Sustainability in the Receptive-Tourist Field in Sicily

La sostenibilità nel settore turistico-ricettivo in Sicilia

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Riassunto: Scopo del lavoro è quello di proporre un indicatore bilanciato per lo studio e la misura della sostenibilità nel settore turistico-ricettivo in Sicilia. Preliminarmente sono stati esaminati alcuni indicatori già presenti in letteratura e successivamente si è costruito un nuovo indicatore fondato su alcuni aspetti della domanda, dell’offerta e dell’impatto del settore turistico-ricettivo sull’ambiente. I principali risultati ottenuti dall’elaborazione dei dati disponibili forniti dalla Regione Siciliana – Assessorato Turismo, mostrano una netta contrapposizione tra province nelle cui economie il turismo assume un ruolo fondamentale (Messina, Palermo, Ragusa) e altri territori interni all’isola nei quali il turismo è un settore marginale (Caltanissetta ed Enna).

Keywords: Indicator, Ranking, Sustainability, Tourism.

1. Introduction

The concept of sustainable development in the environmental, social and economic fields, presupposes the adoption, in various spheres, of behavioural models that allow maintaining the current living conditions in the long term, avoiding damaging the living standard of future generations. The tourist sector is one of the fields in which the principle of sustainability is applicable.

According to the World Tourism Organization (W.T.O.) “Sustainable tourism development meets the needs of the present tourists and host regions while protecting and enhancing the opportunity for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled, while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems”. This definition presupposes the rational utilisation of tourism main resources: the territory and its components.

The present work makes a ranking of Sicilian provinces and has as a starting point some indicators that show the impact of the tourist-receptive activities on the environmental and social-economical component of the considered areas, and then makes some considerations on the sustainability of the sector in question.

2. Indicators and results

In this work some indicators already used in the literature on the examined topic have been used, with the aim to estimate the supply and demand, and the impact of the Sicilian tourist sector on the environment.

The indicators used are the following:
Where \( PL \) is the number of total beds available in the selected areas, \( S \) is the size of the area, \( P \) is the population of the area, \( PR \) are the total presences recorded in the area, and \( AR \) are the total arrivals recorded in the selected area.

The \( D \) index is used in order to estimate the impact of tourist supply on the territory, greater values of \( D \) indicate a greater territorial impact of the tourist-receptive field. The \( F \) index measures the impact of tourist supply on socio-economic substrate of the territory being studied, the higher \( F \) is, the more the tourist-receptive field is present in the local economy. The \( T \) index tries to highlight the existing relationship between the tourist and the local community in the area considered, in the sense that lower values of \( T \), the greater the friction between these two reality. The \( S \) index is proposed, finally, to estimate the degree of use of the physical territory by man, either indigenous or tourist.

From the elaboration of data available it has been possible to create a table containing necessary values for the construction of the indicators and the respective values of these in the nine Sicilian provinces (table 1).

**Table 1: \( D, F, T \) and \( S \) indexes for the nine Sicilian provinces.**

<table>
<thead>
<tr>
<th>Province</th>
<th>( S )</th>
<th>( P )</th>
<th>( AR )</th>
<th>( PR )</th>
<th>( PL )</th>
<th>( D_i )</th>
<th>( F_i )</th>
<th>( T_i )</th>
<th>( S_i )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrigento</td>
<td>3.042</td>
<td>466.591</td>
<td>387.892</td>
<td>958.453</td>
<td>13.604</td>
<td>4.47</td>
<td>29.16</td>
<td>48.68</td>
<td>280.90</td>
</tr>
<tr>
<td>Catanzarit</td>
<td>2.128</td>
<td>282.485</td>
<td>48.907</td>
<td>121.342</td>
<td>1.807</td>
<td>0.85</td>
<td>6.40</td>
<td>232.80</td>
<td>155.73</td>
</tr>
<tr>
<td>Catania</td>
<td>3.552</td>
<td>1.101.936</td>
<td>630.347</td>
<td>1.691.181</td>
<td>18.086</td>
<td>5.09</td>
<td>16.41</td>
<td>65.16</td>
<td>487.69</td>
</tr>
<tr>
<td>Enna</td>
<td>2.562</td>
<td>180.244</td>
<td>55.762</td>
<td>113.414</td>
<td>1.519</td>
<td>0.59</td>
<td>8.43</td>
<td>158.93</td>
<td>92.12</td>
</tr>
<tr>
<td>Messina</td>
<td>3.247</td>
<td>674.082</td>
<td>965.145</td>
<td>3.794.695</td>
<td>36.993</td>
<td>11.39</td>
<td>54.88</td>
<td>17.76</td>
<td>504.84</td>
</tr>
<tr>
<td>Palermo</td>
<td>4.992</td>
<td>1.233.768</td>
<td>1.115.315</td>
<td>3.318.709</td>
<td>34.579</td>
<td>6.93</td>
<td>28.03</td>
<td>37.18</td>
<td>470.57</td>
</tr>
<tr>
<td>Siracusa</td>
<td>2.109</td>
<td>401.805</td>
<td>327.391</td>
<td>1.078.253</td>
<td>10.956</td>
<td>5.19</td>
<td>27.27</td>
<td>37.26</td>
<td>345.75</td>
</tr>
<tr>
<td>Trapani</td>
<td>2.461</td>
<td>432.929</td>
<td>352.208</td>
<td>1.197.231</td>
<td>16.386</td>
<td>6.66</td>
<td>37.85</td>
<td>36.16</td>
<td>319.03</td>
</tr>
</tbody>
</table>

We have highlighted areas that have performed better than the regional average. In particular, the province of Messina produced better results than the other provinces for the four indicators considered, while the provinces of Catanzarit and Enna performed worse.

Starting from these already existing indicators in literature, it has been attempted, taking into account the various characteristics supplied from every indicator, to formulate a balanced indicator that reassumes the typical peculiarities of sustainability.
The procedure consists in giving a score for all the four indicators, which is obtained assigning 100 points to the province with the better result and a proportional value to all the others in the following way:

$$ T(x_i) = \frac{\min\{x_i\}}{x_i} \times 100 \quad (1a) $$

or

$$ T(x_i) = \frac{x_i}{\max\{x_i\}} \times 100 \quad (1b) $$

where $x_i$ is the value from every province and $T(x_i)$ is the value transformed with $(1a)$ or $(1b)$ depending whether the better result, in function of the nature of the indicator, is respectively the lower or the higher value.

Then four rankings of areas are made.

Finally the final ranking is made in which the position of every province is determined from the average between the score obtained in each of the four indicators:

$$ G_i = \frac{1}{4} \sum_{j=1}^{4} T\{x_j\} \quad (2) $$

Using the $G_i$ indicator (2) the following ranking at provincial level has been made (table 2).

### Table 2: Ranking of Sicilian provinces using the $G_i$ indicator.

<table>
<thead>
<tr>
<th>Province</th>
<th>$G_i$</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messina</td>
<td>100.00</td>
<td>1ª</td>
</tr>
<tr>
<td>Palermo</td>
<td>63.22</td>
<td>2ª</td>
</tr>
<tr>
<td>Ragusa</td>
<td>61.36</td>
<td>3ª</td>
</tr>
<tr>
<td>Trapani</td>
<td>59.93</td>
<td>4ª</td>
</tr>
<tr>
<td>Siracusa</td>
<td>52.86</td>
<td>5ª</td>
</tr>
<tr>
<td>Catania</td>
<td>49.62</td>
<td>6ª</td>
</tr>
<tr>
<td>Agrigento</td>
<td>46.13</td>
<td>7ª</td>
</tr>
<tr>
<td>Caltanissetta</td>
<td>14.40</td>
<td>8ª</td>
</tr>
<tr>
<td>Enna</td>
<td>12.50</td>
<td>9ª</td>
</tr>
</tbody>
</table>

Once again the table shows that the province of Messina has reached the first place, manifesting therefore both a strong inclination towards the tourist activities, and a remarkable usage of the tourist resources that avoids their irreversible exhaustion.

In the last positions we find the province of Caltanissetta and Enna that are shaped, therefore, like territories with large potential, as the tourist sector is still underdeveloped there, even though they have the necessary attractions for development.

The result show a subdivision of the ranking in three parts: at the top Messina, clearly ahead of the province placed in second position, then a rather homogenous group (Palermo, Ragusa, Trapani, Siracusa, Catania and Agrigento), finally the last two provinces (Caltanissetta and Enna) that are clearly lagging behind.
Figure 1: $G_i$ indicator in the nine Sicilian provinces.

3. Conclusions

One of the solutions to create sustainable, responsible, long-lasting and possible for future generations tourism, is to try to divert the tourist flow from the areas where it is particularly pressing towards the areas where it is less intense, highlighting the cultural and naturalistic component of these centres. The same can be done making the tourist flows less seasonal, because concentrating tourist numbers in some periods of the year makes the ecosystems particularly fragile. Moreover, an evenly distributed flow of visitors during the year would bring a more regular income to the local economies that are dependant from tourist sector and therefore a greater benefit for the local communities.

Therefore the constructed indicator $G_i$ can give information about the provinces that are more impacted by tourism suggesting the best policies to make sustainability more evenly distributed among the various provinces of the island.

References

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