tourism firm competitiveness.

The results show that the rural tourism model performs better than the cultural tourism model. The efficiency score also reveals slight variations among the years examined in the study, but the differences are not statistically significant. The efficiency index by size indicates that the smallest companies achieve higher efficiency scores compared to large firms, both in cultural and rural tourism destinations. However, the average efficiency for large firms is higher than medium-size firms in both destinations. Therefore, the results do not support the scale economies hypothesis in these tourism modalities.

Furthermore, the efficiency results in cultural tourism firms and the regional ranking show the superior performance in Navarra, Asturias, Cantabria and Madrid compared to Aragon, Galicia, Basque Country and Valencian Community. The efficiency results in rural tourism firms and the regional ranking show high efficiency levels in Galicia, Andalusia, Extremadura and Castilla-Mancha compared to Canary Islands, Cantabria, Navarra and Murcia. Indeed, regions such as Andalusia and Catalonia show a high effort in investment in environment protection compared to regions such as Canary Islands, Cantabria and Extremadura. The last section of the paper sheds light on the link between efficiency scores for rural tourism and the investment in environmental protection developed by regions during the period. The evidence shows that there are some differences in efficiency scores according to the investments in environmental protection developed by regions.

The results contribute to the existing literature on efficiency by analyzing two destinations that have been little explored in the tourism industry compared to other alternatives. The evidence provides an avenue for future studies to continue investigating the competitiveness of rural and cultural destinations considering a sustainable perspective. In particular, it may be of interest to consolidate positioning in regions with lower efficiency results by designing business strategies that improve the competitiveness of tourism firms and increase the value added by customer orientation, quality management, product diversification and markets.

The main limitation of the study is the limited variables used as proxies of sustainable resources and investments of each firm. The database used in the paper provides firm financial information and non-firm financial information but does not contain specific information related to sustainability for each firm. It could be interesting to introduce firm sustainable indicators to extend the results of this work. Future studies could also focus on alternative tourism destinations, considering long-term sustainability. Firm productivity growth, a topic less explored in the prior literature, could also be an interesting research question.

6. Implications

Tourism sustainability demands a comprehensive model to manage its resources that allows the development of this industry, improving the tourist experience, the cultural integrity of the regions and the environment in tourist destinations. The environmental awareness of travelers and tourist clients causes them to positively value environmental practices and sustainable resource management. The tourism industry should not be oblivious to the forces of the market and interest groups in order to achieve eco-efficient management models and more sustainable products or services in a scenario of increasing competitiveness.

The tourism economy and the hospitality industry are strongly affected by the location of firms and other regional factors. Since sustainable destinations such as cultural and rural tourism destinations are important for the performance of tourism firms, this paper may help to continue developing strategies that are more efficient. In particular, entrepreneurs and professionals should develop strategies that conserve and preserve the environment in alignment with the SDG objectives. Governments and tourism policymakers can also provide guides, recommendations and green policies to help the tourism industry continually promote carrying out business with a focus on being truly socially responsible. The

regional efficiency could provide entrepreneurs and tourism decision-makers a guidance that allows them to define plans and strategies, in order to achieve their objectives more efficiently and successfully.

Furthermore, business performance and efficiency analysis could significantly improve business competitiveness. From a production perspective, performance evaluation could be a key factor in difficult economic times such as the current environment uncertainty derived from the COVID-19 pandemic. Tourism in rural areas is sustainable and efficient: this tourism model can become an opportunity for entrepreneurship tourism activities to rethink how tourism interacts with societies and natural resources. Tourism in rural areas provides many opportunities for recovery as tourists look for less populated destinations and offers greater guarantees in terms of social distancing and open-air experiences for tourists.

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