



Article

Perceived Rural Development in UNESCO Global Geoparks in Spain

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Abstract: The tourism management of geoparks is an excellent way of achieving sustainable development in rural areas and improving the quality of life of the resident population while respecting their natural and cultural heritage. Spain is the country with the second highest number of geoparks in the world and the first in Europe. This study aims to find out how rural development is perceived by the highest political representatives of the municipalities affected by the declaration of geoparks in Spain, considering the dimensions of economic and social development and the infrastructures of the environment. Data were collected through a questionnaire and analysed with the structural equation modelling technique. The results reveal that the local perception of the geopark declaration is conditioned, firstly, by the perceived economic and tourism development, followed by the development of the surrounding infrastructure and social development. In conclusion, good tourism planning in these areas, increased recreational use, and the services offered by local businesses are necessary to improve the way of life for these rural populations.

Keywords: rural development; tourism business management; geoparks; geotourism; sustainable tourism; partial least squares; resident perception



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1. Introduction

In recent years, Spain has been visited by more than 80 million foreign tourists, making it one of the world's top tourist destinations [1]. This sector is crucial to the country's economy, accounting for 12.4% of its gross domestic product in the same year [2].

Among the country's many tourist attractions, its rich natural and cultural heritage is particularly noteworthy. As proof of this, it is the fourth country out of 167 with the highest number of UNESCO World Heritage sites in the world [3]. Similarly, Spain is the second country in the world, after China, with the most geoparks recognised by UNESCO and the first in Europe [4]. This invaluable natural heritage is an excellent means of achieving socio-economic development in rural areas [5,6].

In this scenario, it is important to note the role of geotourism. This tourism modality is on the rise all over the world and is characterised by the search for sustainability in its destinations [7–9]. The places par excellence for this type of tourism are the geoparks [10]. In these areas, geological heritage is proposed as a driving force for the sustainability of local development, also representing a sign of identity for the territory [11,12]. However, given their novelty, geoparks remain a relatively unknown concept in society [13].

The beauty of their landscapes and their cultural uniqueness make geoparks excellent tourist destinations. It is impossible to know the exact number of visitors who choose Spanish Geoparks as a destination, due to their open nature and free access, but some studies estimate that these environments are visited by approximately 10 million people per year [14].

In recent years, research that has analysed the concepts of geoparks and geotourism has increased significantly from different perspectives: geodiversity conservation visitor

Land 2022, 11, 1086 2 of 14

numbers and carrying capacity [15], tourist profiles [7], and the conservation of cultural heritage [16], among others.

From a socio-economic point of view, geotourism and geoparks are excellent instruments to achieve rural development, as they improve the economy through increased visitor numbers, create new employment opportunities, and reduce the depopulation of rural areas [16].

On the other hand, tourism activity in popular destinations undoubtedly affects the way of life of the resident population, whose perceptions will vary according to the impact it has on their socio-economic environment [17]. Furthermore, knowledge of the perceptions of the local population is a crucial aspect of sustainable tourism management [18–20], which is even more relevant in a natural destination such as a geopark [21].

Therefore, this paper analyses the local perception of the municipalities that make up the Spanish Geoparks with regard to the sustainability of the environment between 2009–2019, considering different dimensions associated with local development derived from tourism: economic development, social development, and development of the infrastructure of the environment. In other words, the objective is to answer the following questions: Do the local populations perceive sustainable development as a consequence of tourism in the Spanish Geoparks? What are the dimensions that most influence the local perceptions of sustainable development?

The findings of this research will be of great use to political institutions (local and regional), tourism stakeholders, and management bodies of Spanish Geoparks in determining local development strategies in socio-economically depressed rural areas.

Unlike other studies that have only analysed a limited area or a small number of geoparks, this research covers all the geoparks located throughout Spain. Furthermore, the fact that Spain is a world leader in tourism, the great importance of its natural and cultural heritage, and the need to raise awareness of the opportunities of geotourism provide an important justification for this research.

About the structure of this work: firstly, a brief review is made of the history of geoparks in Spain, and the importance of geotourism in socio-economic development is highlighted. In the third section, the methodology used in the data processing is presented. Subsequently, the results are presented, and finally, the paper ends with a series of conclusions.

2. Theoretical Framework

2.1. A Brief Overview of the History of Geoparks in Spain

According to UNESCO's definition, geoparks are unique territories characterised by an internationally outstanding geological heritage and the promotion of sustainable development [22].

The history of geoparks dates back to the year 2000 when rural areas in four European countries (France, Greece, Germany, and Spain) joined forces to enhance the value of their geological resources by creating the European Geoparks Network [23,24].

This cataloging was expanded in 2004, when UNESCO joined this initiative and created the Global Geoparks Network, with the idea of being represented in the rest of the world [23,25,26]. Finally, the continued work of UNESCO led to the creation of a new label in 2015, which is what we know today as the UNESCO Global Geoparks [22]. In this way, the UNESCO Global Geoparks Programme (UGGp) emerges as an innovative and integrating proposal that encompasses different areas of sustainability [27].

Further deepening the mission of the UNESCO Global Geoparks program, geological heritage is presented as the central axis which, linked to the natural and cultural resources of the territory, aims to raise society's awareness of the many challenges we face from a social and environmental point of view. It also maximises the participation of local communities in this quest for sustainable development [28]. As mentioned above, Spain was a pioneer in the creation of this type of space, being one of the founding members at the beginning of the project [23,29]. In terms of their legal status, they are considered

Land 2022, 11, 1086 3 of 14

protected areas under international instruments [30]. In addition, it is necessary to point out that this declaration must be subject to strict quality control, undergoing a revalidation every 4 years to check that these sites continue to meet the requirements [29].

2.2. Geotourism and Sustainable Development

The fundamental reasons why geoparks stand out are fundamentally centered on the reinforcement of cultural identity, the conservation of natural resources, and the search for sustainable economic development through geotourism [22]. In this sense, numerous studies endorse the relationship between the declaration of this type of area and the generation of employment and the creation of new businesses [31–33], greater participation of the local population in geoconservation [34], the improvement of residents' living conditions [13,35], the importance of governance [36], and the achievement of the Sustainable Development Goals [37], among other aspects.

Focusing on other continents, such as Asia or Africa, this type of space provides an excellent opportunity to achieve sustainable development, promote heritage conservation, and eradicate poverty [37–39].

The first definition of geotourism was provided by Hose in 1995, who defined it as a form of tourism that not only consists of the appreciation of the landscape but also allows tourists to get to know the geomorphology of a place [40].

In short, the objective pursued by this type of tourism focuses on the search for a balance between the conservation of the geological heritage and the development of the area for tourism [9,32,41,42], making the UNESCO Global Geoparks an ideal figure to achieve the sustainable development of rural areas [9,37,43,44].

According to the World Tourism Organisation, sustainable tourism takes into account different dimensions that affect society from a present and future perspective including environmental, economic, and social impacts, as well as the well-being of the local population [45]. In other words, sustainability seeks to maximise the benefits of tourism activity without detracting from the available resources, in such a way that it results in an improvement, in all aspects, in the way of life of the resident population [17,46]. Thus, the role of the local population in sustainability is essential. According to many authors, the development of sustainable tourism activity is only possible by integrating the resident population in the development of tourism policies [19,47–49].

In general terms, there is extensive literature that supports the relationship between the tourism impacts perceived by residents and their attitude towards tourism activity. In this sense, these impacts can basically be categorised into positive and negative externalities [20,50–52].

For the population living in the vicinity of a geopark, the economic component generated by tourism is fundamental [53]. In particular, previous studies have shown that the greater the economic development derived from tourism, the more positive the attitude of the residents [54], especially when it comes to environmentally friendly tourism [55]. Numerous authors have also highlighted the relationship between residents' perceptions and economic development in terms of increased recreational use [56], employment generation [57], and better opportunities for local businesses [58], among others.

On the other hand, previous literature has pointed out that well-managed tourism development leads to an improvement in the quality of life of society, helps to keep customs alive, and preserves cultural heritage [59]. Other authors also postulate that adequate tourism activity generates greater environmental awareness among the residents [60].

Based on the above studies, the following hypotheses can be stated:

Hypothesis 1 (H1). Local perceptions of economic development influence the overall perception of the sustainability of geoparks.

Hypothesis 2 (H2). *The local perception of economic development influences the perception of the social development of the population.*

Land 2022, 11, 1086 4 of 14

It is important to note that one of the purposes of protected areas is the development of populations by keeping the resident population in their environment and minimising the effects of rural depopulation [61]. However, previous studies have determined that the tourist activity generated around different protected areas has not managed to prevent the depopulation of their essentially rural municipalities [61,62].

Despite the many positive impacts of tourism, indeed, it can sometimes become a threat to the social development of the residents, in terms of the preservation of cultural heritage and traditions [63]. In this sense, studies show that the perceived loss of local identity leads to a hostile attitude towards tourism development [20,64,65].

The following hypothesis is therefore proposed:

Hypothesis 3 (H3). Local perceptions of social development influence global perceptions of the sustainability of geoparks.

Other research has shown a relationship between economic development as a result of tourism in protected areas and investment in more environmentally sustainable infrastructure [66]. In other words, the income generated by the tourism sector is reinvested in the improvement of infrastructure and services related to transport, education, and health, among others [67].

In addition, it has also been shown that the improvement of the environment, in terms of infrastructure and services offered to the community, has an important impact on the social development of the population and, consequently, on their perception of it [68,69]. The infrastructure of an environment is a fundamental aspect of the sustainable development of society, as it offers essential services such as electricity, water, communication technologies, accessibility in terms of travel, etc. [70].

In this sense, the literature supports the relationship between the development of transport infrastructure and the improvement of the quality of life of residents [68,71]. Research has also highlighted the importance of infrastructure related to accessibility and connectivity in the development of society, as it prevents or reduces the social exclusion of a geographical area [72,73].

Given the above, the following hypotheses are proposed:

Hypothesis 4 (H4). The local perception of economic development influences the perception of the surrounding infrastructure.

Hypothesis 5 (H5). *The local perception of the development of the surrounding infrastructure influences the overall perception of the sustainability of the population.*

Hypothesis 6 (H6). *The local perception of the development of the surrounding infrastructure influences the perception of the social development of the population.*

Finally, the formulation of these hypotheses aims to determine the resident population's perception of the sustainability of their environment as a consequence of the geopark declaration.

Figure 1 shows the hypothesised relationships:

Land 2022, 11, 1086 5 of 14

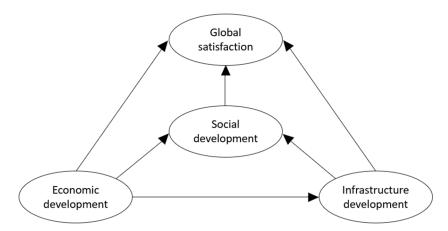


Figure 1. Relationships between constructs.

3. Materials and Methods

Aragón

Extremadura

Sobrarbe-Pirineos

Villuercas-Ibores-Jara

Total

The study sample consists of 116 populations belonging to the 15 UNESCO Global Geoparks located in Spain. Table 1 shows the main characteristics of the sample used, as well as the response rate obtained in each geopark.

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Geopark	Region	Hectares	Inhabitants	Municipalities	Response Rate
Cabo Gata-Níjar	Andalucía	12.600	767.716	3	66.67
Cataluña Central	Cataluña	125.000	194.681	36	27.78
Costa Vasca	País Vasco	1.800	20.880	3	66.67
El Hierro	Islas Canarias	26.800	11.147	3	33.33
Granada	Andalucía	472.200	97.195	47	46.81
Lanzarote	Islas Canarias	250.000	155.812	7	14.29
Las Loras	Castilla y León	96.000	18.820	16	43.75
Maestrazgo	Aragón	35.000	11.758	43	48.84
Molina-Alto Tajo	Castilla-La Mancha	430.000	8.403	77	12.99
Montañas do Courel	Galicia	57.800	5.107	3	100
Orígens	Cataluña	204.000	15.903	19	42.11
Sierra Norte Sevilla	Andalucía	47.300	24.790	10	40
Sierras Subbéticas	Andalucía	32.056	67.343	8	<i>7</i> 5

220.200

50.000

2.060.756

Table 1. Description of the Spanish Geoparks [74,75].

Regarding data collection, a questionnaire used in previous studies [76] was sent by e-mail to the town councils of the 313 municipalities that make up the geoparks. The subjects to whom this questionnaire was addressed were the mayors of the municipalities in the sample with a dual role: those most responsible for local management and residents of the area.

7.490

12.557

1.419.602

19

19

313

36.84

63.16

37.06

Responses were collected between April and May 2022. In addition, the response rate was reinforced by telephone calls until an optimal sample size of more than 100 individuals was achieved to apply the study methodology [77]. Each of the indicators was rated according to a Likert scale with values ranging from 1 to 7.

Considering the study variables, the questionnaire used is composed of a set of questions that represent indicators associated with four dimensions or constructs, as can be seen in Table 2. Appendix A (Table A1) refers to the questions used segmented by the dimensions of the study.

Land 2022, 11, 1086 6 of 14

Economic Development (ED)	Infrastructure Development (ID)	Social Development (SD)	Global Satisfaction (GS)
Level of wealth (ED1)	Travel infrastructure (ID1)	Maintenance of residents (SD1)	Opportunity awareness (GS1)
Tourism services (ED2)	ICT improvements (ID2)	Culture maintenance (SD2)	Expectations fulfilled (GS2)
Increase of visitors (ED3)	Resource efficiency (ID3)	Culture tourist attraction (SD3)	Proud to live there (GS3)
Increase in recreational use (ED4)	Signaling (ID4)	Tourism-residents conflicts (SD4)	Living traditions (GS4)
Tourism-primary sector conflicts (ED5	j)	Environmental awareness (SD5)	Improvement quality of life (GS5)
			Global satisfaction (GS6)

Table 2. Latent variables and indicators.

The technique used for data analysis was structural equation modelling, which determines the effects and relationships between constructs or latent variables, formed by a set of indicators [78]. The software used was SmartPLS 3. For the descriptive analysis, SPSS v25 was used.

As established in previous literature, the analysis was structured in two stages: in the first stage, the measurement model was analysed, while the second stage examined the structural model, which allows us to observe the relationships and corroborate the hypotheses put forward [78].

In addition, an importance-performance analysis (IPMA) was carried out at the indicator level. This analysis makes it possible to identify the importance and performance of the different items and to know which of them need to be addressed to improve a given objective construct. In summary, it is a two-dimensional graph, with the horizontal axis representing importance and the vertical axis representing performance [78–80].

4. Results

4.1. Analysis of the Structural Equation Model

First, Table 3 shows the mean and standard deviation for the indicators of each dimension analysed in this paper.

Table 3. Descriptive statistics and indicator loadings.

Dimension	Item	Mean	Desv.	Loading
	ED1	3.24	1.787	0.855
	ED2	3.55	1.876	0.917
ED	ED3	4.28	1.900	0.912
	ED4	4.01	1.909	0.915
	ED5	3.03	1.890	0.271
	ID1	3.16	1.789	0.791
ID	ID2	3.27	1.781	0.619
ID	ID3	3.49	1.707	0.816
	ID4	4.28	1.737	0.764
	SD1	4.22	2.035	0.548
	SD2	5.24	1.758	0.816
SD	SD3	4.65	1.953	0.877
	SD4	2.47	1.512	0.132
	SD5	4.23	1.706	0.789
	GS1	3.85	1.917	0.791
	GS2	3.13	1.518	0.843
<i>C</i> C	GS3	3.78	1.813	0.866
GS	GS4	3.32	1.806	0.836
	GS5	3.32	1.597	0.906
	SG6	4.25	1.673	0.890

According to the data provided in the table, the most positively rated indicator in terms of economic development was the increase in visitors (ED3), with an average score of 4.28 out of 7. At the other extreme, the indicator referring to the existence of conflicts

Land 2022, 11, 1086 7 of 14

between tourism and the primary sector (ED5), with an average value of 3.03, was at the other end of the scale. Concerning the development of infrastructure, all the indicators reported a medium-low rating, except for signposting (ID4), which obtained a notably more positive rating (4.28). In social development, the indicator referring to the maintenance of culture stands out as the indicator with the highest average rating of all those used in this study, followed by the use of culture as a tourist attraction (SD3) (5.24 and 4.65, respectively). Conversely, the subjects reported little conflict between tourists and residents (SD4), reporting the lowest average rating of all the indicators (2.47). Finally, it is important to highlight a medium-high rating (4.25) of overall satisfaction with the geopark designation (SG6).

Starting with the first stage, the individual reliability at the indicator level is satisfactory. As can be seen in Table 3, in the first approach, some of the indicators did not meet the minimum threshold of 0.707 [81], so they were purged. As depicted in Figure 2, all the indicators that were retained either met the above requirement or were at values very close to or above 0.6 [82]. Continuing with the reliability of the constructs, Table 4 shows that Cronbach's alpha values are above the commonly accepted value of 0.7 [83]. Furthermore, the composite reliability is sufficiently demonstrated, as the values of our analysis are within the threshold of 0.7 and 0.95 [78]. In addition, convergent validity is also satisfactory, with all values exceeding the lower limit of 0.5 [84].

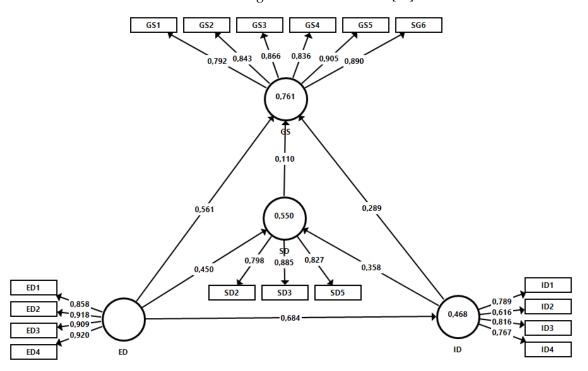


Figure 2. Estimation of the structural equation model.

Table 4. Reliability measures.

Constructs	AVE	Composite Reliability	R Square	Cronbach's Alpha
ED	0.813	0.946		0.923
GS	0.733	0.943	0.761	0.927
ID	0.564	0.837	0.468	0.743
SD	0.702	0.876	0.550	0.791

In addition, it can be said that the latent variables enjoy moderate predictive power, as the values of the coefficients exceed the minimum suggested value of 0.1 [85]. In other words, the model can explain 46.8% of perceptions of infrastructure development, 55% of that for social development, and 76.1% of the overall satisfaction with the geopark designation.

Land 2022, 11, 1086 8 of 14

Furthermore, as can be seen in Tables 5 and 6, the discriminant validity according to Fornell and Lacker's criterion and the Heterotrait–Monotrait relationship of the correlations (HTMT) is confirmed [86,87].

Table 5. Discriminant validity assessment by Fornell and Larcker's criterion.

	ED	GS	ID	SD
ED	0.902			
GS	0.835	0.856		
ID	0.684	0.746	0.751	
SD	0.695	0.692	0.665	0.838

Table 6. Discriminant validity assessment by the heterotrait-monotrait ratio (HTMT).

	ED	GS	ID	SD
ED				
GS	0.899			
ID	0.800	0.879		
SD	0.793	0.785	0.820	

According to Fornell and Lacker's criterion [86], for discriminant validity to exist, the square root of the AVE of each construct must be higher than its highest correlation with any other construct.

Moreover, according to the HTMT criterion, we can observe that all values are below the maximum accepted threshold of 0.85 or 0.90 [87].

Next, we proceed to determine whether or not the hypotheses raised in this research can be accepted by studying the structural model. Figure 2 shows the relationship coefficients between the hypothesised relationships.

The same data can be found in Table 7, which presents the results of the hypothesis test based on a bootstrap technique using 10,000 sub-samples.

Table 7. Hypotheses test.

Hypotheses	Direct Effects	Standard Errors	T Statistics
H1. ED -> GS	0.561	0.069	8.148 ***
H2. ED -> SD	0.450	0.086	5.231 ***
H3. SD -> GS	0.110	0.061	1.814 *
H4. ED -> ID	0.684	0.051	13.303 ***
H5. ID -> GS	0.289	0.073	3.984 ***
H6. ID -> SD	0.358	0.075	4.750 ***

Notes: Significance level: *** *p*-value < 0.01; * *p*-value < 0.10.

The results reveal that all hypothesised relationships between constructs are significant at 1% (p-value < 0.01) except hypothesis 3, which is significant at 10% (p-value < 0.10). Specifically, economic development has a strong influence on the development of the surrounding infrastructure. On the other hand, social development is moderately conditioned (0.450) by economic development and, secondly, by the development of infrastructures (0.358). Finally, overall satisfaction with the geopark status in terms of sustainability is strongly related to economic development (0.561) and, to a lesser extent, is also influenced by infrastructure development (0.289) and social development (0.110).

4.2. Importance–Performance Analysis (IPMA)

Once the relationships between constructs had been studied, a performance–importance map analysis (IPMA) was carried out to determine the importance and performance of the different indicators in the global satisfaction construct [78–80]. The results of this analysis are shown in Figure 3.

Land 2022, 11, 1086 9 of 14

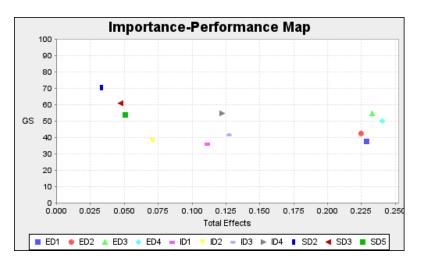


Figure 3. IPMA Diagram.

It can be seen from the diagram that the indicators are not particularly concentrated in any of the four quadrants of the map. Starting with the indicators with the best position, the increase in tourists (ED) and recreational use (ED4) in the geo-parks turn out to be the aspects that have the greatest influence on the perception of sustainability in these spaces. In particular, they have performances between 50–60%, so, although they are the best positioned indicators (in the upper right quadrant), indeed, they can still be considerably improved. Better management of these indicators would lead to a significant improvement in the perception of the sustainable development of geoparks.

The results of this analysis also support claims that the aspects related to the level of wealth of the local population (DE1) and tourism services (DE2), located in the lower right quadrant, play a key role in the overall satisfaction with the declaration of this type of site. However, they have a relatively low performance (around 40%), so an improvement in these would significantly improve local perceptions.

In other words, the indicators mentioned in the previous paragraphs are the aspects that should be further improved, since a better performance on these indicators can substantially improve the local perception of these sites in terms of sustainability.

Other indicators with considerable room for improvement are those related to movement (ID1), resource efficiency (ID3), and signage (ID4). These aspects are of medium importance and their performance can be substantially improved.

On the other hand, it is important to highlight how the indicator related to the maintenance of culture (SD2) has the highest performance of all the items studied (70%), while being at the same time the least important to the perception of local sustainability. The same occurs with the other indicators located in the upper left quadrant, referring to the exploitation of culture as a tourist attraction (SD3) and the environmental awareness of residents (SD5).

According to the above results, it is essential that the bodies responsible for the management of the Spanish Geoparks, as well as the tourism agents, focus on the aspects that have been identified as important and whose management is not being fully optimal.

5. Discussion and Conclusions

This paper aims to determine how different dimensions associated with rural development (economic, social, and infrastructural development) influence each other in terms of local perceptions of sustainability as a consequence of tourism in Spanish Geoparks.

In line with other research [18,19], we believe that knowing how residents perceive tourism activity in their environment is fundamental to the success of a tourist destination. This is even more relevant in this case, as geoparks are a figure whose aims include the sustainable development of the territory.

Land 2022, 11, 1086 10 of 14

The findings of this study reveal that the economic development derived from tourism activity in Spanish Geoparks is the component most valued by the resident population in terms of the sustainability of their area of residence. This has been demonstrated in previous studies [67,88] which have confirmed that the socio-economic dimension is one of the aspects most valued by the local population, with other dimensions, such as infrastructure, being relegated to second place.

Moreover, residents value economic development much more highly than perceived social development in terms of maintaining the population and preserving and exploiting the area's cultural heritage as a tourist attraction. This difference is particularly striking since one of the objectives of the creation of geoparks is precisely the preservation of the cultural identity of the territory.

The results also demonstrate the relevance of tourism activity and, consequently, the economic development it generates to the perceived improvement of the environment in terms of travel infrastructure, signposting, communication technologies, and energy resource efficiency. Closely related to the above, this economic component also has a strong impact on the social development of the resident population in Spanish Geoparks.

On the other hand, from the IPMA analysis, it is possible to extract the points that need to be improved to achieve greater sustainable development in these areas. In general, these aspects can be summarised as the need to boost tourism development in terms of attracting tourists, increasing recreational use, and establishing new tourist services in these areas. Similarly, the results call for investment in educational programs to disseminate knowledge about the geological, natural, and cultural heritage of these territories.

Spain enjoys a great competitive advantage in tourism. In the case in point, its incalculable ecological value, the grandeur of its landscapes, and its wide biodiversity, among other aspects, are outstanding. Thus, given the particularities of the geoparks, from a natural and cultural point of view, as well as the extremely rural characteristics of the municipalities that make them up, it is essential to design tourism that respects the natural resources and the traditions and culture of the residents. In this way, an optimal development of these areas for tourism would be achieved, which would be essential for their regional economic and social development. This new type of tourist destination could be a great alternative to the traditional sun and beach tourism, which also has an important comparative advantage and the extra benefit of not being associated with seasonal tourism during the summer period.

It is also worth highlighting the importance of these areas in the Spanish territory, which has numerous categories of protection with notable limitations on public and tourist use due to the legal regime, geoparks being one of the most flexible in this respect. This makes these areas an excellent option for tourism development since their legal configuration allows for greater recreational use and greater development of local businesses.

On the other hand, we encourage geopark management bodies, local public institutions, and regional governments to further integrate the local population in the tourism development of these unique destinations, as their concerns and interests need to be addressed to achieve optimal sustainable development.

Concerning the future prospects of geoparks and geotourism in Spain, it is worth highlighting the great interest that is being generated among researchers and society in general. Proof of this is that there are currently various proposals for the creation of new geoparks, such as Costa Quebrada in the region of Cantabria, Cabo Ortegal in Galicia, or Altos del Guadalhorce in Malaga, which augurs a promising future for the development of tourism in this type of area.

Finally, the main limitation to be considered in this work is the difficulty of identifying the municipalities that make up the 15 Spanish Geoparks, as there is no official directory in which this information is collected. Related to the above, in some cases, we encountered the problem that some of the municipalities were not considered part of the geopark, even though they were, which demonstrates the need to intensify the relationship between the geopark management bodies and the local authorities. Furthermore, another limitation

Land 2022. 11, 1086 11 of 14

encountered was the difficulty in collecting data, as in many cases it was impossible to contact the very sparsely populated towns.

In future work, a comparison could be made with a selection of control municipalities located further away from the geoparks under consideration to observe differences in perceived regional development. In addition, it would also be interesting to include new indicators in the study constructs to provide a more integrative view, or to carry out a study comparing geoparks in different countries given their management at the regional level.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Questionnaire. Item blocks.

Perception of Economic Development (ED)

ED1. The level of wealth of the village, in general, has increased since the declaration of the geopark.

ED2. The village has a greater number of tourism-related services (directly or indirectly).

ED3. The number of tourists in your area has increased.

ED4. The municipality has increased its recreational use and has more tourist activities.

ED5. There are conflicts between tourism and the exploitation of activities related to agriculture and livestock, mineral extraction, etc. (primary sector).

Perception of Infrastructures Development (ID)

ID1. The subsidies received have led to an improvement in the area of residence in terms of infrastructure for traveling to the area.

ID2. Improvements in communication technologies are noticeable, with increased mobile phone coverage and data transmission capacity.

ID3. Since the declaration of the geopark, resource efficiency has been improved. For example, promoting the use of renewable energy systems to save water consumption.

ID4. The grants received have improved the environment in terms of signage.

Perception of Social Development (SD)

SD1. The number of residents in the village has been maintained.

SD2. Local culture and traditions have been preserved.

SD3. The culture and traditions of your village are exploited as a tourist attraction.

SD4. Conflicts have arisen between tourism and residents (noise, waste, etc.).

SD5. Neighbours are more environmentally friendly.

Perception of Global Satisfaction (GS)

GS1. Residents are more aware of the opportunity the locality has to be in the geopark's zone of influence.

GS2. The expectations generated by the economic and social opportunities of being within a geopark have been fulfilled.

GS3. The geopark has made the residents of this locality proud to live in this community and not in another one.

GS4. The geopark has kept local customs and traditions alive.

GS5. You have improved the quality of life of the inhabitants of your municipality.

GS6. Please rate your overall satisfaction with the geopark designation, in terms of the economic impact it has had on your village.

Land 2022, 11, 1086 12 of 14

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