

TOURISM FLOWS, TERRITORIAL CAPITAL AND CYCLING. ANDALUSIA AS A MODEL OF EMERGING CYCLE TOURISM DESTINATION

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1. INTRODUCTION.

So far, there has been little discussion about the relationships between tourism flows, territorial capital and the development of cycling throughout destinations. This article seeks to explore these links across Spain and in Andalusia.

2. METHODOLOGY.

In order to identify potential relationships, a lineal correlation analysis among overnight stays in hotels and main territorial capital factors was used. The variables studied included the length of the coastline, number of assets of cultural interest, relative surface of protected natural areas and the number of inhabitants.

Later, a characterisation of the particular conditions in Andalusia was carried out by applying diverse territorial capital indicators. Social capital was addressed considering the two main regional planning tools: Cycling Plan of Andalusia and General Sustainable Tourism Plan of Andalusia. To understand the spatial distribution of assets of natural territorial capital, population and tourism density and the existing and planned cycling network, a synthetic map was drawn.

For an initial comparative estimation of the cycle tourism potential market in Andalusia, tourism flows (in terms of number of tourists, or overnight stays in hotels) were represented vs. average proportion of the total number of journeys made by bicycle in the tourist source area, applied to European countries and Spanish regions.

Finally, a brief conceptual model for the development of cycling networks is proposed.

3. RESULTS.

3.1. TOURISM FLOWS AND TERRITORIAL CAPITAL IN SPAIN AND ANDALUSIA.

As can be seen in Table 1 and figure 1, there is a strong positive correlation between overnight stays in hotels and coastline capital, measured in terms of coastline length ($r=0.738$). More moderately, but statistically significant, were found a positive correlation between overnight stays in hotels and number of assets of cultural interest ($r=0.674$), and relative surface of protected natural areas ($r=0.520$).

Table 1. Significant statistical correlations.

	Coast length (km)	Number of assets of cultural interest	Surface of protected natural areas/1.000 ha (2010)	Population (2013)	Population (2012)	Population density
Overnight stays in hotels (national and international) (2013)	$r=0.738^{**}$ Sig. 0.001	$r=0.674^{**}$ Sig. 0.003	$r=0.572^*$ Sig. 0.016	$r=0.520^*$ Sig. 0.032		
National overnight stays in andalusian hotels (2012)					$r=0.736^*$ Sig. 0.015	
% Public Transport in Autonomous Community (2008)						$r=0.858^{**}$ Sig. 0.000

** : Significant at 1% level. * : Significant at 5%. (2 tails).

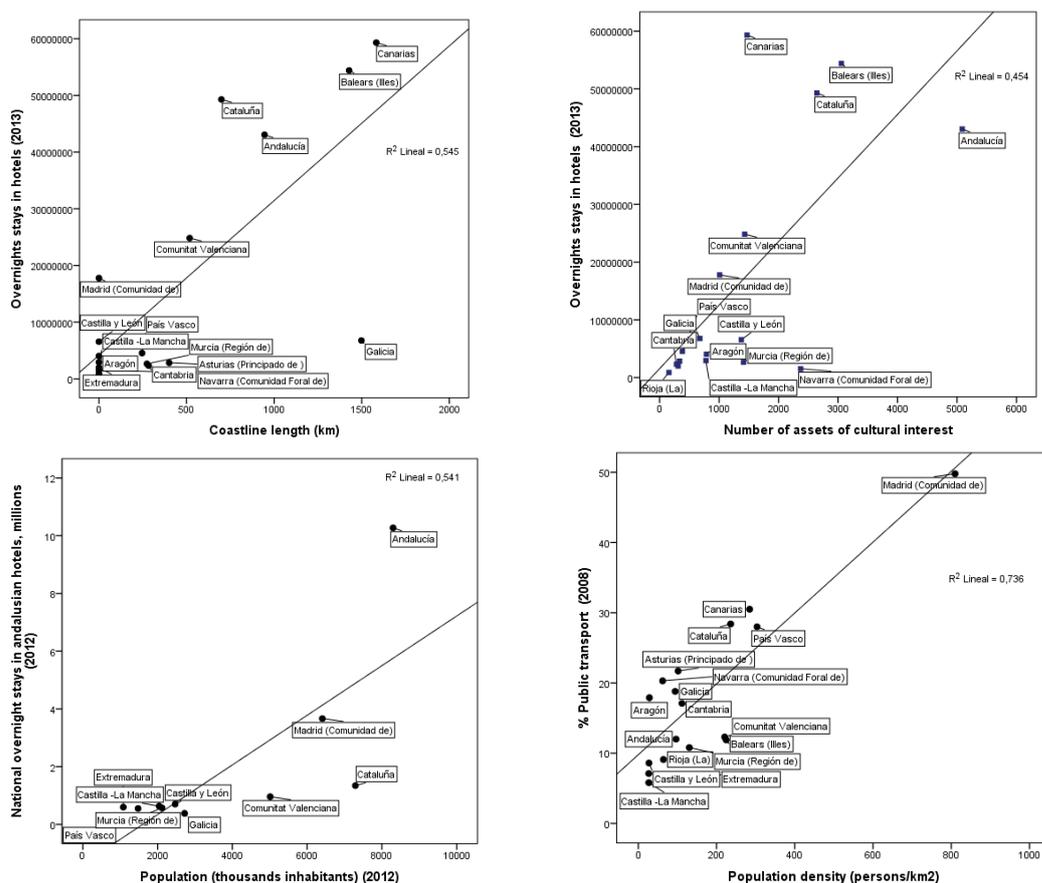
Andalusia adjusts quite well to the correlation line obtained between overnight stays in hotels and coastline length, which indicates that there exists an intense link of tourism flows with this natural resource. The highest values of overnight stays in hotels were reached in the Island Autonomous Communities (Canary Islands and Balearic Islands), followed by Catalonia and Andalusia. It should be noted that there is a superior distance of Catalonia to the correlation line. A possible explanation for this might be the greater diversification of tourism products of this region. Very far from the line was Galicia, an Autonomous Community with a wide coastline, but with a much less attractive climate for bathing.

In any case, these correlations reveal the importance of the coastline as a key driver of tourism flows in Spain and Andalusia, and to a lower extent, with the cultural and natural capital variables employed in this study. These results appear to differ from Pompili and Martinoia' outcomes (2011). However, they may be considered related as these researchers established a statistical relation between cultural capital and tourism employment, a variable which presumably is dependent on the number of

overnights stays. The correlation between number of national overnight stays in Andalusian hotels with the demographic capitals of the autonomous community source ($r=0.736$) reflects the importance of the source population size. As a consequence, Andalusia obtained the highest national overnight stays in hotels, in line with its superior population. Nevertheless, other parameters are likely involved as well, such as distance and per capita income of the source, as suggests the low number of Catalanian tourists in Andalusia, most possibly because of the existing distance, among other factors.

These preliminary findings hint at aspects that should be taken into account while designing cycle tourism products and cycling infrastructures. Specially, by extending both cycle tourism services and cycling facilities along the coast, aiming them not exclusively at specialized cycle tourists but at more conventional tourists.

Figure 1. Scatter diagrams of the correlations of overnights stays in hotels with coastline length, assets of cultural interest and population size.
Correlation between public transport and population density.



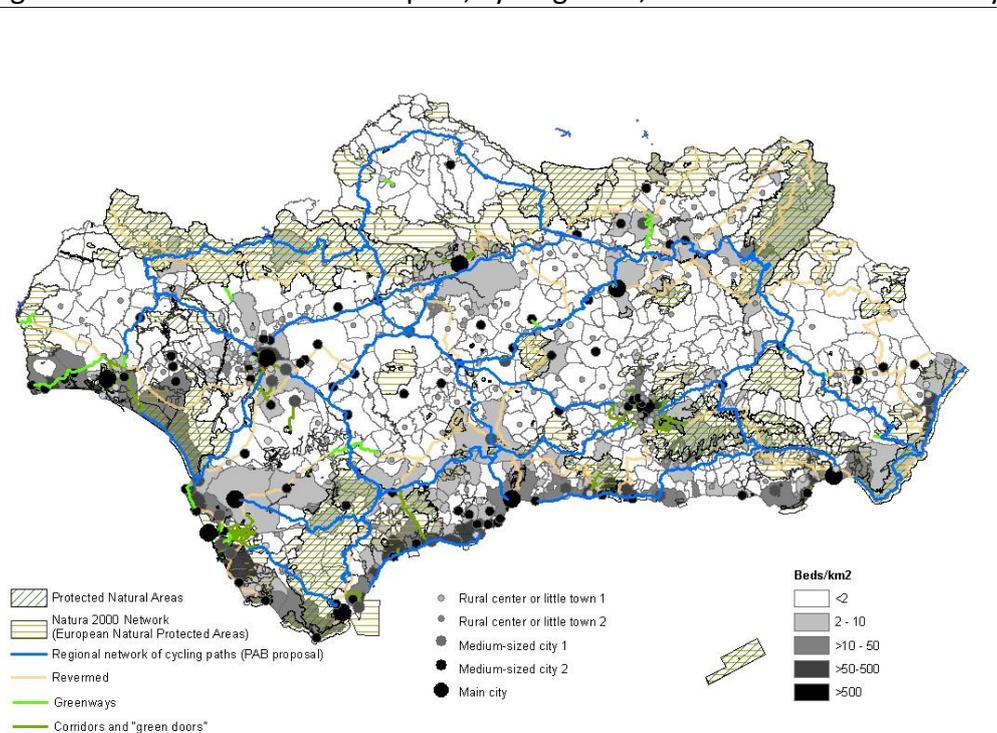
It may be assumed that areas where the seaboard, protected natural areas and assets of cultural interest converge, will be excellent sites for cycle tourism, without detriment to inland geographical areas. The prominent correlation of public transport with population density ($r=0.858$) draws attention to the advantages of agglomeration economies and spatial compacity. Interestingly, this is the case of the regions of Madrid and Catalonia, important autonomous communities tourism sources with a high use of public transport. Therefore, programs for intermodality of public transport with bicycle will be particularly efficient in highly dense populated destinations, visited by tourists accustomed to employing both cycling and public transport.

3.2. PARTICULAR CONDITIONS OF TERRITORIAL CAPITAL IN ANDALUSIA.

The Andalusian tourism cluster is very competitive on an international level, and presents a polycentric town system which provides an advantage to linking cities, intermediate towns, tourism assets and tourism nodes of a great variety of sizes and functions. These links consist in a network of livestock trails (a total length over 34000 km), greenways (abandoned railways adapted for cycling), corridors and “green doors” for municipalities over 50000 inhabitants.

Additionally, a vast network of cycling paths will be implemented in accordance with the Cycling Plan of Andalusia, in coordination with the General Sustainable Tourism Plan of Andalusia.

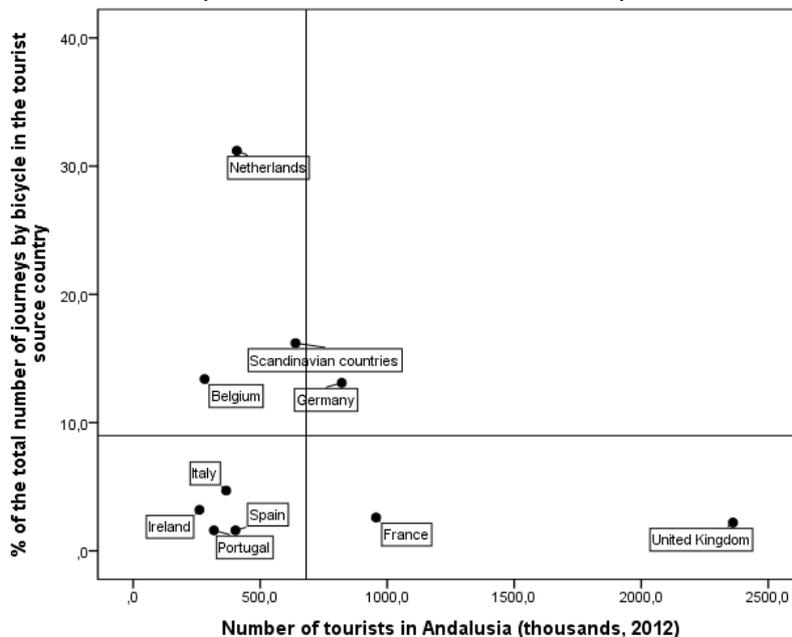
Figure 2. Networks of natural capital, cycling trails, towns and tourism density.



Source: Author, from Rediam, Fundación Vías Verdes, IECA and POTA.

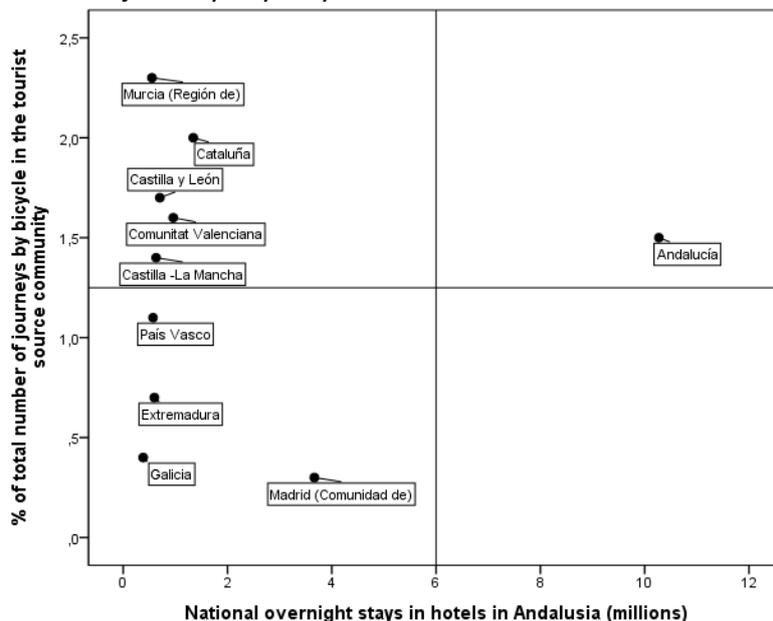
An initial approach to a potential market structure of cycle tourism is shown on figure 3 and 4.

Figure 3. Number of tourists in Andalusia and % of the total number of journeys by bicycle in the tourist source country.



Source: Author, from The Gallup Organization. (2011) and Frontur (2014).

Figure 4. National overnight stays in hotels in Andalusia (millions) and % of total number of journeys by bicycle in the tourist source community.



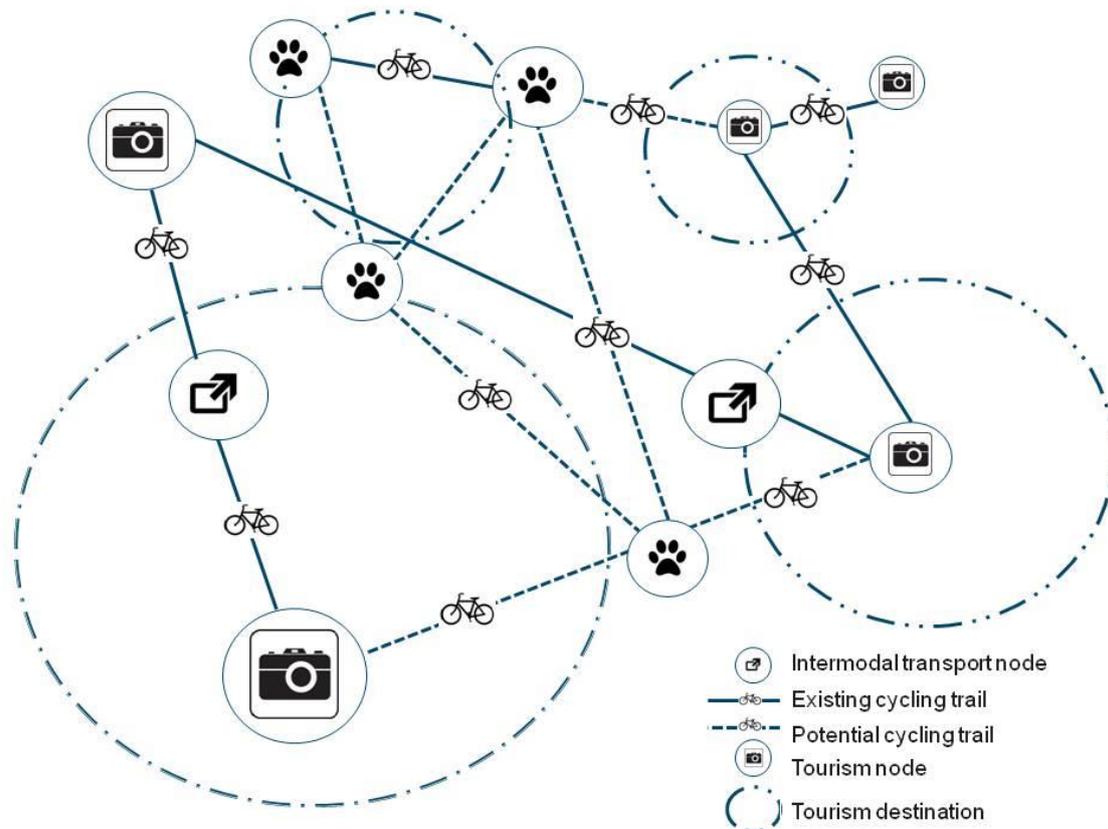
Source: Author, from Frontur (2014) and INE (2008).

3.3. CYCLE TOURISM MULTIDIMENSIONAL MODEL.

The proposed model conceives cycle tourism as a practical tool to combine different tourism resources across a wide range of intensities and spatial dimensions, beyond conventional “heavy cycle tourism” or “mountain-biking”. The model considers four basic dimensions: i. cycling and ecological connectivity, ii. brand and image creation, iii. adaptation to tourism flows, iv territorial capital valorization as a whole. The idea is that cycling infrastructures connect main touristic nodes (attractions, lodging) and population centres with bicycle intermodal transport in a safe manner, and also help improve ecological connectivity of species and habitats in rural and urban zones at the same time.

This implies linking tourism and population nodes through green infrastructures designed as both cycling and ecological corridors, making nature and destinations more accesible to biking, greener trails and surroundings. To achieve this goal succesfully, a number of suitable and specific regulations and laws must be drafted, research and development initiatives developed, as well as monitoring and adapting existing and future cycling infrastructures should be implemented, specially in highly frequented ecologically vulnerable areas or degraded sites.

Figure 5. Multidimensional cycle tourism model.



Source: Author

4. CONCLUSION.

This study has identified a positive correlation between tourism flows and coastline length, number of assets of cultural interest and protected natural areas in the Spanish autonomous communities. Andalusia presents a major comparative advantage in the endowment of these resources, which provides it with a valuable position for the development of cycle tourism initiatives, specially considering coastline and cultural capital. This strength becomes a competitive advantage when taking into account recent Andalusian planning tools concerning cycling and sustainable tourism, and its future implementation. A multidimensional model for the development of cycling in destinations is proposed, aimed to create sustainable cycling which helps set a tourism image and brand based on territorial capital, and at the same time, improving ecological connectivity of habitats and species.

By comparing the present situation of the dimensions of the proposed model with the ideal or desired scenery it is possible to identify existing gaps, and thus, potential improvement points, such as a lack of cycle tourism infrastructures in certain coastal zones. The use of spatial analysis of these variables opens a powerful tool for cycle tourism development planning in the future.