

Article

The Impact of Health and Wellness Tourism in the Regional Economy of Estrela UNESCO Global Geopark, Portugal

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Abstract: Health and wellness tourism is currently an emerging tourist product in the Portuguese context, as it incorporates a great potential to adapt to the challenges that the present time imposes. Given the emergence of new strategies aimed at more sustainable tourism and community development, Serra da Estrela, a Portuguese mountain region classified as a UNESCO Global Geopark since 2020, has been the subject of studies about its tourism potential. Such studies aim to deconstruct the general perception, which prevailed for decades, of a tourist landscape closely related to snow as the main resource. At the same time, as Serra da Estrela represents a rural region in the interior of the national territory, it benefited from its attractiveness during the COVID-19 pandemic. In this sense, this research aims to study the importance that health and wellness tourism can have for the Estrela UNESCO Global Geopark in its impact on the regional economy. To this end, based on the study case, we analyze the thermal frequency in the resorts of the territory and indicators relating to tourist resorts with a spa component that exist in the region: accommodation capacity, the number of jobs, the number of overnight stays and the difference between TRevPAR and RevPAR. This research allows us to conclude that the thermal frequency has adapted to the challenges imposed by the COVID-19 pandemic, and the analyzed tourist resorts show resilience in the face of external demand shocks.

Keywords: tourism economy; health and wellness; thermal springs; spa; Serra da Estrela; Portugal



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1. Introduction

Currently, tourism represents a fundamental reality for the generation of wealth and job creation in Portugal [1,2]. Between 2010 and 2019, the country registered an average annual growth rate of 7.2% in overnight stays. This scenario translates into an increase from 37 million overnight stays in the beginning of the period to 70 million in 2019, the highest value registered so far. The growth in generated revenue followed the same trend. It grew at an average annual rate of 10.3% in the same period, which translated to an increase from EUR 7.6 to 8.4 billion [3].

In 2020, in the face of the unprecedented global health, social and economic crisis caused by the COVID-19 pandemic, Portuguese tourism followed the global trend and suffered unrecorded losses. The country received 73.7% fewer international tourists, 60.4% fewer guests in tourist accommodation establishments and 61.1% fewer overnight stays [3]. During much of 2020 and 2021, major restrictions on international travel and social distancing counseling were introduced. This scenario was based on the outcome of a significant decline in demand and production in a context of disruption to distribution chains, which implies an abrupt reduction in jobs, at least temporarily, due to the imposition of sanitary lockdowns (Plzáková and Smeral, 2022 [4]). This pandemic context caused Portuguese tourists to prefer the domestic market and to value outdoor spaces and contact with nature, to the detriment of large urban centers and mass tourism destinations.

At the same time, demand for nature-based activities started increasing [5–7], as well as demand for smaller tourist resorts with good accessibility and in low-density areas [8], as the need to escape the stress and anxiety caused by confinement became more prominent, along with social distancing. Tourist products associated with these practices, including health and wellness tourism, also started seeing an expansion in demand. In this context, a greater general awareness about sustainability of tourism practices started emerging. Some of the main concerns included how tourism could contribute to the recovery of local economies and promote more sustainable community development for the territories, thereby fostering the achievement of “decent work and economic growth” (SDG 8), “responsible consumption and production” (SDG 12) and “life under water” (SDG 14) [9].

The main goal of this research is to provide an analysis of the importance of health and wellness tourism (HWT) in the regional economy of Estrela UNESCO Global Geopark, a mountain territory located in the center region of Portugal. The Estrela Geopark consists of the nine municipalities that together structure Serra da Estrela and whose classification by UNESCO, since 2020, implies working around the tourism and sustainable development axis. Constituting a tourism product and a territory that, together, have not been well studied, we will proceed to an analysis of economic indicators. Although there are some studies on the potential of various tourist products in the chosen territory, none of these are dedicated to health and wellness tourism.

Given the existence of several resources associated with this product, it is relevant to ask the question: How does health and wellness tourism impact the regional economy of the Estrela UNESCO Global Geopark? The studied indicators are both on the supply side (accommodation capacity and number of jobs) and the demand side (thermal attendance registrations, number of overnight stays, difference between total revenue per available room and revenue per available room), relating to the estimated component for the weight of health and wellness tourism in the tourist panorama of the territory under analysis.

2. Literature Review

Health and Wellness Tourism: Theoretical Background

Health and wellness tourism represents a tourist product that has emerged as a global reality and has undergone exponential growth in recent decades [10–13]. This trend was essentially driven by changes in demographic structure and lifestyles, the need to reduce stress among the working population, the change in the medical paradigm towards prevention and alternative practices and the changes from mass tourism to personalized travel [14]. This approach can enhance the appeal of local areas and seasonal demand in a more sustainable manner, specifically by incorporating activities that have a positive effect on the health of older people. Additionally, certain forms of health tourism infrastructure can aid in expanding the healthcare network of residents, thereby increasing their access to preventive and health-promoting practices [15]. Other motivations can include a growing enjoyment of leisure time and practices, the search for low-density spaces and closer contact with nature [16–18] and a growing appreciation for the body and its care [19].

Health tourism can be defined as that which “covers the types of tourism whose primary motivation is the contribution to physical, mental and/or spiritual health through medical and wellness-based activities that are able to increase the ability of individuals to meet their own needs and function better in their environment and society” [13,20]. This, in turn, extends to two fundamental segments of the tourist demand: those who travel primarily for medical reasons and whose main motivation is a cure for and/or recovery from illness—medical tourism—and those who travel for reasons of prevention, well-being, relaxation or fitness recovery—wellness tourism [21–23]. These are distinguished not only by the type of treatments and healthcare that make up the offer, but also by the types of infrastructure and facilities with which they are associated [24]. Due to the nature of this research, and considering the defined territorial scope, this paper will give exclusive

attention to wellness tourism, namely, thermal and spa components. In fact, there are harmonious bonds between thermal springs, health, wellness and nature tourism [14,25,26].

In Portugal, thermal tourism continues to be the product with the greatest projection within the concept of health and wellness tourism, resulting from a historical past of great relevance [10,27,28]. Throughout their more recent history, the frequency of Portuguese thermal establishments has always been marked by the segmentation of their users into two major groups, which are distinguished not only by the nature of their practices and motivations (predominantly therapeutic use and predominantly recreational use), but also by their social composition [29,30]. In Portugal, “regular visits have declined in recent years, while the number of visitors seeking wellness and comfort activities has been steadily increasing, especially in recent times” [25] (p. 221). However, these motivations have also alternately defined the demand, in aggregate form, according to the phases that characterize thermalism in Portugal.

In recent decades, several strategic documents have been formulated and approved to promote the competitiveness and sustainability of tourism, not only because of their relevance to the current situation, but also because of their diagnostic capacity and their character as a basis for strategic sectoral intervention in the medium to long term [31]. Among these are the pioneering National Tourism Plan 1986–1989 [32] and, more recently, the National Strategic Plan for Tourism—PENT, both in its initial formulation for the 2007–2015 time horizon and in the revision carried out in 2013 [33]—to adapt to the evolution of the national and international contexts. Other documents include the Tourism Strategy 2027 [34], the Regional Tourism Development Plan of Turismo Centro de Portugal [35] and the Marketing Plan of Turismo Centro de Portugal 2020–2030 [36]. All the documents presented mention health and/or wellness as strategic products/assets with relevance for regional and national tourism development.

At the same time, health and wellness tourism finds several opportunities for expansion and recognition, either per se or in conjunction with other strategic tourism products. The thermal establishments are development poles at the local and regional scale, since they generate an overflow effect in the economic and social fabric. They contribute to the enrichment of the quality of life of local communities, contributing to an enduring and economically executable form of tourism, socially and ethically fair in relation to the host community [37]. These locations also contribute to the mitigation of regional asymmetries and their position in the face of an emerging paradigm: the affirmation of destinations in the interior of the country [14,38], more specifically the northern and center regions of Portugal, where most of the national thermal springs are located.

Moreover, scholars have stressed the significance of recognizing the value of intangible factors in this form of tourism [39]. During their stay in such establishments, travelers can engage with the local community, gain insights into their distinct language and culture and consequently enhance their appreciation of the community. In this particular context, a cost-benefit analysis may have to deviate from the customary approach and acknowledge the financial worth of the ecological and societal contributions that stem from tourism in this locality. At the same time, in a context of permanent change and, more recently, due to the great economic impact caused by the COVID-19 pandemic, new challenges arise that require the development of strategies, products and services that meet the specific needs of the market [40]. COVID-19 was seen by thermalism as an opportunity to claim its health-promoting character in society. As an example, in the Spanish tourism scene, the value and importance of the spa was promoted during the pandemic, essentially due to its curative aspect. This is a dimension that gave spas uniqueness and allowed them to differentiate themselves from the centers and destinations of mass tourism, by ensuring the quality and safety of the facilities and services when reopening the tourist resorts [41].

According to the literature [42], tourists with extensive international experience engage in more robust and long-lasting travel arrangements, even in difficult circumstances. In contrast, senior citizens generally avoid tourist destinations with perceived high risks, whereas younger generations are less concerned about physical hazards associated with

tourism and, therefore, exhibit greater travel intentions. Thus, young travelers tend to prioritize immediate gains and show greater interest in destinations that have faced disasters. This phenomenon may clarify why, within the context of wellness tourism, this urge in demand after the lockdown has been propelled by younger and wealthier individuals. In addition, Qi's 2009 study [43] highlights that well-educated tourists demonstrate more favorable attitudes towards travelling, even if there are potential perils associated with it.

Even in the post-COVID-19 era [44], it remains advantageous to showcase the distinctiveness of the resources associated with health tourism. This advantage stems from the exceptional thermal water, unique experiences and local community context of such locations. Such an approach will continue to differentiate this form of tourism and allow it to compete effectively.

3. Study Area

3.1. Tourism in Serra da Estrela

Serra da Estrela represents an isolated granite massif of the Iberian mountain range, located in the central region of Portugal, and its peak, the Torre Plateau, is the highest point in continental Portugal, with 1993 m of altitude [45]. It is a region that is thought of as the Portuguese mountain tourist destination par excellence.

The physical structure, forest, climatic conditions, forms of land use and occupation, distribution of historical and architectural groups, vegetation and water resources are the main resources of the Portuguese mountain [46,47]. Serra da Estrela holds all of these, also adding a rare landscape and unique cultural heritage [48].

Due to its nature, mountain tourism represents a complex issue, and the complexity of tourism in these destinations relies on the specific traits of their environment and cultural heritage [49–51]. In the case of Serra da Estrela, the regional tourist scene has been marked by a high seasonality, associated with the tourist resource of “snow” [52–54]. Despite having worked as a driver of tourism activity in the region for many decades, snow is still associated with mass tourism [52,54], and it is not very environmentally, economically or socially sustainable. The gross domestic product (GDP) per capita of Serra da Estrela is the lowest in the central region of Portugal, and the labor productivity is also in the lower values of the region. The weight of the primary sector in the gross value added of the region is higher than the regional and national average. However, the tourism sector has been the great bet of the sub-region, which has sought to value the existing natural resources and assert itself in the market as a tourist destination with quality [55].

Thus, the need to diversify the range of products that make up the tourist offering of the region emerges. It is fair to say that Serra da Estrela has made a great investment effort over the past few years, which has allowed it to take advantage of its historical, cultural and natural heritage [52,56]; this is capable of giving it notoriety both in terms of attraction and dynamization of tourist programs operating throughout the year. Different focuses on cultural tourism [57,58], scientific tourism [59] or gastronomic tourism [52,60] have been one of the strategies adopted. But the clear emphasis has been on nature tourism [52,61,62], described as one of the most strategically important tourism typologies for the Serra da Estrela region [60], and whose joint development with health and wellness tourism may constitute a good aspect of differentiation and leverage for both tourism products in this territory [25,26].

Focusing, now, on the potential for health and wellness tourism, it was the scientific expedition to Serra da Estrela, organized by the Geographical Society of Lisbon in August 1881, which marked not only the study of the relationship between mountain climates and the treatment of tuberculosis in Portugal, but also the beginning of the vision of Serra da Estrela as a tourist destination, above all focused on this tourist product.

In the mid-19th century, some Portuguese medical doctors joined forces to build a mountain sanatorium, which would be a specialized center for the treatment of the disease of the century and the leading cause of death in the main cities of the kingdom, surpassing all other infectious and contagious diseases put together: pulmonary tuberculosis [63]. At

this time, Serra da Estrela was inhabited only in the valleys and half slopes, since above 1500 m, there were no roads, electric light or any kind of construction, giving it a wild look, not suitable for habitation [64]. However, it had all the conditions that were believed to be able to provide mental and organic rest for the recovery of patients: purity and rarefaction of the air, sun and an absence of a busy social life [63]. These aspects followed the European trend in the 19th century of highlighting the mountains and high-altitude resorts as the main destinations for medical travel [65].

The scientific expedition was, in short, the bet of adventurous scientists who, influenced by the modern scientific movement of the nineteenth century, worked to understand and value an inland territory which, at the time, was still considered wild and almost inhospitable. This opened the doors for Serra da Estrela to begin to be described in advertising and propaganda as a tourist destination and health and healing resort [66]. The launch of the first effective drugs against tuberculosis during the 1940s, which opened the possibility of a cure, along with the decadence phase that thermalism experienced nationally in the post-World War II and the expansion of sun and sea tourism, led to the beginning of a phase of weak investment in this area in Serra da Estrela. However, the investment was recovered in the 1990s, with the elements water, air and mountain motivating the growing complexity of projects in the field of tourism. At the same time, since 2004, thermalism has acquired new rules for its operation, following the international trend of thermalist locations asserting themselves as tourist poles of diversified supply regarding the use of mineral-medicinal waters [66].

In 2010, one of the largest investments in the region regarding health and wellness took place with the inauguration of Portugal's first thermo-ludic tourism complex in the village of Unhais da Serra (municipality of Covilhã), with an investment of about EUR 15 million. This was one of the major results from the legislation stipulated in 2004 in terms of thermalism and health and wellness tourism, materialized in the Decree-Law No. 142/2004 of 11 June [67]. More recently, in 2021, the region saw the emergence of a different concept with the opening of New Life Portugal, a tourist resort located in the village of Folgoso (municipality of Gouveia), whose main mission is to combine, in a spiritual retreat format, occupational therapies with tourism. New Life Portugal is indicated to treat addictions and other clinical conditions such as stress, burnout, anxiety and depression. This investment was around EUR seven million and allowed the creation of 13 jobs in the region, which is relevant in a low-density territory.

3.2. Estrela UNESCO Global Geopark and the Hydrogeological Geosites

The concept of a geopark appeared at the end of the twentieth century. In 1998, faced with numerous requests from its member states expressing their interest in seeing their national geological heritage being recognized internationally, UNESCO launched the Global Geoparks Program [68]. A UNESCO Global Geopark is defined as a "single, unified area where sites and landscapes of international geological importance are managed in a holistic conception of protection, education and sustainable development" [69].

In other words, based on a certain number of geological sites of international relevance, in terms of scientific quality, rarity, aesthetic appeal or educational value, a geopark should play an active role in the economic development of its territory, the promotion of geotourism and the cultural revitalization of the territory. It also must allow local communities to actively participate in it and reclaim the values of their cultural heritage [70].

To date, there are 177 territories classified as UNESCO Global Geoparks, spread over 46 countries, about half of which are located on the European continent [71]. In the Portuguese context, there are five that have the recognition. Estrela UNESCO Global Geopark (Estrela UGGp), located in the central region of mainland Portugal, covers all or part of nine municipalities that are structured around Serra da Estrela, a factor that gives them identity and territorial cohesion [72]: Belmonte, Celorico da Beira, Covilhã, Fornos de Algodres, Gouveia, Guarda, Manteigas, Oliveira do Hospital and Seia (Figure 1).

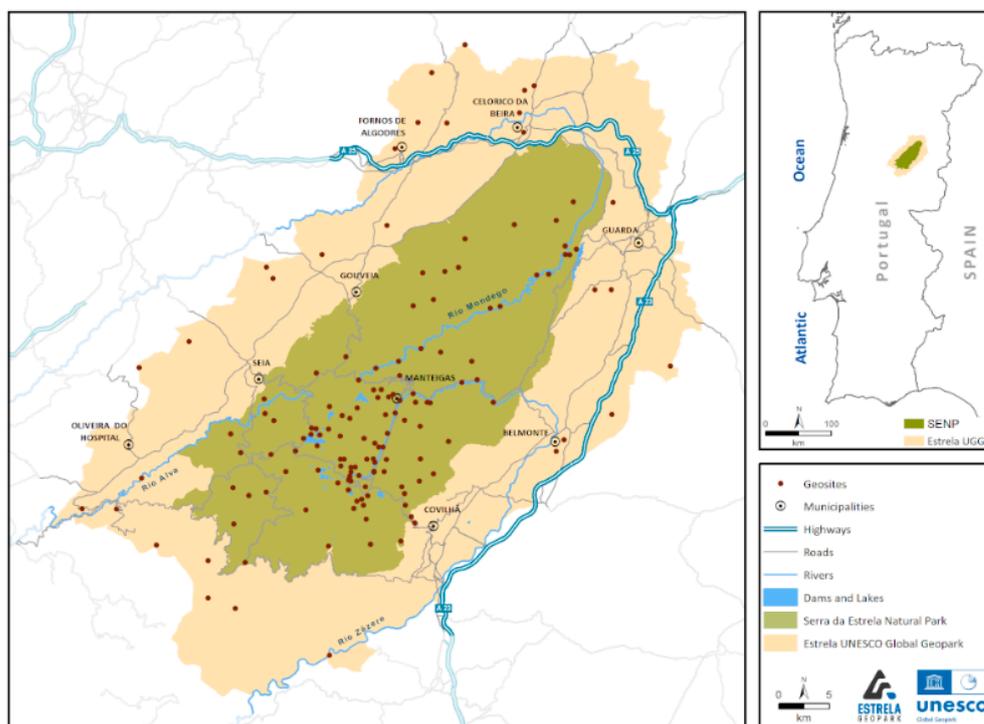


Figure 1. Estrela UNESCO Global Geopark territory (source: Estrela Geopark Association).

Estrela UGGp currently has 147 sites of geological relevance (or geosites) inventoried, which include 31 sites with national relevance and 3 that boast an importance of international character—strong premises for a solid scientific argument in the classification of Estrela UGGp [73]. In turn, the sites are subdivided into eight categories, divided by their intrinsic characteristics:

- Glacial and fluvio-glacial (28%);
- Periglacial and slope dynamics (9%);
- Fluvial geomorphology (8%);
- Granite weathering (14%);
- Hydrogeological (5%);
- Bedrock geology (17%);
- Mining (4%);
- Viewpoints (15%).

There is a clear predominance of geosites of glacial and fluvio-glacial character, evidence resulting from the phase of the last maximum glaciation of Serra da Estrela, the one that presents the best-preserved deposits and that occurred, in light of thermoluminescence dating, about 30 thousand years before present [74]. The traces of the last glaciation are the distinctive mark of the geological heritage of Estrela Geopark, incorporating great scenic and pedagogical importance and a high scientific value, considering the geographical position at the southwestern limit of Europe [75].

Within the geosites of hydrogeological relevance, we can find five hot springs, four of which are currently in operation (Figure 2). They share some similarities, namely, regarding the chemical properties of the waters. The Caldas de Manteigas Thermal Spring and the Unhais da Serra Thermal Spring (both located in the Serra da Estrela Natural Park) share waters associated with the Bragança-Vilariça-Manteigas-Unhais da Serra fault, one of the major tectonic structures in the northeast of mainland Portugal, which corresponds to a left-disconnecting fault, with a NNE-SSW direction and an approximate length of 220 km [76]. The therapeutic indications associated with the waters of each thermal spring are still quite similar, with rheumatism being common to all and respiratory and musculoskeletal diseases simultaneously predominating.

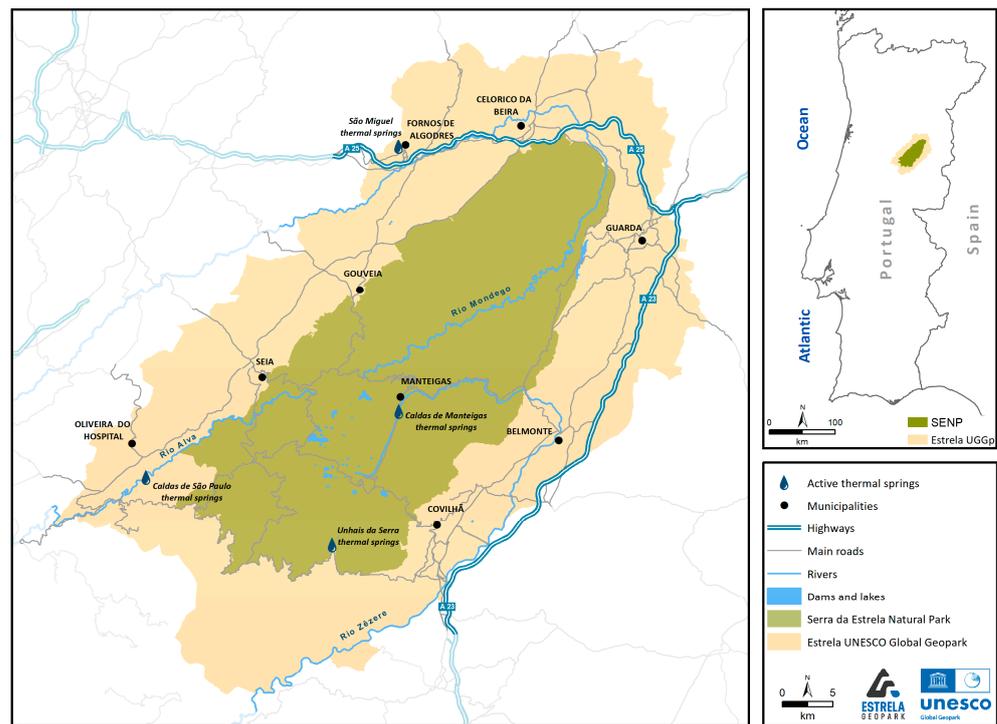


Figure 2. Thermal springs of the Estrela UNESCO Global Geopark territory (source: Estrela Geopark Association).

In the São Miguel and Caldas de São Paulo thermal springs, waters with different chemical properties are collected because they are associated with other tectonic faults and, therefore, also have contrasting water temperatures. In the specific case of Caldas de São Paulo, where the resurgence of the thermal spring is due to the presence of a fault system associated with the Arganil–Nazaré tectonic alignment, the most recent medical-hydrological studies may demonstrate new therapeutic indications [77].

4. Materials and Methods

Within the current context of the territory of Estrela UNESCO Global Geopark, health and wellness tourism materializes not only in the tourist enjoyment of the hot springs presented above. This is only a small part of what can be analyzed, to understand the real effect of the practices associated with this tourism product on territorial development. The present investigation will try to uncover more concrete data as to the real impact of health and wellness tourism on the regional economy of the territory of Estrela UGGp. An in-depth and multifaceted exploration is undertaken based on the study case method.

Health and wellness tourism, as we see it so far, has some special qualities that are manifested in a specific form and type of economic impacts: employment, economy and living conditions [23]. This research is carried out through the study of the direct effects of the territory on tourism [78] by this demand segment. In this way, we study the direct impacts on leisure and entertainment services and accommodation, from the perspective of both supply and tourism demand, through the analysis of different indicators:

- Accommodation capacity of the selected tourist resorts in the territory in 2021, with data provided by Statistics Portugal and Turismo de Portugal. Measured by the number of existing beds in each tourist resort, the accommodation capacity will serve as a weighting factor in the evolutionary analysis of the number of overnight stays and the number of jobs;
- Evolution of the number of jobs in the entities operating the selected tourist resorts in the territory between 2014 and 2021, with data provided by Informa D&B. The creation of jobs is an important indicator of the performance of the tourism sector in

general, and it can also be assumed to be a measure of the economic importance of the tourism enterprises analyzed in this tourism segment. For this purpose, the evolution of the number of jobs in the operating entities of each of the tourism enterprises will be presented and studied. These are legal persons and have an economic activity code (EAC) inserted in category 55—accommodation;

- Evolution of the number and value of registrations for thermal attendance in the thermal resorts of the territory between 2014 and 2021, with data provided by the General Directorate for Energy and Geology. Only three of the four operating thermal springs in the Estrela UGGp territory present data concerning the number and value of registrations for thermal attendance in the official General Directorate for Energy and Geology website; therefore, the thermal spring of Caldas de São Paulo was excluded from the analysis carried out in this point;
- Evolution of the number of overnight stays in the selected tourist resorts in the territory between 2014 and 2021, with data obtained from Statistics Portugal and Turismo de Portugal. As an important indicator of the performance of a destination with regard to its tourist attractiveness, the number of overnight stays is an important element to be analyzed within the scope of the direct effects of health and wellness tourism in Estrela UGGp;
- Evolution of the revenue per available room (RevPAR), the total revenue per available room (TRevPAR) and the difference between both in the selected tourist resorts in the territory between 2014 and 2021, with data obtained from Statistics Portugal and Turismo de Portugal. These are indicators used in revenue management practices. In turn, as its main object the study in the accommodation sector, revenue management looks to the management of prices and the physical capacity of a company to maximize its turnover, optimize decision making at the commercial level and consider the intangibility of services and the restrictions of the fixed capacity of each company [79].

For this purpose, the territory of Estrela UGGp is considered as the set of seven municipalities of the territory that, according to Turismo de Portugal, have tourist resorts with spa services and/or have thermal establishments that are currently in operation, with tourist resorts associated with these. These are the municipalities of Covilhã, Fornos de Algodres, Gouveia, Guarda, Manteigas, Oliveira do Hospital and Seia. Thus, the municipalities of Belmonte and Celorico da Beira are excluded for not fitting the defined parameters. The restriction to the seven municipalities mentioned above mainly allows for a better approximation of the reality of the calculations made in this section as well as for the reduction of statistical noise related to the data provided by Statistics Portugal. This restriction does not aim for the disaggregation of the territory, which is always analyzed as a whole and never municipality by municipality. Table 1 lists the 19 total tourist resorts that fit the abovementioned criteria, and Figure 3 illustrates the location of each one.

Table 1. Analyzed tourist resorts in the territory of Estrela UNESCO Global Geopark, per municipality.

Municipality	Tourist Resort
Covilhã	Pena D'Água Boutique Hotel and Villas Pousada Serra da Estrela H2otel Congress and Medical SPA Hotel Tryp Dona Maria Hotel Santa Eufêmia
Fornos de Algodres	Palace Hotel and Spa Termas de São Miguel
Gouveia	New Life Portugal—Quinta dos Ginjais Quinta da Estrela Casa do Rio Quinta do Paço da Nespereira
Guarda	Hotel Lusitânia Congress and Spa

Table 1. Cont.

Municipality	Tourist Resort
Manteigas	Hotel Vila Galé Serra da Estrela Casa de São Lourenço—Burel Panorama Hotel INATEL Manteigas Hotel Casa das Penhas Douradas—Expedition Design Hotel
Oliveira do Hospital	Aqua Village Health Resort and Spa
Seia	Abrigo da Montanha Hotel Rural and Spa Casa da Fândega Casas da Lapa—Nature and Spa Hotel

Data source: Turismo de Portugal.

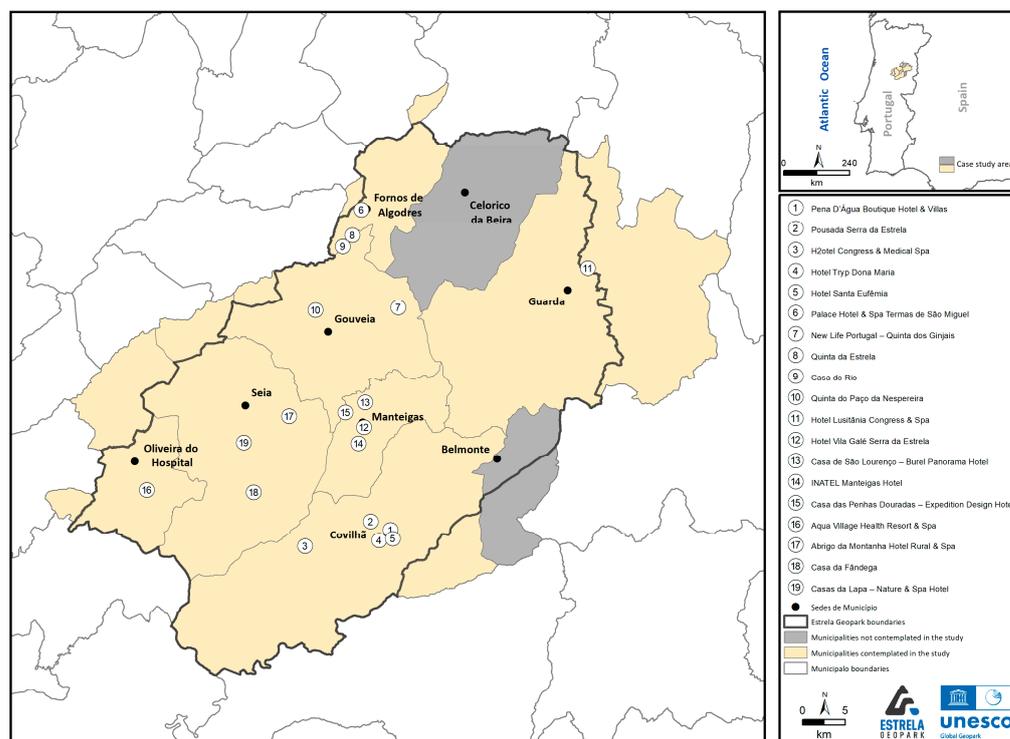


Figure 3. Administrative division of the municipalities and territory of Estrela UNESCO Global Geopark and location of the analyzed tourist resorts (source: Estrela Geopark Association).

5. Results

5.1. Supply Side

5.1.1. Accommodation Capacity

In 2021, the accommodation capacity of tourist resorts with a thermal, spa and/or wellness component represented almost 30% of the total accommodation capacity of the municipalities that make up the territory of Estrela UGGp, as it can be seen through the analysis of Table 2, with a total of 1848 beds. Despite representing less than half of the total lodging capacity, we can verify, in a municipality-by-municipality analysis, that its relative importance varies (Figure 4).

It is in Fornos de Algodres that the accommodation capacity has a greater weight, with Palace Hotel and Spa Termas de São Miguel representing more than 60% of the accommodation capacity of the whole municipality. Manteigas comes next in line, where almost half of the accommodation capacity is in tourist resorts with thermal, spa and/or wellness services, justified in large part by the large accommodation capacity of the Hotel Vila Galé Serra da Estrela. Covilhã, the municipality with the highest absolute accommodation capacity, sees about 42% of it explained by tourist resorts such as those already mentioned above, with

the great contribution of the IMB Natura Group hotels (Puralã—Wool Valley Hotel and Spa and H2otel Congress and Medical Spa). It is in the municipalities of Gouveia and Seia that health and wellness tourism has less relative importance in terms of accommodation capacity, since such tourism is only found in tourist resorts inserted in the typology of tourism in rural areas, which per se already represents a small percentage (6.8% in 2021) of the total accommodation capacity at a national level.

Table 2. Accommodation capacity by municipality and by analyzed tourist resort in the Estrela UNESCO Global Geopark territory.

Municipality	Municipal Accommodation Capacity ¹	Tourist Resort	Absolute Accommodation Capacity ²	Relative Accommodation Capacity ³
Covilhã	2194	Pena D'Água Boutique Hotel and Villas	52	2.4%
		Pousada Serra da Estrela	184	8.4%
		Puralã—Wool Valley Hotel and Spa	200	9.1%
		H2otel Congress and Medical Spa	188	8.6%
		Hotel Tryp Dona Maria	174	7.9%
		Hotel Santa Eufémia	133	6.1%
Fornos de Algodres	464	Palace Hotel and Spa Termas de São Miguel	292	62.9%
Gouveia	345	New Life Portugal—Quinta dos Ginjais	10	2.9%
		Quinta da Estrela	4	1.2%
		Casa do Rio	6	1.7%
		Quinta do Paço da Nespereira	8	2.3%
Guarda	701	Hotel Lusitânia Congress and Spa	132	18.8%
Manteigas	623	Hotel Vila Galé Serra da Estrela	182	29.2%
		Casa de São Lourenço—Burel Panorama Hotel	40	6.4%
		INATEL Manteigas Hotel	48	7.7%
		Casa das Penhas Douradas—Expedition Design Hotel	27	4.3%
Oliveira do Hospital	451	Aqua Village Health Resort and Spa	80	17.7%
Seia	1456	Abrigo da Montanha—Hotel Rural and Spa	42	2.9%
		Casa da Fândega	20	1.4%
		Casas da Lapa—Nature and Spa Hotel	26	1.8%
TOTAL	6234		1848	

¹. Measured by the number of beds in each municipality (data obtained from Statistics Portugal and referring to the year 2021). ². Measured by the number of beds in each tourist resort (data obtained from Turismo de Portugal on 7 August 2022). ³. Measured as a percentage of municipal accommodation capacity.

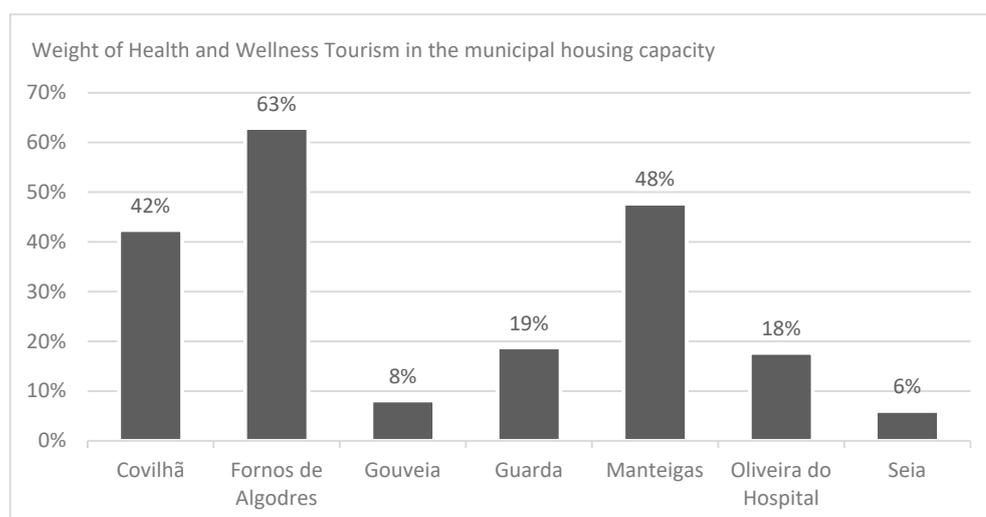


Figure 4. Municipal accommodation capacity in terms of tourist resorts—with a thermal spring, spa and/or wellness component per municipality in Estrela UNESCO Global Geopark in 2021 (data sources: Statistics Portugal and Turismo de Portugal | Elaborated by the authors).

In turn, in an analysis by the type of tourist resort (Table 3), we find that in the case of hotels, it is the ones with a spa and/or wellness component that stand out, representing almost half of the accommodation capacity of all hotels in the region. At the same time, inns represent the entire accommodation capacity of this respective group, meaning that hotel establishments with these characteristics represent more than half of all those existing in the territory. As for tourist villages, there is only one in the territory, and it has the described features. In turn, the subgroup of tourism in rural areas has a more residual role in this component, with just over 9% of the developments of this type to incorporate some of the services mentioned, but still with a slight representation of rural hotels.

Table 3. Accommodation capacity by typology/group and by analyzed tourist resort in the territory of Estrela UNESCO Global Geopark.

Typology	Group	Territorial Accommodation Capacity by Typology	Tourist Resort	Absolute Accommodation Capacity	Relative Accommodation Capacity
Hotel Establishments	Hotels	2951	Pena D'Água Boutique Hotel and Villas	52	1.8%
			Puralã—Wool Valley Hotel and Spa	200	6.8%
			H2otel Congress and Medical Spa	188	6.4%
			Hotel Tryp Dona Maria	133	4.5%
			Hotel Santa Eufêmia	174	5.9%
			Palace Hotel and Spa Termas de São Miguel	292	9.9%
			Hotel Lusitânia Congress and Spa	132	4.5%
			Hotel Vila Galé Serra da Estrela	182	6.2%
			Casa de São Lourenço—Burel Panorama Hotel	40	1.4%
			INATEL Manteigas Hotel	48	1.6%
			SUBTOTAL	1441	48.8%
	Inns	184	Pousada Serra da Estrela	184	100.0%
			SUBTOTAL	184	100.0%
	TOTAL	3135		1625	51.9%
Tourist Villages	---	80	Aqua Village Health Resort and Spa	80	100.0%
	TOTAL	80		80	100.0%
Tourism in Rural Areas	Country Houses	1118	New Life Portugal—Quinta dos Ginjais	10	0.9%
			Quinta da Estrela	4	0.4%
			Casa do Rio	6	0.5%
			Quinta do Paço da Nespereira	20	1.8%
			SUBTOTAL	40	3.6%
	Rural Hotels	256	Casa das Penhas Douradas—Expedition Design Hotel	27	10.5%
			Abrigo da Montanha—Hotel Rural and Spa	42	16.4%
			Casas da Lapa—Nature and Spa Hotel	26	10.2%
			SUBTOTAL	95	37.1%
	Agrotourism	204	Quinta do Paço da Nespereira	8	3.9%
SUBTOTAL			8	3.9%	
	TOTAL	1578		143	9.1%

5.1.2. Number of Jobs

Table 4 shows the operators of each analyzed tourist resort and their respective economic activity codes (EAC). Of the 18 operators covered by the study in this section, only 16 represent corporate bodies with an EAC in category 55—accommodation. Because Quinta da Estrela is operated by an individual owner, and Quinta do Paço da Nespereira is operated by an entity whose EAC does not provide assurance that the data provided refer to the accommodation component, they are not included in this analysis.

Table 4. Entities that explore the analyzed tourist resorts in Estrela UNESCO Global Geopark and respective economic activity codes (EAC).

Operating Entities	Tourist Resort ¹	Operating Entities' EAC
• Rvb—Investimentos e Imobiliária, Lda.	• Pena D'Água Boutique Hotel and Villas	• 55111—Hotels with restaurant
• Grupo Pestana Pousadas—Investimentos Turísticos S.A.	• Pousada Serra da Estrela	• 55114—Inns with restaurant
• Hotel Turismo da Covilhã S.A.	• Puralã—Wool Valley Hotel and Spa	• 55111—Hotels with restaurant
• Sociedade Termal de Unhais da Serra, S.A.	• H2otel Congress and Medical Spa	• 55111—Hotels with restaurant
• R.M.P.Z.—Administração de Hotéis, Lda.	• Hotel Santa Eufêmia	• 55111—Hotels with restaurant
	• Hotel Tryp Dona Maria	
• Terras Serranas—Desenvolvimento Turístico e Imobiliário, S.A.	• Palace Hotel and Spa Termas de São Miguel	• 55111—Hotels with restaurant
• New Life Portugal, S.A.	• New Life Portugal—Quinta dos Ginjais	• 55202—Tourism in rural areas
• Casas do Pinheiro Grande, Turismo e Agricultura, Lda.	• Casa do Rio	• 55202—Tourism in rural areas
• KGSC—Importação e Exportação, Lda.	• Quinta do Paço da Nespereira	• 46732—Wholesale of construction materials (except wood) and sanitary equipment
• HI—Hotelaria e Turismo, Lda.	• Hotel Lusitânia Congress and Spa	• 55111—Hotels with restaurant
• Vila Galé Internacional—Investimentos Turísticos S.A.	• Hotel Vila Galé Serra da Estrela	• 55119—Other hotel establishments with restaurant
• Casas da Senhora da Estrela—Turismo Rural, Lda.	• Casa de São Lourenço—Burel Panorama Hotel	• 55202—Tourism in rural areas
	• Casa das Penhas Douradas—Expedition Design Hotel	
• Fundação Inatel	• INATEL Manteigas Hotel	• 55111—Hotels with restaurant
• Craptur—Apartamentos Turísticos, Unipessoal Lda.	• Aqua Village Health Resort and Spa	• 55117—Tourist villages with restaurant
• O Abrigo da Montanha II—Empreendimentos Turísticos, Lda.	• Abrigo da Montanha—Hotel Rural and Spa	• 55202—Tourism in rural areas
• Léguas Glaciares, Lda.	• Casa da Fândega	• 55202—Tourism in rural areas
• Soito da Lapa, Turismo de Aldeia Lda.	• Casas da Lapa—Nature and Spa Hotel	• 55202—Tourism in rural areas

Data sources: Turismo de Portugal and Informa D&B. ¹ Quinta da Estrela is not included in this list because it is a sole proprietorship.

The figures for jobs, originally supplied by Informa D&B, will be treated, as in the previous cases, according to the accommodation capacity. The exploiting entities will be divided into three groups, according to the percentage corresponding to the ratio $\frac{\text{Accommodation Capacity in tourist resorts explored in Estrela UGGp}}{\text{Accommodation Capacity of the total of explored tourist resorts}}$, whose values are shown in Table 5. They are thus organized into the following groups (Table 6):

- Entities whose exploited tourist resorts are located in their entirety in the territory of the Estrela UGGp;
- Entities whose accommodation capacity of the exploited tourist resorts in Estrela UGGp represents between 50 and 99% of the accommodation capacity of all the tourism enterprises explored by the respective entity and, therefore, with a lower degree of confidence as to the origin of the mentioned jobs;
- Entities whose accommodation capacity of the tourist resorts explored in the Estrela UGGp represents between 1 and 49% of the accommodation capacity of all the tourist resorts explored by the respective entity and, therefore, with the lowest degree of confidence regarding the origin of the jobs mentioned of the entire analyzed spectrum.

Table 5. Accommodation capacity of the analyzed tourist resorts in Estrela UNESCO Global Geopark, by operating entity.

Operating Entities	Total Accommodation Capacity	Accommodation Capacity of the Analyzed Tourist Resorts in Estrela UGGp	Estrela UGGp Accommodation Capacity/Total Accommodation Capacity
• Rvb—Investimentos e Imobiliária, Lda.	66	52	79%
• Grupo Pestana Pousadas—Investimentos Turísticos, S.A.	2114	184	9%
• Hotel Turismo da Covilhã S.A.	200	200	100%
• Sociedade Termal de Unhais da Serra, S.A.	188	188	100%
• R.P.M.Z.—Administração de Hotéis, Lda.	670	308	46%
• Terras Serranas—Desenvolvimento Turístico e Imobiliário, S.A.	292	292	100%
• New Life Portugal, S.A.	25	10	40%
• Casas do Pinheiro Grande, Turismo e Agricultura, Lda.	6	6	100%
• HI—Hotelaria e Turismo, Lda.	132	132	100%
• Vila Galé Internacional—Investimentos Turísticos, S.A.	1266	182	14%
• Casas da Senhora da Estrela—Turismo Rural, Lda.	67	67	100%
• Fundação Inatel	1544	48	3%
• Craptur—Apartamentos Turísticos, Unipessoal Lda.	88	80	91%
• O Abrigo da Montanha II—Empreendimentos Turísticos, Lda.	42	42	100%
• Léguas Glaciares, Lda.	34	20	59%
• Soito da Lapa, Turismo de Aldeia Lda.	36	26	72%

Data source: Turismo de Portugal.

Table 6. Operating entities by weight in accommodation capacity of the analyzed tourist resorts in Estrela UNESCO Global Geopark.

100%	50–99%	1–49%
<ul style="list-style-type: none"> • Hotel Turismo da Covilhã S.A. • Sociedade Termal de Unhais da Serra, S.A. • Terras Serranas—Desenvolvimento Turístico e Imobiliário S.A. • Casas do Pinheiro Grande, Turismo e Agricultura, Lda. • HI—Hotelaria e Turismo, Lda. • Casas da Senhora da Estrela—Turismo Rural, Lda. • O Abrigo da Montanha II—Empreendimentos Turísticos, S.A. 	<ul style="list-style-type: none"> • Rvb—Investimentos e Imobiliária, Lda. • Craptur—Apartamentos Turísticos, Unipessoal Lda. • Soito da Lapa, Turismo e Aldeia Lda. • Léguas Glaciares, Lda. 	<ul style="list-style-type: none"> • Grupo Pestana Pousadas—Investimentos Turísticos, S.A. • R.P.M.Z.—Administração de Hotéis, Lda. • Vila Galé Internacional—Investimentos Turísticos S.A. • Fundação Inatel • New Life Portugal, S.A.

The values shown in Figure 5 correspond to the sum of the product between the ratio $\frac{\text{Estrela UGGp Accommodation Capacity}}{\text{Total Accommodation Capacity}}$, calculated in the fourth column of Table 5, and the number

of jobs created in the total tourist resorts operated by each entity, according to the years in which each resort was operating.

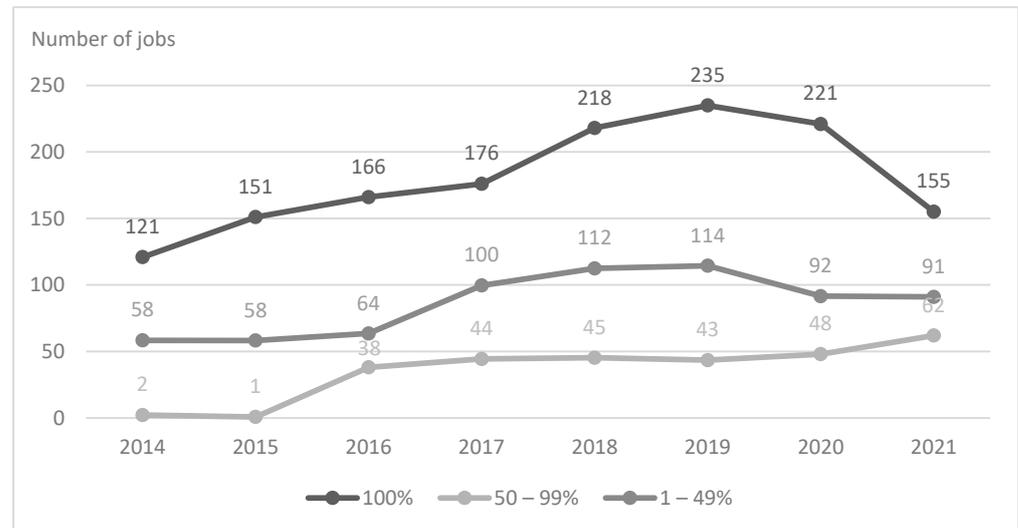


Figure 5. Number of jobs created in the analyzed tourist resorts between 2014 and 2021, as a function of relative accommodation capacity (data source: Informa D&B, elaborated by the authors).

It should be noted that Fundação Inatel does not have any figures for 2020, so the 50–99% group does not include data on this operator for that year. At the same time, both Fundação Inatel and Casas da Senhora da Estrela—Turismo Rural, Lda. do not have any figures for 2021, so the 100% and 50–99% groups also do not include data on these operators for that year. The estimate of jobs created in tourist resorts with a spa and/or wellness component grows, almost uninterruptedly, between 2014 and 2019. The year 2020 brings with it a decrease in the 100% and 1–49% groups, motivated, with great probability, by the pandemic context in force and consequent layoffs in the hospitality sector. In the case of the first group, the year 2021 further aggravated this decrease, returning to 2015 values. This may denote the lower resilience and recovery capacity of small tourist resorts (usually operated by small businesses) in the face of external adversities. The 50–99% group was the only one that differed from the trend seen in 2020 and even improved this indicator in 2021, which may be related to the opening, in that same year, of two tourist resorts in this group.

5.2. Demand Side

5.2.1. Registrations for Thermal Attendance

The data concerning the number of thermal attendance registrations, the distribution of the thermal spa users by age groups and the value corresponding to the thermal attendance registrations were taken from the databases provided by the General Directorate for Energy and Geology. In these databases, for an analysis of the Estrela UGGp territory, the data are available concerning the thermal springs of Caldas and Fonte Santa (Manteigas), Unhais da Serra and Termas de São Miguel. The evolution of the data will be made for the period between 2014 and 2021, with the data for Termas de São Miguel only available from 2018 (inclusive).

Table 7 and Figure 6 aggregate the data for the three thermal springs under study, in an analysis that distinguishes classic thermalism (demand for therapeutic reasons, associated with a medical prescription) from wellness thermalism (demand for leisure, relaxation and/or recreation). Classical thermalism has a negligible weight in the thermal demand of the studied territory. It only represents between 17% and 34% of the annual thermal demand in the period under study, around 1000 thermal visitors per year until 2019. At the same time, it suffers an abrupt decline in 2020, due to the COVID-19 pandemic, with a slight recovery in 2021. On the contrary, wellness thermalism is the most representative of the

thermal demand in the territory, with a tendency to grow in a pre-pandemic context. With peaks in demand in 2018 and 2019, it registers a decrease in 2020 to the values recorded at the beginning of the period under analysis, but also with some recovery in 2021.

Table 7. Total registrations in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2014 and 2021.

Year	Total Registrations
2014	3317
2015	3102
2016	3079
2017	4091
2018 ¹	6370
2019	6875
2020	2657
2021	3252

Data source: General Directorate for Energy and Geology. ¹ Break in the series in 2018 with the introduction of data for Termas de São Miguel.

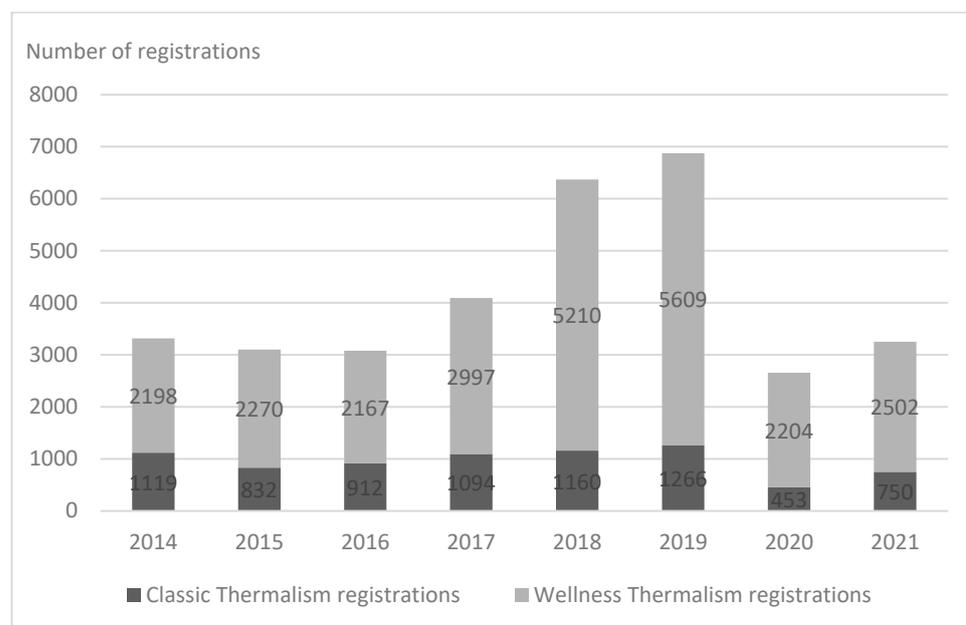


Figure 6. Number of registrations in classic thermalism and wellness thermalism in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2014 and 2021 (data source: General Directorate for Energy and Geology, elaborated by the authors).

By observing Figure 7 (which performs an annual analysis by age groups of users), it is also possible to verify that between 2014 and 2015, the most significant share of the thermal demand in the territory, within classic thermalism, was made up of users aged between 46 and 65 years. This scenario of aging of the thermal demand worsens in 2016, with the increasing registration of users in the age group of 66 to 74 years. In 2019 only, this age group almost doubled in relation to the one immediately before. In 2020, all demand in this segment decreases abruptly, with special incidence in the age classes with greater relevance in demand. It drops to values never reached before, which may be explained, in large part, by the forced closure of facilities and general restrictions dictated by the COVID-19 pandemic.

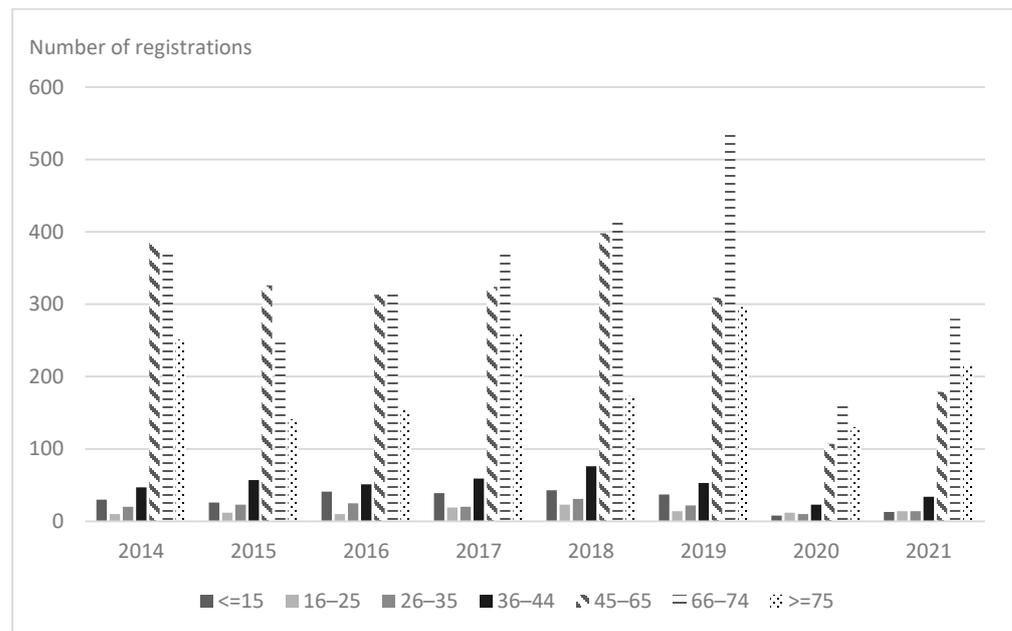


Figure 7. Classic thermalism registrations by age group in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2014 and 2021 (data source: General Directorate for Energy and Geology, elaborated by the authors).

At the same time, regarding wellness thermalism users, the predominance of users aged between 45 and 65 years old extends throughout the time horizon under study (Figure 8). However, the exponential rise in demand of the 26- to 35-year-old age group until 2019 is of relevance. This may denote a growing ability of the thermal resorts of the territory to attract a younger market segment, motivated by a thermalism that brings with it a higher added value, although with no apparent signs of recovery after the decrease recorded in 2020.

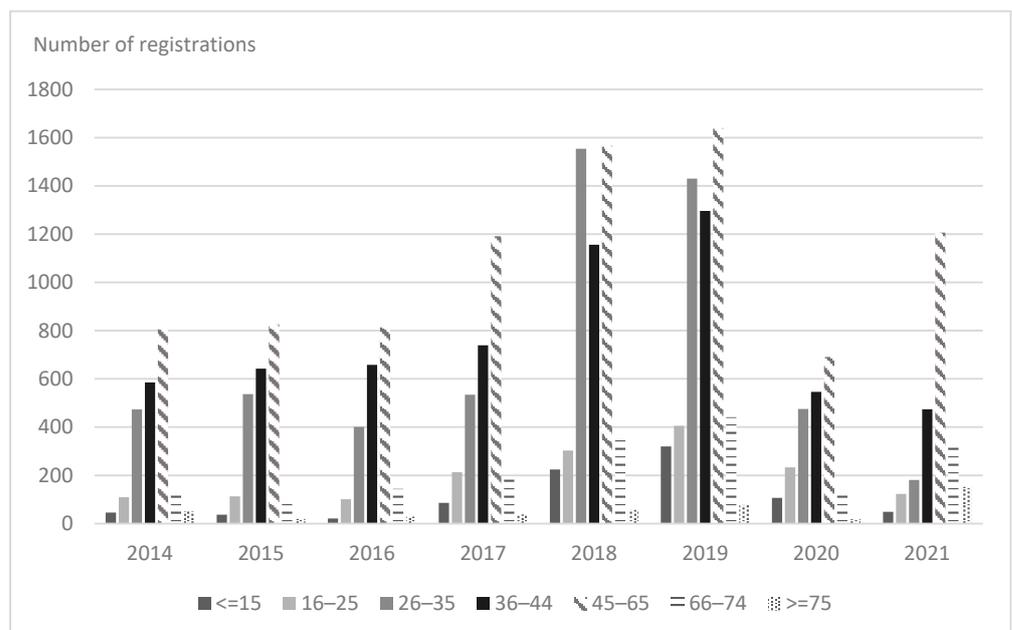


Figure 8. Wellness thermalism registrations by age group in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2014 and 2021 (data source: General Directorate for Energy and Geology, elaborated by the authors).

The variation in the total value of registrations is, according to Figure 9, quite irregular over the analyzed period, with two large drops to similar levels in 2016 and 2020 (approximately EUR 280,000), but with the highest value set at EUR 484,573 in 2019.

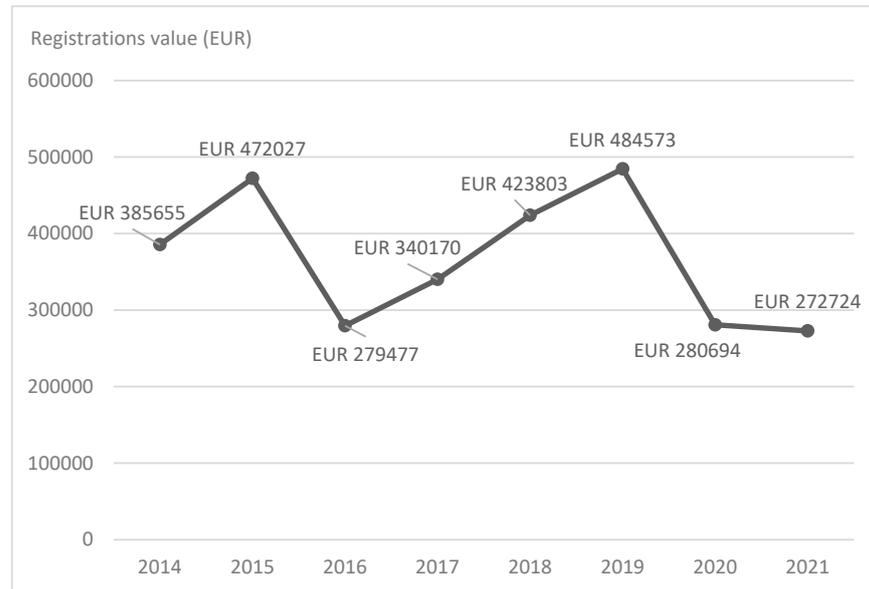


Figure 9. Evolution of the total value of registrations in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2014 and 2021 (data source: General Directorate for Energy and Geology, elaborated by the authors).

However, the year-on-year change in the total value of registrations does not always follow, in the same direction and/or by the same percentage, the year-on-year change in the number of annual registrations, as Figure 10 shows. In years such as 2017 and 2018, the number of registrations varies more than their value. As there is no significant increase in these years in the number of registrations in classic thermalism (related to treatments reimbursed by the public health system), a possible explanation lies in a greater demand for wellness thermalism treatments with more affordable prices.

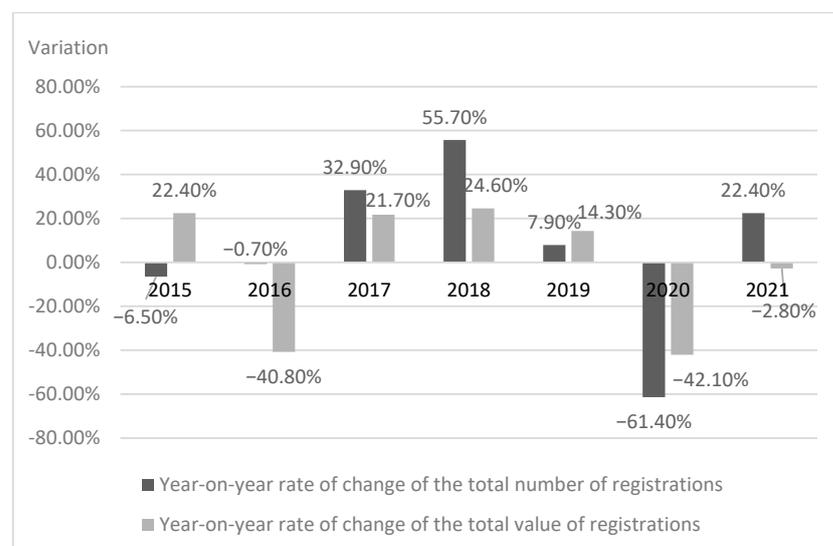


Figure 10. Year-on-year variation rates of the total quantity and value of registrations in the thermal establishments of Manteigas, Unhais da Serra and Termas de São Miguel between 2015 and 2021 (data source: General Directorate for Energy and Geology, elaborated by the authors).

In 2015 and 2019, the scenario is inverted: the total number of registrations varies in the opposite direction or in a smaller proportion than their value, which can be related to an increase in demand for wellness thermalism. This can be associated as well with the increase in the purchasing power of this segment in both years mentioned (end of IMF intervention in the Portuguese economy and the highest value of GDP per capita recorded nationally since 1960, respectively), which also increases the willingness of customers to enjoy more expensive treatments.

In 2016, the number of registrations remained stable, but their value decreased significantly compared to the previous year. This decrease may be related to the increase in the number of users registered in classic thermalism versus a slightly more significant decrease in demand for wellness thermalism. The year 2020 closes with an unprecedented evolution of these indicators in the analyzed timeframe: a decrease of around 40% in the total number of registrations and of 60% in the total value of registrations, motivated by the pandemic context and the major restrictions imposed on thermal establishments.

5.2.2. Number of Overnight Stays

According to data from Statistics Portugal, in the period between 2014 and 2019, the average stay in the tourist resorts of the seven analyzed municipalities varies between 1.55 and 1.63 nights. These are worrying values in a territorial analysis, since in each of the years observed, they are below the records of not only the central region of Portugal but also of the whole country. However, this indicator will not be approached in this research in a more in-depth way, since it is not possible to separate the average stay data only by the tourist resorts in question in a way that is related to the health and wellness tourist product.

In this sense, given the impossibility of obtaining exact data from each of the establishments, it is more appropriate to try to obtain an approximation of the number of overnight stays in the tourist resorts included in this study, weighting them by the accommodation capacity. It is important to mention that for this data approach, it is assumed as an initial assumption that all the tourist resorts in the territory operate at the same occupancy rate in each year of the studied period. Table 8 shows, for each of the tourist resorts, the respective opening year and the accommodation capacity, measured by the number of beds. In turn, based on the data provided by Table 8, Table 9 shows, for each typology/group of tourist resort and year of the time horizon under analysis, the annual frequency of accommodation capacity (number of existing beds opened in each year) as well as its accumulated frequency (measurement of the number of existing beds, accumulated from year to year).

Table 8. Accommodation capacity of the analyzed tourist resorts in Estrela UNESCO Global Geopark, by year of opening.

Opening Year	Tourist Resort	Accommodation Capacity
1993	Puralã—Wool Valley Hotel and Spa	200
2001	Hotel Tryp Dona Maria	174
2004	Hotel Lusitânia Congress and Spa	132
2005	Hotel Santa Eufêmia Quinta do Paço da Nespereira	133 8
2006	Casas da Lapa—Nature and Spa Hotel	26
2007	Casa das Penhas Douradas—Burel Expedition Hotel	27
2008	H2otel Congress and Medical Spa	188
2012	Palace Hotel and Spa Termas de São Miguel	292
2014	Pousada Serra da Estrela Casa do Rio	184 6

Table 8. Cont.

Opening Year	Tourist Resort	Accommodation Capacity
2015	Quinta da Estrela	4
	Abrigo da Montanha—Hotel Rural and Spa	42
2016	Aqua Village Health Resort and Spa	80
2017	INATEL Manteigas Hotel	48
2018	Casa de São Lourenço—Burel Panorama Hotel	40
2020	Hotel Vila Galé Serra da Estrela	182
2021	Pena D'Água Boutique Hotel and Villas	52
	New Life Portugal—Quinta dos Ginjais	10
	Casa da Fândega	20
TOTAL		1848

Data source: Turismo de Portugal.

Table 9. Annual and accumulated frequency of accommodation capacity in the analyzed tourist resorts in Estrela UNESCO Global Geopark, by typology/group and year of opening.

Opening Year	Hotels			Inns			Tourist Villages			Tourism in Rural Areas		
	Annual Frequency	Accumulated Frequency	% ¹	Annual Frequency	Accumulated Frequency	% ²	Annual Frequency	Accumulated Frequency	% ³	Annual Frequency	Accumulated Frequency	% ⁴
Before	1119	1119	37.9	---	0	0.0	---	0	0.0	61	61	4.0
2014	---	1119	37.9	184	184	100.0	---	0	0.0	6	67	4.4
2015	---	1119	37.9	---	184	100.0	---	0	0.0	46	113	7.4
2016	---	1119	37.9	---	184	100.0	80	80	100.0	---	113	7.4
2017	48	1167	39.6	---	184	100.0	---	80	100.0	---	113	7.7
2018	40	1207	40.9	---	184	100.0	---	80	100.0	---	113	7.4
2019	---	1207	40.9	---	184	100.0	---	80	100.0	---	113	7.4
2020	182	1389	47.1	---	184	100.0	---	80	100.0	---	113	7.4
2021	52	1441	48.8	---	184	100.0	---	80	100.0	50	143	9.1

Data source: Turismo de Portugal. ¹ Accumulated frequency of the “Hotels” group according to the territorial accommodation capacity relative to the “Hotels” group. ² Accumulated frequency of the “Inns” group according to the territorial accommodation capacity relative to the “Inns” group. ³ Accumulated frequency of the “Holiday Villages” typology according to the territorial accommodation capacity relative to the “Holiday Villages” typology. ⁴ Accumulated frequency of the “Tourism in Rural Areas” typology according to the territorial accommodation capacity relative to the “Tourism in Rural Areas” typology.

The accumulated frequency allows us to observe the weight of the tourist resorts related to health and wellness tourism in the total tourist resorts of the territory, by each of the types (tourist villages and tourism in rural areas) and by each of the groups (hotels and inns). We confirm that in 2021, Pousada Serra da Estrela and Aqua Village Health Resort and Spa are, respectively, the only inn and tourist village in the territory, totaling 100% of the accommodation capacity of the group and of the tourist resort typology in question. In turn, the hotels covered by this study only reach about half of the accommodation capacity of the seven municipalities in this group, and in the case of tourism in rural areas, only 1 in 10 resorts includes a spa and/or wellness component.

The accumulated frequency of accommodation capacity of each typology/group of analyzed tourist resorts, as a function of the territorial accommodation capacity relative to the same typology/group (data in Table 9), will serve as a weighting factor for calculating the number of overnight stays estimated for the health and wellness tourism segment in each year of the studied period. As an example, with the number of overnight stays in hotels in the territory for the year 2014 set at 232,159 and the cumulative frequency of accommodation capacity of HWT-oriented hotels in the territory, for the same year, calculated at 37.9%, this means that approximately 87,988 (37.9% of 232,159) overnight stays in this group of tourist resorts were motivated by the demand for the tourist product in question. Keeping the same reasoning for the other years, Figure 11 illustrates the evolution of the estimated values for the number of overnight stays in this market segment. However,

given that the values for the inns and tourist villages are hidden due to statistical secrecy, only those corresponding to hotels and tourism in rural areas will be presented.

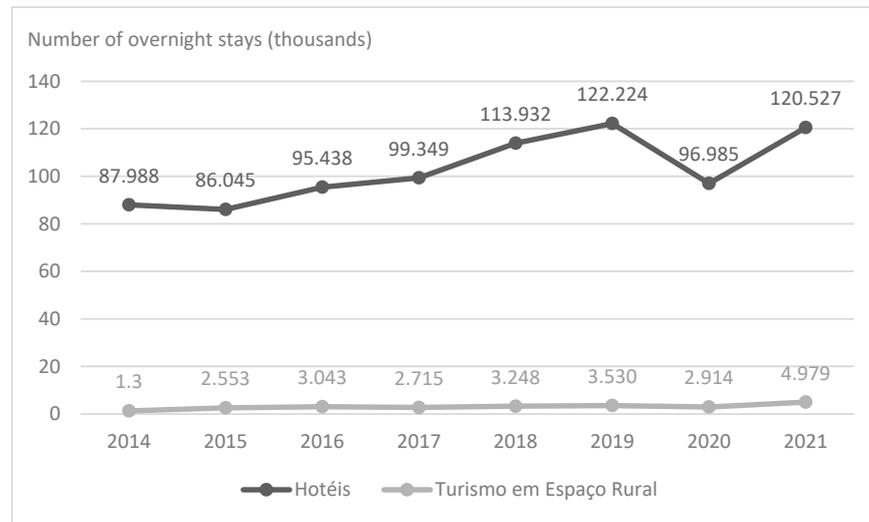


Figure 11. Evolution of the estimated number of overnight stays in the analyzed tourist resorts in Estrela UNESCO Global Geopark between 2014 and 2021 (data sources: Statistics Portugal and Turismo de Portugal, elaborated by the authors).

We can verify that the number of overnight stays associated with the health and wellness tourism segment grows, in a broad sense, throughout the studied years, with a more significant increase in 2021. The increase in overnight stays in tourism in rural areas always appears in a residual perspective when compared to that of hotels, whose growth was constant between 2014 and 2019, with a significant drop in 2020 (largely due to the closure of several establishments), but with a recovery to pre-pandemic levels already in 2021. This may denote not only a great capacity of adaptation of the hotel sector but also a greater demand for this tourist product in the context of health crises.

5.2.3. RevPAR and TRevPAR

The revenue per available room (RevPAR) represents a ratio that evaluates and compares the revenue of the occupied rooms and the available rooms of an accommodation in each period, measuring the performance of the tourism development in terms of accommodation management and revealing the level of effectiveness of rate management and revenue maximization [80]. In turn, total revenue per available room (TRevPAR) considers the revenue obtained in all departments of the tourist resort, in addition to accommodation, such as food and beverage, meeting spaces, parking, telephone and/or internet service and also spa and wellness services. Constant monitoring of this metric can help managers to identify underperforming revenue sources and profit-generating opportunities, especially during periods when revenue relative to overnight stays is lower [81].

The arithmetic difference between these two indicators results in the revenue obtained by all the departments in each tourist resort, except for the accommodation itself, which provides, in the scope of this research, the best possible approximation to the value that the spa and wellness services of the studied resorts assume in the context of the territory under analysis. For the seven municipalities under study, the RevPAR and the total income relative to hotels, inns, tourist villages and tourism in rural areas, between 2014 and 2021 were obtained through Statistics Portugal. TRevPAR will be calculated through the ratio between total revenues and available accommodation units, the latter having been obtained through Turismo de Portugal.

Table 10 reveals the number of accommodation units of each analyzed tourist resort, the percentage weight of each in the total number of accommodation units and also the

accommodation capacity per each unit, resulting from the ratio $\frac{\text{Accommodation Capacity}}{\text{Number of Accommodation Units}}$, starting from data already given in Table 9 for the dividend values. The average accommodation capacity per unit, weighted by the weight of each tourist resort in the total number of accommodation units, is 2.2, i.e., each accommodation unit in the analyzed set has, on average, 2.2 beds of accommodation capacity.

Table 10. Accommodation units and accommodation capacity per unit of the analyzed tourist resorts in Estrela UNESCO Global Geopark, by year of opening.

Opening Year	Tourist Resort	Number of Accommodation Units	Weight in Total Accommodation Units (%)	Accommodation Capacity per Unit ¹
1993	Puralã—Wool Valley Hotel and Spa	100	10.7	2.0
2001	Hotel Tryp Dona Maria	87	9.3	2.0
2004	Hotel Lusitância Congress and Spa	63	6.7	2.1
	Hotel Santa Eufêmia	81	8.7	1.6
2005	Quinta do Paço da Nespereira	4	0.4	2.0
2006	Casas da Lapa—Nature and Spa Hotel	15	1.6	1.7
2007	Casa das Penhas Douradas—Burel Expedition Hotel	18	1.9	1.5
2008	H2otel Congress and Medical Spa	90	9.6	2.1
2012	Palace Hotel and Spa Termas de São Miguel	146	15.6	2.0
	Pousada Serra da Estrela	92	9.8	2.0
2014	Casa do Rio	3	0.3	2.0
	Quinta da Estrela	2	0.2	2.0
2015	Abrigo da Montanha—Hotel Rural and Spa	21	2.3	2.0
2016	Aqua Village Health Resort and Spa	30	3.2	2.7
2017	INATEL Manteigas Hotel	24	2.6	2.0
2018	Casa de São Lourenço—Burel Panorama Hotel	21	2.3	1.9
2020	Hotel Vila Galé Serra da Estrela	91	9.7	2.0
	Pena D'Água Boutique Hotel and Villas	27	2.9	1.9
2021	New Life Portugal—Quinta dos Ginjais	10	1.1	2.5
	Casa da Fândega	10	1.1	2.0
TOTAL		935	100.0	
WEIGHTED AVERAGE		---	---	2.2

Data source: Turismo de Portugal. ¹ Calculated from the accommodation capacity mentioned in Table 8 for each tourist resort.

In turn, Table 11 establishes a similar procedure as Table 9, but for the annual and accumulated frequency of accommodation units of tourist resorts offering health and wellness services. Similarly to what happens with the accommodation capacity, the accommodation units of the analyzed hotels reflect, in 2021, almost half of all accommodation units of hotels in the territory, and in the case of tourism in rural areas, 1 in every 10 accommodation units is also inserted in tourist resorts related to health and wellness tourism. For the analyzed inn and tourist village, being the only ones existing in the whole territory, they also have all the accommodation units associated with spa and wellness services. The annual and cumulative frequency of accommodation capacity only considers the analyzed tourist resorts for each of the years, not including any other accommodation units that, although they might be operating in some part of the period under analysis, were no longer in operation in 2021.

The total income for the analyzed tourist resorts, shown in Table 12, results from the product between the total income for each type and group (provided by Statistics Portugal) and the accumulated frequency of accommodation units in each year. We can see that, although with much more significant expression in hotels, both in hotels and in tourism in rural areas, the total income increases annually between 2014 and 2019, reaching the highest aggregate value of the analyzed period in the latter year. In 2020, given the pandemic context, the values decline to similar levels as those in 2017, recovering in 2021 to levels close to (in the case of hotels) or even higher (in the case of tourism in rural areas) than those in 2019.

Table 11. Annual and accumulated frequency of accommodation units in the analyzed tourist resorts in Estrela UNESCO Global Geopark, by typology/group and year of opening.

Opening Year	Hotels			Inns			Tourist Villages			Tourism in Rural Areas		
	Annual Frequency	Accumulated Frequency	% ¹	Annual Frequency	Accumulated Frequency	% ²	Annual Frequency	Accumulated Frequency	% ³	Annual Frequency	Accumulated Frequency	% ⁴
Before 2014	567	567	37.5	---	0	0.0	---	0	0.0	37	37	4.8
2014	---	567	37.5	92	92	100.0	---	0	0.0	3	40	5.2
2015	---	567	37.5	---	92	100.0	---	0	0.0	23	63	8.2
2016	---	567	37.5	---	92	100.0	30	30	100.0	---	63	8.2
2017	24	591	39.1	---	92	100.0	---	30	100.0	---	63	8.2
2018	21	612	40.5	---	92	100.0	---	30	100.0	---	63	8.2
2019	---	612	40.5	---	92	100.0	---	30	100.0	---	63	8.2
2020	91	703	46.5	---	92	100.0	---	30	100.0	---	63	8.2
2021	27	730	48.3	---	92	100.0	---	30	100.0	20	83	10.9

¹ Accumulated frequency of the “Hotels” group according to the territorial accommodation units relative to the “Hotels” group. ² Accumulated frequency of the “Inns” group according to the territorial accommodation units relative to the “Inns” group. ³ Accumulated frequency of the “Holiday Villages” typology according to the territorial accommodation units relative to the “Holiday Villages” typology. ⁴ Accumulated frequency of the “Tourism in Rural Areas” typology according to the territorial accommodation units relative to the “Tourism in Rural Areas” typology.

Table 12. Estimated total income for the analyzed tourist resorts in Estrela UNESCO Global Geopark between 2014 and 2021.

Year	Hotels	Tourism in Rural Areas
2014	EUR 4,427,787.00	EUR 76,404.22
2015	EUR 4,443,184.13	EUR 135,465.89
2016	EUR 5,379,294.75	EUR 168,854.15
2017	EUR 5,586,157.18	EUR 207,298.38
2018	EUR 7,116,915.15	EUR 257,700.99
2019	EUR 7,969,597.29	EUR 257,177.67
2020	EUR 5,907,678.06	EUR 198,345.70
2021	EUR 7,746,731.71	EUR 381,347.73

The calculation of the TRevPAR will result from the quotient between total income, by group and type, presented in Table 13, and the estimated number of occupied accommodation units in the context of health and wellness tourism (Table 13), estimated by the number of overnight stays (see Figure 11).

Table 13. Estimated occupied accommodation units for the analyzed tourist resorts in Estrela UNESCO Global Geopark between 2014 and 2021.

Year	Hotels	Tourism in Rural Areas
2014	40,889	604
2015	39,986	1186
2016	44,351	1414
2017	46,168	1262
2018	52,945	1509
2019	56,798	1640
2020	45,069	1354
2021	56,010	2645

The estimated annual value of TRevPAR for hotels, as shown in Table 14, varies between a minimum of EUR 108.29 and a maximum of EUR 138.31, showing a broadly increasing variation in the period under study. In turn, in the case of tourism in rural areas, despite showing higher values than hotels in most years, it varies more irregularly, with a minimum of EUR 114.18 in 2015 and a maximum of EUR 170.73 in 2018. Both typologies/groups under analysis suffered a drop in the value of their RevPAR in 2020, but hotels, unlike tourism in rural areas, are already showing some signs of recovery.

Table 14. Estimated annual TRevPAR for analyzed tourist resort typologies and groups in Estrela UNESCO Global Geopark between 2014 and 2021.

Typology/Group	2014	2015	2016	2017	2018	2019	2020	2021
Hotels	EUR 108.29	EUR 111.12	EUR 121.29	EUR 121.00	EUR 134.42	EUR 140.31	EUR 131.08	EUR 138.31
Tourism in Rural Areas	EUR 126.47	EUR 114.81	EUR 119.41	EUR 164.30	EUR 170.73	EUR 156.78	EUR 146.47	EUR 144.20

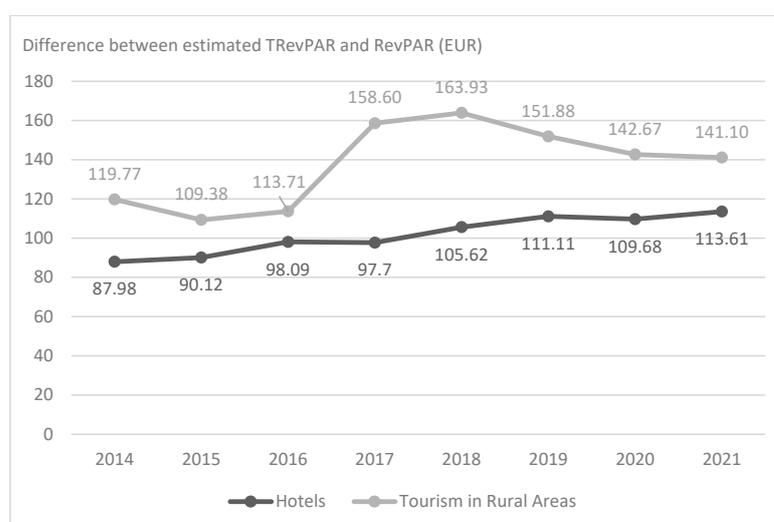
The analysis of the evolution of RevPAR already shows some differences with respect to TRevPAR: the values recorded for tourism in rural areas are significantly lower than those for hotels, and they also vary in the opposite direction. They show an almost constant decrease between 2014 and 2021, worsened with the onset of the pandemic in 2020, and still showing no signs of recovery. Hotels, in turn, show an increasing evolution during the analyzed period but suffer with a more significant drop in their RevPAR in 2020, although already showing signs of recovery, albeit to 2017 levels (Table 15).

Table 15. Annual RevPAR for analyzed tourist resort typologies and groups in Estrela UNESCO Global Geopark between 2014 and 2021.

Typology/Group	2014	2015	2016	2017	2018	2019	2020	2021
Hotels	EUR 20.30	EUR 21.00	EUR 23.20	EUR 23.30	EUR 28.80	EUR 29.20	EUR 21.40	EUR 24.70
Tourism in Rural Areas	EUR 6.70	EUR 4.80	EUR 5.70	EUR 5.70	EUR 6.80	EUR 4.90	EUR 3.80	EUR 3.10

Data source: Statistics Portugal.

The arithmetic difference of TRevPAR and RevPAR tells us the revenue, per accommodation unit, of all services/departments of these tourist resorts, except for accommodation. This is, as mentioned before, the best possible approximation of the revenue that the spa and wellness component of this type and group of tourist resorts brings to the studied territory. Through the analysis of Figure 12, it is possible to observe that the calculated values of the difference between TRevPAR and RevPAR for tourism in rural areas exceed, in each of the years, those recorded for hotels, which may indicate that the revenue obtained through complementary departments of the tourism resorts has much more weight in tourism in rural areas than in hotels and, thus, suggests that the same may be true for the spa and wellness component of these resorts.

**Figure 12.** Evolution of the difference between estimated TRevPAR and annual RevPAR of the typologies and groups of the analyzed tourist resorts in Estrela UNESCO Global Geopark between 2014 and 2021 (source: elaborated by the authors).

6. Discussion

In an analysis of the impact of the health and wellness tourist product in the accommodation capacity of Estrela UGGp territory, the higher weight of the tourist resorts with a spa and/or wellness component stands out, perhaps by mere coincidence, in the municipal accommodation capacity of the municipalities where there are thermal springs: Fornos de Algodres (63%), Manteigas (48%) and Covilhã (42%). A possible explanation may lie in the fact that these municipalities, due to the existence of thermal springs in them, feel a greater proximity to health and wellness tourism, corroborating the theory that thermal tourism remains the aspect of this tourism product with greater projection [10,27,28]. At the same time, hotels are the group with the described features that stands out in the accommodation capacity of the territory, which may denote a greater ability to own and maintain the necessary infrastructure and equipment for the pursuit of health and wellness services.

As for the number of jobs created, it is possible to verify that these are registered in a larger quantity in the operating entities whose owned enterprises and respective accommodation capacity are totally in the tourist resorts selected for this research. In this scenario, small- and medium-sized companies predominate in the region. This helps to confirm that thermal tourism and health and wellness tourism generate an overflow effect in the local economic and social fabric, contributing to its enrichment [9,14]. However, it is in companies with tourist resorts also located outside the territorial limits of Estrela UNESCO Global Geopark (predominance of large companies, with the presence of some multinationals) that there seems to be greater resilience to shocks on the demand side, since the number of jobs, in a pandemic context, remained virtually unchanged in the group of 1–49%.

Regarding thermal attendance, in 2021, there is a slight recovery in demand for the territory's thermal springs after the sharp drop recorded in 2020, which proves the ability of thermal tourism to seize the opportunity to claim its health-promoting character in society during a pandemic [41]. A distinction between two large groups of thermalists is also observed here [27,29]: (i) those with therapeutic motivations (classical thermalism), for which users aged between 66 and 74 years predominate; (ii) those with leisure, relaxation and/or recreation motivations (wellness thermalism), for which the age group of 26 to 35 years predominates until 2019, and from 2020 on, users aged 46 to 65 years predominate by a wide margin. Here, one can see the loss of purchasing power of the younger sections of the population, motivated by the COVID-19 pandemic as a possible explanation.

The evolution of the number of overnight stays estimated for the selected tourist resorts within the scope of this research between 2014 and 2021 roughly mirrors, in the case of hotels, the evolution also recorded at a national level: a progressive increase between 2014 and 2019, a sharp drop in 2020 [3] and recovery in 2021 towards pre-pandemic levels. In the case of tourism in rural areas, the drop recorded in 2020 is much less significant, which may prove that in addition to the preference for activities that take place in greater contact with nature [5,16–18] and less mass tourism destinations, there was also greater demand for accommodation typologies that follow the same trend.

The analysis of the evolution of the difference between the estimated average TRevPAR and the average RevPAR of the analyzed tourist resorts allows us to extract information about the operation of this type of accommodation. Since the difference between these indicators is greater than that recorded for hotels in all years of the studied period, this allows us to see that the component of revenue from sources other than accommodation is more significant in the total revenue of tourism in rural areas than in hotels. As the difference between TRevPAR and RevPAR is the best possible approximation of the value generated by the spa and/or wellness component, since it includes all departments of the tourist resort except for accommodation, this may imply a greater weight of revenue generated by services related to health and wellness tourism in tourism in rural areas than in hotels. However, there is a convergence trend for this typology and group, respectively, from 2019 onwards, which may once again reflect the greater resilience of hotels to negative shocks on the demand side.

7. Conclusions

Theoretically, it can be concluded that health and wellness tourism is an increasingly important product within the tourism system. The range of spa services on offer to the tourist has increased, with many already established spas renovating their buildings and new real estate investments, hotels and resorts springing up in their immediate vicinity. In addition, tourist resorts are broadening their service portfolios to offer different options for different segments of tourist demand. On the demand side, there has been very significant growth in both medical tourism and wellness tourism, which is due to:

- The emergence of new behaviors and lifestyles that place greater emphasis on the well-being of the body, mind and spirit;
- Changes in the demographic structure, with an increase in average life expectancy at birth;
- An increase in the number of elderly people visiting medical spas, which was already noticeable before the COVID-19 pandemic.

In Portugal, health and wellness tourism is very important to the national economy and that of the northern and central regions. The Estrela UNESCO Global Geopark is in the center of Portugal. It can be concluded that the accommodation capacity of tourist resorts with a thermal, spa and/or wellness component is very relevant for the municipalities that make up the Estrela UGGp territory. The spa and/or wellness component is more present in hotels than in rural tourism establishments. Hotels are the group that stands out in the accommodation capacity of the territory with respect to the characteristics described, which may indicate a greater capacity of hotels to own and maintain the infrastructure and equipment needed to provide health and wellness services.

Serra da Estrela is the Portuguese mountain tourist destination par excellence, with a huge potential for sustainable tourist growth based on a great diversity of tourist products. Although there is still a long way to go to dissociate the destination from the “snow” resource, nature, culture, gastronomy, science and, as the object of this study, health and wellness are growing in the regional tourism panorama. However, there is still a need to evaluate the economic impact of tourism based on a particular product, to ensure its sustainability.

This investigation presents the calculations of the parameters defined for the analysis of health and wellness tourism in the regional economy of Estrela UNESCO Global Geopark, the classification that Serra da Estrela has had since 2020, both on the supply side (accommodation capacity and number of jobs) and on the demand side (thermal attendance registrations, number of overnight stays and difference between TRevPAR and RevPAR). The results show that from 2014 to 2019, all indicators showed an upward trend, marked in most cases by falls in 2020 (motivated by the onset of the COVID-19 pandemic) but already showing signs of recovery in 2021. It is possible to see that the profile of a spa user in the territory seems to have been changed by the pandemic, and that as a rule, hotels, particularly those operated by medium and large companies, show greater resilience to adapt to external demand shocks.

In terms of management, it is important to attract human resources, particularly young people, for the promotion of health and well-being services, as there are many job opportunities in a fast-growing segment of tourism. There is also training in tourism segments that complement this offer very well, such as nature tourism, cultural tourism and food and wine tourism. The potential for these tourist products to generate employment is remarkable and presents an opportunity for low-density rural areas where thermal spa and spa and wellness services are located.

Destination management organizations should combine the promotion of health and wellness tourism with other tourist products in low-density rural areas, as well as with the promotion of domestic and international tourism. Thermal resorts oriented towards health and wellness tourism and spas must seek to increase and diversify the portfolio of services they provide to attract different market segments. They must also value high-quality standards and induce a demand with purchasing power.

In social terms, the COVID-19 pandemic has changed travel behavior, leading to an increase in domestic tourism and demand for rural areas characterized by low population densities and closer contact with nature and thermal resorts geared towards health and wellness tourism. The thermal frequency has adapted to the challenges imposed by the COVID-19 pandemic, and tourist resorts show resilience in the face of external demand shocks. It is important to adjust the supply of health and wellness services to an increasingly young, urban, lifestyle-orientated demand.

The study has the merit of focusing on an issue that is becoming increasingly relevant in contemporary society: health and well-being; of concerning a UNESCO site, a Global Geopark, which contributes to its interest; of covering a low-density territory; of highlighting the importance of tourism for the local and regional economy; and of mobilizing a wide range of indicators to highlight local and regional economic dynamics based on tourism. This research faced several challenges in the methodologies used throughout its realization. One of the limitations of this study is that it is a study case, so the conclusions are related to a specific territory. In addition, the analysis is limited by the lack of some indicators disaggregated at a local scale. Also, the statistical secrecy of the indicators used in the analysis of the regional economy, regarding inns and tourist villages, affected the published results. The fact that there is only one inn (Pousada Serra da Estrela) and one tourist village (Aqua Village Health Resort and Spa) in the seven municipalities analyzed made it impossible for the Portuguese National Statistics Institute to provide the figures for accommodation capacity, the number of overnight stays, the total revenue and the RevPAR for this group and type of accommodation, respectively, so that the only available data are for hotels and rural tourism.

Beyond the results presented throughout this study, many other approaches can be used to complement this research and to seek other equally enriching results. Here are some suggestions:

- Measurement of the direct impacts of health and wellness tourism according to the other tourism products with growth potential in the territory (nature tourism, food and wine tourism, scientific tourism, cultural tourism, among others), in order to calculate its relative importance;
- Analysis of the same indicators presented in this research (accommodation capacity, number of jobs, number of overnight stays, RevPAR and TRevPAR) for future tourist resorts, with data to be obtained, for example, through the SIGTUR platform—Geographic Information System of Tourism, created by the Turismo de Portugal;
- Analysis of the profile of Estrela Geopark's health and wellness tourists, such as their motivations, their preference for mineral-medicinal water or water from the public water supply, details of their stays in tourist resorts in the region (if applicable) and sociodemographic data.

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