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Oriol Sallent^a, Ramon Palau^b & Jaume Guia^b

^a ONIT Research Group, Girona, University of Vic, Catalonia

^b ONIT Research Group, University of Girona, Girona, Catalonia

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ARTICLE

Exploring the Legacy of Sport Events on Sport Tourism Networks

ORIOL SALLENT,* RAMON PALAU,** & JAUME GUIA**

**ONIT Research Group, Girona; University of Vic, Catalonia & **ONIT Research Group;
University of Girona, Girona, Catalonia*

ABSTRACT An important amount of literature have focused on analyzing the consequences of sport events, particularly on the economic impacts; however as is often claimed, impacts also occur on the environment, culture and society. As sport events are intensive in stakeholders' relationships, the creation and strengthening of networks among these stakeholders should be a first priority of strategies aiming at building events' legacies. The purpose of this study is to explore the generation of effective networks in a regional triathlon event using social network analysis theory and techniques. Ten key stakeholders from the sports and tourism areas were interviewed before and after the first edition of the event in 2009 and the data collected were analyzed by means of social network analysis software. Findings indicate that there is an evolution in the structure and complexity of the network, affecting both the social, personal and economic components of relationships and the connectivity among local and external stakeholders. Subsequent implications for managers are drawn to plan strategies that ensure the effectiveness of the event in terms of positive legacies.

KEYWORDS: Sport tourism; impact; event; stakeholder; network

Introduction

Measuring sport events impacts is a subject with a significant academic and managerial interest (Getz, 2007; Hall, 1997; Weed, 2007). The legacy of events can affect communities in economical, environmental and social terms. However, in the literature the interest has been particularly focused on big events (Olympic Games and other mega-events) and on their economic impacts (Burns, Mules, & Hatch, 1986; Crompton, 1995; Gratton, Dobson,

Correspondence address: Oriol Sallent, Departament de Ciències Socials, Facultat d'Educació - Ciències de l'Activitat Física i l'Esport, Universitat de Vic, C. Sagrada Família, 7 08500 Vic. Tel. 938 816 164. Email: oriolsallent@uvic.cat, www.uvic.cat

& Shibli, 2000; Porter & Fletcher, 2008), mostly due to the necessity of the public sector to justify their huge expenditures to finance such events (Crompton, Lee, & Shuster, 2001; Gratton & Preuss, 2008; Preuss, 2005).

The increasing interest in supporting sport events as an avenue for local development (Jones, 2005) compels us to study different forms of legacies. The generation of networks is one of the six “event structures” proposed by Gratton and Preuss (2008) which can be a long term result of events. On the other hand, well-integrated and institutionalized networks have been reported to engender, among others, sport tourism destination competitiveness (Scott, Baggio, & Cooper, 2008a), policy implementation (Pavlovich, 2003), learning (Castells, 1996), local development (Dematteis & Governa, 2003), and social capital (Bordieu, 1986).

The evidence that a successful event needs an effective and efficient network of stakeholders behind it is grounded in common sense, but also in professional practice and academic studies (Erickson & Kushner, 1999; Getz, Andersson, & Larson, 2007; Larson, 2002). In the sport events literature, the relationships among these stakeholders have been studied either to understand event failure or success (Parent & Séguin, 2007), or to examine relations of trust, power or integration (Stokes, 2006) but recently have also been approached as consequences of the same events (Gratton & Preuss, 2008).

Social network analysis can help researchers to measure and examine stakeholder relations, not only to give evidence of the actual existence or not of solid networks, but also to study their evolution and qualities (Wasserman & Faust, 1994). In the sport management context, social network analysis can provide several analytical tools to understand organizational behavior in sport organizations (Quatman & Chelladurai, 2008).

The main purpose of this study is to explore the evolution of relationships within destination sports and tourism stakeholders' networks by following the implementation of a sport event, the Calella Challenge, a long distance triathlon held annually since 2009, in a coastal summer tourist destination.

By means of the reputation method, starting with the main stakeholder and later proceeding with the snowball technique we found ten key stakeholders. Data were collected two months before and one month after the first edition in 2009 and the results were then analysed using UCINET 6.0 (Borgatti, Everett, & Freeman, 2002), a social network analysis software. The research was focused on the description of increasing network complexity through the identification of embedded relationships among local stakeholders (Hite, 2003) and the evaluation of the innovation and creativity potential by looking at the links between local and external agents at a regional level (Granovetter, 1973, 1985).

The results show both a growing complexity in the stakeholders' relationships and an increase of connectivity with external stakeholders.

The exploration using social network analysis brings up useful information to sport managers when facing the organization of an event and to

policy makers and local stakeholders that pursue a long positive legacy of sport events.

Review of Literature

The Impacts of Sport Events

The fast worldwide interest in organizing sport events has been driven, mainly, by the economic consequences they are presumed to generate (Gratton & Preuss, 2008; Jones, 2005). But events are not happening in isolation, they affect every aspect of our lives, either social (Reid, 2008), cultural (Horne & Manzenreiter, 2004; Kim, Gursoy, & Lee, 2006), environmental (Collins, Jones, & Munday, 2009) or emotional (Chalip, 2006; Getz, 2008).

The analysis of these impacts differs upon who is behind the analysis, academic researchers or professional practitioners and if the main goal is knowledge creation and theory building or decision influence and the justification of outcomes.

Long term consequences of events are defined by Gratton and Preuss (2008, p. 1924) as “planned and unplanned, positive and negative, intangible and tangible structures created through a sport event that remains after the event.” Legacies in a tourism destination could be achieved by enhancing the tourism attractions (De Groote, 2005), reducing tourism seasonality (Higham & Hinch, 2002), shaping and improving the image of the destination (Chalip, 2004), branding the destination (Brown, Chalip, Jago, & Mules, 2004; Jago, Chalip, Brown, Mules, & Ali, 2003), developing the tourist sector (Pyo, Cook, & Howell, 1988) and improving the capacity to act as developmental catalysts (Spilling, 1996), which can be better reached if the event is embedded within the development strategy of the city (Preuss, 2007; Ritchie, 2000).

One Specific Legacy, Sport Tourism Network Generation

The event literature states that “stakeholders” are people and groups involved in the event. Therefore, this includes groups participating in the various phases of the event (design, bidding, production, outcome, etc.) (Getz, 2005).

There are different ways of classifying the stakeholders (Spiropoulos, Gargalianos, & Sotiriadou, 2006). From a social perspective we have actors belonging to the public, private and voluntary sectors (Shone & Parry, 2001); from a managerial perspective we find the host organizations, the host community, co-workers, event sponsors, the media and participants and spectators (Allen, 2008); finally, from the roles taken on in relation to the event organization we distinguish organizers, co producers, facilitators, allies and collaborators, regulators, suppliers and venues, the audience and the impacted (Getz, 2007). In light of the above literature, local event

Table 1. Local stakeholders in sport events.

Functions	Public	Private	Non-profit	Community
Organization and execution	Sports council board	Organizing corporations	Sports club	
Co-producers	Tourism council board Other council services	Organizing corporations Other private enterprises	Sports clubs Various associations	Co-workers
Facilitators	Tourism council board sponsorship	Local sponsors		Volunteers – community
Allies and collaborators		Local media	Local associations (trading, social, etc.)	
Regulators	Security council board Sports council board Environment council board			
Suppliers and venues	Tourism council board	Local providers	Local club	Host community
The audience and the impacted		Local business	Environmental associations	Participants & spectators

stakeholders are herein organized considering several taxonomies, as presented in Table 1.

The existence of many stakeholders involved in the development of events with different objectives and sometimes having conflicting interests (Preuss & Solberg, 2006) can generate a loss of coordination and effectiveness in the consecution of fixed goals (Brown *et al.*, 2004). It is for this reason that often organizers decide to create a single organization committed to the coordination of all the entities and to assisting the organizing team (Emery, 2002) with appropriate public resources (Bonham & Mak, 1996). However, this is not often the case and the coordination of the stakeholders is done by means of informal processes and networks, defined as ungoverned organic structures connecting a potentially unbounded group of individuals (Mintzberg, 1979), as a result of face to face contacts (Allen, James, & Gamlen, 2007). Tourism agents are involved in the event network in different ways depending on their role (accommodation, food and beverage, renting vehicles, leisure, excursions). They are all important stakeholders in the management of tourism destination as tourism research have already proved (Sheehan & Ritchie, 2005).

Laying between the economic and social approaches of events' studies, the stakeholder and network theories are useful to explain what the relationships within these networks are like, at the origin, and during the operation and evolution of events (Getz, 2007). They focus on the attributes of the

internal and external stakeholders that influence the event organization (Friedman & Mason, 2005; Getz *et al.* 2007; Parent & Séguin, 2007; Reid & Arcodia, 2002). They also focus on conflicts, interests, control or power (Girginov & Sandanski, 2004; Larson, 2009; Spiropoulos *et al.*, 2006; Stokes, 2008).

Nonetheless, some of the literature investigates the outcomes of the event in the form of relationships. From the moment reciprocal relationships embedded in social networks are created, we speak of social capital, in like manner that we refer to physical capital when an event generates new sports equipment and infrastructure, or we speak of human capital referring to the expertise, abilities and competence of the individuals involved in tourism or sports practices (Moscardo, 2008). However, as relationships are a much less tangible concept it has not attracted the same amount of academic attention. Most of these studies are focused on the generation of trading possibilities (Chalip, 2004; O'Brien & Gardiner, 2006), regional development (Jones, 2005), community networks (Misener & Mason, 2006), the fostering of *liminality* and *communitas* creation (Chalip, 2006) and social consequences (Reid, 2008).

Relevant to our purpose is the research done by Misener and Mason (2006) on how, if at all, sport events take on ideological importance in the construction of social capital and community networks within host cities. In other words, how the social capital construct can be used to understand the effects sport events have on community development and social networks, on the basis of the premise that strong, healthy community networks are essential to productivity. The fundamental importance of this theory as it relates to events in a city, "lies in the collective sense of responsibility generated by broad-based participation in community initiatives" (2006, p. 44).

Although closely related to this research, social network analysis has been scarcely used in the study of events (Quatman, 2006). An exception is found in Stokes (2008) who studied the relationships and knowledge involved in event strategies and the importance of each stakeholder on the basis of network attributes like centrality, connectedness and other social network theory concepts.

Network Theory

The theory of networks lies within the complex world of relationships among people, groups and communities. A social network is a structure made of nodes (usually individuals or organizations) connected by one or more sort of ties. In fact, a network is generally defined by a specific type of relation linking a defined set of persons, objects, or events and thus, "the properties of those networks studied by academics have to do with the structure of these relations" (Scott *et al.*, 2008a, p. 1).

Networks are shaped by groups of actors that are studied as inter-dependent rather than as independent and autonomous unities (Wasserman

& Galaskiewicz, 1994). In addition to individuals, groups or organizations, these actors can be corporations, countries, social entities, tourism destinations, etc.

A second element of networks that deserves attention is the relationships between subjects. The relational ties among different actors are “channels to transfer resources (either materials, like money or immaterial like information, political *support*, friendship or respect)” (Wasserman & Galaskiewicz, 1994, p. xiii).

In the study of these networks we can differentiate two complementary approaches. The first one focuses on the cohesiveness of the network and the centrality of the actors taking into consideration the content of the ties. It is particularly attentive to the structure of networks in terms of density, which measures the relative number of ties that are present in the network. As for the centrality of actors, attention must be paid to the actors’ betweenness, which is the power they have because most other actors can only get connected through them. An actor with high betweenness lies in the path between other, otherwise, unconnected actors and thus plays the role of “broker” or “gatekeeper” (Freeman, 1979). Regarding the content of ties, we rely on Hite (2003) who introduces a multidimensional taxonomy of ties taking into account some relevant features of the relations. In any relation, three different potential components are identified: personal, economic and social components. In any relationship they can be present in isolated form—unidimensional embeddedness (i.e. only the personal component, or the economic or the social), in pairs—bidimensional embeddedness (i.e. economic and social components together; personal and economic; or personal and social) or all three together—full embeddedness.

The second approach is concerned with studying hyperconnectivity and evaluates innovation and creativity in social networks, on the basis of the relationships that actors have with other external nodes or networks. Here, the classification of ties made by Granovetter (1973, 1985) is highly pertinent. He identified two types of network relations: “strong ties” that an actor has with others within a well-linked cohesive group, and “weak ties” that an actor has with others in external groups. Strong ties are seen within clusters of people in congruent and strong relationships, each person knowing what the other party knows (Pavlovich, 2003), that’s why they are long term ties based on trust and collaboration within the different actors. On the other side, “weak ties” are those with actors external to the cohesive group. Weak ties assist in bringing new information into the groups, while the strong ties support the knowledge creation processes by embedding strategic capabilities into the network. Considering the importance of weak ties (Granovetter, 1973), it is probably clearer and more adequate to call them “external,” and in like manner to label strong ties as “internal.”

Pavlovich (2003) demonstrated that organizations need to have a portfolio of network-oriented relationships, internal ties (supportive ties), and external partnerships (as a source of new and current information and opportunities) which comply with the ideas on local development with local

and extra-local networks interacting on a specific “milieu” (Dematteis & Governa, 2003).

Both, the consideration of the content of ties, and the measurement of network cohesiveness, actors’ centrality and network connectivity with other external actors provide us with a complete framework to assess the effectiveness of a network. This is crucial to create competitive advantage (Scott, Cooper, & Baggio, 2008b), foster innovation (da Fontoura Costa & Baggio, 2009) and produce integrated tourism experiences (Scott *et al.*, 2008b).

Hypotheses of the Study

Taking into consideration the previous theoretical background, and according to Gratton and Preuss’ theory (2008), regional sport events must contribute to generate more cohesive and innovative networks. Thus, in our case study we should then expect:

H₁: The sport event affects the structure of the stakeholders’ network, which becomes more cohesive and less centralized.

H₂: The sport event will result in the generation of new external relationships with actors from outside the organizing destination and thus, the innovation capacity of the destination will increase.

Conventionally, sport and tourism activities lie in separate realms which makes the institutionalization of relationships among them difficult (Weed, 2009). The organization of a sport event in a tourism destination should then help to break this separation and contribute to the creation of a new network in which both realms get entangled together. We can thus propose this hypothesis:

H₃: The sport event will result in an increase of relationships involving both sport and tourism sectors’ actors.

The centrality of actors in the destination network of relationships after and before the event might not be similar. It makes sense to propose that before the event, public sector actors will be more prominent as it is their mission to look at the big picture and contribute to create awareness of the potential gain for the whole community that can be obtained from the collaboration of otherwise separated actors in the organization of the sport event. However, after the event the actors which have experienced important private gains will become prominent as now they do not need being persuaded as was the case before the event (Saxena, 2005). Therefore we can propose the following hypothesis:

H₄: The public sector will have a stronger prominence before the sport event, while the leading role will sway towards the private sector after the first edition of the event and in successive editions.

We should also expect that both the interactions needed to create and implement the sport event, and the outcomes obtained by the different stakeholders will affect the number of links present in the network, the composition of ties, and the centrality of the different actors. Therefore we can propose the following last hypothesis:

H₅: The sport event will increase the stakeholders' network density or number of links, modify the composition of ties, and affect the centrality of the actors.

Method

Description of the Case and Data Gathering

The case study chosen to explore and analyze these hypotheses is the Challenge Calella, a one day triathlon competition that involves 3.8 km swimming, 180 km biking and one marathon run.

The first edition of the Challenge Calella took place on 4 October 2009 with the participation of international competitors with departure and arrival in Calella, a town with a population of 18,627, 50 km north of Barcelona.

In the origin of this event, The *CHALLENGE Costa de Barcelona – Maresme* corporation (CHALLENGE) made a proposal to the public administration in the area, the municipality of Calella and the county of Maresme, to get together in a project in order to guarantee the means and resources needed to organize an ambitious event of a higher size and complexity than ever seen before in the region. The organization in the first edition was very complex and created a conflict between some of the stakeholders. By contrast, the sport event generated cohesion in the town, a sense that something important happened, a new liminal energy injected to the community, who lived the event with a sense of *communitas* and as the feeling of having a potential generator of new future initiatives.

Regarding the structural characteristics of the case study network we focused on the measurement of characteristics such as density (network cohesiveness), betweenness (actors' centrality) and the content of ties as described in Hite's (2003) three component model. As for the innovative capacity and dynamic aspects of sports-tourism networks we were interested in identifying the relationships actors have with "external" agents.

To gather the necessary relevant data we used the reputation method and started interviewing the local council tourism officer as the main stakeholder. Then we used the snowball method to reach and interview other relevant stakeholders. A total of 10 actors were thus identified and interviewed (see Table 2). The interviews were conducted two months before and one month after the event. This way we avoided the time when all stakeholders are most involved in the implementation of the event (Gorden, 1987). Two months before the event the actors were asked to identify their relationships with the other relevant stakeholders before the new event was conceived, while one month after the event they were asked for the new relationships created as a consequence of the conception and actual organization of the event.

Table 2. CHALLENGE stakeholders.

Functions	Public	Private	Non-profit	Community
Organization and execution	Sports officer	Hotel owner, event co-organizer	President of local athletics club	
Co-producers	Tourism councilwoman		President of local nautical club	
Facilitators	Manager of county government		President of social photo association	
Allies and collaborators	Urban services councilman	President of local trading association		
Regulators				
Suppliers and venues		President of local hotel association		
Audience and the impacted				

Regarding the content of ties, the interviewees were asked to identify the particular content of each relationship (economic, social and personal). Two potential problems were found in this regard: (1) the different meaning and interpretations some individuals might give to the questions and particularly to the components of relationships, and (2) potential discrepancies between related stakeholders about the particular content of the same relationship.

To overcome the first problem, the set of questions took into account the list of attributes of each component identified by Hite (2003) which were specifically adapted to the context of our particular research. For instance, to facilitate a common understanding of the economic component of relationships, we were interested in knowing whether some kind of economic bond involving monetary transaction or voluntary work existed, either between the two stakeholders studied or between those stakeholders together with a third part; as for the personal relationship component three different questions were established concerning personal knowledge, affect and sociality; and finally, regarding the social component we were interested in knowing whether there were some sort of social obligations or structural embeddedness between any two related stakeholders.

To avoid the second problem we established that when only one of the two linked stakeholders considered that there exist a personal tie then we did not consider the personal component as present. Thus both sides of the personal relationship must acknowledge this type of tie for the relationship to be considered as personal. However, when one of the two linked actors judged that there exists a social tie, we quote the social component as present; and similarly, when one of the two linked stakeholders stated that there exists an economic tie, we estimated the economic component as present.

Methods of Analysis

The relational data collected from the interviews were translated into a matrix showing all the existing relationships among “stakeholders.” Then, using social network analysis techniques, the data was coded and analyzed with UCINET 6.0 (Borgatti *et al.*, 2002). As a result the evolution of the network regarding density and actors’ centrality was identified and depicted.

In the subsequent graphs (Borgatti, 2002), each node is connected to one or more nodes by arrows reporting some kind of relationship. The position of each node in the graph comes out from the number of links and the positions of the other actors to which it is linked. The more the actors lie in the middle of the graph, the more they belong to the core, while the further away from the middle the more peripheral they are. Similarly, in the graphs depicting the centrality of the actors, the larger the size of the nodes, the more betweenness the actor has. Regarding density, the more lines there are in the graph relative to the number of actors, the higher the density of the network.

A graphical representation of the network makes thus a comparative analysis and the identification of critical stakeholders more intuitive. In addition to portraying the evolution of the network’s density, and how the role of key agents changes, the graphs also depict the dynamics of the towns’ tourism and sport communities, and the structure of the private, public and non-profit sectors. The form and color of the nodes in the graphs indicate attributes such as whether the actor belongs to the sport, tourism or other community and whether they are private, public or non-profit organizations. Finally, the strength of ties, or number of components they have, are depicted by how thick the lines linking different nodes are.

Results

The matrix of relationships resulting from this study is shown in Tables 3 and 4 and proves to be a matrix of a complex network of relationships between agents.

The fact that the relevant stakeholders have prominent positions (hotel directors, president of social associations, councilmen, etc), imply that there is an intense social capital bond present in the network. Therefore, before the event all the relationships already had a social tie component. All the actors belong to clusters with high density except for the county representative who does not belong to the same town (depicted far on the right in Figure 1). This figure depicts the structure of the network when all types of ties are taken into account. However, the attributes of the actors (whether they are public, private, non-profit; or whether they belong to the sport, tourism or other sector) are not depicted here. Similarly, the strength of ties is not depicted in this figure.

In the rest of the figures, both the attributes of the actors and the strength of the relationships are present. This way the interpretation of the results is more interesting.

Table 3. CHALLENGE matrix before the event.

HOTEL ASSOC. HOTEL ORGANIZER TRADING ASSOC.	HOTEL ASSOC. economic social personal economic social	HOTEL ORGANIZER social	TRADING ASSOC.							
ATHLETIC CLUB	social	social	social	ATHLETIC CLUB social	NAUTICAL CLUB social	PHOTO ASSOC.	COUNTY GOVERN.	TOURISM COUNCIL	URB. SERV. COUNCIL	SPORT OFFICER
NAUTICAL CLUB	social	social	economic social	social	social	economic social	social	economic social	personal social	
PHOTO ASSOC. COUNTY GOVERN.	economic social	social	economic social	social	social	economic social	social	economic social	personal social	
TOURISM COUNCIL URBAN SERV. COUNCIL	social	personal social	social	social	social	economic social	social	economic social	personal social	
SPORT OFFICER	social	personal social	personal economic social	economic social	economic social	personal social		economic social		

HOTEL ASSOC. HOTELO GANIZER	HOTEL ASSOC. economic social	HOTEL ORGANIZER social	TRADING ASSOC.	ATHLETIC CLUB	ATHLETIC CLUB	NAUTICAL CLUB	PHOTO ASSOC.	COUNTY GOVERN.	TOURISM COUNCIL	URBAN SERV. COUNCIL	SPORT OFFICER
TRADING ASSOC.	personal economic social	personal economic social	social	social	social	social	social	economic social	economic social	personal economic social	personal economic social
ATHLETIC CLUB	economic social	personal economic social	social	ATHLETIC CLUB	social	NAUTICAL CLUB	PHOTO ASSOC.	COUNTY GOVERN.	TOURISM COUNCIL	URBAN SERV. COUNCIL	SPORT OFFICER
NAUTICAL CLUB	social	economic social	economic social	economic social	social	PHOTO ASSOC.	COUNTY GOVERN.	TOURISM COUNCIL	URBAN SERV. COUNCIL	SPORT OFFICER	
PHOTO ASSOC.	social	economic social	economic social	economic social	social	PHOTO ASSOC.	COUNTY GOVERN.	TOURISM COUNCIL	URBAN SERV. COUNCIL	SPORT OFFICER	
COUNTY GOVERN.	economic social	economic social	economic social	economic social	social	economic social	economic social	TOURISM COUNCIL	URBAN SERV. COUNCIL	SPORT OFFICER	
TOURISM COUNCIL	social	personal economic social	personal economic social	economic social	economic social	personal social	economic social	personal social	SPORT OFFICER		
URBAN SERV. COUNCIL	social	personal economic social	personal economic social	economic social	economic social	personal social	economic social	personal social	SPORT OFFICER		
SPORT OFFICER	social	personal economic social	personal economic social	economic social	economic social	personal social	economic social	personal social	SPORT OFFICER		

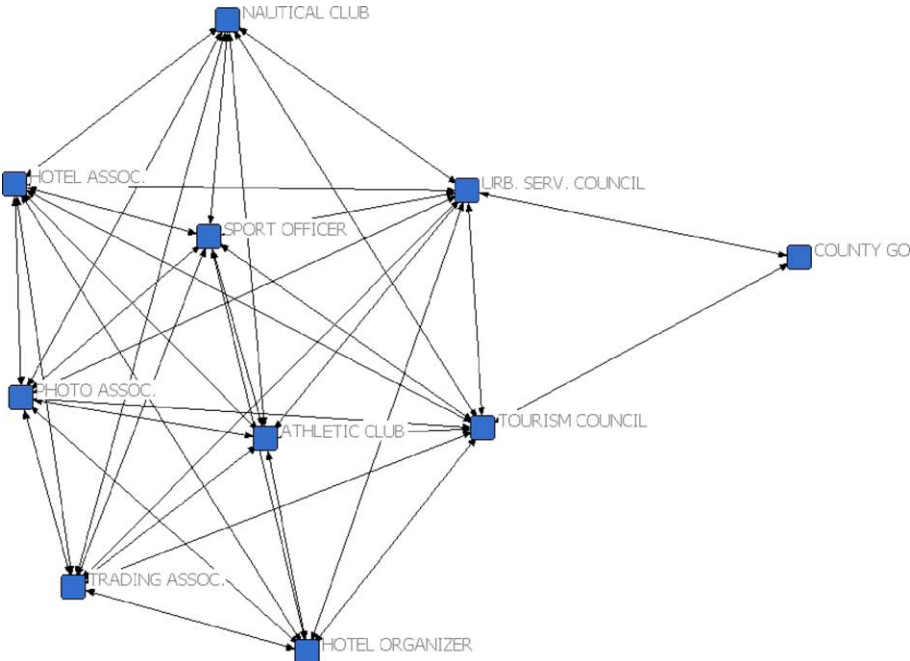


Figure 1. Network of all relationships before the event (without attributes).

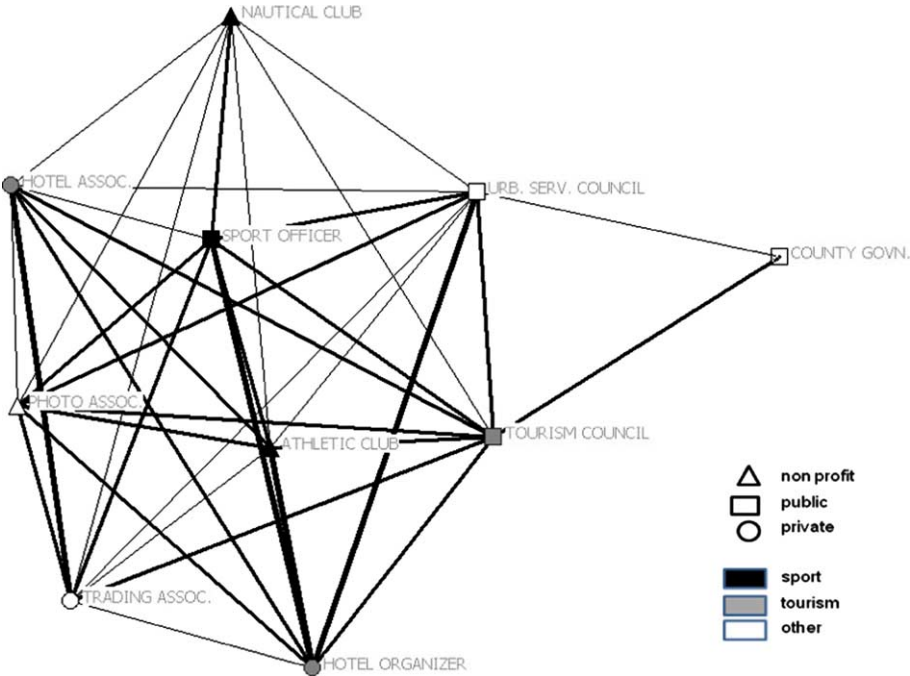


Figure 2. Network of all relationships before the event.

Figure 2 shows the network structure before the event when all types of ties are taken into account. We can see that the more central or key stakeholders are the councilmen, the sports officer and the athletics club representative. If we look at the number of components of ties we observe that the athletics representative, although in a more central position, has weaker bonds with his linkages (ties with fewer components). Another interesting finding is that the president of the trade association has two full ties (ties with all three components) with some other stakeholders. Finally, when all types of ties are considered we see how sports, tourism and other sectors are all intermingled within the dense network of ties. As for the public sector actors, we also see that they occupy the central part of the network with private and non-profit sectors placed on the sides or periphery.

However, if we look at Figure 3, the network when only functional links are considered (ties with both social and economic components), that is, when personal ties are not considered, we observe that the sport and tourism actors are clearly separated in two subgroups acting in different and distant spaces.

This is relevant as it shows that these sectors were not interrelated in functional terms and the only ties that had existed among them had a personal component.

Figure 4 is similar to Figure 3 but here the actors with higher betweenness are the nodes with larger size. Two actors stand out here: the sports officer and the tourism councilwoman both of which were also central when all types of ties were taken into consideration.

After the first edition of the event, the density of the network when all types of ties are considered, increases, which can be deduced from the higher number of ties present in the network after the event (Figure 5) in relation

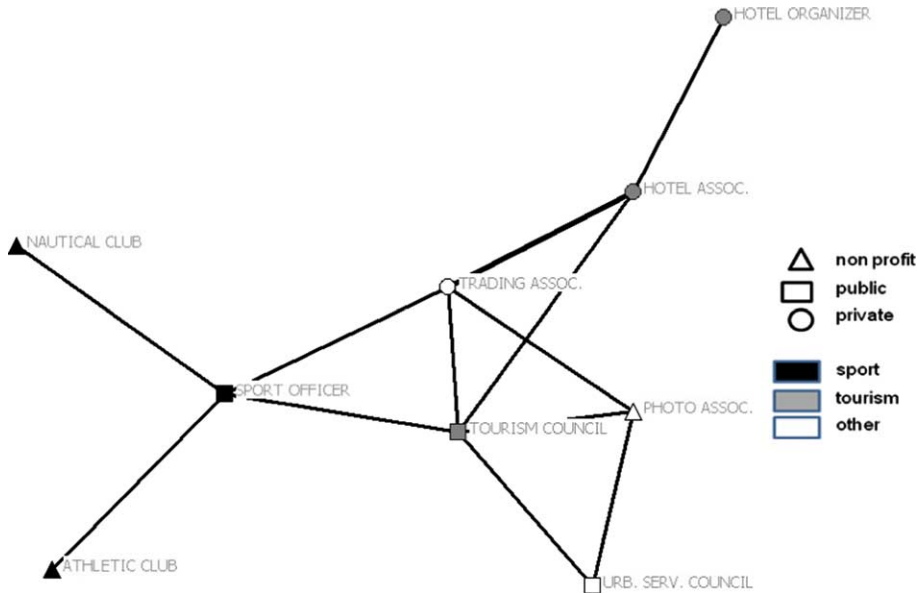


Figure 3. Network of all functional relationships before the event.

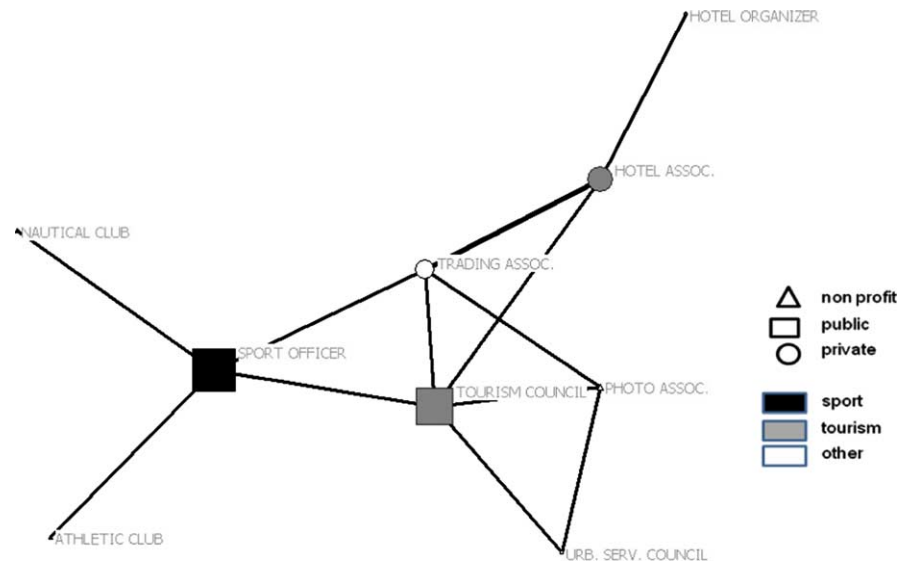


Figure 4. Network of all functional relationships before the event – betweenness.

to the number of ties in the network before the event (Figure 2). We can also observe how the number of ties with a higher number of components is higher after the event (Figure 5) than before the event (Figure 2).

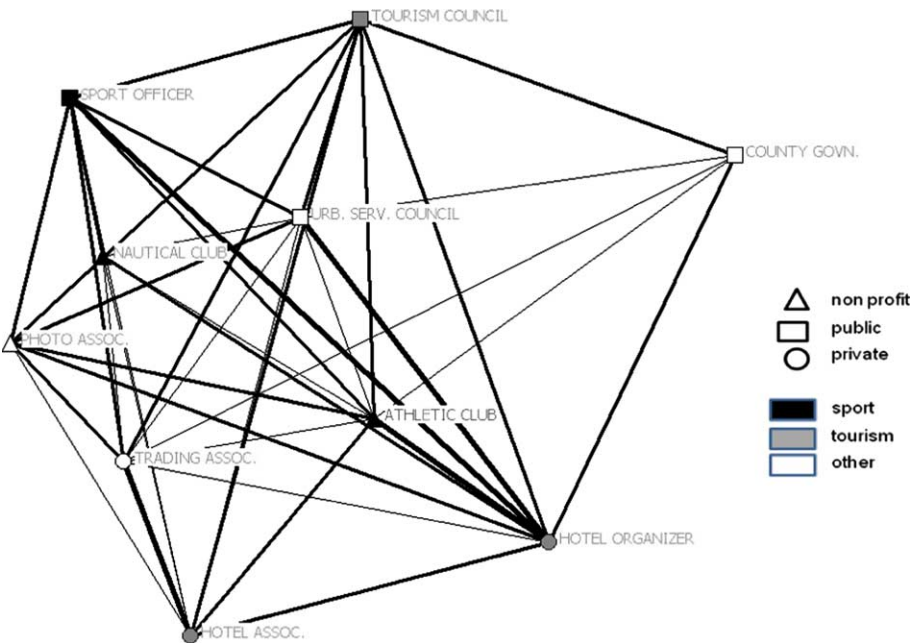


Figure 5. Network of all relationships after the event.

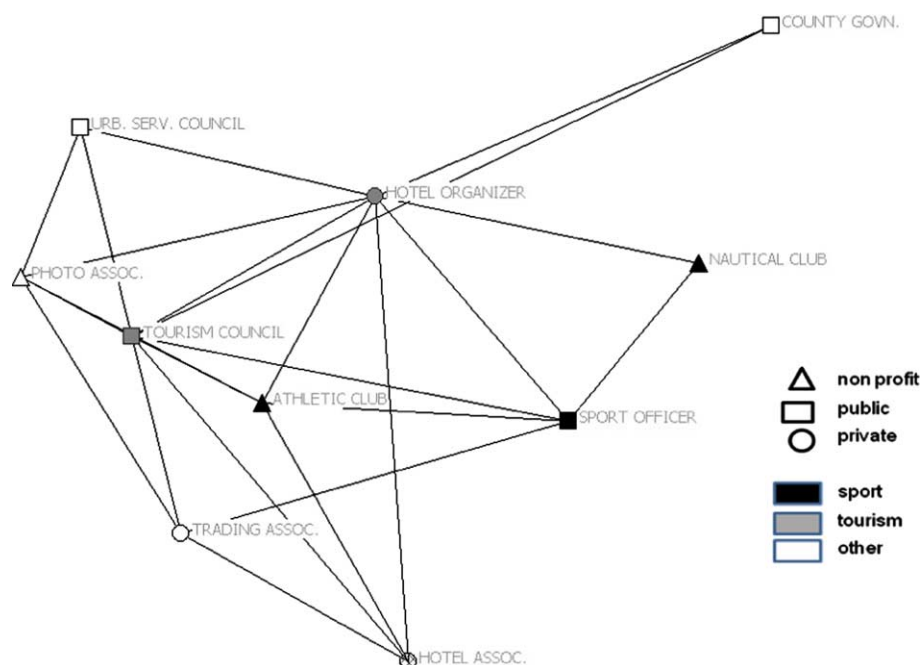


Figure 6. Network of all functional relationships after the event.

Figure 6 displays the graph showing only the functional ties among actors after the event and reveals an interesting network structure where the sport and the tourism sectors are much better integrated or tied together than before the event for this particular network (Figure 3).

Here we note that after the event the hotel organizer stands out as the most significant and central stakeholder in the whole network while the sports officer who took a passive attitude towards the event is now shifted away from central positions. A similar situation happens with the representative of the athletics club who was much more involved in the event than the president of the nautical club and that, as a result the former occupy a more central position now after the event. This can also be seen in Figure 7 where the size of the nodes indicates the betweenness of each actor. The hotel organizer plays the most central role, while the tourism councilwoman plays the role of keeping the core of the network linked with an important array of secondary and more peripheral agents.

Figure 8 shows all the new relationships created with the event. We see how all types of actors: public, private and associative stakeholders as well as sports and tourism agents, have created new ties as a consequence of the event. Also we observe that the hotel organizer and the athletic club representative are the actors that have gained more new relationships with the event.

Finally, Figures 9 and 10 illustrate the situation of the network before and after the event when only functional ties are taken into consideration and when the links with external actors are included.

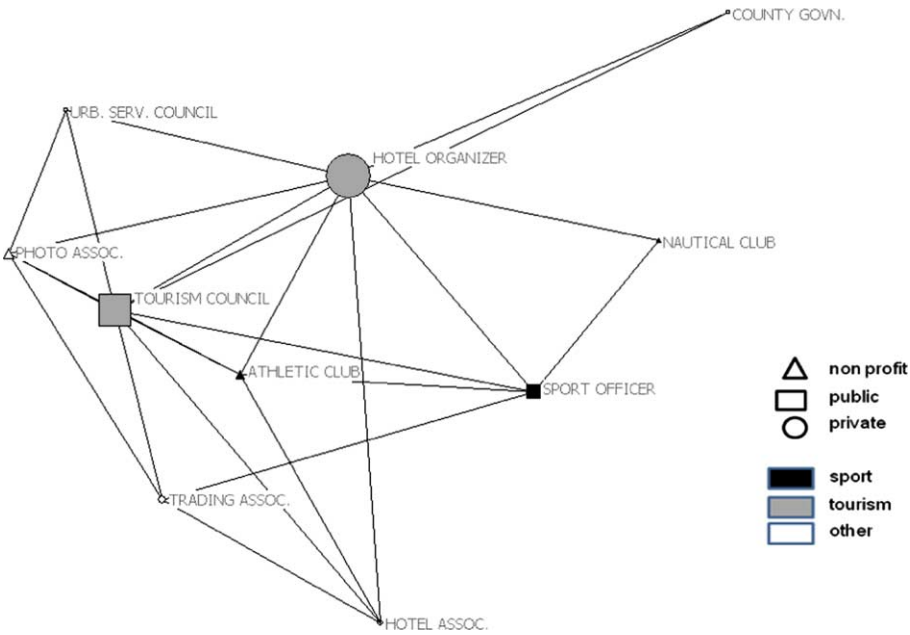


Figure 7. Network of all functional relationships after the event – betweenness.

We see in Figure 10 how after the CHALLENGE event important entities like the Catalan and Spanish triathlon federation, and other private organizers and public entities end up linked in a dense network of ties

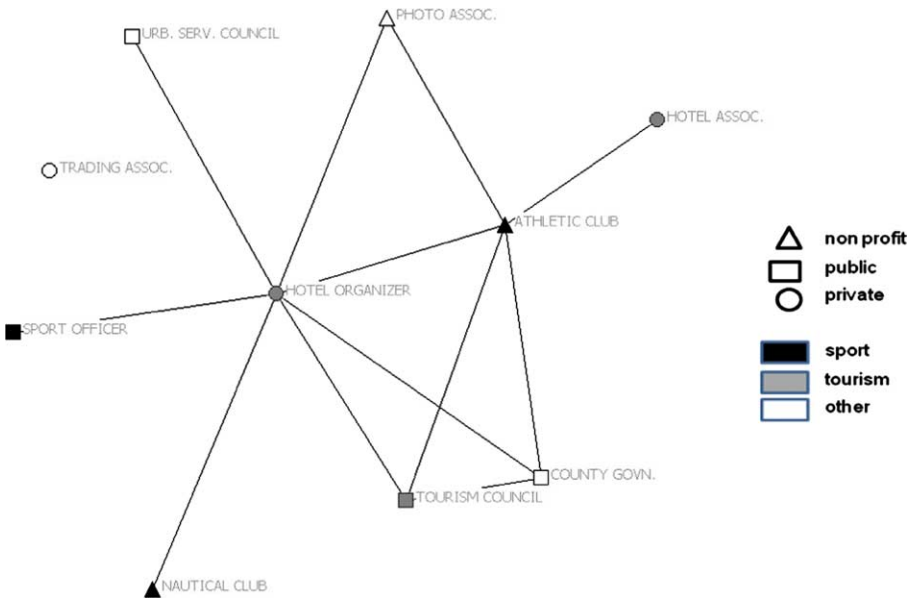


Figure 8. Network of all new relationships after the event.

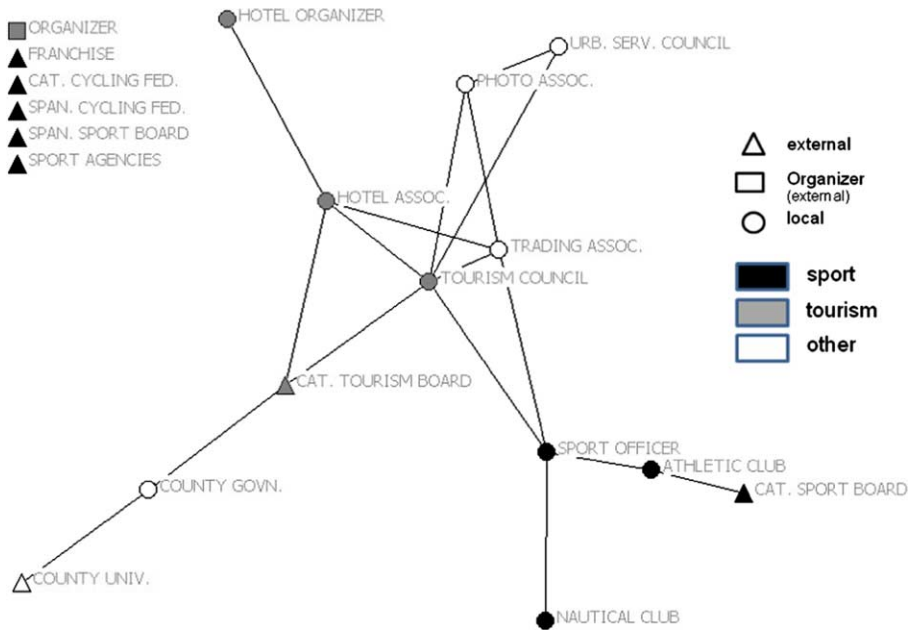


Figure 9. Network of local functional ties and external links before the event.

that gives local agents access to new multiple resources for future projects. This enhances in an important way the innovative capacity of the network in relation to the situation before the event.

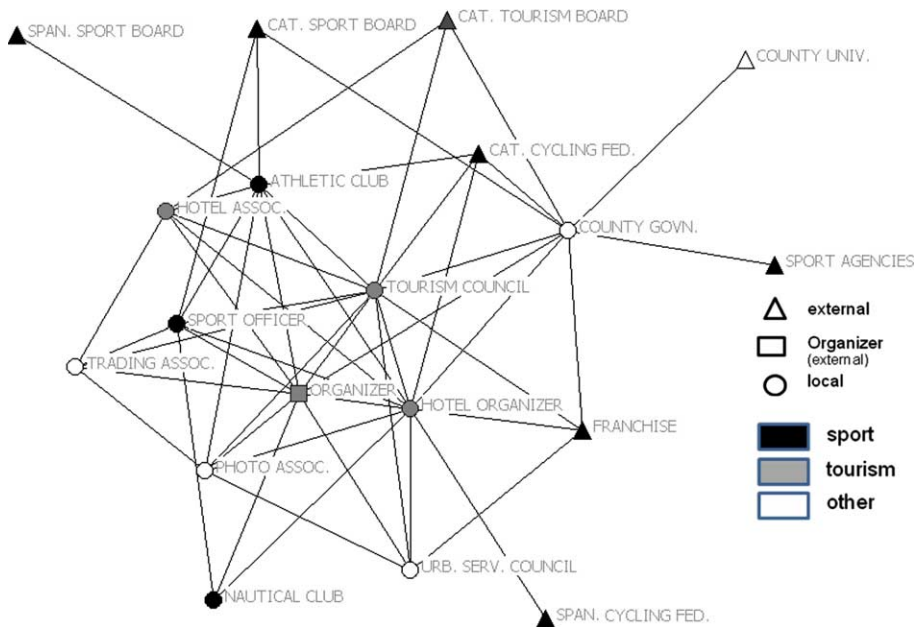


Figure 10. Network of local functional ties and external links after the event.

After the event, some actors are better off and others worse off in terms of connectivity with external links. The county manager, for example, takes most of the profit with multiple connections with many new external entities, while the sports officer is not able to generate any new external link with the event.

Discussion

The findings show evidence that regional sport events can help to generate more cohesive and innovative networks confirming H_1 and H_2 and thus supporting the theory of Gratton and Preuss (2008). As for the innovative capacity we saw the creation of new relationships with external actors, often from different sector or administrative level than the counterpart. It is the case of the county manager or the hotel organizer. Innovation being a crucial aspect of local development, it is not acceptable that the sports officer does not take advantage of the networking opportunities with new external actors due to a passive attitude. Sport agencies when creating an event must react to specific structures focusing on key agents and empowering links with relevant stakeholders (Chalip, 2006).

The measurement of both cohesion and capacity of innovation provide us with a complete framework to assess the effectiveness of a network. This is crucial to create competitive advantage (Scott *et al.*, 2008b), foster innovation (da Fontoura Costa & Baggio, 2009), produce integrated tourism experiences (Scott *et al.*, 2008b), facilitate future business (O'Brien, 2007) and be a crucial part in the consolidation of clusters as required by Porter (1998).

When stakeholders are grouped by their attributes we see that sometimes the different groups are disconnected within the network of relationships. As stated by Webb (2005) and Weed (2009), this is the case of the sports and tourism subnetworks when only the functional ties are been considered. We have seen, however, how a sport event can help to break this dynamics and reinforce intersectorial integration (Parent & Séguin, 2007), thus confirming H_3 in our case.

When we look at the roles of private and public agents in the network we observe that public stakeholders (tourism officer) have a more relevant role in the network before the event, while the private sector (hotel organizer and external event organizer) take over and become the most relevant actors after the event, thus illustrating the particular dynamics of public, private and non-profit sectors as described by Saxena (2005) and partially confirming H_4 . The fact that the case studied is the first edition of a sport event can explain why the initiative in the network is only partially transferred from the public to the private actors. Regarding non-commercial actors, their integration in the network must be sought strategically and through an intense process of communication. Due to their voluntary status their involvement in the process might be difficult.

Findings also confirm H_5 , proving that after the event we observe changes in the network regarding the number of links, tie composition and actors'

centrality. It is the case, for instance, of the hotel organizer, the athletics club president and representative of the county government. Finally, concerning how different actors get involved in the network, the results of this study reveal that it depends not only on the function actors play in the network at any moment, but on the proactive attitude they have towards networking (Larson, 2002). In our case, the athletics club and the nautical club presidents took an opposed approach.

Therefore, the results support the need of strategically planning joint sports and tourism developments (Bramwell, 1997; Weed, 2009) and specifically in what concerns the network outcomes of sport events. In the case studied, the outcome was a by-product of unplanned interaction patterns, and thus it is representative of the lack of a strategic approach without which important opportunities might get lost (O'Brien, 2007).

Conclusions

The purpose of the research was to study the impact of sport events in the evolution of relationships among sports and tourism stakeholders. Thus the article aims at contributing to the understanding of these processes with theoretical and practical findings.

By studying the networks of sports and tourism stakeholders before and after the event we show the great potential of sport events in generating cohesive and innovative networks and observe that this process must not be left "unmanaged" as in the case of the Challenge Calella. These processes should be directed focusing on the generation of specific initiatives and led by public and private managers. They should aim at ensuring the integration of diversity in points of view, at paying careful attention to process dynamics and at harnessing the effective implementation of agreements. Finally, they should also pursue the involvement of the different actors (Gray, 2007) with the purpose of sharing the same vision and management "culture" and integrate the sport public oriented mentality with the private profit focus approach of tourism.

Concerning our case, managers interested in consolidating the event network should pay attention to the latent ties between stakeholders which stand waiting for potential future involvement, and integrate in the first place the sports officer, and then the whole hotel association and the nautical club. Another step ahead would be the strengthening of specific ties like the relationship between the hotel organizer and the trade association or the links between the hotel association and the Catalan triathlon federation; these would not only benefit the whole event but also help to generate new sport tourism products (Weed & Bull, 2009). Therefore, stakeholders should be managed and operated like business (Wäsche & Woll, 2010) and the process would benefit from training managers on stakeholder theory (Parent & Séguin, 2007) and network theory (Erickson & Kushner, 1999).

Public bodies, sport agencies and community leaders, by planning the desired legacy before the event, can provide the means to facilitate the

development of the right type of relationships so that the networks become both more cohesive and innovative (Kellett, Hede, & Chalip, 2008). In the case of the Challenge, although the Catalan Tourism Strategy Plan (Catalan Tourist Board, 2006) aims at the consolidation of partnerships in the Catalan tourism industry, this was absolutely ignored by the tourist destination managers.

A second contribution of this study is to prove that social network analysis can help in analyzing whether sport events support the creation of local development through the generation of cohesive and innovative networks between sport and tourism local stakeholders. The tools and measurement criteria used in the analysis have interesting implications for both the managerial and academic fields. The information collected through social network analysis can be used by public sector agencies and other actors involved in destination management to reflect upon and enhance their practices. It can also help public sector events' agencies to deliberate about their current stakeholder direction. This includes also its usefulness in settling specific aims and evaluation measures in strategic planning. Furthermore, it helps to give feedback to the different actors and to help them with a better network management.

Finally, if sport event outcomes in terms of social networks can be easily measured and explicitly displayed, as done in this study, public authorities could have a complementary criterion to explain the consequences of sport events to other stakeholders and in particular to the local community. This could enhance the engagement of actors and generate new internal and external links. As a consequence we should observe an increase of social capital (Misener & Mason, 2006), a growing positive feeling of the diverse stakeholders about the event (Chalip, 2006) and therefore, an increase in the support to the event.

Social network analysis has proved to be of great help in identifying the different stakeholders, their relations and roles and the composition of ties involved in the evolution of a sport event. Integrating social network analysis tools and theory in practical research on sport event management (as advocated by Quatman (2006); Quatman & Chelladurai, 2008) helps to develop some of the latest proposals in this field (Chalip, 2006; Kellett *et al.*, 2008; Misener & Mason, 2006; O'Brien & Gardiner, 2006; Reid, 2008; Stokes, 2006; Wäsche & Woll, 2010; Webb, 2005) and contribute to "close the gap between the analysis of major event impacts and the wider regional development debate" (Jones, 2005, p. 186).

Limitations and Future Research

The main limitation of this research is that being a case study, it does not allow for the universalization of the findings. Many more cases should be analyzed if a generalization of these results were to be done.

Future research should focus, first of all, on continuing the exploration here initiated in order to find additional proofs that the new relationships

found after the event are relationships actually created by the event itself and not consequences or by-products of other strategies.

Collecting new data after each edition of the event for several years would further help with the mapping of the evolution of the networks with time. Also, by enlarging the array of stakeholders studied we could try to better analyze why some relationships became stronger and others kept unchanged after the event. Finally, the investigation of newer events in order to do a comparative analysis would also contribute to a better understanding of this.

Finally, it is our purpose to interact with and participate in the management of diverse events in the near future with the aim of further exploring the issues here described and thus further contributing to this academic debate.

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