Tourist hub consumption systems: convenient flexibility versus administrative constraint

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Tourist Hub Consumption Systems: Convenient Flexibility Versus Administrative Constraint

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Keywords

Tourist behaviour, within-destination travel patterns, territoriality of trips, accommodation influence area, overlapping destinations, destination boundaries

Abstract

The extant literature shows that political borders may artificially divide latent tourist destinations without considering consumer preferences (Blasco, Guia, & Prats, 2014b; Ioannides, Nielsen, & Billing, 2006; Lovelock & Boyd, 2006; Paulino & Prats, 2013). This study critically examines the traditional way of defining tourist destinations following administrative criteria and advocates a more visitor-oriented model of destination planning and management based on tourists' spatial visitation patterns (Dredge, 1999). This represents a demand side approach which should facilitate more effective management of tourist flows, the realisation of benefits from synergies between destination stakeholders, and the planning of new infrastructure and services in line with changes in market demand. The first step, then, is to identify the demand-side destinations by examining tourists' visitation patterns within a destination.

This study uses network analysis in combination with GIS to examine three European tourist destinations. It focusses on the networks between accommodation hubs and attractions formed by tourists' spatial visitation patterns within a destination in order to critically assess the legitimacy of their administratively defined boundaries versus their visitor defined spatial configurations. The findings show that tourists geographically consume destinations using convenient radial trips from accommodation hubs, and as such, the visitation patterns are not prescribed by or aligned with political borders. Tourist visitation patterns are influenced by the spatial configuration of attractions and other features in proximity to their accommodation. This accommodation hub-based consumption pattern suggests that destinations should evolve to a more flexible system of stakeholder governance, which acknowledges the incongruity between the tourist destination prescribed by administrative boundaries and that defined by tourist visitation patterns.

1. Introduction

Modern European Destination Management Organisations (DMOs) are mostly tied to public administrations, which implement administrative regulation and policies on tourism within their international, regional or local borders. As such, most DMOs are still attached to their political boundaries, managing and promoting destinations on the basis of administrative criteria (Saraniemi & Kylänen, 2011). Public administrations and their policies tend to privilege particular spaces within their territory and to neglect, marginalize or exclude others (Brenner, 2009; Kang, Kim, & Nicholls, 2014). By comparison, tourism phenomena do not stop at administrative boundaries. Largely due to technological innovation, tourists are able to gather information from many sources (Llodrà-Riera, Martínez-Ruiz, Jiménez-Zarco, & Izquierdo-Yusta, 2015), which makes them less dependent on DMO's information. Thus, they are able to visit places without being constrained by administrative boundaries. Tourists take side trips venturing either close to or further from accommodation points, depending mostly on the spatial distribution and amount of attractions, their attractiveness and other characteristics of place (Lew & McKercher, 2006). Thus, tourism destinations should arguably be redefined to account for their geographical consumption by tourists in order to improve the planning and management of tourist attractions, accommodation and the transportation links between them.

This study critically examines this perspective using a research framework which integrates a number of relevant concepts from the extant literature namely: a critical approach to traditional tourism destination delimitation (Beritelli, Reinhold, Laesser, & Bieger, 2015), travel patterns (Lew & McKercher, 2006; Lue, Crompton, & Fesenmaier, 1993), the notion of the local tourism destination (Lew & McKercher, 2006) and the geographical overlapping of destinations (Dredge, 1999). The particular focus of the study is on tourist accommodation hubs and their network of attractions connected by tourists' aggregated visitation patterns with the purpose of redefining tourism destinations in consideration of hub consumption systems.

Previous research has highlighted the fundamental role of understanding tourists' movements for the planning and management of attractions, accommodation or transport links (Lue et al., 1993; Mckercher & Lew, 2004). Furthermore, the territoriality of individual hotel locations has been explored in an urban context (Shoval, McKercher, Ng, & Birenboim, 2011). However, the purpose of these studies was not to consider destination limits from the consumer perspective. Furthermore, the extent of territoriality is still largely unknown, particularly at tourism destination level and specifically in rural locations. Thus, following the extant literature, which considers the hub-and-spoke travel pattern the most common, as well as considering territoriality patterns around accommodation, the first aim of the present study is to establish the existence of differences between administrative-based destination boundaries and those defined by tourist visitation patterns. The second aim of the study is to highlight the key factors which affect tourists' spatial visitation patterns from accommodation hubs within a destination. This will facilitate the identification of hub-based tourism destinations from the tourist perspective.

The key difference between this study and previous research relates to both the scale of the analysis and its purpose. Firstly, this study focuses at the destination level and secondly, its main purpose is not only to focus on visitation patterns from destination accommodation hubs, but to consider this territoriality to gain insights into the attendant network characteristics in order to inform the design of tourism destinations in line with contemporary

tourism needs. This re-orientation could potentially facilitate the management of environmental and social impacts and the development of new tourism products and services (Kim, Thapa, & Jang, 2019), while informing transportation and communication infrastructure planning, and providing opportunities for collaboration between tourism organisations.

To address the existing gap in the literature and contribute to theory development, the study focussed on two research questions:

1. How do tourism destinations, as defined by visitation patterns from accommodation hubs, differ from destinations as defined by administrative boundaries?

2. What are the key factors, in relation to tourism visitation patterns, which should inform the design and management of accommodation hub-based tourism destinations?

Three case studies were selected to facilitate the triangulation of data through a comparative analysis of tourist visitation patterns between accommodation hubs and attractions in different situations. The three cases were: 1) a Mediterranean coastal natural park destination; 2) a Mediterranean mountain natural park destination; 3) a British upland national park destination. All three cases are in rural areas where hub-and-spoke (or base-camp) patterns are predominant because of extensive car use (Connell & Page, 2008; Smallwood, Beckley, & Moore, 2012). Data was elicited at each destination from visitor questionnaire surveys at the main accommodation hubs and attractions to identify which attractions were visited from each accommodation point. Network analysis and GIS were then used to examine and map the characteristics of tourist visitation patterns.

The main contribution of the paper is the empirical evidence it provides in relation to significant discrepancies between the official destinations defined by political boundaries and those defined by tourist visitation patterns in each case. Its theoretical contribution relates to the identification of destination subsystems based on convenient travel patterns around accommodation hubs. Both contributions indicate that destinations should be re-defined from the consumer perspective and hub consumption systems should be recognised to facilitate effective tourism planning and resource management.

The remainder of the paper is structured as follows. First, the extant literature on tourism destinations and tourist travel patterns together with their associated methodologies is presented. Second, we explain the research method employed in the study and outline the case studies in more detail. Thirdly, we present and discuss the findings, and finally, we outline the theoretical contribution of this research and its planning and management implications, address the study's limitations, and make recommendations for further research.

2. Literature Review

2.1. Tourism destinations: supply and demand side perspectives

The tourists' view of a destination may not always coincide with the political perspective, as their geographical consumption is not constrained by these restrictions, but is instead influenced by a range of push and pull factors. If destinations are artificially divided by geographical and/or political barriers, they fail to take into consideration consumer preferences or tourism industry functions (Buhalis, 2000). An example of this discrepancy can be found in many case studies based on cross-border tourism areas (Blasco, Guia, & Prats, 2014a; Ioannides et al., 2006; Lovelock & Boyd, 2006). These studies have noted tensions arising when the respective national interests of the two neighbouring countries do not coincide with those of the local trans-frontier destinations. These impediments are not restricted to an international level; local and regional destinations share similar problems as they are delineated following the same criteria. Administrations may differ in their policies and goals, to which should also be added a general lack of planning and collaboration on either side of the border. In fact, the traditional concept of DMOs is considered to be obsolete due to the impossibility of integrating the geography, political administration, the businesses, the residents and the tourists into one system. Meshing everything a territory contains into a single brand means making a "big hash" of colourless mass only distinguished by its borders (Beritelli et al., 2015, p. 17).

From a demand side perspective, tourists do not stop at political borders unless there are physical impediments (Paulino & Prats, 2013). Moreover, new communication technologies offer tourists a wide range of information sources outside of traditional channels such as tourism information offices. Although there are many promotional channels which still follow the classical conception of tourism delimitation based on administrative boundaries, time after time tourists take advantage of internet and mobile technologies to organize their trips with independence and prioritize demand-side criteria. Therefore, travel patterns are increasingly less affected by cognitive distances imposed by boundaries and are less path dependant on promotion based on administrative boundaries (Bauder & Freytag, 2015).

Leiper (1995) defined tourism destinations as a geographical area to which tourists travel to visit some attractions. The attractions therefore constitute the main decisive reason for visiting a particular destination because they provide activities and experiences (Gunn, 1993; Kušen, 2010; Leiper, 1990; Richards, 2002). Additionally, attractions need to be close to service components, including accommodation, to facilitate tourism development. Once a tourist is at the destination, s/he tends to visit some attractions from a central accommodation point (Lew & McKercher, 2006). Additionally, Dredge (1999) has noted the need for identifying subsystems based on tourism travel patterns in order to plan and manage destinations effectively. Each subsystem should provide tourist accommodation and services in their central position. Thus, subsystems may overlap, which means that a single element may be part of several hub consumption systems, according to particular tourist travel patterns (Dredge, 1999). Finally, while tourism destinations are traditionally perceived as static all-inclusive areas, tourists' tastes and fashions evolve over time causing the activation of certain places and the deactivation of others. In this process, new suppliers join and exit as their markets and new business opportunities change. Consequently, there is a need to abandon the concept of a

tourism destination as a rigid unit that denotes a delimited geographical area, and move to a more dynamic concept of subsystems (Beritelli, Bieger, & Laesser, 2014; Beritelli et al., 2015).

2.2. TOURIST TRAVEL PATTERNS

Travel patterns have been traditionally represented as linear path models to display tourist flows along the spatial structure of recreation opportunities. Lue, Crompton, & Fesenmaier (1993) identified five relevant linear itinerary patterns adopted by pleasure travellers: 1) the single destination pattern, when an attraction is the only destination; 2) the en-route pattern, when a secondary destination is visited on the way to a primary destination; 3) the base-camp or hub-and-spoke pattern, which uses a base-camp to do side trips to attractions in the area; 4) the regional tour pattern, when several destinations within a region are visited and 5) the trip chaining pattern, which involves touring along a route which links several destinations. Chancellor & Cole (2008) found that multi-destination trips are far more common than single destination trips in rural areas. Moreover, the vast majority of trips follow a hub-and-spoke pattern, to maximise the number of visits to the surrounding attractions (Lue et al., 1993). Smallwood et al. (2012) found that at Ningaloo marine national park tourists were predominantly either static (34%) or travelled in a hub-and-spoke pattern (66%). Both configurations share the common element of a single accommodation point from where they visit attractions, but differ in respect of the exploration width. Additionally, they are territorially compatible with other multi-destination trips, if we consider that 'when a new accommodation point appears, a new destination is invoked' (Dredge, 1999, p. 781).

Lew & McKercher (2006, p. 405) define the 'local destination' from the demand point of view by considering it as 'the area containing products and activities that could normally be consumed in a day trip from the heart of the destination'. In addition, the definition is closely related to the hub-and-spoke pattern if we acknowledge the accommodation as the central element of the destination. Going a step further, Bujosa, Riera, & Pons (2015, p. 2) affirm that the tourists' 'recreational destination' can be depicted as a network, consisting of different nodes (several locations and landscape elements) that are connected to each other due to tourist trips. They affirm that the aggregation of these connections leads to a macro-spatial analysis of intra-destination movements.

The key relationship between tourist accommodation and visitation patterns is highlighted by Lew & McKercher (2006) who conceptualized the territoriality of day trips, categorizing explorations according to how far tourists venture from the accommodation point. They found four main categories of exploration: 1) no movement, where tourists remain at the accommodation; 2) convenient-based movement, which is characterized by an exploration in the immediate proximity of the accommodation; 3) concentric exploration, consisting of multi-nodal side trips around the accommodation influence area, and 4) unrestricted destination-wide movement, where tourists are likely to feel uninhibited throughout the destination and venture further away. Few studies have documented distances that tourists venture from their accommodation in nature-based destinations. Smallwood et al (2012) found that most tourists in their study travelled less than 20 km from their accommodation, although secondary peaks were found corresponding with the location of accommodation. Studies which have documented territoriality in urban destinations (Mckercher & Lau, 2008; Shoval et al., 2011) also found that accommodation (hotel) location was a critical factor influencing attraction visitation in the destination, particularly with regard to minor attractions. Iconic attractions

can draw tourists' flows regardless of the hotel location, whereas other places of touristic interest within the city tend to spatially concentrate around hotels (Shoval et al., 2011).

The complexity of urban attraction visitation was also highlighted by Mckercher & Lau's (2008) study. They identified 11 movement or itinerary styles taking into account territoriality from the hotel and linearity of travel patterns. However, urban travel patterns may not be representative of itineraries in rural destinations due to the differences in both destination characteristics and tourist behaviour. Nature-based destinations are normally characterized by a scarcity of support facilities (Gunn, 1993; Lue et al., 1993), which makes tourism activity more dependent upon a symbiotic relationship with the support services offered by base-camps. Moreover, the more extensive use of private car transportation to visit spatially dispersed attractions, induces tourists to build their own itineraries (Connell & Page, 2008; Page, 2004; Shih, 2006).

2.3. Factors influencing tourist travel patterns

In any given area, tourists do not use the recreational possibilities randomly (Zillinger, 2007). Rather, their use is connected to tourist accommodation hubs. Consequently, knowledge about which attractions are connected to each accommodation hub through trips and which factors affect these patterns is critical for planning tourist amenities and facilities. Attractions are the key element in the tourist experience of place; they strongly influence whether tourists move widely or narrowly within a destination whether urban or rural (Chhetri & Arrowsmith, 2008; Lew & McKercher, 2006; Mckercher & Lau, 2008). More specifically, the spatial distribution of attractions, the inter-attraction distances, their intensity, attractiveness level and/or uniqueness and their characteristics are the main factors which influence both tourists' travel patterns and the distances travelled from their accommodation. The distance to an attraction is perceived as one of the most important friction factors which influence travel patterns. In line with the concept of distance decay, demand for attractions generally declines with the distance travelled from the accommodation and from one attraction to another (Mckercher & Lew, 2004, 2003; Nyaupane & Graefe, 2008). However, this concept assumes 1) rational decision making on the part of the consumer, who would decide to visit the closer option between two similar experiences, and 2) that tourism supply is distributed uniformly over space. In reality, tourists may not act rationally and tourism opportunities are distributed inconsistently (Mckercher & Lew, 2004).

The spatial distribution and intensity of attractions and facilities, particularly accommodation, in an area are strongly influenced by a destination's topography (Lew & McKercher, 2006), which, in turn, affects travel patterns. Therefore, while the flow of tourists tends to be more easily predicted in compact destinations with fewer attractions and accommodation hubs, in rural destinations the dispersal of attractions and accommodation hubs tends to induce a wider variety of movements which are more difficult to predict (Lew & McKercher, 2006). The spatial characteristics of attractions also predispose different visitor behaviours. Point attractions represent a specific place, like monuments, waterfalls or planned events, where tourists tend to concentrate. By comparison, line attractions, like rivers, beaches, routes or trails encourage a bi-dimensional dispersion, and area attractions such as scenic landscapes, produce a wide dispersion (Wall, 1997).

The relevance and uniqueness of attractions and market access also influence tourists' travel patterns. Prominent or unique attractions tend to draw tourists over greater distances (Lew &

McKercher, 2006). Moreover, the theory of market access affirms that proximate attractions with similar characteristics and attractiveness levels to less proximate ones, have a competitive advantage as they are more convenient (Pearce, 1989). Destinations which provide infrastructure and tourist facilities, particularly accommodation, are also more likely to attract a greater number of visitors (Chhetri & Arrowsmith, 2008). Both the quantity and quality of tourist accommodation are influential i.e. the number of beds, its dispersion or concentration and its type also affect the way a destination is consumed (Dredge, 1999; Shoval et al., 2011).

Distances travelled by tourists from their accommodation are also affected by a wide range of factors including: length of stay, trip purpose, familiarity with the destination, distance travelled from home, personal choices, travel group composition, markers, budget, tourists' sociocultural background, tourists' psychological profile, cultural distance, transportation services and level of tourism intermediation (Barros & Machado, 2010; Lau & McKercher, 2006; Leiper, 1990; Oppermann, 1997; Plog, 1974; Thornton, Shaw, & Williams, 1997).

Given this level of theoretical complexity, to define the destinations from the demand-side it is essential to focus on empirical data. Examining tourists' territorial travel patterns will shed light on the demand-side destination and enable it to be compared with the extant administratively defined destination. The next section outlines the method adopted for the study's primary research.

3. Method

Innovative data collection methods using GIS, geotagged pictures on social media or passive mobile positioning can be problematic in rural areas because of the existence of black areas. Traditional tourist intercept surveys were therefore used to collect primary data from three case study areas because of their proven reliability and avoidance of excessive micro-scale geographical data (Paulino, Prats, Blasco, & Russo, 2016).

Optimum survey locations were identified in each destination, at both accommodation hubs and attractions. Attractions were selected from a content analysis of guide books according to their level of attractiveness (Paulino & Prats, 2013). Accommodation hubs were selected from official registers on the basis of the number of beds offered by municipality. The number of survey days in each location reflected the accommodation beds and the number and level of attractions in each location, in addition to considering labour days, weekends and public holidays. Moreover, during the survey period in each destination, a number of additional locations were added to the schedule, based on high frequency responses from respondents, in order to obtain more representative samples.

Day trippers were excluded from the survey because they did not stay overnight. Long-stay tourists (over 60 nights) were also excluded given that they tend not to go sightseeing, but to experience life in a similar way as residents (Ono, 2008). The sample therefore consisted of leisure tourists who had been in the destination area for at least one night. A total of 3,163 completed questionnaires were obtained from the following case study destinations: The Ebro Delta, Spain (887); the Ports, Spain (835); the Peak District, UK (1,441).

Participants were asked to identify the location of their accommodation and the attractions they had visited from that point. Individual data from the surveys at each destination was aggregated into asymmetric matrices representing attractions (rows) and accommodation (columns). Each cell represented frequency of flows from a single accommodation point to an attraction. The data matrices were uploaded to *Ucinet.6,* a Network Analyst program (Baggio & Scaglione, 2017; Hwang, Gretzel, & Fesenmaier, 2006; Kang, Lee, Kim, & Park, 2018; Plog, 1974; Shih, 2006; Stienmetz & Fesenmaier, 2015) and outputs were represented with *NetDraw* and *ArcGIS*. Whereas graphs coming from *NetDraw* allow a better visualisation of nodes and frequencies, ArcGIS maps show how the spatial dimension affects the consumption and the discrepancies between the promoted destination and the consumed destination. Networks represent aggregated intra-destination movements from central accommodation hubs to tourist attractions, where peripheral nodes are the attractions connected to an accommodation hub (round nodes) due to flows (links among nodes). Weighted links among nodes represent aggregated individual flows. To simplify the visualisations, only those attractions with a frequency of four or more visits are featured. The output figures feature ego-networks of a particular accommodation hub, whole destination network overview, and partial networks selecting main accommodation hubs. Subsequently, attractions in ego-networks have been classified in concentric circles representing the distance to an accommodation hub (Lew & McKercher, 2006). These distances were recorded as time distance, rather than spatial (Euclidean or road) distance given the former's relevance in tourists' decision making in relation to trip planning (Mckercher & Lew, 2003).

4. The case study destinations

Case study 1, the Ebro Delta, is a Mediterranean coastal area in Spain characterized by lagoons, marshes, rice fields and natural beaches, the natural environment of which is protected by the Natural Park of the Ebro Delta. The Ebro river divides this area into two supra-local administrative divisions: Montsià and Baix Ebre (Figure 1), but results include patterns of visitation to the neighbouring Autonomous Communities, Provinces and Comarcas. From a tourism perspective, the Terres de l'Ebre DMO is responsible for Montsià, Terra Alta, Baix Ebre, Ribera d'Ebre administrative areas, which includes this case study and part of case study 2: The Ports area, located 70km away.

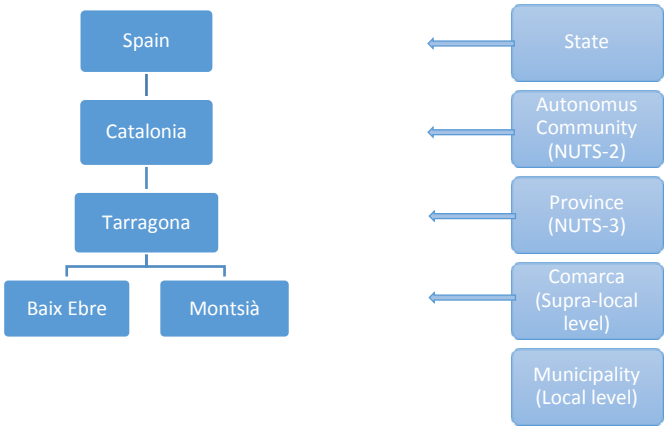


Figure 1: The administrative structure in the Ebro Delta area, Spain

The Ports mountain range is divided into three autonomous communities, which correspond to the strongest administrative division within the country (Figure 2). Furthermore, lower administrative levels subdivide the three autonomous communities.

As the functions of the Spanish state are of little applicability at a promotion and management level, this area does not share any policy in regard to tourism planning. For example, each administration has declared different levels of protection for the mountain range, which is managed separately by their respective administrations. The heart of the Catalan side is the Ports Natural Park, the Valencian side, Tinença de Benifassà Natural Parc, and the Aragon side is a Hunting Reserve. The natural border that forms the slope of the mountain range makes it difficult to visit all the range in the same trip. However, Paulino & Prats (2013) have already studied this case study and detected that in spite of administrative boundaries, the north-west side of the mountain range has the potential to be a destination due to the geographical distribution of tourism attractions and accommodation. Therefore, this area has been selected to check tourist patterns.

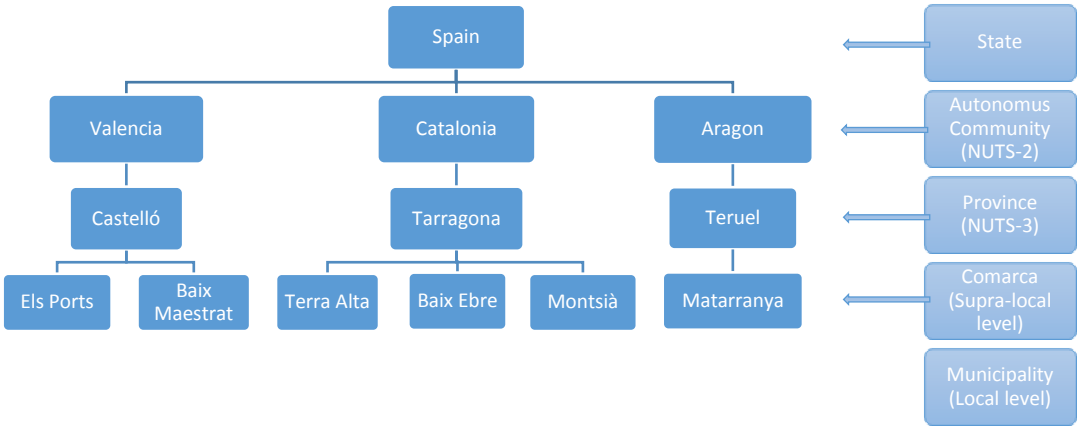


Figure 2: The administrative structure in the Ports area, Spain

Case study 3 is the Peak District, which is surrounded by several of the most populated cities in the north of England and, as such, is one of the most visited National Parks in Europe. Although most of the park is within the county of Derbyshire, the Peak District is divided into six county administrative regions, which are part of three distinct English regions. Furthermore, and at supra-local level, the Peak District is divided into several districts (Figure 3). The DMO - Visit Peak District and Derbyshire - manages the whole of Derbyshire, including those National Park areas which are not in the Derbyshire administrative area.

The three case study destinations share similar cultural, natural and sport/adventure attractions. Moreover, the attractions are accessed predominantly by car using a hub-and-spoke travel pattern. However, there are a number of differences. For example, cultural attractions in the Mediterranean destinations are characterised by gastronomy and festivities/events, whereas in the Peak District, they are more focussed on built heritage. Moreover, in the mild climate of the Mediterranean destinations, tourists take advantage of the beaches, rivers and waterfalls.

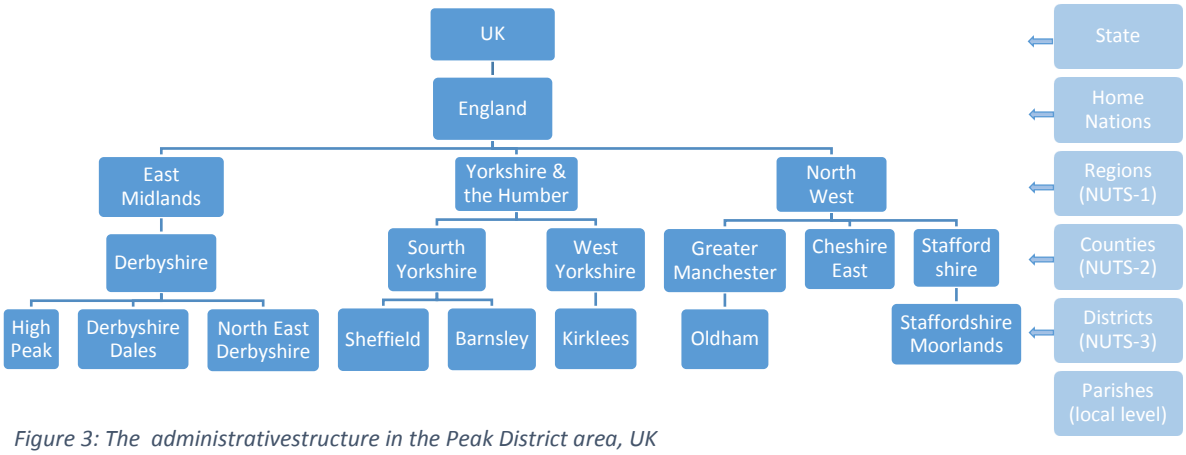


Figure 3: The administrativestructure in the Peak District area, UK

5. Results and Discussion

In this section, outputs from the data analysis are presented as figures and tables and discussed. Firstly, the results of the transboundary visitation patterns are provided. Then, the hub consumption systems are analysed to highlight the key factors influencing travel patterns. These factors include time distance, attraction characteristics, intensity of attractions, topography and network connections, rather than political boundaries, in line with the extant travel patterns literature. Finally, the overlapping areas of the hub consumption systems are presented, showing different levels of overlapping. To explain the results, most relevant figures and tables have been selected.

5.1. Administrative boundaries

In line with Buhalis' (2000) suggestions, the results show that tourist visitation patterns from accommodation hubs to attractions are not generally constrained by administrative boundaries, i.e. tourist geographical consumption does not reflect the way in which these attractions are promoted and managed by the relevant tourist authorities. In the three destinations, all hub consumption systems located next to an administrative boundary transcend the borderline of the different administrative levels. However, the frequency of links between nodes reveals some influence of administrative boundaries on visitation choices. This is particularly the case in relation to the least renowned attractions which reflect a certain degree of administrative boundaries' influence on visitation choices, as a result of psychological barriers and path-dependence on promotional strategies over time. This path dependency, due to the effect of public administrations and policy, has already been discussed by Kang et al. (2014), who found a positive effect of domestic tourism development due to tourism policies. However, Kang et al. (2014) supported Brenner's concept of state spatiality (2009) in which systemic transformations may occur to create new geographies of territorial organization or regulatory activity and they demonstrated spatial dependence by showing that tourism development remains clustered with a clear tendency to expand along neighbouring regions.

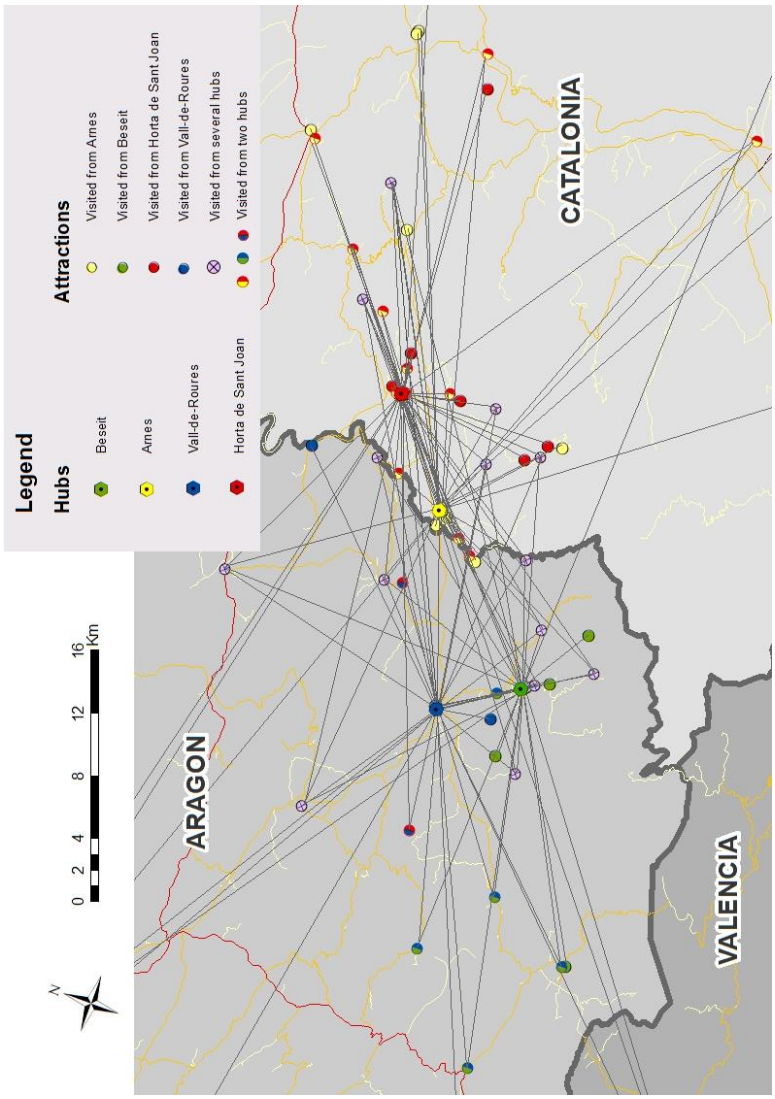


Figure 4: Spatial distribution of accommodation hubs and the main attractions visited in the Ports

Figure 4 clearly shows a transboundary consumption pattern in the Ports destination because of the high level of interconnectivity between accommodation hubs and attractions on the Aragon and Catalan sides of the mountain range. In particular, the four hub consumption systems are clearly transboundary, which highlights the sharp contrast between the destination as defined by tourist visitation patterns and that delineated by the administrative boundaries in the area. Moreover, the closeness of the main accommodation hubs in contrast with the lack of accommodation hubs in the surrounding area, intensify this cross-border effect, which suggests the consideration of a transboundary destination

5.2. Hub Consumption Systems

Accommodation at destinations tends to concentrate in hubs, which exerts an important effect on how destinations are geographically consumed. This tendency generates hub consumption systems, comprising a central accommodation hub in connection with a number of attractions, places and areas visited from the hub. The results in this section show frequency graphs of aggregated tourists' visitation patterns from the accommodation hubs at each destination. Furthermore, the hub consumption systems have been analysed to determine the main factors

affecting visitation patterns, which, in turn, have been compared with those identified in previous studies.

Due to the importance of the distance decay factor, as highlighted in the literature, we have adapted Lew & McKercher's (2006) exploration model to classify attractions in five concentric circles representing how far (in time distance) tourists venture from their accommodation (Figure 5).

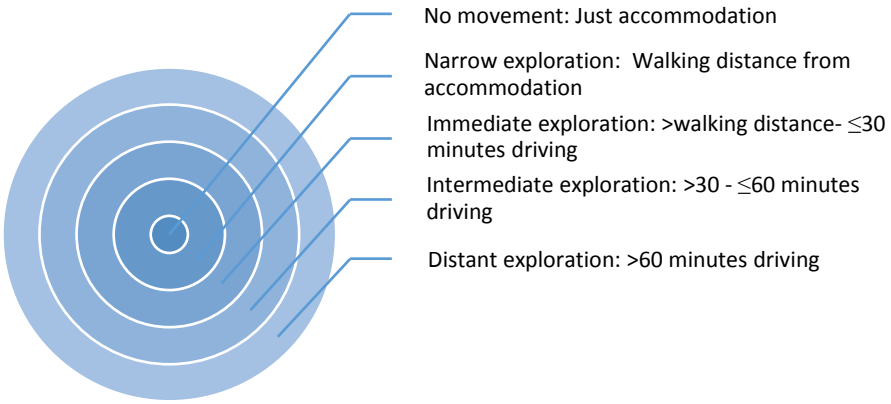


Figure 5: Tourists' exploration model based on distance decay

Visitation patterns around accommodation points show a predominance of convenient visits (Figures 6 & 7, and Table 1), in line with previous travel pattern findings (Mckercher & Lau, 2008; Shoval et al., 2011; Smallwood et al., 2012). Going more deeply into territoriality than previous research, the present study is able to show distance decay influence by estimating driving time distance from the accommodation hub. In each of the three destinations, the network influence area of accommodation hubs decreases sharply above a driving time distance of 30 minutes from the hubs (Table 1) and is practically non-existent upwards of 40 minutes.

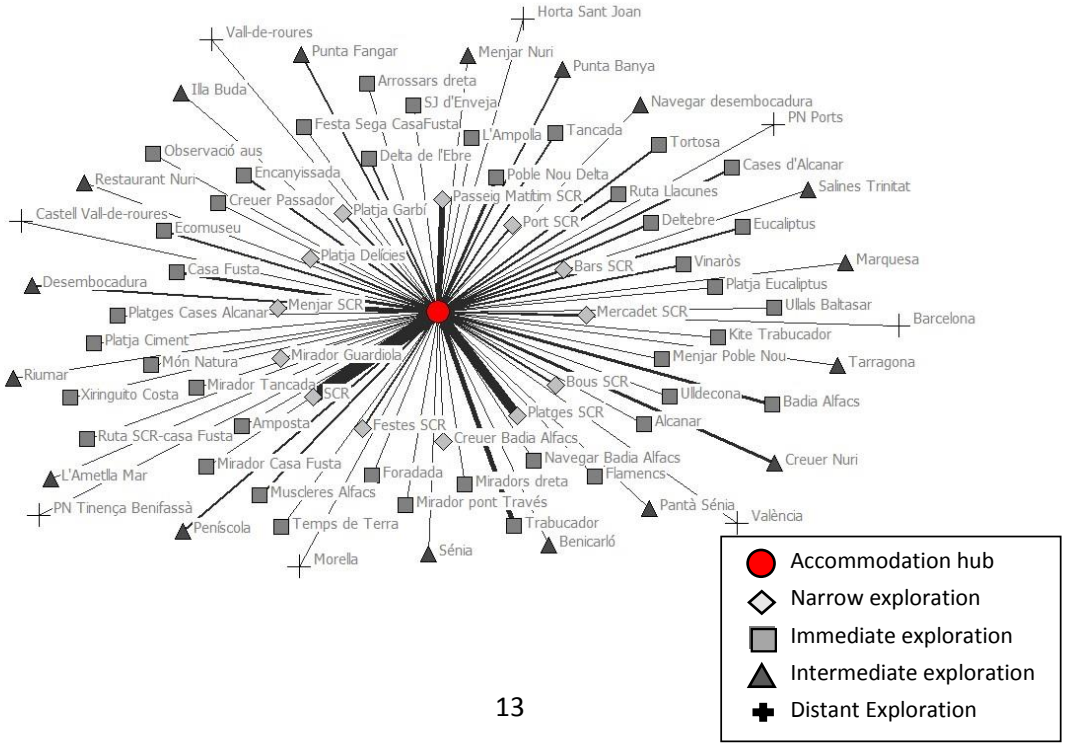


Figure 6: Distance decay effect on the attractions visited from Sant Carles de la Ràpita in the Ebro Delta

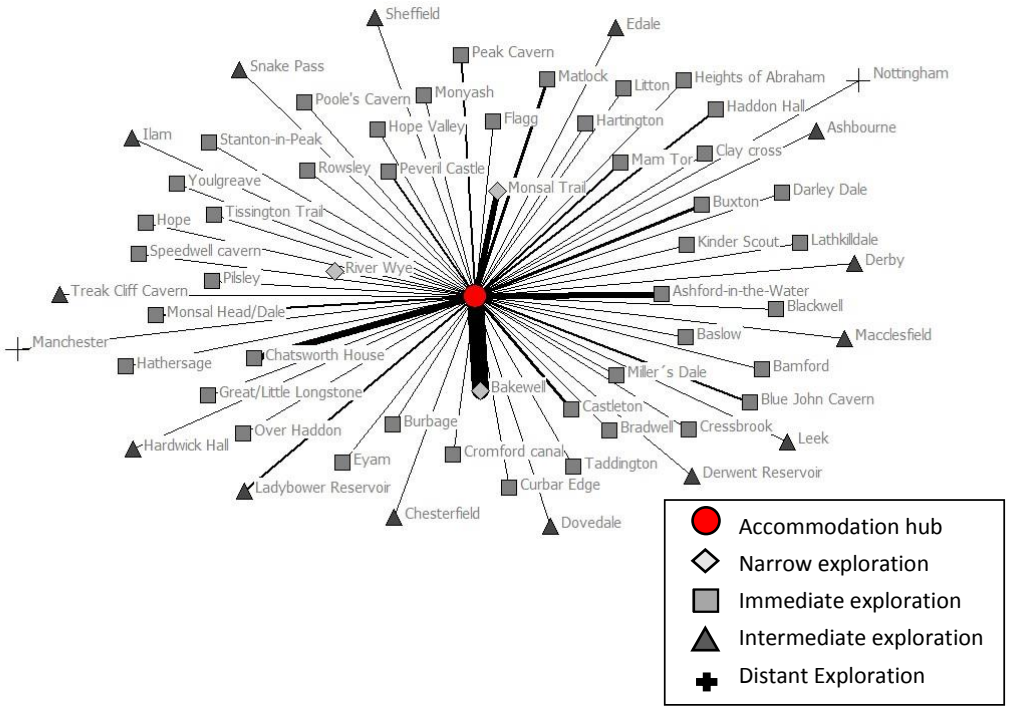


Figure 7: Distance decay effect on the attractions visited from Bakewell in the Peak District

Exploration distance from the accommodation hub		**From Sant Carles de la Rapita**	From Arnes	From Bakewell
◇	Narrow exploration: walking distance	48%	32%	41%
□	Immediate exploration: >walking distance≤30 min. driving	37%	57%	51%
△	Intermediate exploration: >30≤60 min. driving	12%	9%	7%
✚	Distant Exploration: >60 min. driving	3%	2%	1%

Table 1: Distance decay effect on the attractions visited from the main accommodation hub in each destination

In addition to showing tourists' tendency to explore the narrow and the immediate area regarding territoriality, the results indicate that tourists' movements are more concentrated or dispersed by the influence of factors such as the spatial relationship between hubs and attractions, attraction characteristics, market access, the agglomeration of attractions, and the spatial characteristics of the destination.

Regarding attraction characteristics, the results at all destinations support the theory that tourists are more willing to travel longer distances to visit places which are unique or more attractive (Lew & McKercher, 2006, p. 441). By comparison, visits to attractions located at either short or intermediate distances from accommodation hubs include both unique places and those with low attractiveness level, which supports the results presented by Shoval et al. (2011), while low level attractions are only visited when in closer proximity to accommodation (Lew & McKercher, 2006, p. 411).

By contrast, coastal hub consumption systems, like Sant Carles de la Ràpita (Figure 6), show the combined influence of attraction specificity and attractiveness level on visitation patterns. The duality of patterns reflects a tendency towards static behaviour typical of beach

destinations (Smallwood et al., 2012) with hub-and-spoke patterns characteristic of natural areas (Lue et al., 1993). This hub in comparison with the other case study areas shows, on one hand, the highest percentage of narrow exploration typical of static patterns and, on the other hand, the higher percentage of intermediate and distant visits influenced by renowned attraction located at a longer time distance.

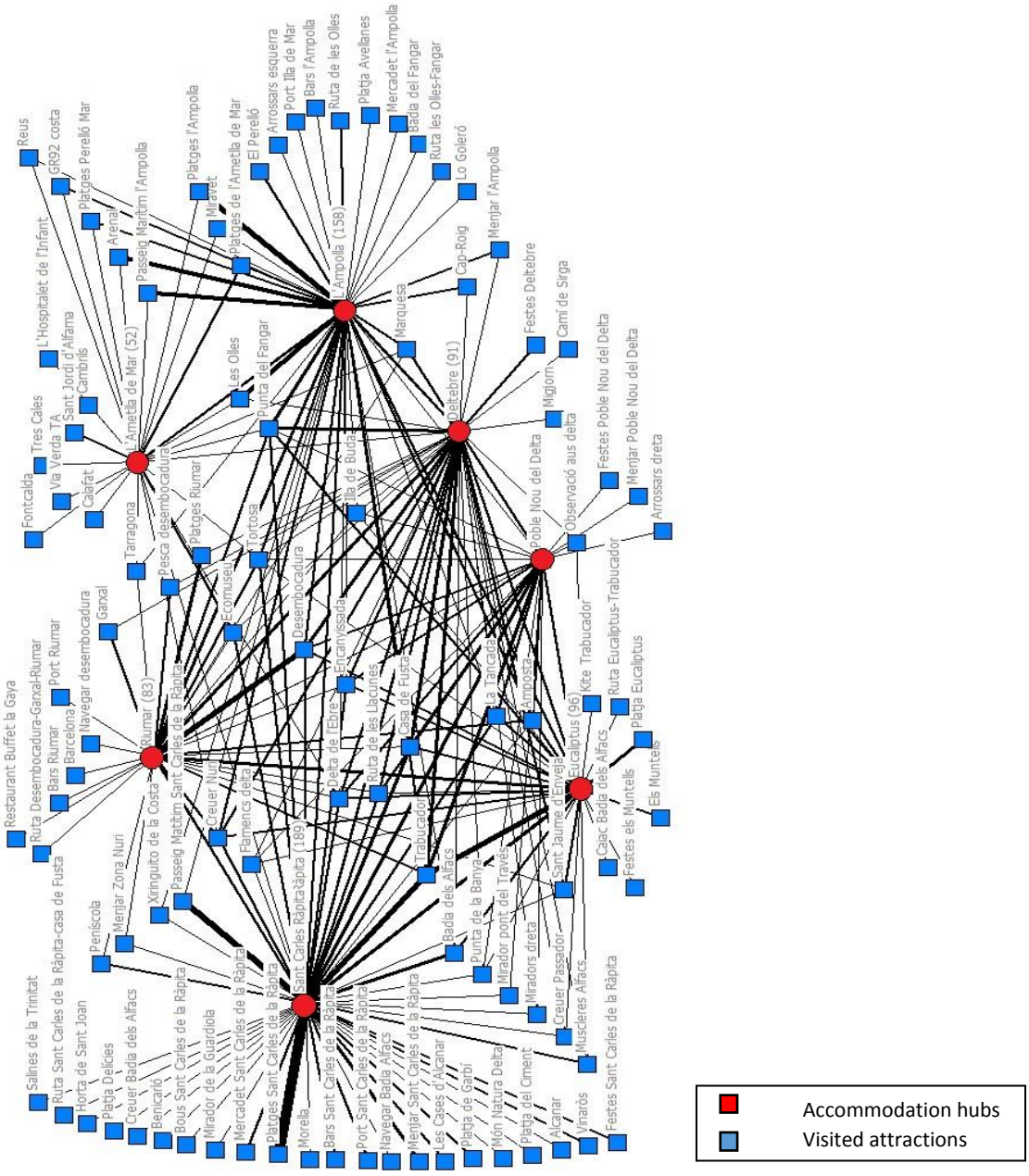
In relation to market access, the findings provide empirical evidence of market access theory (Pearce, 1989). In the Ebro Delta destination, the higher frequency of visits to closer attractions shows their competitive advantage over attractions with similar characteristics but at greater distance. Here, some attractions, like beaches, markets and festivals, can be similarly found at the immediate and intermediate area but tourists show a preference for more convenient locations.

Differences in intensity of aggregated visits between the case study destinations are also evident. Tourists at the *Ports* and especially at the Ebro Delta destinations visit a larger variety of attractions, compared with the Peak District, where tourist visits are concentrated among a smaller number of attractions which produces more repetitive travel patterns (Lew & McKercher, 2006). It is likely that the differences in intensity are also linked with the length of stay at destinations. Whereas Mediterranean destinations are more holiday-based (means of 9.7 days in *Ebro* Delta and 7.9 days in *Ports*), the Peak District is more of a short break or long weekend destination (mean of 3.6 days). When tourists have less time, they tend to prioritise renowned and/or closer attractions (Barros & Machado, 2010; Lau & McKercher, 2006).

Maps representation provides evidence of visitation patterns affected by topography and road network quality. Indeed, good road connections generally motivate tourists to take side trips to more distant locations. This is evident in the case of the L'Ampolla hub in the Ebro Delta destination, where a high speed road facilitates access to distant attractions. The influence of topography and road network access on attraction visitation frequency is also evident in the Peak District, where tourist activity is concentrated in the more accessible central area. Similarly, in the Ports destination, most attractions are located far from the steepest parts of the mountain range and close to the road network linking Horta de Sant Joan to Vall-de-Roures.

5.3. Overlapping Systems

Figures 8, 9 and 10 show the visitation patterns from accommodation hubs in the three case study locations and demonstrate the existence of overlapping hub consumption systems in each case, thereby supporting Dredge's (1999) theory. In order to compare the degree of overlapping in each case, the analysis focussed on the number of the same attractions, and the repeat visits to those attractions (represented by line thickness), visited from each hub. The more attractions which are shared and more repeatedly visited, the higher the degree of



overlapping among the hub consumption systems.

Figure 8: Overview of accommodation hubs and intensity of visitation to places in the Ebro Delta

Figure 8 depicts the Ebro Delta coastal destination and shows the strong influence of the main hubs, which promote the existence of overlapping hub consumption systems following the

coastline. Focusing on the two main hubs of the Ebro Delta (Sant Carles de la Ràpita & l'Ampolla), there is evidence that tourists occasionally visit the same attractions from these two accommodation hubs, most of them located within the Natural Park, while tourists staying in each hub mainly visit a large number of different attractions. This shows that their hub consumption systems are just slightly overlapping, which can be explained by the relatively large geographic distance between them compared with the other hubs in the destination.

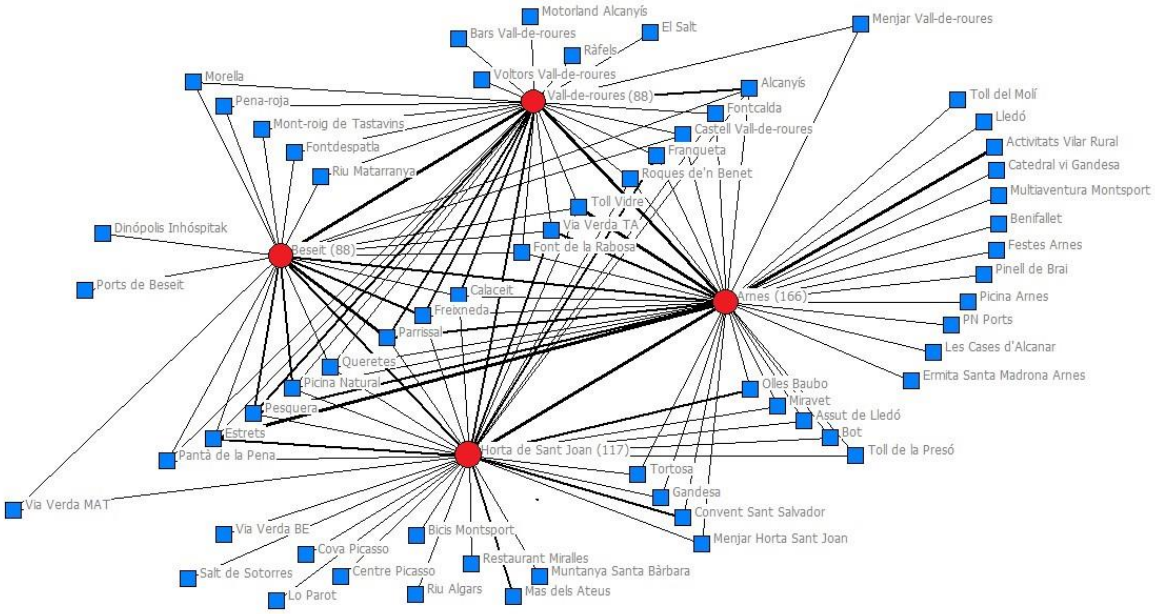


Figure 9: Shared intensity graph of visits to attractions from the main accommodation hubs of the Ports

Figure 9 shows a shared intensity graph displaying the main hub consumption systems and their associated flows in the Ports mountain range area. The results show a considerable degree of overlapping between the main hub consumption systems. The attractions which are visited from only one hub are mainly local attractions with low attractiveness or distant attractions with very low frequency visitation. The lack of nearby accommodation hubs, other than the four featured here, together with the high frequency of visits to the same attractions from each hub, denote the existence of a latent cross-border destination (compare Figures 4 & 9).

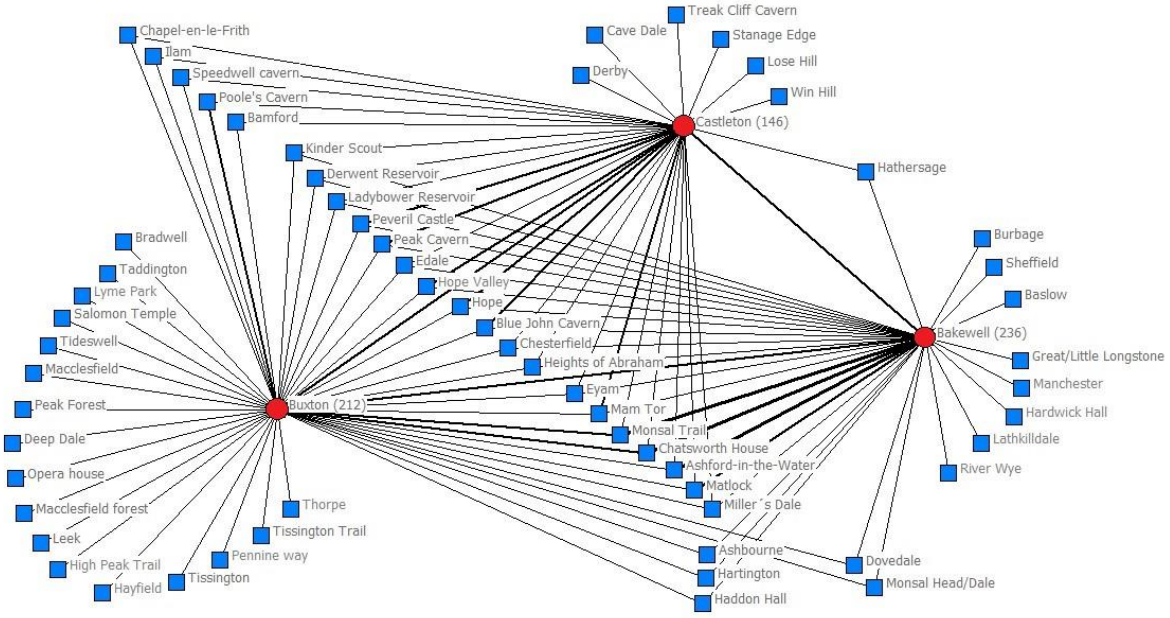


Figure 10: Shared intensity graph of visit to attractions from the main accommodation hubs of the Peak District

Figure 10 displays a shared intensity graph of three main accommodation hubs in the Peak District National Park. It shows a high level of overlapping between these hub consumption systems, as they share the majority of more frequently visited attractions. By comparison, each hub has a number of attractions which are visited only by tourists from its own accommodation; these are the local attractions in close proximity to the individual hubs which can be easily accessed from each one, as in the clear case of Buxton.

6. Conclusions

This study has focussed on two research questions relating to 1) tourism destinations as demarcated by administrative boundaries versus destinations defined by geographic consumption i.e. tourist visitation patterns and 2) the key factors influencing territoriality of visitation patterns in rural areas that determine the hub consumption systems. The findings have shown that visitation patterns in the three rural case study destinations are only rarely influenced by administrative boundaries. More frequently, they are influenced by time distance between accommodation hubs and attractions. In line with previous studies (Mckercher & Lau, 2008; Shoval et al., 2011; Smallwood et al., 2012), the findings show that most visits to attractions are through convenient, short trips around accommodation hubs. Interestingly, results provide empirical evidence that most visits are taken to attractions located around 30 minutes driving time distance from the accommodation and there is a significant decrease of visits around 40 minutes time distance away. While time distance is a key factor in attraction visitation, other factors including the attractiveness and uniqueness of places, the agglomeration of attractions, market access, and the overall spatial characteristics of the destination are also influential in the case study areas.

A key contribution of the study relates to the importance of the location of accommodation points relative to tourist attractions. The findings suggest that hub consumption systems in rural areas should be constituted by a central accommodation hub surrounded by tourism attractions and services located in the influence area. More specifically, tourist elements linked to a specific hub should be located in the immediate area of exploration, within 30 minutes driving time from that hub. Additionally, places of medium and high level attractiveness could be located at intermediate distance, while unique attractions could even be located at further distance from the hub. Furthermore, the evidence for overlapping hub consumption systems, which supports Dredge's (1999) claims, demonstrates that tourism actors and indeed, administrative destinations are part of several subsystems of accommodation hubs. The findings therefore indicate that destinations, which are administratively defined and managed, are foregoing many opportunities to more effectively plan, market and manage tourism visitation because they have neglected the realities of visitation patterns. Given that these destinations are unlikely to be unrepresentative of other rural destinations in Europe where tourists stay at accommodation points and visit attractions from these base camps, destinations would benefit from officially recognizing hub consumption systems, identifying the requisite elements in each area, and collaborating with relevant tourism actors both within and across political boundaries.

In this paper we have focussed on the geographical consumption of destinations with specific reference to the centrality of accommodation. As such, the influence area of a single visitor attraction has been neglected to an extent. Furthermore, focusing on visitation patterns from accommodation sources precludes the analysis of multi-destination travel patterns such as en-route travel patterns. Future research should therefore examine both the relationship between single attractions and surrounding accommodation, and also the connection between the main destination and neighbouring destinations to address multi-destination travel patterns. Another consideration for future research should be the governance of each hub consumption system, relating to the extent to which they overlap. Finally, this study represents a cross sectional analysis of travel patterns at one point in time; however, destinations evolve at the same rate as factors affecting tourists' mobility patterns and market

changes (Beritelli et al., 2014, 2015). Therefore, hub consumption systems will need to be monitored over time to update the activation or deactivation of places in response to the market changes and to ensure that they continue to reflect the dynamics of geographic consumption.

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