

# Màster Tesi

Nom del treball: Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism.

MÀSTER EN DIRECCIÓ I PLANIFICACIÓ DEL TURISME

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## **1. Introduction**

Film tourism is an on growing field of study and it has been recognized as an encouragement for tourism development in various destinations. Hence, tourism stakeholders are noticing film tourism as a potential tool for marketing and promotion of destinations throughout featured films and television production (Connell, 2012).

As it can appeal to wide and diverse audience, destination marketers might use a film in marketing campaigns, when the film is appropriated to the destination. Marketing opportunities appear when the film is premiered, distributed and on release. It is also important to notice that further services and business can be generated through film tourism, encouraging changes on visitor's behavior, such as strengthening and extension of visitor season (Hudson and Ritchie, 2006a).

In order to assist film production companies the first Film Commissions were established in the 1940's. Their main task was facilitating the communication between local services and producers (Association of Film Commissions International, 2012). Film commissions at first justified their existence on the money spent by production companies on the filming process, when reporting the impacts of location films (Riley,1994).

Riley (1994) states the need for tourism bureaus, film commissions and economic development agencies to jointly investigate this secondary effect caused by tourism and how this effect can be managed to increase arrivals, hotel stays, attractions admission fees, restaurant meals and souvenir shops revenue. Research of motion picture film's contribution to tourism visitation could also present a justification for film commissions as in the search for monetary resources to encourage further productions at tourist sites (Riley, 1994).

Hudson (2011) identified that an increasing number of film and tourism stakeholders have begun to work jointly on the dual goal of attracting film production and benefit from the following secondary economic effects of tourism activities. Hudson (2011) also pointed out that the film industry has realized that increasing film tourism can bring benefits to the local film industry. Tourism stakeholders and film stakeholders should meet and work on how those both sectors can obtain maximum exposure for their campaigns (O'Connor, Flanagan and Gilbert, 2008).

Another growing theme of research in tourism is the internet. In the early 1990's the launch of commercial internet was noted by researchers as potential in business,

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and encouraged the incorporation of the Internet in tourism business (Burger, 1997; Clyde and Landfried, 1995). The internet has become an influential technology on travelers' behavior. Customers are searching for travel related information themselves and the popularity of internet applications is making tourism organizations integrate internet technology as part of their strategies on marketing and communication (Buhalis and Law, 2008).

Today, it is widely accepted that the internet can be an effective marketing tool in tourism, being a valuable instrument for suppliers and consumers for information diffusion, communication and purchase online. The fast growing number of online users and increasing amount of online transactions demonstrate the popularity of the technology. Thus, business tourism enterprises, both customer oriented and information intensive, are applying e-business models to achieve organizational goals. An effective website can strength the business and customer relationship and gain larger market segment. Academic research has supported the importance of evaluating website effectiveness (Law, Shanshan, and Buhalis, 2009).

In addition, film commissions are more and more using the internet to promote their locations. Some are redirecting their funds from traditional advertisement to electronic activities. Some offer virtual tours through various film locations as a way of interaction, and others maintain an online database of their regions. The use of the internet also provides the option of selection for other languages, to adapt to their many online visitors. Many websites offer photo libraries, local support and services available, details of prior productions in the area, as well as financial incentives. Some also use testimonials and guarantees to build credibility online. Blogs have also become another online trend to deliver promotional information (Hudson and Tung, 2010).

Baggio (2007) states that the network of websites can indicate more than just an artificial technological network, being the web space of a tourism destination a close representation of the essential economic and social network. Hyperlinks form pattern's structures are based on the plans and design of individuals and/or organizations who own the websites.

Networks are considered a logical response to the context that tourism offers to business managers, and network theory can help to "understand the collective nature of organization action, constraint and coordination within tourism." (Scott, Baggio, Cooper, 2008: 16).

In order to contribute to this new trend of research, this master thesis presents a research on the analysis of film tourism stakeholders in Catalonia applying the network

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analysis approach. The research aims to provide an analysis of the relations between local tourism stakeholders with local film offices through their websites.

Therefore, the development of the present work involved the review of literature on the themes of film tourism and network analysis. Then the main stakeholders of film and tourism of Catalonia were identified and their websites analyzed. The measures indicators for network analysis such as centrality, closeness and betweenness degree have been applied on the analysis of the websites to determine the extent of the relations of film and tourism stakeholders in Catalonia. Results and conclusions are presented on the referred sections.

### **1.1 Objectives**

This master thesis aims to investigate the extent of relations between film office /commission and tourism organizations of Catalonia by an analysis of their websites, in order to identify the existence of joint actions and their collaboration level in the virtual world.

Review of literature regarding film tourism and network science contributes to the objective of developing the framework on the studied themes.

With the aim of analyzing the extent of relations between film and tourism organizations, the present work also objects to apply the network analysis, using measures and indicators of degree centrality, closeness centrality and betweenness centrality.

Thus, the present work aims to provide an analysis of the extent of relations between local film offices/commissions and tourism organizations through their websites applying network analysis method and measuring the indicators of degree centrality, closeness and betweenness degree.

## **1.2 Structure**

This master thesis is structured in three areas of contents. The first section presents literature review on film tourism, with an overview of the context through time, main definitions of film tourism and film commissions and strategies for promotion of locations used by film commissions.

In the second section concepts of network analysis are introduced, as it represents the methodological approach to the present work.

In the third section the methodology of this master thesis is presented. The third section is the application of the network analysis approach on the Catalonia case, with the objective of analyzing the extent of the relations between tourism organizations and film offices, in order to identify the existence of joint actions and their collaboration level in the virtual world. In this section the methodology of network analysis is applied.

In the conclusions the main findings of the master thesis are presented and summarized. Proposals for further research are provided according to the findings presented.

## **1.3 Motivations**

There are several reasons that have motivated this work. The first is personal motivation for studying the approach of film tourism and its development, specially studying the case of Catalonia. The first contact with Catalonia before arriving was through film. Then, the idea for the theme came from the introduction of film commissions in a class during the master.

Another personal motivation is the study of the relations of the film and tourism actors on the Web, since today it represents the main channel of communication between the public and companies and companies between each other. The Web also represents a source of information for tourists and business, so the study of the relations on the Web attracted the attention and motivation for the present work.

Also the opportunity of an internship during the Master at Girona Film Office that enable a practical experience on the studied theme, leading to the professional

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motivation that relates to the understanding the interactions and relations between tourism activities and the film industry and business generated from those interactions.

The main contributions of this master thesis are that it complements the ongoing researches on film tourism, adding a framework on the theme. It also contributes to the application of network analysis on tourism, especially by using the internet and websites to represent the interactions.



## **2. Film Tourism**

In this chapter it is presented the film tourism theme and its study evolution. The definitions of film tourism and film commissions are presented. The chapter ends with the most used strategies for promotion used by film commissions.

### **2.1 Research of film tourism over time**

In a recent study, Connel (2012) states that film tourism has become over the years a major growth sector in tourism research and it has also been recognized as an encouragement for the development of tourism in many destinations.

Cohen (1986) provides primary research on the profitable effects of film tourism for a destination, recognizing the motivation power of film for demand and advises destination marketers that they should identify films that could be used on strategies for place promotion. Urry (1990) indicates that film and television, as non-touristic activities could influence the tourist gaze. Butler (1990) suggests that the influence of film, such as in literature, would increase on destinations.

In the late 1990's after these initial approaches, more exploratory and scoping work have been made, specially by Riley, Backer and van Doren (1998), Riley and van Doren (1992) and Tooke and Baker (1996). They began to draw early research interests, doubts and opportunities. Film and television induced tourism were taken into account for a range of destinations, and the matter became accepted as worthy for further examination in academic literature. (Connel, 2012).

The concept of film tourism presented a growing body of knowledge and gained motion for tourism research by the early 2000s. The knowledge was based on case studies of destinations that had faced some impact from film tourism, being the research focused on its impacts revealing some criticism and negative associations (Connell, 2012). Critics were based on unplanned and unexpected flow of tourists to destinations which were unprepared to this larger flow of tourist (Beeton, 2001; Connell, 2005; Mordue, 2001).

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Busby and Klug (2001) highlighted opportunities for tourism marketing and development. Then, an approach to the main concerns and impacts of film tourism were published on the first book dedicated to the theme (Beeton, 2005).

There have been many studies of film tourism published on tourism research journals. Some authors comment this increasing effect on research literature as a consequence of diverse authors, regions and perspectives (Beeton, 2010; Croy & Heitmann, 2011). Beeton (2010) suggests for future research to be cross-disciplinary and forward thinking.

Table (01) presents an overview of the previous themes of the research on film tourism.

**Table 1: Research on film tourism, themes and focus.**

Themes		Focus
Tourism destination impacts	Scoping the occurrence and effect of film tourism activity	Identification of locations and growth, initially in various UK and US locations and outline of major issues for locations affected by film tourism
	The implication of filming and film tourism activity for communities and small business	Effect on film inducing a different visitor profile, and/or increased numbers to destinations, and consequences for host-guest relationship and existing tourism business
		Film-makers have a social responsibility in filming locations
	Environmental and conservation issues	Effect of film in stimulating demand for vulnerable, remote, historic or sacred sites and experiences
	Economic impacts	Film tourism has a role to play in local economic development in at different levels and in various types of environment
	The role of film in cities	The development, significance and economic impact of film festivals
		The role of film in the creative city and implications for place-making
The cultural construction of film tourism	Cultural appropriation	Hollywood representation of the Mediterranean
		Cultural appropriation and consumption through camera lens
	Representation of heritage	Use of heritage, UK costume drama and consumption of heritage
	Authenticity	Interplay between fictional and authentic locations in film
		Creating fantasy, constructing and fabricating authenticity
Dissonant relationship between actual and filmed world		
Recognizing demand	Acknowledgement that film can influence tourism demand	
	Motivation for	Influence of film on motivations to travel to a destination

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Tourist demand and motivation	film tourism	
	Celebrity associations	Celebrity involvement and perception of destinations.
		Segmentation of film tourists and implications for marketing
	Tourist profiles	Study of cross cultural perspectives in degree of desire to visit film location
Study of females and TV drama		
The film tourism experience	On-locating filming	The importance of simulation and the hyper-real is significant in the experience of the film set tour
	Film set/location tours	Greater levels of involvement tend to create greater visitor satisfaction
		The experience of specific fans of film genre and creation of sites for consumption
		Role of photography in experiencing film sites and re-enacting film scenes
	Tourist performance and re-enactments	Tourism and fandom as a religious metaphor
		Tourism recognition of place through experiencing film destination
		Tourist dissatisfaction at not being able to engage with simulation of TV show at destination
Tourist consumption	Tourist can have life-changing experience through experiencing film destination	
Marketing	Recognizing the potential marketing power of film tourism	Sharing of experiences and consumption through media products
	Branding	The pulling power of film for destinations
	Marketing to film-makers	The opportunities for branding provided by the film and television
		Strategies used by film commissions to attract productions to destinations
	The use and development of destination marketing initiatives	Types of marketing activities engaged in by destinations
		The development and use of movie map concept in the UK
Questioning the demand of film tourism	The potential use of marketing to address problems and opportunities in film tourism destination	
Destination Image	Perception of destination image	The issues of phantom demand and the real value of film tourism; methodological issues is determining its volume and value
	Role of image in decision making	The role of film in changing perception of destination image
	Tourism and the moving image	Strong images can be presented through film and these impact on images and marketability of destinations
	Tourism and the moving image	Media cultures create tourism demand and vicarious consumption as well as corporeal travel

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Tourism, place and media	The mediatization of the tourist gaze	The appropriation and portrayal of place and space in film and TV, socio-cultural references and the techniques used to portray meaning
	Cinematography, representation of place and symbolism	Tourism effects can depend on the power of film-makers; who have power to present clichéd/confirmatory images of space and place to external world
	Media, power and space	Use and meaning of landscape; cultural geography perspectives in understanding film tourism
	Film, tourism and place	The importance and meaning of rurality, rural landscape, and nature The Dominance of the city as a film landscape and the tourism connections

Source: Adapted from Connell (2012)

Film tourism represents growing research sector for tourism research. From the table (01) presented, the main themes approached were regarding tourism destination impacts, cultural approach, demand and motivation, tourist experience, marketing, destination image and media.

The study of film tourism and local websites has not yet had an approach. Therefore, it is proposed in this master thesis a network analysis methodology applied on the analysis of the extent of the relations between film and tourism stakeholders based on their website's relations.

In order to understand film tourism, the next section (2.2) presents definitions regarding film tourism.

**2.2 Definitions and concepts**

Tourists are increasingly going to destinations and attractions they have seen on film or television (Connell, 2005; Hyunjung and Chon, 2008; Iwashita, 2007).

By watching a film, the attractions of a destination are transferred in a story-line, the living form of locations to potential consumers. Destinations can enrich its appeal through viewer's involvement with the film story (Riley, 1994).

The first purpose of a film production is not to encourage viewers to go to the film locations portrayed in the film, but still motion pictures can increase the charm of the locations and attract visitors (Warnick, Bojanic and Siriangukul, 2005).

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Film tourism can be defined as “tourist visits to a destination or attraction as a result of the destination being featured on television, video, DVD or the cinema screen.” (Hudson and Ritchie, 2006a:256). Sharing this point of view, Roesch (2009) describes film tourism as a specific form of tourism that can encourage visitors to see places portrayed in a film or a television production during or after production. In his statement, Roesch (2009) presents the timing of the visit, as being when the film is being produced or after its production, and consequence release.

Tooke and Baker (1996) take another factor into account when they propose that film tourism is the effect of television film and cinema on the amount of visitors that go to the location where the shooting is believed to have taken place. Beeton (2005) use the term “mistaken identities” to describe this situation when filming is only believed to have taken place or the film is set but not filmed. This can be a contradictory aspect of film tourism, but yet mistaken places are noticing the flow of tourists and are welcoming this demand.

The benefits of film tourism are becoming more apparent, such as the appeal to wide and diverse markets and the incentive to destination marketers to use the films as a trigger for marketing campaigns, when the film is seen appropriated to the destination (Hudson and Ritchie, 2006a).

Riley (1994) also states motion picture can maintain prolonged exposure and sustained interest, specially by box-office (successful) films that can increase the awareness of destinations. When gathering knowledge, fewer people are relying on written information being the gratification of effortless film watching and involvement with the story line greater in attracting consumer attention to the destination, more than through promotional brochure, for example. That provides opportunities for enhancing destinations representation on screen, as the barriers of time lack and information are reduced and the ‘hard sell’ impression is not noticed (Riley, 1994).

The opportunities for marketing are generated on the premiere and distribution, as well as during the release window. Through film tourism additional business and services can be shaped and that could stimulate longer and lasting visitor’s season (Hudson and Ritchie, 2006a).

Hudson and Ritchie (2006a) point out the benefits of film tourism that are in general:

- Increase in the number of visitors and profits to local economy;

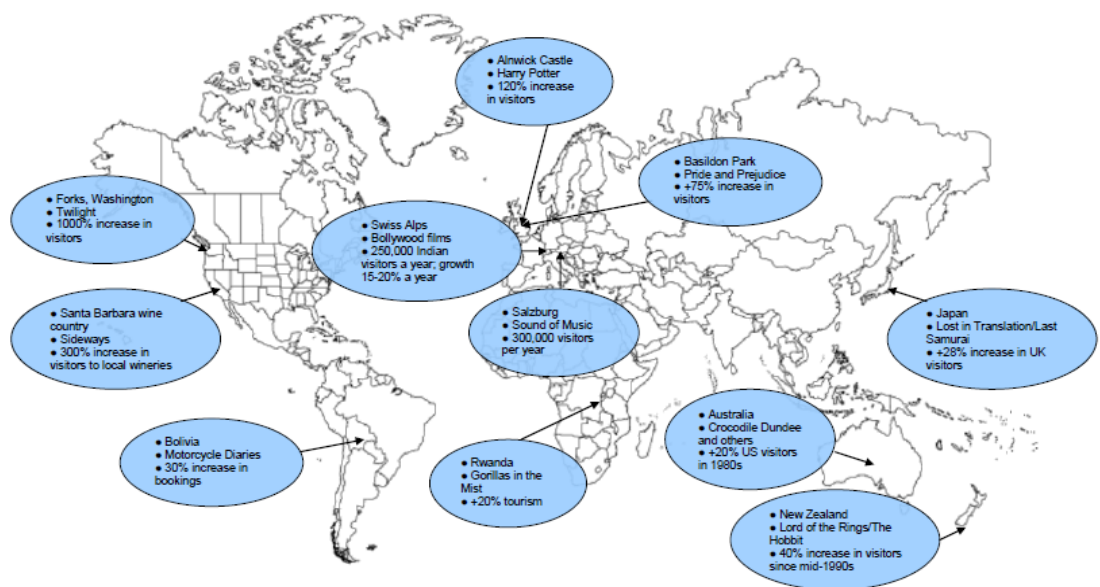
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- Alleviation of the problems of seasonality since the visit to film locations can be offered all year and all weather, not depending on specific seasons for film related tourist activities;
- Places that are considered common and ordinary can acquire status and ambience due their association with fame;
- Wide socioeconomic appeal increasing the potential visitor's market; and enduring effects, since a film can draw visitors years after year.

Another characteristic of film tourism is that it can occur on-location and off-location. Regarding this aspect, Beeton (2005) also points out that film tourism doesn't only happen at external locations (on-location), but it can happen off-location. Production studios and sets are off-locations and these environments can also generate tourist activities such as tours.

The figure (01) below demonstrates on a world scale eleven on-locations featured in films.

**Figure 1: Eleven global illustrations of visitor's numbers on locations featured in films.**



Source: Oxford Economics, 2010.

The locations presented on the map are examples of cities, regions and countries that have experienced growth in tourism visitors' numbers through film productions at the mentioned locations.

Nevertheless some problems have also been noticed regarding film tourism. The benefit from film induced tourism only happens when the films experience success

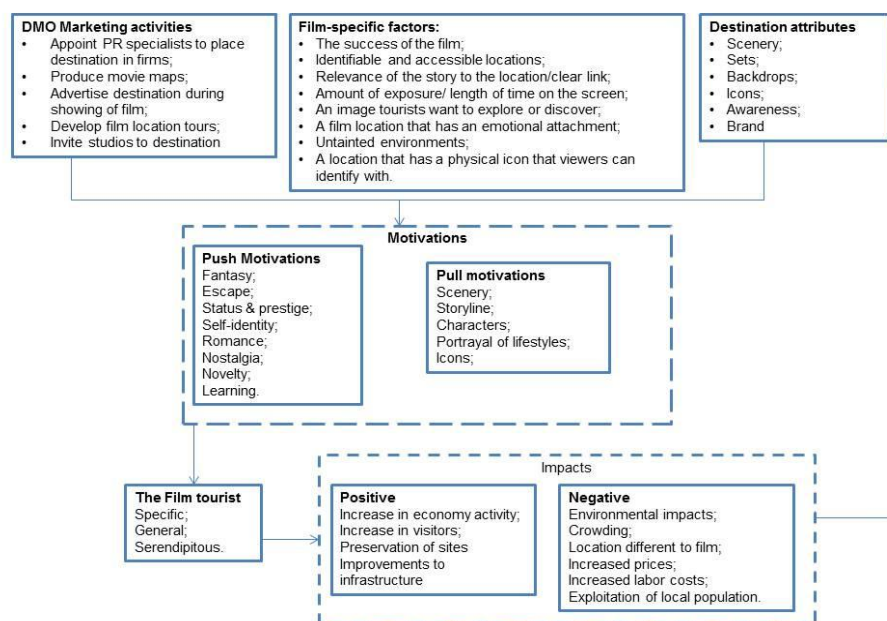
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or receive recognition from markets, being the benefit for destination marketing organizations (DMO) beyond their control (Law, Bunnell and Ee Ong, 2007; Warnick, Bojanic and Siriangukul, 2005). In general film producers don't have much concern for the impacts of film induced tourism and once finished the on location filming they leave without considering the long term impacts on site (Beeton, 2000).

Beeton (2005) also points out as negative impacts the undesirable image, created by a negative storyline and undesired tourism image which brings tourists flows but impacts the community on loss of privacy, crowding and cultural comfort. Another negative impact is the creation of an unrealistic visitor expectation and authenticity aspects, caused when tourists reach the location but they are not as described in the film, leaving disappointment and no satisfaction to tourists.

In order to present an overview of film tourism, figure (01) below illustrates a framework for understanding film tourism:

**Figure 2: Framework of film tourism.**



Source: Hudson and Ritchie (2006a).

The framework presented by Hudson and Ritchie (2006a:258) locates the film tourism in the center represented by push and pull motivations. These motivations can be through characteristics of destination marketing activities, film-specific factors and/or destination attributes. When film tourist occurs, it can generate either positive or negative impacts. These impacts can affect destination attributes.

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Cohen (1986) suggests some variables that can affect the impact of films on tourism as in more general way. The first impact Cohen (1986) points out is when tourist perceive the setting of the film as a possible tour site, as the set leaves an impression on viewer's mind. Another film variable that can impact tourism is the length and the timing that a destination is portrayed on the movie, for example if the destination is portrayed on the climax of the film that can also leave a strong impression on viewer's mind. Another variable is if the settings are explicit, as the more explicit the setting the more influence it will have.

Briefly, film tourism can be mainly defined as tourist visit to a place portrayed in featured film, to the film location itself or in some cases to locations believed to have been shot. Film can motivate tourism visitation and planning from destination marketing organizations can be required, in order to avoid negative impacts. Film tourism can cause positive or negative impacts to the location, depending on the extent of planning and actions of the local organizations. Tourists' motivations can be influenced by DMO marketing activities, film factors and/or destination attributes. When the film is appropriated to the destination, destination marketers might use a film in marketing campaigns (Hudson and Ritchie, 2006a).

Therefore, the main concepts of film tourism are presented on this section, as well as the possible positive and negative impacts of this activity. The origin and functions of a film commission are presented on the next section.

### **2.3 Film Commissions**

The first commission was established in the United States in the late 1940's as a response to the need for film producers to gain local government cooperation to assist on coordination of local services such as police, road and highway departments, fire department, among other municipal and government services (Association of Film Commissions International, 2012).

In North America, the Moab to Monument Valley Film Commission established in 1949, represents the longest in service time and it was founded as a result of the interest of shootings in the area and the need for organization of services required for the shootings. In 1969, the Colorado Film Commission was the first government approved film commission and Colorado is recognized as the first film commission at



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the Association of Film Commissions International (Association of Film Commissions International, 2012).

In the world, the Association of Film Commissions International (AFCI) it is a non-profit educational organization that was founded in 1975, with the purpose of assisting the growing needs of on-location film and television production. The association gathers film commissions that are willing to share information and knowledge with each other's experience. Today, the Association has a worldwide network of more than 300 commissions, in 30 countries, being all of them dedicated to the business of facilitating on-location film and television production, an activity that generates billions of dollars each year around the world (Association of Film Commissions International, 2012).

Film commissions are established by cities, countries, states provinces or federal governments and are usually operated and founded by various agencies of government, as governor's or mayor's office, county board of supervisors, chamber of commerce, convention and visitors bureaus, travel commissions and departments of business and economic development. Their main responsibility is the attraction of audiovisual productions to their area, which can benefit from the hiring of local services and talents, rental of local equipment, use of hotel rooms, car rentals, catering services among other goods and supplies on location (Association of Film Commissions International, 2012).

The main functions of a film commission are: to facilitate on location filmmaking offering production companies a complete range of services through a central contact point; to provide information regarding film procedures, permits and guidelines; liaison with government departments and agencies that connect producers with local communities and assist on arranging filming on public property and spaces; information source for information about the region and services such as site location photography, location, library, regional scouting and support for logistical regarding crew, stages, equipment, support services and talent (Association of Film Commissions International, 2012).

Film offices are locally responsible for promotion, hosting and management of productions, as well as providing producers what they need to carry out the shooting under the conditions established (Barcelona Catalunya Film Commission, 2012).

The next section presents some strategies of promotion applied by film commissions to attract productions and tourism activities.

## **2.4 Strategies of promotion used by Film Commissions**

As presented on previous sections (2.2), film tourism can offer destination the opportunity to generate additional revenue, economic development and increase of visitors flow. Film tourism is complex and dynamic, and its success relies on various factors that are not on control of the destination (Hudson and Ritchie, 2006)

Destination or place marketing refers to strategic planning and conscious application of publicity and marketing for the promotion of business investment and visitation to a particular country, state, region or town as well as using it to raise exports (Nielsen, 2001). Destination marketing requires cooperation and effort from all sectors of the community, as participation from government, business, interest groups, residents and visitors (Beeton, 2005).

According to Beeton (2005), places are becoming products, and as products they must be designed and marketed strategically, so that they won't face risks of economic decline.

Gold and Ward (1994) define place promotion as the use of publicity and marketing with the purpose of communicating selected images of specific locations to a target audience.

For tourism activities, the placing of a destination in a film or a television serie is ultimate in tourism product placement. The tourism industry noticed the importance and power that film and its locations can have on destinations, and has been present at film festivals (Morgan and Pritchard, 1998).

Film, television and travel programmes can have the power of raising the profile of places; hence there has been more collaboration between tourism agencies and film makers in order to promote the destinations as possible locations (Morgan and Pritchard, 1998).

Hudson and Tung (2010) identified the main marketing strategies used by film locations. There are three similar approaches employed when film commissions promote their locations to film producers: product differentiation, service differentiation and cost advantages.

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Product differentiation can assist commissions in gaining competitive edge by creating a niche position through the deliver of exclusive range of activities and key competencies that competitors find hard to emulate (Hudson and Tung, 2010).

Service differentiation refers to the promotion of their service, therefore some film commission build solid structure of services (network of hotels, guesthouses, caters, transport) and/or offer niche labor and expertise (Hudson and Tung, 2010).

Another common marketing strategy used is cost advantages that are incentives such as cash back and income or corporate business tax cessations (Hudson and Tung, 2010).

Hudson and Tung (2010) also identified the promotional tools employed by film commissions with the purpose of promoting their location advantages to producers. The six main tactics are: advertising, sales promotion, joint promotion, public relations, online marketing, direct marketing and personal sales.

In advertising the main vehicles are printed and electronic media and brochures, while outdoor advertising is not used frequently. The production guide is the most used medium. The location brochure is the most important and expensive item in the marketing financial plan. Some film commissions also use new technology, for example CD-ROMs, DVDs and the internet. Yet one the most effective marketing tool available to film commissions is photography, most of them have a photo library with all kinds of available locations (Hudson and Tung, 2010).

Sales promotions is often used on advertising, that presents the film commissions name on handouts as a reminder like calendars, hats, pens, T-shirts, water bottles (Hudson and Tung, 2010).

Joint promotion is used when film commissions work together with other institutions on advertising campaigns. They joint actions with national, regional and local film offices, hospitality industry and other production services. They can also partner with Destination Marketing Organizations (DMO) to encourage film productions in their region. Tourism consultants are noticing an increase on the tourist flow that choose to visit a location featured in television and film, therefore, the tourism sector is also aiming on benefit from this phenomenon (Hudson and Tung, 2010).

Public relations include various tools used by film commissions such as generating publicity and campaigns, press release and press conference; participate in travel trade shows, exhibitions or conventions and film festivals. Familiarization tours

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(fam trip) are also used as a method to expose their products on location, the channel of distribution (Hudson and Tung, 2010).

Online marketing has been growing since last decade. Film commissions are more and more using the internet to promote their locations. Some are redirecting their funds from traditional advertisement to electronic activities. Some offer virtual tours through various film locations as a way of interaction, online database of their regions. The use of the internet also provides the option of selection for other languages, to adapt to their many online visitors. Many websites offer photo libraries, local support and services available, details of prior productions in the area, as well as financial incentives. Some also use testimonials and guarantees to build credibility online. Blogs have also become another online trend to deliver promotional information (Hudson and Tung, 2010).

Direct marketing and personal selling are very important marketing strategies applied by film commissions. Direct marketing comprehends telemarketing, mail, internet and direct response television. Personal selling regards one-on-one campaigns, such as trade shows, film festivals and maintenance of individual customers. As the industry is still determined by personal relationships, some film commissions make use of the personal selling over other tools, as the potential benefit can compensate the extra costs. Some commissions send out salespeople to find new customers, some have marketing offices in places other than the location itself, and some exhibit at trade shows and film festival (Hudson and Tung, 2010).

The table (02) presents some examples of some actions used by destinations to attract film producers and actions regarding touristic activities.

**Table 2: Examples of some actions used by destinations to attract film producers and actions regarding touristic activities .**

Location / Tourism Organization	Actions	Authors
VisitBritain	Work with film distributors Tactical promotions to ensure locations are exposed Plan with studio 12 month in advance of release date; Movie Maps (VisitBritain's most successful printed product, generated media coverage in the country and overseas) Attract Bollywood productions	Hudson and Ritchie (2006a); Hudson (2011)
Canada	Public relations specialist to place country in films, maximum exposure	Hudson and Ritchie (2006a)
Bahamas	Film Commission is under the auspices of the Ministry of Tourism Ministry involved as soon as it receives a script Investment on films to ensure maximum exposure	Hudson and Ritchie (2006a); Hudson and Tung (2010)

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	Public relations specialist to place country in films, maximum exposure Investment of US\$ 16 million on “After the sunset” to ensure maximum exposure	
Chicago’s Office of Film and Entertainment Industries	Employed product placement specialist	Hudson and Ritchie (2006a)
Australian Tourism Commission	Develop relationships with film industry Collaborated with Disney (Finding Nemo): first DMO that intended promotion through an animated film Movie Maps	Hudson and Ritchie (2006a); Hudson (2011)
New York	Movie Maps Concierge Service: support to entire production cycle	Hudson and Tung (2010)
Santa Barbara Conference and Visitors Bureau	Movie Map: “Sideway” – guide was published before the release: attracted tourists to featured businesses and sold many copied of the guide	Hudson and Ritchie (2006a)
Washington DC Tourism	Website promoted a self guided tour for the movie National Treasure	Hudson and Ritchie (2006a)
New Zealand	Tourism board “The Lord of the Rings” as promotional piece –exposure Destination guide with “The Lord of the Rings” sets; Media clipping mentioning that film (The Lord of the Rings) was being shot there Film stars seen on location (promote fashion, cafés); Film website that links film to locations: Tourism New Zealand’s website with parts promoting “The Lord of the Rings” and its film sites – national’s tourism website had more than 1 billion hits in a year	Hudson and Ritchie (2006a); Hudson and Tung (2010); Hudson and Ritchie (2006b); Hudson (2011)
Kansas’s Travel and Tourism Development Division	Spends US\$ 1.2 million annually on tourism and film promotion	Hudson and Ritchie (2006b)
Singapore tourism board	In 2004: 3 year US\$ 7 million scheme to appeal to international filmmakers and broadcasters; Approved projects: special help with resources and work permits	Hudson and Ritchie (2006b)
Tourism Authority of Thailand (TAT)	Advertised attractions during the release of “The Beach”, joint activity with 20th Century Fox to exploit popularity of Thai beach in the wake of the film Heavily advertising in cinemas Familiarization trips for United Kingdom’s journalists and travel agents Awareness campaigns: financing holiday prize on BBC game show	Hudson (2011)
South Africa Tourism Department	Helps visitation of film scouts, finding locations and provides technical support and accommodation for production staff	Hudson (2011)
Malta Tourism Authority	Cash incentive, logistical support to film and television productions that portray “Malta as Malta” Malta Film Commission: host of press trips to promote island as “movie location”	Hudson (2011)

Source: Own elaboration.

The table presents some examples of how destinations can attract film productions and generate some touristic activities to their locations.

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Briefly, the strategies used by film commissions to attract productions and promotion of the featured film and are the linkage with tourism organizations, as they alliance in order to attract film producers and also viewers and possible visitants.

The next section presents the network science theme.

### **3. Network Analysis**

In this section the key concepts of network science, network studies, complex system and web as a complex system and the tourism approach are presented.

#### **3.1 Network Science**

A network can be defined as a set of pieces, called vertices or nodes, with connections between them, called edges or linkages. In the world there are a large number of systems shaped as networks, such as the internet, social networks of individuals, organizational networks and business relations among companies, food webs and many others (Newmann, 2003).

A network is usually represented by a drawing in which the many elements are displayed as dots and the connections between them as lines joining pairs of dots. The drawing, as mathematical concept, is called a graph. The mathematical graph theory is used as the framework, describing it and its features (Scott, Baggio and Cooper, 2010a).

During the 20<sup>th</sup> century the mathematical graph theory has developed into a significant body of knowledge (Newmann, 2003). In social science the application of network by using graphs and related social network analysis instruments were developed during the first half of the 20<sup>th</sup> century. This line of research takes as basic concept that individuals are influenced by the structure of the social interactions, and that influence affects their decisions, beliefs and behavior (Scott, Baggio and Cooper, 2010a). The focus was on the pattern of the relationships (Newmann, 2003).

By the 1990's, network analysis had become a typical diagnostic and prescriptive instrument in applied fields, for example in management and organizational studies, at the same time methods and possibilities of the social network analysis had been established and formalized (Cross, Borgatti and Parker, 2002; Haythornthwaite, 1996; Tichy, Tusman and Fombrun, 1979; Freeman, 2004; Scott, 2000; Wasserman and Faust, 1994; Wellman and Berkowitz, 1988). However, the problem on these studies was that they tended to look social systems as static, ignoring the dynamic nature of organizations and groups. At the same time, scientists were examining

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natural and artificial systems and had recognized the dynamic behavior that was non-linear and over time complex or chaotic pattern (Baggio, Scott and Cooper, 2010a).

On the second half of the 20<sup>th</sup> century, detailed studies and models for this nonlinear complex systems were enabled by modern computers, although were based on ideas from the 18<sup>th</sup> century (Baggio, Scott and Cooper, 2010a).

In the late 1990s, the analysis of networked systems in the context of statistical physics provided a strong theoretical support to these investigations and justified the exploration for universal properties of networked objects. These proposed models have enabled the description of static, structural and dynamic characteristics of a large number of natural and artificial complex networks, and also have emphasized the connection between topological properties and functionality of a system, independent of the kind of systems components (Boccaletti, Latora, Moreno, Chavez and Hwang 2006; Caldarelli, 2007; Watts, 2004) Thus, in recent years, there has been a new movement in network research. The focus changed from the analysis of single small graphs and the properties of individual vertices to large scale statistical properties of graphs. This new approach has been motivated by the accessibility of computers and communication networks that can help on the gathering and analysis of the data on a larger scale (Newman, 2003).

Therefore, social network methods have been developed during the past 50 years as part of the advances in social theories, empirical research and mathematics and statistics. Social network analysis is centered in the concept of the importance of the relations between interacting units (Wasserman and Faust, 1994).

The social network analysis is an attempt of solving non-standard analytical problems, being interested in the interrelatedness of social units. The dependence of the units is measured with structural variables. Some theories present the argument that units are influencing each other instead of acting independently (Wasserman and Faust, 1994)

Hence, social network analysis should provide a “precise way to define important social concepts, a theoretical alternative to the assumption of independent social actors, and a framework for testing theories about structured social relations.” (Wasserman and Faust, 1994:17).

The use of the “graph theory in a social network analysis is the identification of the ‘most important’ actors in a social network” (Wasserman and Faust, 1994: 169).



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Measures have been designed to highlight the “importance” differences between the actors involved, describing the actors’ locations in a social network, being the most important situated in strategic locations in the network (Wasserman and Faust, 1994).

In this section, the development of the concepts and application of network analysis in social science was presented. In the next section network analysis on tourism is approached.

### **3.2 Network and Tourism**

Tourism can be defined as a system in which interdependence is crucial (Bjork and Virtanen, 2005) and the collaboration and cooperation between the many different organizations involved in a tourism destination generate the tourism product (Pechlaner, Abfalter and Raich, 2002; Tinsley and Lynch, 2001).

A tourism destination can be considered as a cluster of interrelated stakeholders involved in a social network, which by its interactions together can meet visitor’s needs and produce the experience consumed by the travelers, tourism product (Scott, Baggio and Cooper, 2010b).

The destination stakeholders consist of “accommodation business, attraction, tour companies and other providing commercial services, government agencies and tourism offices, as well as representatives of the local community.” (Scott, Baggio and Cooper, 2010b: 51)

In tourism activities it can occur that the source markets are far and geographically spread in remote areas, there can also be many small businesses with high staff turnover operating in a mutable business environment (Dollinger, 1990).

In other words:

“(…) tourism has always been a networked industry and the usual description of tourism as a fragmented and geographically dispersed industry belies a pervasive set of business and personal relationships between companies and managers in business such as national tourism offices, hotels, attractions, transport, tours, travel agents and restaurants. It is this network of relationships that allows the tourism industry to deliver its product and overcome the problem of fragmentation. Therefore it can be

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argued that the tourism industry provides the ideal context for study of networks.” (Scott, Baggio, and Cooper, 2008, p.1).

Hence, networks can help compensate the fragmented nature of tourism activities. These networks can be based on informal local alliances, formal partnership agreements, local, regional or national tourism organizations or other government structures (Scott, Baggio and Cooper, 2008).

Networks in tourism are identified as changeable and complex, developing and evolving as a result of demand, environmental and organization changes (March and Wikinson, 2009). Hence, the basic idea of tourism destination management is that the cooperative planning and organizational activities can be effective on the joint interactions, that when improved can benefit the individual's stakeholders (Scott, Baggio and Cooper, 2010b).

Studies in tourism have shown a growing interest in networks. The studies are divided into two streams of application: networks as model to analyze evolutions of business, product development and opportunities to improve (Tinsley and Lynch, 2001); and networks as an important way to manage public and private relationships and the structure of tourism governance (Palmer, 1996; Tyler and Dinan, 2001; Pforr, 2002).

Consequently networks are considered a logical response to the context that tourism offers to business managers, and the network theory can help “understand the collective nature of organization action, constraint and coordination within tourism.” (Scott, Baggio and Cooper, 2008: 16) and the whole destination network can be represented as a unit of analysis, rather than each individual stakeholder.

### **3.3 Complex Systems**

The study of complex networks is still on early stages of development (Newmann, 2003). There is no agreement of a formal definition, even with the growing debate and literature study of the theme (Scott, Baggio and Cooper, 2010a).

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In order to characterize a system as complex and adaptive Scott, Baggio and Cooper (2010a) list the properties that these systems present, such as described on the table (03) below:

**Table 3: Properties of complex systems.**

---

The system is composed of a large number of interacting elements;
The interactions among the elements are nonlinear;
Each element is unaware of the behavior of the system as a whole, it reacts only to locally available information;
The system is usually open and in a state far from equilibrium;
Complex systems have a history, their actual and future behavior depend upon this history and are particularly sensitive to it.

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Source: Scott, Baggio and Cooper (2010a).

The tools used to the study of complex systems originate from the three main areas of research: nonlinear dynamics, statistical physics and network science (Amaral and Ottino, 2004).

A tourism destination as a socio-economic system “is the archetype of a complex adaptive system.” (Baggio, 2007:728). It presents many characteristics of complex adaptive system such as: non-linear relationships between the system elements (public and private components), self-organization of the structures and resilience to external impacts, such as epidemics, international crises, conflicts and political uncertainty.

### 3.4 Web as complex network

Several scholars consider the virtual network as representative of the social relationships between the actors that origin them. Wellman (2001) states that computer networks are essentially social networks, connecting people, organizations and knowledge. Newman (2003) identifies the Web as important example of information network.

The study of the web can be taken in two different levels. The first considers the physical machines, the undirected network of interconnected vertices consisting on hosts (end user computers), servers (that provides a network service to other

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computers) and routers (those which drive the information across the network). The servers, routers and internet protocol (IP) networks are managed or owned by entities, such as an organization or a company, and are grouped in autonomous systems (Hawkinson and Bates, 1996). These autonomous systems can be identified as an Internet Domain (Scott, Baggio and Cooper, 2008).

The second level, defined as a logical level, is the collection of contents, such as information, data and services, that are provided on the net through a service called World Wide Web (WWW or Web) (Scott, Baggio and Cooper, 2008).

One side of the Web technology is the hypertext architecture of data which take the form of text, graphics, sound or animation. The hypertext architecture manages data as collections of chunks and links, being these chunks stored as computer files that are associated with each other by pre-established linkages. Hence, “the website can be seen as a network of chunks, one chunk or a number of them together make up a webpage which is displayed onscreen as viewers reach the corresponding address”. (Wan and Chung, 1998:116).

Applying the network science term, the web can be described in terms of a “large directed graph whose vertices are the html documents and whose edges are the hyperlinks connecting one document to another” (Scott, Baggio and Cooper, 2008: 195). The network of Web pages contains information and the webs are linked together by hyperlinks from one page to another (Newman, 2003). The measurement and characterization of the webpage – hyperlink networks have had many metric proposed, and most of them are derived from those used for analyzing any kind of network. (Scott, Baggio and Cooper, 2008)

The use of the hyperlinks on the web is viewed by some private or public organizations as a strategic resource, and the structure of this network can be developed by specific communications goals, rather than by accidental choices (Park and Thelwall, 2003; Vaughan, Gao, and Kipp, 2006).

Scott, Baggio and Cooper (2010a) propose that: “the network of websites belonging to a cluster of (tourism) companies is a reliable sample of the whole socio-economic network formed by them.”

Hence, the present work refers to the study of the relations between film and tourism websites and their hyperlinks in order to analyze the extent of relations between their websites. Taking into account that some organizations view the links as

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a strategic resource and the network of their websites is a reliable sample of their socioeconomic relations, the analysis of the websites of film and tourism organizations of Catalonia are presented on the following section.

### **4. Analysis of website's network of Catalonia's film and tourism organizations**

In this section of the work the analysis of the website's network is presented. First the methodology applied is defined and the study is delimited. Then a presentation of data of the Barcelona Catalunya Film Commission is made to introduce the film offices and commission studied. This section presents each city that has a Film Office/Commission, its location and a brief description of touristic activities in the city.

#### **4.1 Methodology**

For the purpose of the investigation and development of the master thesis, this section presents the techniques and procedures applied to define the studied tourism and film organizations, the network analysis measures indicators and the computer software used to handle data.

Derived from graph theory, the network analysis provides an effort on describing the structure of relations between given entities. The relations are displayed by links and the entities by nodes. Quantitative techniques are applied to produce significant indicators and results to the study of the characteristics of the whole network and individual's position within the network (Shih, 2005).

This master thesis uses a model of appliance of the network analysis developed by Baggio (2007) on the study of a website network of a tourism destination, in which it is used "network theoretic metrics to gauge the static and dynamic characteristics of the webspace." (Baggio, 2007: 727). Thus, it is here presented an application of the network analysis to explore the structural characteristics of multiple websites of film offices and tourism agencies, where the websites are treated as nodes and the hyperlink between websites are treated as a series of links. The links between websites

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have been identified by using a simple crawler and complementary information have been obtained by visual inspection of the websites (Baggio, 2007).

The first part of this work consisted on identifying the actors of the network. Actors are defined as social entities, and they can be individual, corporate or collective social units. The use of term actor does not imply that they have the desire or ability to act. Some methods make possible the study of actors of conceptually different types or sets (Wasserman and Faust, 1994). For the present work the actors identified are from different types, being film actors and tourism actors.

Film actors will include actors responsible for planning and promoting audiovisual activities at the city. Film festivals represent the opportunity for promotion and presentation of the locations to the audiovisual sector and production companies (Hudson and Tung, 2010). Therefore film offices/commissions, film festivals, Consortium for Catalan films and TV and festivals coordinator entity of Catalonia (CI&VI) were included as common actors to all cities analyzed.

In specific cases, such as Barcelona, Anoia, Girona and Terrassa, some film actors are included for their potential of promotion of audiovisual activities in the city and territory. The included actors under this condition are: Institut Català de les Empreses Culturals (ICEC) in Barcelona; De Verità Produccions S.L and Rosebud Films and Museu Molí Paperer de Capellades in Anoia; Cinema Truffaut (Col·lectiu de Crítics de Cinema de Girona), Museu de Cinema and Clúster TicMedia de Girona in Girona; and Parc Audiovisual de Catalunya in Terrassa. Those actors might develop opportunities for business and partnerships, and as strategies for promotion with tourism organizations.

As part of the film actors local film offices were included. The local film offices have been identified through the Barcelona Catalonia Film Commission (BCFC) website and official documents Barcelona Catalunya Film Commission: Balanç Annual (2011, 2009) and also official documents from the Institut Català de les Empreses Culturals: Memòria de l'Institut Català de les Indústries Culturals (2011).

The BCFC, as a regional promotion office, takes under its responsibility productions all around Catalonia, hence it can be taken as the main database for the all the municipalities and projects of the audiovisual sector in Catalonia. (Barcelona Catalonia Film Commission, 2012)

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In 2011 the network of the BCF presented 166 municipalities (Barcelona Catalunya Film Commission, 2011). Since the focus of the present work is on Film Offices /Commission in Catalonia, from the 166 possible locations, 10 were defined as possible the elements to be analyzed within this work fulfilling the film office/commission criteria.

The table (04) presents the Film Offices/Commission identified within the BCFC Network. (Barcelona Catalonia Film Commission, 2012)

**Table 4: Film Offices/Commissions in the Barcelona Catalonia Film Commission.**

Barcelona Catalunya Film Commission	Lloret Film Office
Anoia Film Office	Torroella de Montgrí Film Commission
Girona Film Office	Roses Film Office
Sitges Film Office	Terrassa Film Office
Tarragona Film Office	Tortosa Film Office

Source: Own elaboration.

An evaluation of the film offices websites identified was conducted in order to validate the structure of the offices and by this first evaluation the Tortosa Film Office was excluded from the analysis, since there is no mention of the services of the film office on the websites of responsible organizations, neither its own website.

Tourism actors included were those in the area of territorial planning and promotion organizations, as being identified in literature review that joint action between this organizations and film producers should benefit film tourism. (Hudson, 2011). The tourism actors were identified in local and regional level. In local level they are the following:

- City halls (Ajuntament);
- Department of tourism (Departament de Turisme);
- City's tourism boards (Patronat);
- Department of Promotion and Occupation (Departament de Promoció i Ocupació);
- Economic and Social Council (Consell Econòmic i Social);
- Tourist offices (Oficinas de Turisme);
- Conventions bureau (Convention Bureau);
- Chamber of commerce (Cambra de Comerç);
- Agency of tourism promotion (Agència de promoció turística).

Regional tourism actors included were:

- Provincial Councils (Diputació);
- District Council (Consell Comarcal),
- Tourism Consortium (Consorti de Promoció Turística),
- Regional Projects for Development (Turisme a prop de Barcelona, Projecte Portals de Montserrat, Sitges Model XXI)
- Regional Tourism Boards (Patronat),
- Visitor's center (Centre de Visitants);
- Association of public and private agents for the development of tourism (Taula Oberta de Turisme de l'Anoia);
- Tourism Associations (Associació de Turisme).

Local and regional tourism actors included are those in the areas of, economic and territorial promotion, planning and economic and tourism development. The tourism actors listed were included because of their organizational characteristics and potential for development of projects, joint actions and business opportunities with the audiovisual sector. Tourist office and visitor centers are included for their potential of reaching tourists and providing information, being a valuable tool for promotion of film tourism related activities.

With film and tourism defined, the measure indicators of the network analysis are presented. Hence, in a social network one of the uses of the graph theory is the identification of the "most important" actors (Wasserman and Faust, 1994).

A variety of measures have been designed to "highlight the differences between important and non-important actors. (...) All such measures attempt to describe and measure properties of 'actor location' in a social network." (Wasserman and Faust, 1994: 169). Strategic locations within the network are occupied by the most important actors.

In network analysis, the idea of centrality of individuals in their network is one of the primaries to be followed, and it is applied to obtain positional features of individual nodes within networks (Scott, 2000). Freeman (1979, 1980) identifies three forms of centrality: degree centrality, closeness and betweenness.

In this research the centrality measures of degree centrality, closeness and betweenness degree are applied to analyze the extent of relations between local film



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offices/commissions and tourism organizations through their websites applying network analysis method.

A simple definition of actor's centrality is that central actors should be the most active, when it has the most ties to the other actors in the graph. This very active actor should have a maximal centrality index. In a digraph, the degree of a node (actor) is the number of nodes that are adjacent to (*indegree*) or from (*outdegree*) another node, depending on the direction of the arc. An actor with a high centrality, measured by its degree, is in direct contact or is adjacent to many other actors, this means that it should be recognized by the other as a major channel of relational information, the in-degree in this case represents measures of receptivity or popularity. In the contrary, actors with low degree are peripheral and not active in the relational process of the network. The *outdegree* measures the expansiveness of the node, the actor which nominates others (Wasserman and Faust, 1994)

The second view of an actor's centrality is established on closeness, an actor that is central is the one which can rapidly interact with all others. This measurement indicates how close an actor is to all others in the network. Freeman (1979) proposed that the closeness of an actor should be measured by the geodesic distances function. A geodesic is the shortest path between two nodes, and the geodesic distance is the length of a geodesic between a pair of nodes, in other words the length of any shortest path between two nodes, some researchers equaled closeness with minimum distance. This type of centrality depends also on indirect ties (Wasserman and Faust, 1994). In a directed network, closeness centrality can be termed in-closeness and out-closeness, referred to inward and outward connections. (Shih, 2005)

Betweenness centrality refers to fact that interactions between two nonadjacent actors can depend on other actors, especially those actors which are on the path between the two. Therefore, an actor is central "if it lies between other actors on their geodesics, implying that to have a large betweenness centrality, the actor must be between many of the actors via their geodesics." (Wasserman and Faust, 1994:189).

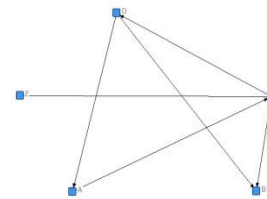
After identifying the elements of the network, an asymmetric matrix can be built, where the rows and columns index the websites in the graph. The matrix describes sociometric choices that portray the presence or absence of a given type of relation (Degene and Forse, 1999). The asymmetric matrix was built by filling with a 1 in the (*i,j*)th cell (row *i* and column *j*), when there is a directed hyperlink from *i* to *j*, and 0 in the

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contrary case (Shih, 2005). The figure (03) demonstrates an example of the matrix and a simple graph:

**Figure 3: Example of the matrix and a simple graph.**

	A	B	C	D	E
A	0	0	1	0	0
B	0	0	0	0	0
C	0	1	0	1	1
D	1	1	0	0	0
E	0	0	0	0	0



Adapted from Shih (2005).

The matrix, the graph and the indicators of the network analysis were calculated by UCINET 6.411, which is the most widely and used network analysis program. (Borgatti, Everett and Freeman, 2002).

The matrix was built by checking the existence of hyperlinks between film and tourism actors' websites. In some cases the checking of the hyperlinks between websites presented some singularities. It occurred in some cases that the website of one actor carries under its own website domain the content of another identified actor. Since the website is the same for those actors, the hyperlinks could have had the risk of double checking, because they originate from the same source. This risk is due the fact that the hyperlinks that adjacent from the different sections of the same main website can be double checked. In order to avoid duplications of the links, the hyperlinks from the sections were checked only once as adjacent from the main website.

In order to verify the information of the websites analysis, interviews with open questions were sent by email to the main actors: film offices and tourism boards of each city. The interview questions were sent to 9 film offices and 9 tourism boards by email, with the intent of reaching the responsible contact that could answer them according to each case. Email was chosen because of time and budget constraints. The interviews were used for a practical approach of the theme. From the 18 organizations approached four provided information that are presented in this work which are: marketing responsible of the Barcelona Catalunya Film Commission,

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tourism department of the Girona city Hall responsible, Girona Film Office responsible and tourism department of Roses responsible.

The next section of the work presents the application of the network analysis on the film and tourism websites of Catalonia.

### **4.2 General Information of Barcelona Catalunya Film Commission**

This section presents an overview on how the Barcelona Catalunya Film Commission works and their main results regarding film productions in the Catalan territory.

The Barcelona Catalunya Film Commission (BCFC) is a service that was established by the Barcelona City Council and the Government of Catalunya in 1996. It has the purpose of promoting the audiovisual industry and Catalunya as a film location. It is a non-profit regional promotion office that has the objective of serving the public and audiovisual sector. The office's services are delivered free of charge (Barcelona Catalunya Film Commission, 2012).

The BCFC is composed of a network of 166 municipalities (Barcelona Catalunya Film Commission, 2011). Since the focus of the present work is on Film Offices /Commission in Catalonia, from the 166 possible locations, 10 were defined as possible the elements to be analyzed within this work fulfilling the film office/commission criteria.

For producers the BCFC works on the support acting as an intermediary between these and the different departments of the government, in order to help the process of shooting permits and application for exemption and or reduction of fees for producing. It also arranges meetings to prepare for shootings in the city of Barcelona. The BCFC works with a database of audiovisual companies and professionals in Catalunya and locations around the country (Barcelona Catalunya Film Commission, 2012).

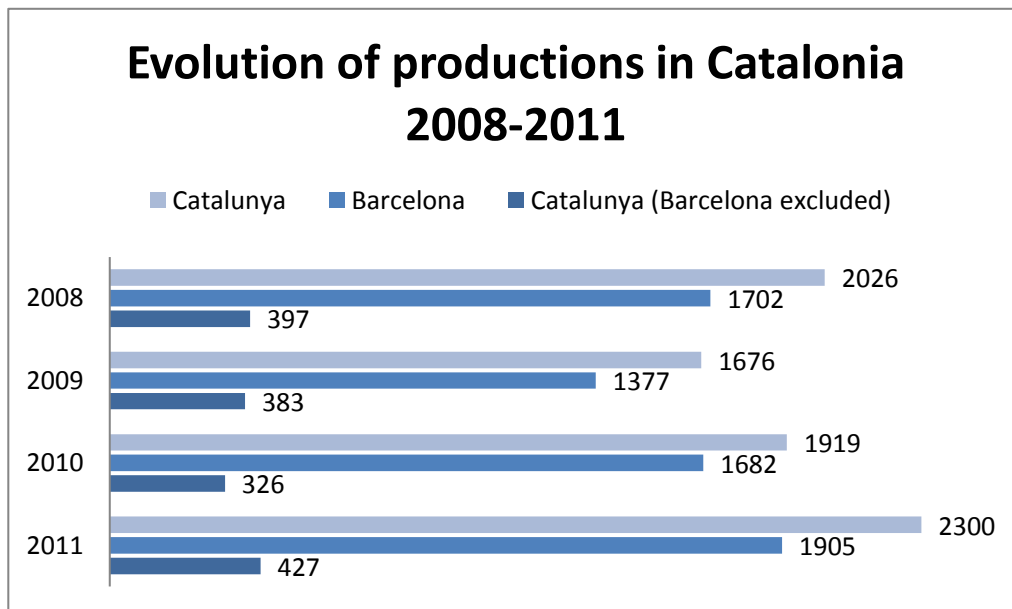
The BCFC also acts as a territorial network, representing various cities. It organizes meeting with members of the network to increase synergy, share experiences and present case studies with the participation of municipal and/or production teams who want to collaborate (Barcelona Catalunya Film Commission, 2012).

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During the year, the BCFC does promotion actions to attract productions to promote the territory and the industry. In 2011 the promotion actions were: attendance at national and international festivals and markets, e.g. European Film Market – Festival de Cinema de Berlin, Conference organized by the Association of Film Commission International, reunions with production companies, Festival de Cinema de Cannes, Conference organized by European Audiovisual Observatory Film and TV. The BCFC has also published publicity on several specialized film magazines. There is also an Audiovisual Production Guide, which is distributed to producers, freelancers, associations, national and international institutions, schools, City Halls, Generalitat de Catalunya and the department of Institut Cultural de les Empreses Catalàns and Barcelona agencies.

In 2011 the BCFC has registered a total of 2.300 productions in Catalonia, 18% more than the previous year. By the end of the year, 2011, the cities registered to the BCFC network were 166 (Barcelona Catalunya Film Commission, 2011). The graph (01) below demonstrates the evolution of the production in Catalonia from 2008 to 2011.

**Graph 1: The evolution of the production in Catalonia from 2008 to 2011.**



Source: Barcelona Catalunya Film Commission (2011).

As demonstrated on the graph (01) there has been an increase on production in Catalonia, in the city Barcelona and in the territory as well. From this total of productions, they can be divided into different typologies, and its distribution is presented on the table (05) below.

**Table 5: Production distributed according to typology.**

Productions divided according to typology		
Typology	Total	% from total
Featured Films	59	3%
Documental	227	10%
Short Films / Academic practice	438	19%
Entertainment / TV shows	282	12%
Photography	513	22%
Publicity	394	17%
Video Clips	77	3%
Corporate / Institutional	124	5%
Other productions	186	8%
<b>Total</b>	<b>2300</b>	<b>100%</b>

Source: Barcelona Catalunya Film Commission (2011).

From the table (05) it is possible to see that the main types of productions in Catalonia are related to photo shoots and short film and academic practice. (Barcelona Catalunya Film Commission, 2011).

From the total of 166 cities of the BCFC network, 27 have presented a report of the productions. Of the 27 that have reported their productions, the 15 that received most productions are presented on table (06) below.

**Table 6: The 15 locations that received most productions in Catalonia.**

Cities	Total of Productions	% of total
<b>Barcelona</b>	1905	81,10%
<b>Sitges</b>	86	3,66%
<b>L'Hospitalet de Llobregat</b>	56	2,38%
<b>Terrassa</b>	50	2,13%
<b>Tarragona</b>	28	1,19%
<b>El Prat de Llobregat</b>	37	1,58%
<b>Girona</b>	32	1,36%
<b>Sabadell</b>	31	1,32%
<b>Castelldefels</b>	19	0,81%
<b>Lloret de Mar</b>	14	0,60%
<b>Mataro</b>	14	0,60%
<b>Gavà</b>	13	0,55%
<b>Tossa de Mar</b>	13	0,55%
<b>Sant Cugat</b>	12	0,51%

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Tortosa	8	0,34%
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Source: Adapted from Barcelona Catalunya Film Commission (2011).

The table is presented in order to demonstrate in production numbers the 15 cities that most received productions. From the table it can be noticed that not all the cities approached in the present work have presented their productions results, such as Anoia, Torroella de Montgrí, Roses. Barcelona is the city that most received productions (1905), followed by Sitges (86), Terrassa (50), Tarragona (28), Girona (32) and Lloret de Mar (14).

This table also presents other cities of the BCFC network that receive productions, but are not necessarily organized as Film Offices. L'Hospitalet de Llobregat, El Prat de Llobregat, Sabadell, Castelldefels, Mataró and Gavà are very close to Barcelona (medium distance of 15 km) and managed by the departments of Culture, Press and Communication, City Hall, Tourism, Economic Promotion, and city hall, respectively.

Not all productions inform the economic impacts of their productions, therefore in 2011 from the 59 featured films only 10 have reported its expenditure as €15 million to the territory. Between 2007 and 2011 the BCFC has gathered data from 31 productions that have made an investment of €45 million to the territory that represents €1, 4 million for each production (Barcelona Catalunya Film Commission, 2011).

Regarding strategic promotion used by Film Commission, in Barcelona they have developed a touristic movie map and route. The Barcelona Movie Walk was created with the collaboration of the University of Barcelona (CETT), Turisme de Barcelona and BCFC. They have created a website that present film themed walks around the city; on the website they make an introduction of the Film, Curiosities, technical list and a map with the film locations. (Osàcar, 2011). The themed walks are:

- La Barcelona de Woody Allen;
- La Barcelona de Salvador;
- La Barcelona de Pedro Almodóvar;
- La Barcelona de "El Perfum";
- La Barcelona dels Eramus;
- La Barcelona de Manuelle d'Amore.

Catalunya Turisme presents 6 cinematographic routes:

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- Rutes de cine per l'Alt Empordà: Banyoles, Cadaqués, Colera, Figueres and Girona (contact Oficina de Turisme de Girona)
- Un itinerari de cine des de Montserrat fins al Cadí: Cardona, Castellar de n'Hug; Manresa, Mura, Sant Fruitós de Bages, Sant Vicenç de Castellet, Terrassa and Góso;
- Els racons de Ciutat Vella que el cinema ha immortalitzat: Barcelona (contact Oficina de Turisme Barcelona);
- Una ruta cinematogràfica pels voltants de Barcelona: Castelldefels, Esplugues de Llobrega, Gelida, Hospitalet de Llobregat, Molins de Rei, Prat de Llobregat and San Boi de Llobregat (contact Oficina de Turisme Castelldefels);
- El Montseny com a escenari cinematogràfic: Ametlla del Vallès, Cardedeu, Montseny, Torelló, Vic and Breda. (contact Oficina de Turisme Vic);
- De Sitges fins al delta de l'Ebre a la gran pantalla: Sitges, Vilanova i la Geltrú, Alcanar, Reus, Tarragona, Torredembarra and Tortosa.

Even though these routes are available on the website of Catalunya Turisme and Tourist Offices are identified as contact reference, there is no mention of the routes neither on the cities websites nor film offices.

The next section presents the website analysis of film and tourism actors at each city identified with film office/commission within the BCFC network.

### **4.3 Barcelona**

Barcelona is the capital of Catalonia. It is located on the Barcelonès region as showed in the figure (04) below.

Figure 4: General information about the Barcelonès region.



**Comarca Barcelonès.**

**Surface area:** 144,7 km<sup>2</sup>.

**Population:** 2.246.280 (2011).

**Towns:** 5.

**Capital:** Barcelona.

**Tourist Brand:** Barcelona.

**Province:** Barcelona.

**Audiovisual Production:** 1.905 (2011).

Source: Generalitat de Catalunya (2012); Barcelona Catalunya Film Commission (2011).

Catalunya Turisme (2012) points out four main events that have helped developed the city in infrastructure and projection. The first one in 1888 being the Exposició Universal that left the Ciutadella Park as legacy, then in 1929 the transformation of the Montjuïc Mountain in a place dedicated to leisure.

Then Barcelona has experienced solid growth in tourism numbers since the city hosted the Olympic Games in 1992. The Olympic Games helped the city to promote its profile around the world as a renewed city with values and proposals to adjust to new markets. In this context, the Turisme de Barcelona Consortium was created as a result of an agreement of Barcelona City Council and Barcelona Chamber of Commerce, in the purpose of working to continue the incentive from the Olympic Games and improve services and facilities over time. These incentives made Barcelona the European city which experienced greatest growth in tourism (Pla Estratègic de Turisme Barcelona, 2012).

In 2004 the city received the Forum of Cultures that served to renew the area at Besòs and the creation of a new neighborhood at a factories and warehouses area (Catalunya Turisme, 2012)

The city today is internationally recognized and established as a tourist destination. It receives a great amount of tourists motivated by recreation, business, training, medical reasons, sporting events (Pla Estratègic de Turisme Barcelona, 2012).



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Barcelona represents a Mediterranean city that is welcoming, dynamic, innovative, modern and modernist, gothic, with heritage and cultural dynamism. It can reach the demand to cultural, sun & beach, water sports, shopping, nightlight and festivals (Catalunya Turisme, 2012).

Regarding Film Commission registered activities, Barcelona has received 1.905 productions in 2011, 22% more than the previous year (1.682). The service of audiovisual production is divided into the Barcelona Catalunya Film Commission that managed 596 from the 1.905. The rest of productions (1.309) was managed by the Oficina d'Informació I Tràmits de la Guàrdia Urbana, Medi Ambient, Serveis Municipals, depending on the typology or the characteristics of the production and the fact that some areas require services from the mentioned departments (Barcelona Catalunya Film Commission, 2011).

In 2011 it was noticed a reduction (5,25% less) on permits to the BCFC, but regarding the other departments involved, such as Oficina d'Informació I Tràmits de la Guàrdia Urbana, Medi Ambient, Serveis Municipals, which manage parks, beaches and gardens; there was an increase of 21%, from the previous year (2010). Beaches registered 140 more productions, while 57 more at Parc de la Ciutadella, 52 at Parc Güell and 35 at Parc del Laberint d'Horta (Barcelona Catalunya Film Commission, 2011).

The city areas that most received productions in 2011 were Ciutat Vella, Sant Martí and Eixample (Barcelona Catalunya Film Commission, 2011).

The most common typologies of productions in 2011 were: photography (22%), publicity (18%) and short film (13%). Regarding featured films, in 2011 there were 45 that represent an increase of 4,4% comparing to the period in 2010 (Barcelona Catalunya Film Commission, 2011).

The BCFC has database of the origin of the productions which are exclusively managed. In 2011, from the 596 productions managed by the BCFC in Barcelona they were originated from:

- 456 Catalan, representing 76% from the total (reduction from previous year that had 82%, 2010);
- 25 Spanish (reduction of 7 productions comparing to 2010);
- 64 European (11% from the total and an increase of 17% comparing to 2010);

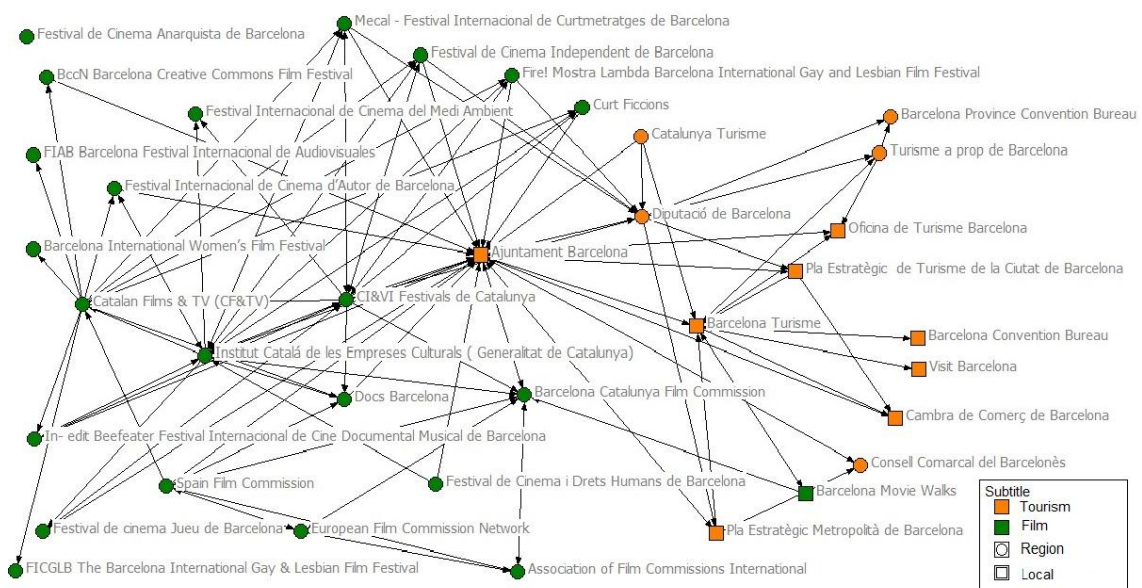
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- 41 Asian (7,1% from the total and an increase of 58% comparing to 2010);
- 9 American and 1 from Oceania.

The city of Barcelona represents the main city in the BCFC network since it receives more production (1905) than all the other Film Offices/Commissions.

The results of the network analysis of the websites of film and tourism organizations in Barcelona are presented on the graph (02) and table (07) below.

**Graph 2: Network Graph of Barcelona's Film and Tourism websites.**



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**Table 7: Network indicators of Barcelona’s film and tourism websites.**

Barcelona	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
CI&VI Festivals de Catalunya	13.000	6.000	9.091	21.605	88.597
Catalan Films & TV (CF&TV)	11.000	3.000	9.067	19.022	147.988
Ajuntament Barcelona	9.000	19.000	9.804	20.468	409.365
Institut Catalá de les Empreses Culturals ( Generalitat de Catalunya)	8.000	11.000	9.537	19.663	278.842
Barcelona Turisme	7.000	7.000	9.383	18.325	149.667
Spain Film Commission	6.000	2.000	8.838	20.115	34.333
Barcelona Catalunya Film Commission	5.000	7.000	9.409	19.553	137.032
Diputació de Barcelona	5.000	6.000	9.333	17.857	40.545
Fire! Mostra Lambda Barcelona International Gay and Lesbian Film Festival	4.000	2.000	8.642	19.663	3.895
Festival de Cinema Independent de Barcelona	4.000	3.000	9.044	19.663	6.672
Mecal - Festival Internacional de Curtmetratges de Barcelona	4.000	3.000	9.044	19.663	6.672
Pla Estratègic de Turisme de la Ciutat de Barcelona	3.000	2.000	9.186	17.857	1.500
In- edit Beefeater Festival Internacional de Cine Documental Musical de Barcelona	3.000	2.000	8.642	19.337	2.713
Turisme a prop de Barcelona	3.000	2.000	8.974	15.982	5.500
Pla Estratègic Metropolità de Barcelona	3.000	2.000	9.186	17.857	1.500
European Film Commission Network	3.000	2.000	8.838	17.588	0.000
Catalunya Turisme	3.000	0.000	2.778	21.739	0.000
Festival Internacional de Cinema d’Autor de Barcelona	2.000	2.000	8.997	18.817	3.483
Barcelona Movie Walks	2.000	1.000	8.794	17.766	6.750
Docs Barcelona	2.000	3.000	8.772	18.919	3.070
Festival de cinema Jueu de Barcelona	2.000	2.000	8.974	19.126	1.556
Festival de Cinema i Drets Humans de Barcelona	2.000	0.000	2.778	23.026	0.000
Curt Ficcions	2.000	2.000	8.663	18.919	1.928
Visit Barcelona	1.000	1.000	8.794	15.766	0.000
Association of Film Commissions International	1.000	3.000	8.861	16.667	0.000
BccN Barcelona Creative Commons Film Festival	1.000	1.000	8.557	17.500	1.392
Consell Comarcal del Barcelonès	1.000	2.000	9.186	17.327	0.000
Festival de Cinema Anarquista de Barcelona	0.000	0.000	2.778	2.778	0.000
Barcelona Province Convention Bureau	0.000	2.000	9.722	2.778	0.000
FICGLB The Barcelona International Gay & Lesbian Film Festival	0.000	1.000	9.284	2.778	0.000
Oficina de Turisme Barcelona	0.000	3.000	10.204	2.778	0.000
Barcelona International Women’s Film Festival	0.000	1.000	9.284	2.778	0.000
Festival Internacional de Cinema del Medi Ambient	0.000	2.000	9.831	2.778	0.000
Barcelona Convention Bureau	0.000	1.000	9.615	2.778	0.000
Cambra de Comerç de Barcelona	0.000	3.000	10.204	2.778	0.000
FIAB Barcelona Festival Internacional de Audiovisuales	0.000	1.000	9.284	2.778	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	3.056	3.056	8.649	14.855	37.028
Standard Deviation	3.179	3.488	1.816	7.118	86.594
Sum	110.000	110.000	311.382	534.789	1.333.000
Variance	10.108	12.164	3.298	50.669	7.498.508
Minimum	0.000	0.000	2.778	2.778	0.000
Maximum	13.000	19.000	10.204	23.026	409.365

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As it can be seen on the graph (02), film actors in the Barcelona website network, represented by the color green, are the majority of actors. The film actors on this network are film festivals, international film commissions, Institut Català de les Empreses Culturals (ICEC), Consortium for Catalan films and TV and film festivals coordinator entity of Catalonia (CI&VI) and Barcelona Movie Walks.

The indicator of the degree of centrality indicates that the actors with higher in-degree are popular and a channel for relational information within the network. In the case of Barcelona, the city hall has the highest in-degree, followed by the Institut Català de les Empreses Culturals (ICEC), Barcelona Turisme and BCFC. It is important to notice that the BCFC is under the responsibility of the city hall and the ICEC that represents a cultural department of the Generalitat de Catalunya, and those two organizations are the most central in the website network.

The out degree of centrality indicates the expansiveness of the actor, highest out degree represents an actor which nominates several others. In the case of Barcelona, the festivals coordinator entity of Catalonia (CI&VI) and the Consortium for Catalan films and TV nominate most actors, mostly film festivals.

The city hall of Barcelona also has the highest in-closeness, which means it can rapidly interact to the other actors. The out-closeness degree represents how the actor can reach other actors, and in this case the city hall also has high out-degree closeness. The city hall can be reached and reach most actors, being an important website on the network. The Consortium for Catalan films and TV and festivals coordinator entity of Catalonia (CI&VI) have also high out closeness degree, which means they can reach many actors, mostly, as seen on the graph (02) film festivals, but also the Institut Català de les Empreses Culturals (ICEC) and the BCFC.

The betweenness centrality indicates the websites that act as bridges between two other websites. In this case, the city hall of Barcelona acts as highly intermediate between the pairs of the other websites, but most importantly, it represents an important bridge between tourism actors websites and film actors websites. The Institut Català de les Empreses Culturals (ICEC) has also high betweenness centrality, being a bridge to mainly film actors websites.

In this case the regional actors, such as Catalunya Turisme, Turisme a prop de Barcelona, and Consell Comarcal del Barcelonès, that were identified for their potential of the development of projects, joint actions and business opportunities with the audiovisual sector and as consequence film tourism activities, are not so central as

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showed on the graph (02) and table (07) of the results. The similar results are shown to local level of actors such as Pla Estratègic de Turisme de la Ciutat de Barcelona, Barcelona Province Convention Bureau, Oficina de Turisme Barcelona, Barcelona Convention Bureau and Cambra de Comerç de Barcelona.

The responsible for marketing states in the interview 1 the BCFC is a department of the Barcelona city hall responsible for gathering all the information related to film production. The BCFC act as a connection point between other city departments and professionals associated with audiovisual productions.

Nevertheless, as seen on the results presented, the BCFC website does not present as many connections as the city hall's website. Also, the number of service solicitation to the BCFC has decreased from last year. However, as presented on the introduction to the BCFC the city hall's services have experienced some increase and its level of high interaction can be seen on the results presented.

The interview 1 also reveals that there is recognition that actions with tourism department could help increment the economic impact of film productions in the territory, at the same time that film commissions actions could foment the attraction of tourists interested on film productions and publicity that take place on the territory. Nevertheless, the result of the website network analysis show that the BCFC website does not present direct linkage (hyperlink) to the Turisme de Barcelona website, which is the responsible department for tourism.

The Barcelona Movie Walks website presents little linkage to the total of the network, as shown on the total network results. As portrayed on the graph (02), it is adjacent to the BCFC and from Turisme de Barcelona. The interview 1 indicates that the Barcelona Movie Walk is a project that was developed with Turisme de Barcelona and should represent a linkage between tourism and film actors, but as seen on the results the BCFC does not mention it on the website.

Nevertheless, the interview 1 describes that:

“El impacto del cine en el comportamiento y los deseos de ocio de las personas está probado en numerosos estudios que avalan que las decisiones de viajes por ocio están muy a menudo influenciadas por las películas de cine y series de televisión. Una película es clave para posicionar un modelo de ciudad y darla a conocer a nivel internacional. (...) No obstante la BCFC no ha realizado todavía hoy ningún estudio de impacto turístico de las películas rodadas en su territorio (...).” (Interview 1)

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In the Barcelona website network case, actions regarding joint action between film and tourism should use the city hall and the Institut Català de les Empreses Culturals (ICEC) for providing information and promotion of the actions. As presented on previous sections the use of the hyperlinks on the web is viewed by some private or public organizations as a strategic resource (Park and Thelwall, 2003; Vaughan, Gao, and Kipp, 2006), but in this case, for the development of film tourism in the case of Barcelona, film and tourism websites actors are mostly separated on their areas of interests, not presenting much interactions with each other.

### 4.4 Anoia

The region of Anoia is located in the province of Barcelona, east end of central Catalan depression in the valley of the Anoia's river. The capital of the region is Igualada. The economic activities in the region are agriculture, leather, textile and paper industry. Figure (05) below illustrates the region on a map and provides general information about the region.

**Figure 5: General information about the Anoia region.**



#### **Comarca Anoia**

**Surface area:** 866,3 km<sup>2</sup>

**Population:** 118.509 (2011)

**Towns:** 33

**Capital:** Igualada

**Tourism Brand:** Catalunya Central

**Province:** Barcelona

**Audiovisual Production:** Not Informed (2011)

Source: Generalitat de Catalunya (2012); Barcelona Catalunya Film Commission (2011).

The region presents rural tourism, Natural Park of Montserrat (mountain), local cultural celebrations, museums of special interest (industrial themes), different architectural styles (Romanesque, Gothic, Renaissance, Baroque, Art Nouveau avanguardista), sports activities and various touristic routes, being natural and/or

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cultural themed, including “Camí de Sant Jaume” (Generalitat de Catalunya, Departament d’Empresa i Ocupació, 2010).

The Anoia Film Office (AFO) offers free services to audiovisual productions that take place in the Comarca of Anoia. It acts as a linkage between the city councils of cities involved, private locations and producers (Anoia Film Office, 2012).

It was established in May 2011, as an initiative of “DeVerité Produccions”, Rosebud Films, two audiovisual companies, and the support of the Consell Econòmic i Social de la Comarca de l’Anoia. (CESCA) (Newsletter Barcelona Catalunya Film Commission, 2011).

The office aims to attract filming in the region of Anoia, acting as a bridge between the city halls and locations, providing its service to audiovisual productions. The AFO represents a regional film office, that includes the cities of Igualada, Calaf, La Pobla de Claramunt, Masquefà, Capellades, Santa Margarida de Montbui, Piera, Copons, Castellolí, Òdena, Vilanova del Camí and El Bruc (Anoia Film Office, 2012).

The AFO presents itself as unique because it is managed by professionals of the audiovisual production; therefore their processes should be faster and more efficient. Their objective is to operate as a complete guide to the audiovisual sector, presenting vast service options, documents, shooting permits, information form and public and private locations, facilitating the process of shooting in the territory of Anoia and its 33 municipalities (Anoia Film Office, 2012).

The Barcelona Catalonia Film Commission (2011) pointed out another distinguishing feature of the AFO that is offering, through its website directory sites, areas of public and private shooting and free registration for those interested. Another point highlighted, was that the AFO offers a directory of service and companies in the region that can facilitate producer’s search (Barcelona Catalonia Film Commission, 2011).

The Consell Econòmic i Social de la Comarca de l’Anoia (2010) presents that the objective of the AFO is attracting television and film production and being more attractive for the audiovisual producers, but it also infers that the project can generate significant economic synergies also in the field of tourism in the region, as it is a good opportunity to create an image database of locations.

The resulting network graph (03) and table (08) of Anoia’s film and tourism websites are presented below:





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**Table 8: Network indicators of Anoia's film and tourism websites.**

Anoia	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Anoia en Viu	14.000	5.000	13.878	9.471	94.277
Diputació de Barcelona	12.000	15.000	15.044	9.366	271.194
Anoia Turisme	12.000	1.000	12.500	9.392	0.111
Anoia Film Office	11.000	3.000	11.525	9.366	88.199
Consell Comarcal de l'Anoia	11.000	7.000	14.050	9.239	123.523
Alta Anoia Consorci de Promoció Turística	5.000	6.000	13.878	9.214	64.010
Turisme a prop de Barcelona	5.000	1.000	12.830	8.901	4.067
Igualada Turisme /Museu de la Pell d'Igualada i Comarcal de l'Anoia	4.000	2.000	13.281	9.115	33.942
Catalunya Turisme	4.000	0.000	2.857	9.884	0.000
Ajuntament Calaf	3.000	6.000	14.346	8.947	48.319
De Verité Produccions S.L	3.000	3.000	12.546	9.019	97.042
Anoia project (promoció econòmica del Consell Comarcal de l'Anoia)	3.000	1.000	12.593	8.971	0.375
Ajuntament de la Poble de Claramunt	3.000	5.000	14.468	8.947	13.407
Consell Econòmic i Social de la Comarca de l'Anoia	3.000	0.000	2.857	10.059	0.000
Zoom Festival Europeu de Cinema per a Televisió	2.000	3.000	11.525	8.947	24.283
Catalan Films & TV (CF&TV)	2.000	0.000	2.857	10.398	0.000
Ajuntament Masquefà	2.000	4.000	14.050	8.924	16.486
Ajuntament de Capellades	2.000	6.000	14.655	8.718	39.562
microCurt Festival de Vídeo d' Igualada	2.000	2.000	13.333	8.651	89.250
Ajuntament de Santa Margarida de Montbui	2.000	5.000	14.468	8.924	13.407
Ajuntament Igualada	2.000	7.000	14.719	8.786	140.042
CI&VI Festivals de Catalunya	2.000	1.000	2.941	9.913	14.500
Barcelona Catalunya Film Commission	1.000	0.000	2.857	9.605	0.000
Ajuntament Piera	1.000	5.000	14.468	8.786	1.845
Ajuntament Copons	1.000	7.000	17.172	2.941	30.000
Ajuntament Castellolí	1.000	4.000	14.167	8.786	1.470
Patronat de la Muntanya de Montserrat	1.000	0.000	2.857	9.827	0.000
Ajuntament Òdena	1.000	6.000	14.530	8.786	1.845
Ajuntament Vilanova del Camí	1.000	5.000	14.468	8.786	1.845
projecte Portals de Montserrat	1.000	1.000	2.941	9.605	26.000
Museu Molí Paperer de Capellades	1.000	5.000	14.530	8.213	2.000
Rosebud Films	0.000	1.000	11.724	2.857	0.000
La teva Alta Anoia	0.000	1.000	17.526	2.857	0.000
Taula Oberta de Turisme de l'Anoia (Web 2.0)	0.000	0.000	2.857	2.857	0.000
El Bruc	0.000	0.000	2.857	2.857	0.000

Descriptive Statistics

	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	3.371	3.371	11.090	8.283	35.457
Standard Deviation	3.765	3.127	4.985	2.253	56.227
Sum	118.000	118.000	388.155	289.912	1.241.000
Variance	14.176	9.776	24.847	5.075	3.161.501
Minimum	0.000	0.000	2.857	2.857	0.000
Maximum	14.000	15.000	17.526	10.398	271.194

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

Anoia represents a region, so the tourism actors included were those in the area of territorial planning and promotion organizations in regional and local level. In the Anoia website network analysis, tourism actors are the majority. Film actors are the Anoia Film Office, the two audiovisual companies that founded the AFO, film festival and the common to all analysis Consortium for Catalan films and TV, film festivals coordinator entity of Catalonia (CI&VI) and the BCFC.

The results of the Anoia network shows that there is many interactions between the network, but some websites are isolated and don't connect to the network in general. This is the case of the city El Bruc and the website Taula Oberta de Turisme de l'Anoia that results of centrality, closeness and betweenness and reveal 0 degree of connection. This is mainly due to the fact that these two elements don't have a website of their own and links are broken, leading to nowhere. The Patronat de la Muntanya de Montserrat and the project of Portals de Montserrat are also isolated from the rest, since their main linkage should be the city El Bruc.

The measures applied to the network of Anoia showed that the central websites are those representing the main territorial government institutions, such as Diputació de Barcelona, Consell Comarcal de l'Anoia and Ajuntament de Igualada that present high centrality degree, closeness and betweenness.

The indicator of the degree of centrality indicates that the actors with higher in-degree are the most important and popular, and in his case it is the Diputació de Barcelona (provincial council). The Provincial Council represents the local government and provides support to its municipalities and in this case it has the most access and control over the actors. The Diputació is followed by the Consell Comarcal de l'Anoia and the city hall of Igualada that represent the region's council and the city as the capital of the regional council, respectively. Their websites represent strategic position on the network.

The Diputació de Barcelona also has the highest in-closeness, which means it can be reachable from the other actors. Two other actors presented high in-closeness the city hall of Copons and "La teva Alta Anoia". The "la teva Alta Anoia" represents a web for the Alta Anoia region that provides information and promotes tourism. It is also a tool of identity and cohesion of the territory and the brand Alta Anoia. However, those two actors mentioned present low results on the out closeness, which mean they are not easily reachable.

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

The betweenness centrality indicates the websites that act as bridges linking the other websites. In this case, the Diputació de Barcelona, the city hall of Igualada and the Consell Comarcal de l'Anoia act as highly intermediates between the pairs of the other websites.

The Anoia Film Office website, presents a high out-degree that means it nominates many actors, especially city halls. The closeness centrality degree indicates that the AFO can reach and be reached easily by the other actors. The betweenness centrality indicates it can act as bridge, connecting other pairs of actors. Those results represent opportunities for the development of linkages between film and tourism actors.

The other film related websites present low indicators; they don't have much influence in this network, as portrayed in the graph (03) they are isolated. Film websites results presented are lower than the average variance of the degree centralities, closeness and betweenness, showing that they don't connect much to the other websites.

Anoia en Viu represents a project for the promotion and development of the tourism in the region. In this analysis presents high out degree centrality, which means it names various actors and the in closeness degree indicates that it can be easily reached. Regarding film tourism, this actor should be connected to the film office and the other film actors, but as seen on the graph (03) there is no interaction.

Regional and local tourism actors, as presented on the graph (03) as Diputació de Barcelona, Consell Comarcal de l'Anoia and Ajuntament de Igualada are the most central and should be recognized as informational channel to the other actors. For the development of joint actions between film and tourism actors they represent potential to development of connections between film actors and tourism actors. However, from the analysis and the results in the case of Anoia film and tourism actors don't present many interactions.

### 4.5 Girona

Girona is the capital of the Comarca Gironès. The figure (06) below situates Girona in its region and provides general information about the region:

**Figure 6: General information about the Gironès region.**



**Comarca de Gironès**  
**Surface area:** 575,4 km<sup>2</sup>  
**Population:** 182.916 (2011)  
**Towns:** 27  
**Capital:** Girona  
**Tourist Brand:** Costa Brava  
**Province:** Girona  
**Audiovisual Production:** 32 (2011).

Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

The city conserves its old medieval quarter, medieval walls, Romanesque and gothic monuments, baroque spaces and a preserved Jewish Quarter. The highlights of the city are the Santa Maria Cathedral, Sant Feliu Church, Banys Àrabs, painted facades of the houses on the Onyar River, among others (Girona Convention Bureau, 2012).

Catalunya Turisme (2012) describes Girona as a city that offers vast tourism facilities, culture and history and a rich social life with events and festivals of great interest. There are also examples of civil architecture of various periods; green spaces as the Park Devesa and museums.

The Girona Film Office (GFO) was established in 2008, as a part of the Department of Culture in the City Council of Girona (Girona Film Office, 2012).

The GFO aims to stimulate and consolidate the choice of Girona as a cinematographic and photo shoot location. The purpose of the service is to centralize the petitions and consults of this purpose in order to support audiovisual sector. When regarding the use and occupation of public spaces the GFO works with other departments of the Girona City Council such as mobility and environment (Girona Film Office, 2012).

The GFO is the main interlocutor for solving queries and different stages of filming and photo shoots in the city, and also works with Barcelona Catalunya Film Commission to provide producers, individuals and other services a range from database of locations, local producers and professionals of the audiovisual sector (Girona Film Office, 2012).



**Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

**Table 9: Network indicators of Girona's film and tourism websites.**

Girona	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closene	
Ajuntament Girona	18.000	8.000	7.027	29.885	223.333
Turisme Gironès	5.000	1.000	6.436	26.804	3.000
Patronat Costa Brava Pirineu de Girona	5.000	6.000	7.008	25.743	91.333
Girona Convention Bureau	5.000	4.000	6.971	23.009	66.667
Gironaln	5.000	1.000	6.806	24.762	8.000
Museu del Cinema	4.000	1.000	6.806	24.299	0.000
Punt de Benvinguda	3.000	1.000	6.771	22.807	24.000
Consell Comarcal Gironès	3.000	2.000	6.633	25.490	23.500
Catalunya Turisme	3.000	1.000	6.771	21.488	1.000
CI&VI Festivals de Catalunya	2.000	0.000	3.704	4.000	0.000
Clúster TicMedia de Girona	2.000	1.000	6.806	23.853	0.000
Festi.dok	2.000	2.000	6.824	23.853	0.500
Cinema Truffaut	1.000	2.000	6.824	23.636	0.000
Diputació de Girona	1.000	5.000	6.971	20.968	1.667
Cambra de Comerç de Girona	1.000	2.000	6.824	19.118	0.000
Barcelona Catalunya Film Commission	1.000	1.000	7.283	3.846	0.000
Girona Film Office	0.000	2.000	7.855	3.704	0.000
Oficina de Turisme	0.000	1.000	7.283	3.704	0.000
Centre de Visitants Gironès	0.000	2.000	7.182	3.704	0.000
Festival de Cinema de Girona	0.000	3.000	7.879	3.704	0.000
Promoció i Ocupació					
Ajuntament	0.000	1.000	7.283	3.704	0.000
Turisme - Girona Emociona					
Ajuntament	0.000	8.000	7.558	3.704	0.000
Patronat Call de Girona					
Ajuntament	0.000	2.000	7.303	3.704	0.000
Consell Econòmic i Social (Turisme) Ajuntament	0.000	1.000	7.283	3.704	0.000
VAD, festival internacional de vídeo i arts digitals	0.000	1.000	7.283	3.704	0.000
Oficina de Turisme de Catalunya a Girona Ajuntament	0.000	1.000	7.283	3.704	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	3.846	3.704	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closene	
Mean	2.259	2.259	6.833	14.233	16.407
Standard Deviation	3.576	2.083	0.928	10.278	45.786
Sum	61.000	61.000	184.502	384.301	443.000
Variance	12.785	4.340	0.861	105.645	2.096.326
Minimum	0.000	0.000	3.704	3.704	0.000
Maximum	18.000	8.000	7.879	29.885	223.333

In the case of the Girona network analysis, some actors identified as individuals on the methodology such as department of tourism, Girona Film Office, tourist office, Department of Promotion and Occupation, Economic and Social Council are all under

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

the internet website domain of the Girona's city hall (Ajuntament). The matrix for the analysis of Girona was built with the identification of those actors separately in order to position them in the network as individuals. Since the website is the same for those actors, the hyperlinks could have had the risk of double checking, because they originate from the same source. In order to avoid duplications of the links, the hyperlinks from the mentioned actors were checked only once as adjacent from the main website.

With those considerations taken into account, the website network analysis of the Girona case was developed.

The results presented on graph (04) and table (09) show that the city hall (Ajuntament) is the most central and popular actor in this network, according to its high centrality in and out degree, in and out closeness and betweenness indicators. The Girona city hall centrality characteristics are that the website is central and at the same time nominates other actors; it is reachable and reach easily the other actors and it is a powerful bridge between pairs of actors; respectively to the indicators above mentioned.

The results of the Girona network showed that the city hall of Girona, Patronat de Girona Costa Brava Pirineu and the Girona Emociona – Tourism present the highest in-degree indicators, and therefore are the most central actors in the network.

Regarding the closeness centrality, the in-closeness is as the extent to which a website is reachable from others. In this case the website of Festival de Cinema de Girona has the highest in-closeness, followed by Girona Film Office and Girona Turisme. However, they present low out-closeness result, which indicates that their websites are not easily reachable from the other actors.

The indicator for betweenness centrality represents the extent of stops at different websites between pairs of other websites; or the websites that are bridges to pairs of other actors. The city hall shows the highest betweenness degree, and it acts as the major bridge between the websites of Girona.

Another important actor of this network is the Patronat de Turisme Costa Brava Pirineu de Girona. It presents the second highest results in degree centrality, closeness centrality and betweenness, acting as a central and potential connector to the other actors. The Girona Convention Bureau also shows above the average results, representing an actor with potential to joint actions.

The other film actors, festivals and regional actors (BCFC, CI&VI, Catalan films & TV and the cluster TicMedia) present under the average results. They are not much connected to the other actors of the network. Between the regional tourism actors, the

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

Consell Comarcal presents higher degree indicators, representing a potential actor for joint actions.

The Girona Film Offices results are limited due the fact that it is under the responsibility of the cultural department of the Girona city hall and it doesn't have its own website, depending on the city hall's website domain. The relations to and from the Girona Film Office website occur from the intermediation of the website of the city hall.

The tourism department of the city also presents limited results due to the fact it doesn't have its own website, depending on the city hall's website domain. The Girona Film Office interview 2 reveal that there is a coordination between the tourism department and the film Office that aim facilitating productions in the city. In some cases, publicity production companies address primarily to the tourism department, and productions regarding promotional and touristic characteristics first address to the tourism department. That represents 50% of the solicitations to the film office.

On the other hand, Interview 3 with the responsible for the tourism department of the city recognizes the potential of film tourism and states that through the cinematographic production a destination can promote itself in a direct and effective way, being a recommendation for possible travel.

The Girona Film Office interview 2 also reveals a project that is on the development phase, for a cinematographic route with the collaboration of the tourism department. However, this project was not mentioned by the tourism department. The Girona Film Office interview 2 recognizes that their focus so far has been on the management of permits and support to productions, but also states that next phase of actions should be making their results more public to visitors and inhabitants.

The network characteristic of the Girona film and tourism websites shows a dominance of the website of the Girona City Hall. Most relations occur through the city hall website, including film and tourism actors. Other actors that present potential for joint actions, since they present high centrality indicators, are the Patronat de Turisme Costa Brava Pirineu de Girona and the Convention Bureau. Film actors in this case are don't present much interactions.

### **4.6 Sitges**

Sitges is located in the Garraf region, in the province of Barcelona, at 35km from Barcelona. The figure (07) below locates the city in the region of Garraf.



Figure 7: General information about the el Garraf region.



**Comarca de Gironès.**

**Surface area:** 185,3 km<sup>2</sup>.

**Population:** 146.469 (2011).

**Towns:** 6.

**Capital:** Vilanova i la Geltrú.

**Tourist Brand:** Costa de Garraf.

**Province:** Barcelona.

**Audiovisual Production:** 86 (2011).

Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

The city is on the Mediterranean coast and on the foothills of the Garraf Massif, a calcareous rock mountain range. Sitges tourism is based on: culture (modernist period, cosmopolitan town, museums); sun and sea products (17 beaches); active tourism (sea and mountain activities); popular traditions, celebrations and architecture (Agència de Promoció Turisme Sitges, 2010)

Sitges Film Office (SFO) is a project of Sitges Tourism Board created to coordinate, advise and manage film and photographic productions in the city. It acts as a center of contact for professionals who wish to develop audiovisual activity in the city. The SFO was founded in April 2007, and within a year it was the second city in Catalunya to receive photo shoots (Sitges Film Office, 2008).

In 2011, excluding Barcelona, it was the city that most received productions (86) comparing to the others in the BCFC (Balanz Annual Barcelona Catalunya Film Commission, 2011).

The services offered by the SFO are: internet based management of permits, provision of database of locations and facilitate the contact between audiovisual companies and coordinate closing of the streets, cleaning and reservation of public space (Ajuntament de Sitges, 2011).

The SFO recognizes that productions are important to the level of image and placing Sitges as a natural set, but it also contributes to generate income, demand of service and workplaces (Sitges Film Office, 2008). The SFO represents a destination for national and international productions, and producers value experienced professionals, management of permissions with agility and speed, closeness to

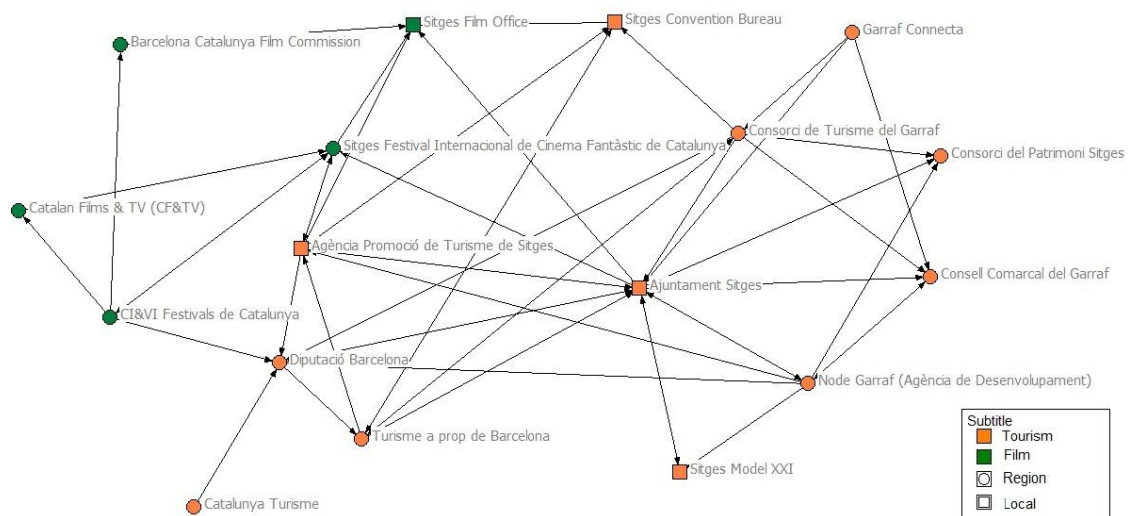
## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

Barcelona and airport and specialized services, such as public spaces reservation (Sitges Film Office, 2008).

In 2010, the SFO managed 103 productions (publicity, short films, TV series, photo shoots). These productions generated €25.587, 75 in taxes. Comparing to 2009, there was an increase of 7% (Turisme de Sitges, 2010).

The resulting graph (05) and table (10) of Sitges's film and tourism websites are presented below.

**Graph 5: Network graph of Sitges's Film and Tourism websites.**



**Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

**Table 10: Network indicators of Sitges's film and tourism websites.**

Sitges	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Ajuntament Sitges	8.000	8.000	22.857	28.070	85.000
Node Garraf (Agència de Desenvolupament)	6.000	2.000	19.753	25.806	3.500
Consorci de Turisme del Garraf	6.000	2.000	17.978	26.230	5.667
Agència Promoció de Turisme de Sitges	5.000	4.000	21.622	26.667	27.667
Turisme a prop de Barcelona	4.000	3.000	20.253	25.397	26.000
CI&VI Festivals de Catalunya	4.000	1.000	18.391	25.000	27.333
Sitges Festival Internacional de Cinema Fantàstic de Catalunya	3.000	4.000	21.333	24.242	48.000
Garraf Connecta	3.000	0.000	5.882	32.653	0.000
Sitges Convention Bureau	2.000	3.000	20.253	21.622	3.167
Diputació Barcelona	2.000	6.000	21.918	24.615	33.167
Consell Comarcal del Garraf	2.000	4.000	20.253	23.188	1.000
Sitges Model XXI	1.000	2.000	19.753	22.857	0.000
Catalunya Turisme	1.000	0.000	5.882	25.397	0.000
Barcelona Catalunya Film Commission	1.000	1.000	19.048	6.250	0.500
Catalan Films & TV (CF&TV)	1.000	1.000	16.327	20.513	0.000
Consorci del Patrimoni Sitges	0.000	3.000	24.615	5.882	0.000
Sitges Film Office	0.000	5.000	37.209	5.882	0.000

Descriptive Statistics

	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	2.882	2.882	19.607	21.781	15.353
Standard Deviation	2.246	2.083	6.647	7.745	22.837
Sum	49.000	49.000	333.327	370.272	261.000
Variance	5.045	4.339	44.183	59.985	521.536
Minimum	0.000	0.000	5.882	5.882	0.000
Maximum	8.000	8.000	37.209	32.653	85.000

The measures applied to the network of Sitges show that the City Hall of Sitges, the Diputació de Barcelona are those representing the main territorial government institutions in central positions. In this case the Sitges Film Office has high in-degree, being popular in this network. Their websites represent a strategic position on the network.

Regarding the in-closeness degree of centrality, Sitges Film Office presents the highest in-closeness, which means it can be easily reachable from the other actors. However, closeness out-degree of Sitges is very low, which represents that this website is not able to reach much actors. This result can be due the fact that Sitges Film Office website presents many broken links, that don't link the other websites.

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

The Consorci del Patrimoni Sitges is also reachable, and it represents the cultural aspect of the city actors, but as it occurs to the Sitges Film Office, the out-degree is low, which means it doesn't reach much actors.

The city hall and the agency for tourism promotion present also high in-closeness and out-closeness. This indicates that they are easily reachable and reach the other actors.

The betweenness centrality indicates the websites that act as bridges linking the other websites. In this case, the city hall, the Sitges Film Festival and the Diputació de Barcelona are the main bridges to the other websites.

In the BCFC, Sitges Film Office represent the city that most received productions in 2011. A cause for that might be the highly connected network that they represent. The Film Office and Film, Tourism and local and regional actors occupy center positions in the website network, and are easily reachable. Even though there was one limitation on the analysis of the Sitges Film Office website as it presents many broken links, if not the betweenness centrality would also demonstrate high values.

In general, in the case of the Sitges network analysis, the actors that present the highest indicators of centrality are in local level the city hall, tourism promotion agency, and Sitges Film Festival. In regional level they are the Turisme a Prop de Barcelona (tourism promotion and development project), CI&VI Festivals and the Diputació de Barcelona. This results indicates that local and regional levels are related, and also that film and tourism actors websites show connections. This represents great potential opportunities for the development of film tourism in the city, using the already established relations between the presented actors.

### **4.7 Lloret de Mar**

Lloret de Mar is located in Costa Brava coats, in the province of Girona. The figure (08) below situates the city in the region of la Selva.

Figure 8: General information about the el La Selva region.



**Comarca de La Selva.**

**Surface area:** 995,1 km<sup>2</sup>.

**Population:** 172.280 (2011).

**Towns:** 26.

**Capital:** Sta Coloma de Farners.

**Tourist Brand:** Costa Brava.

**Province:** Girona.

**Audiovisual Production:** 14 (2011).

Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

The tourism activities that are described by Catalunya Turisme (2012) are the beaches and nautical activities, trails on the coast; the Gardens of Santa Clotilde; cycling, golf and horseback riding; Casino and cultural and traditional festivals.

The Lloret Film Office (LFO) was established in 2008. The LFO is a department of the Lloret Tourism, the city's institution responsible for the promotion of Lloret the Mar and it takes part of the BCFC network (Lloret Film Office, 2008).

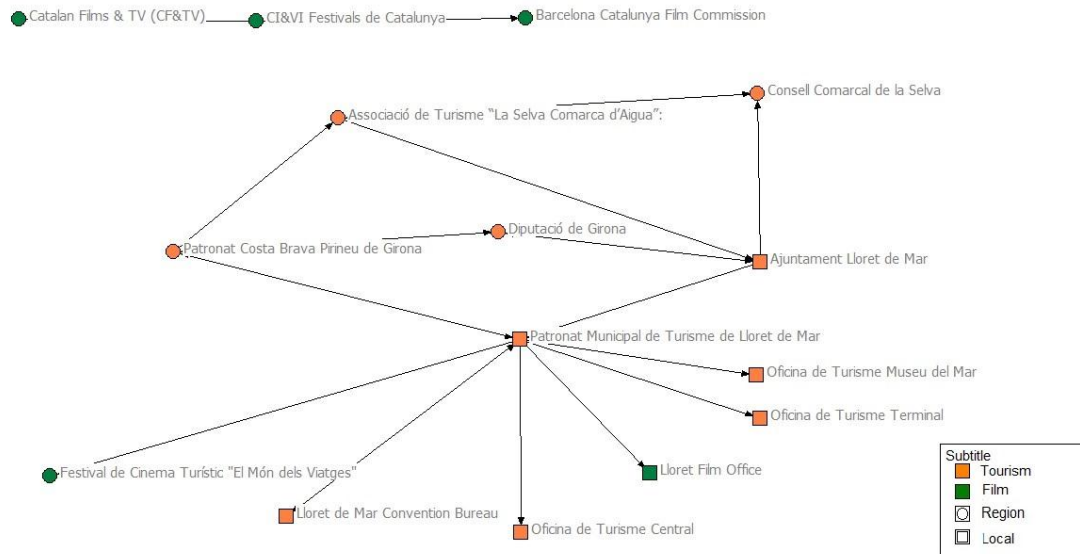
The LFO provides a range of free services to assist national and international audiovisual production. Its objectives are: assisting in production, facilitating the process to shoot in the city; speeding up the procedures, permitting quickly and at no additional cost services; help on location scouting providing an image database and professional staff, logistical support; contact with audiovisual professionals in the area and collaboration with other public administration departments; and support local producers development and national and international promotion (Lloret Film Office, 2008).

The LFO applies filming fees based on taxes established by city laws, depending on the area and days of filming. The taxes are based on visitation of attractions, carrying out activity that requires police force and use of local public space (Lloret Film Office, 2008).

The resulting graph (06) and table (11) of Lloret de Mar's film and tourism websites are presented below.

## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

**Graph 6: Network graph of Lloret de Mar's Film and Toursim websites.**



**Table 11: Network indicators of Lloret de Mar's film and tourism websites.**

Lloret de Mar	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	ut-closeness	
Patronat Municipal de Turisme de Lloret de Mar	7.000	3.000	10.769	22.581	41.500
Ajuntament Lloret de Mar	3.000	2.000	10.526	21.875	22.500
Patronat Costa Brava Pirineu de Girona	3.000	2.000	10.526	21.875	12.500
Associació de Turisme "La Selva Comarca d'Aigua":	2.000	2.000	10.687	19.444	14.500
Diputació de Girona	2.000	2.000	10.606	19.718	3.000
CI&VI Festivals de Catalunya	2.000	0.000	6.667	7.692	0.000
Lloret de Mar Convention Bureau	1.000	1.000	10.370	19.444	0.000
Consell Comarcal de la Selva	1.000	2.000	10.526	17.073	1.000
Oficina de Turisme Central	0.000	1.000	11.475	6.667	0.000
Lloret Film Office	0.000	1.000	11.475	6.667	0.000
Oficina de Turisme Museu del Mar	0.000	1.000	11.475	6.667	0.000
Barcelona Catalunya Film Commission	0.000	1.000	7.143	6.667	0.000
Oficina de Turisme Terminal	0.000	1.000	11.475	6.667	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	7.143	6.667	0.000
Festival de Cinema Turístic "El Món dels Viatges"	0.000	1.000	11.475	6.667	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closene	
Mean	1.400	1.400	10.156	13.091	6.333
Standard Deviation	1.855	0.712	1.640	6.846	11.557
Sum	21.000	21.000	152.341	196.370	95.000
Variance	3.440	0.507	2.690	46.862	133.556
Minimum	0.000	0.000	6.667	6.667	0.000
Maximum	7.000	3.000	11.475	22.581	41.500

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

In the case of the Lloret de Mar network analysis, some actors identified as individuals on the methodology such as Lloret Film Office, and tourist offices are under the internet website domain of the Patronat Municipal de Turisme de Lloret. The matrix for the analysis of Lloret de Mar was built with the identification of those actors separately in order to position them in the network as individuals.

Since the website is the same for those actors, the hyperlinks could have had the risk of double checking, because they originate from the same source. In order to avoid duplications of the links, the hyperlinks from the mentioned actors were checked only once as adjacent from the main website.

The indicator of the degree of centrality measured on the Lloret de Mar Website Network indicates that the actors with higher in-degree is the Patronat Municipal de Turisme, which is the responsible institution for management and promotions of tourism in the city, as well as the Lloret Film Office. This measure indicates that the Patronat Municipal de Turisme has the most access and control over the actors and its websites represent a strategic position on the network.

In this websites network in general the in-degree is quite low and the out-degree is higher in most of the cases. That can indicate that most of websites lead to other, but don't receive many connections.

The closeness centrality indicates that the most reachable websites are those belonging to the Patronat Municipal de Turisme, as they are the tourist offices and the Film Office. However, their out-closeness degree indicates that they cannot reach much actors, since their hyperlinks are adjacent from the Patronat Municipal de Turisme. Thus, the Patronat presents high in-closeness and out-closeness, being easily reachable and able to reach many other actors.

The betweenness centrality indicates the websites that act as bridges linking the other websites. In this case, the Patronat Municipal de Turisme and the city hall of Lloret de Mar act as highly intermediate between the pairs of the other websites.

The mains actors identified on the Lloret de Mar network are the Patronat Municipal de Turisme, Lloret city hall, Regional Tourism Association (Associació de Turisme La Selva, Comarca d'Aigua and the Diputació de Girona. The mentioned actors present the highest centrality degree, closeness centrality and betweenness centrality, respectively, being the most related ones.

## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

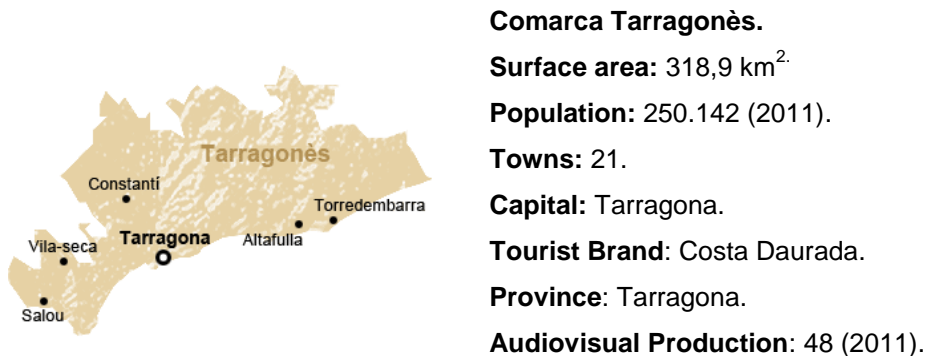
In this network, the general film actors, Catalan films & TV, BCFC and CI&VI are isolated from the network, interacting among each other, but not with Lloret de Mar local and regional tourism and film actors.

Lloret de Mar websites network represent a singular case, because of the dependence of the film office to the tourism board (Patronat). Film and tourism actors in local and regional don't present many relations with each other, being some film actors isolated from the network, as mentioned before. Tourism and film actors relate to their actors types, not presenting much integration. For film tourism, the Lloret de Mar website network needs to work on the relations between the different types of actors.

### 4.8 Tarragona

Tarragona is the capital of the region Tarragonès, in the province of Tarragona. The figure (09) below situates Tarragona in its region.

**Figure 9: General information about the Tarragonès region.**



Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

The city is located at the northeastern corner of the Iberian Peninsula. Tarragona preserves roman architectural patrimony and was declared by UNESCO in 2000 world heritage (Catalunya Turisme, 2012).

Tarragon attractions include beaches, architectural patrimony and various museums. It also has a commercial port, Port Tarraco, the busiest commercial port in the Mediterranean. The city presents traditional festivals and gastronomy offer (Catalunya Turisme, 2012).



## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

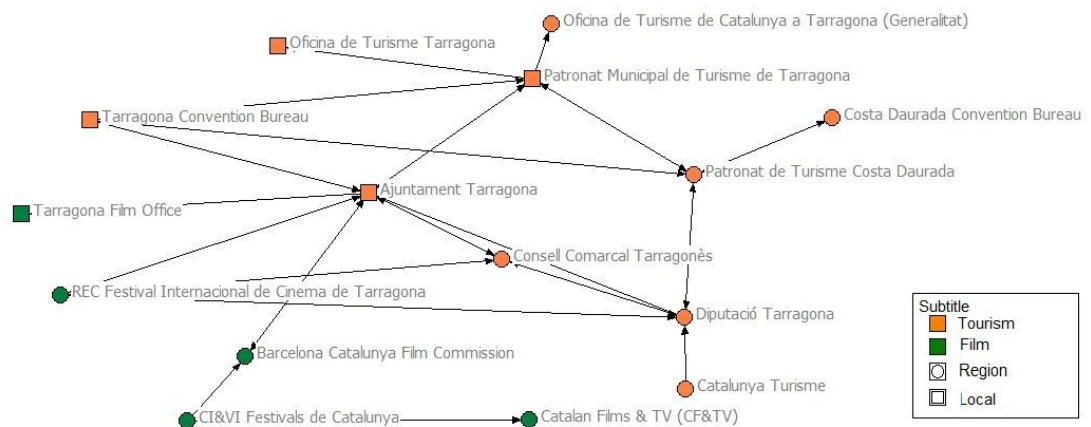
The Tarragona Film Office (TFO) is a municipal service that supports audiovisual productions, established in 2008. It is part of the BCFC network. The TFO offers information and support services on procedures to the professionals of the audiovisual sector (Ajuntament de Tarragona, 2012).

Their main services are: support on location scouting and procedures, coordination between different municipal services, such as light on public spaces, reservation for technical team, coordination to city guard; support to production needs and on shooting and communication services (Ajuntament de Tarragona, 2012).

In 2011, excluding Barcelona, it was the fourth city that received most productions (48) comparing to the others in the BCFC (Barcelona Catalunya Film Commission, 2011).

The resulting graph (07) and table (12) of Tarragona's film and tourism websites are presented below.

**Graph 7: Network graph of Tarragona's Film and Tourism websites.**



**Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

**Table 12: Network indicators of Tarragona's film and tourism websites.**

Tarragona	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Ajuntament Tarragona	5.000	6.000	18.667	18.421	52.000
Patronat Municipal de Turisme de Tarragona	4.000	3.000	17.722	18.421	30.000
REC Festival Internacional de Cinema de Tarragona	3.000	1.000	16.667	17.500	1.500
Patronat de Turisme Costa Daurada	3.000	4.000	17.722	17.500	23.000
Tarragona Convention Bureau	3.000	0.000	6.667	21.875	0.000
Diputació Tarragona	3.000	4.000	17.722	17.722	20.000
Consell Comarcal Tarragonès	2.000	3.000	17.722	17.284	1.500
CI&VI Festivals de Catalunya	2.000	0.000	6.667	20.896	0.000
Barcelona Catalunya Film Commission	1.000	2.000	17.073	16.471	10.000
Catalunya Turisme	1.000	0.000	6.667	18.667	0.000
Costa Daurada Convention Bureau	1.000	1.000	15.909	15.730	0.000
Tarragona Film Office	0.000	1.000	19.718	6.667	0.000
Oficina de Turisme Tarragona	0.000	1.000	18.667	6.667	0.000
Oficina de Turisme de Catalunya a Tarragona (Generalitat)	0.000	1.000	18.667	6.667	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	7.143	6.667	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	1.867	1.867	14.893	15.143	9.200
Standard Deviation	1.543	1.707	4.967	5.318	14.984
Sum	28.000	28.000	223.396	227.152	138.000
Variance	2.382	2.916	24.668	28.278	224.527
Minimum	0.000	0.000	6.667	6.667	0.000
Maximum	5.000	6.000	19.718	21.875	52.000

In the case of the Tarragona network analysis, some actors identified as individuals on the methodology such as Tarragona Film Office and tourist offices are under the internet website domain of the Tarragona city hall and city's tourism board (Patronat Municipal de Turisme de Tarragona), respectively.

As seen on the cases of Girona and Lloret, for the network analysis, special considerations were made. The matrix for the analysis of Tarragona was built with the identification of those actors separately in order to position them in the network as individuals. Since the websites are the same for those actors, Tarragona Film Office and City Hall; and Tourist Offices and tourism board (Patronat Municipal de Turisme de Tarragona), the hyperlinks could have had the risk of double checking, because they originate from the same source. In order to avoid duplications of the links, the hyperlinks from the mentioned actors were checked only once as adjacent from their main websites.

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

The indicator of the degree of centrality measured on Tarragona Website Network indicates that the actors with the highest in-degree are those that represent government websites, being the most centered the city hall of Tarragona, followed by the Patronat Costa Daurada (representing tourism promotion) and the Diputació of Tarragona. Those websites are occupying the central position in this case.

The closeness centrality indicates the websites that by a high in-closeness indicator represents quick interactions to all other. In the case of the Tarragona website network the one that interacts the quickest is the Tarragona Film Office, then the tourist offices and the city hall, respectively. Nevertheless, those actors are under the website domain of the city hall and city's tourism board and their websites relations are limited due this peculiarity. When analyzing the out-degree, Tarragona Film Office and tourist offices show low results, indicating that they cannot reach many other actors.

The betweenness centrality indicates the websites that act as bridges linking the other websites. In this case, the Tarragona city hall and the Patronat Municipal de Turisme are the websites with highly betweenness degree.

As it is shown on the graph (07), tourism actors and film actors, in local and regional level related to each other's types of actors. The Tarragona city hall is the central, as indicated by the results, actor that represents a potential for connecting and relating film and tourism actors. For the development of joint actions for film tourism, the Tarragona city hall represents the central location and possible connections to film and tourism actors.

### **4.9 Roses**

Roses is located in the north of Costa Brava, in the region of Alt Empordà at the province of Girona. The figure (10) below situates Roses and presents a brief description of its regions.

Figure 10: General information about the Alt Empordà region.



**Comarca Alt Empordà**  
**Surface area:** 1.357,5km<sup>2</sup>.  
**Population:** 140.428 (2011).  
**Towns:** 68.  
**Capital:** Figueres.  
**Tourist Brand:** Costa Brava.  
**Province:** Girona.  
**Audiovisual Production:** Not Informed (2011).

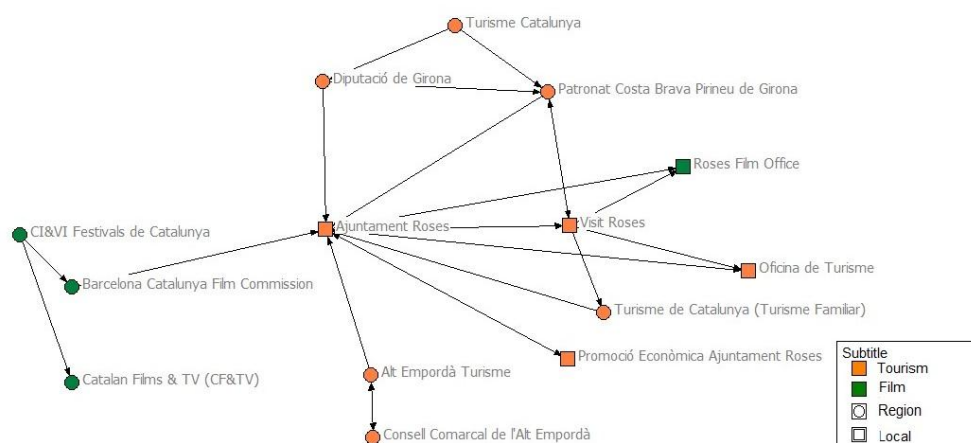
Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

Roses is surrounded by natural parks of geological, maritime and ornithological importance. The attractions of the city are the 2 Natural Parks (Cap de Creus and Aiguamolls de l'Empordà); beaches and cultural heritage of Greek and Roman remains and Civil War bunkers and raid shelters (Ajuntament Roses, 2005).

Roses Film Office has the objective of providing information and facilities to producers, so that they reach successful results (Ajuntament de Roses, 2005). In 2009, Roses received 4 productions (Barcelona Catalunya Film Commission, 2009). In 2010, there was a film production, collaboration between the city Hall and TV3, being considered as a good instrument for promotion of Roses and natural surroundings. (RosesInfo, 2010).

The resulting graph (08) and table (13) of Roses's film and tourism websites are presented below.

Graph 8: Network graph of Roses's Film and Tourism websites.



**Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

**Table 13: Network indicators of Roses's film and tourism websites.**

Roses	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Visit Roses	5.000	2.000	20.968	13.978	24.667
Ajuntament Roses	4.000	7.000	23.636	13.684	49.333
Patronat Costa Brava					
Pirineu de Girona	3.000	3.000	19.403	13.684	13.333
Turisme Catalunya	2.000	0.000	7.143	14.773	0.000
Alt Empordà Turisme	2.000	1.000	7.692	17.105	8.000
CI&VI Festivals de Catalunya	2.000	0.000	7.143	18.310	0.000
Diputació de Girona	2.000	2.000	17.333	13.402	1.667
Turisme de Catalunya (Turisme Familiar)	1.000	1.000	18.571	13.000	0.000
Promoció Econòmica					
Ajuntament Roses	1.000	1.000	20.313	12.871	0.000
Consell Comarcal de l'Alt Empordà	1.000	1.000	7.692	15.476	0.000
Barcelona Catalunya Film Commission	1.000	1.000	7.692	14.607	8.000
Oficina de Turisme	0.000	2.000	25.490	7.143	0.000
Roses Film Office	0.000	2.000	25.490	7.143	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	7.692	7.143	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	1.714	1.714	15.447	13.023	7.500
Standard Deviation	1.436	1.666	7.223	3.400	13.531
Sum	24.000	24.000	216.260	182.320	105.000
Variance	2.061	2.776	52.170	11.563	183.091
Minimum	0.000	0.000	7.143	7.143	0.000
Maximum	5.000	7.000	25.490	18.310	49.333

In the case of the Roses network analysis, some actors identified as individuals on the methodology, such as Roses Film Office and Tourist Offices are under the internet website domain of Visit Roses (tourism department of Roses). Therefore, the matrix for the analysis of Roses was built with the identification of those actors separately in order to position them in the network as individuals. As the website is the same for those actors, the hyperlinks could have had the risk of double checking, because they originate from the same source. Thus, in order to avoid duplications of the links, the hyperlinks from the mentioned actors were checked only once as adjacent from the main website.

The network analysis's results of the websites of Roses, regarding degree centrality, indicate that the actors with the highest in-degree are the city hall of Roses, followed by the Patronat de Girona Costa Brava (representing tourism promotion).

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

The closeness centrality indicates the websites that by a high in-closeness indicator represents quick interactions to all other. In the case of Roses websites, the closeness centrality indicates that Roses Film Office is quickly accessible, together with the city's tourist Office, but as it is also demonstrated on other analyzed cases, such as Girona, Lloret de Mar and Tarragona, their out-degree result is low. Roses Film Office and Tourist Offices websites are not able to reach many other actors.

The betweenness centrality indicates the websites that act as bridges linking the other websites, being the website of Visit Roses the one that act as bridge to pairs of other websites.

It is important to take into account that the website of Visit Roses and Ajuntament de Roses that represent the Roses Film Office is not updated and presents many broken links and errors in information contents. Regarding online marketing, as seen on section 2.4 in the present work, the use of internet to promote locations is getting more and more common in offering database and information for producers. In this case, the section for the Film Office on the website of Visit Roses doesn't present any content.

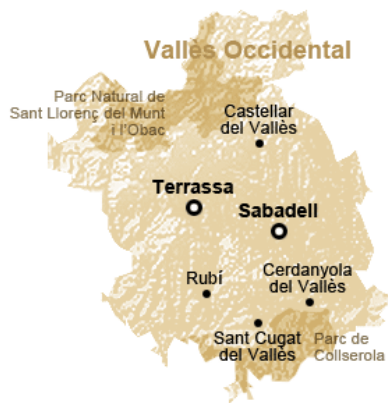
The responsible for Tourism Department of Roses inform (Interview 4) that Roses Film Office is dependent of the tourism department and its functions are managed by the tourism department. The interview 4 reveals that the tourism department of Roses joined the BCFC with the objective of promoting the city's locations as scenery to audiovisual productions, but they haven't received much production.

In general, the most central websites of Roses network are the Roses city hall, Visit Roses, and the regional tourism board (Patronat Costa Brava Pirineu Girona). Those actors present high results regarding degree centrality, closeness centrality and betweenness centrality. In this case, film actors are not much integrated on the total of the network.

#### 4.10 Terrasasa

Terrassa is located in the region of Vallès Occidental, in the province of Barcelona. . The figure (11) below situates Terrassa and presents a brief description of its regions.

**Figure 11: General information about the Vallès Occidental region.**



**Comarca Vallès Occidental.**

**Surface area:** 583,2km<sup>2</sup>.

**Population:** 892.260 (2011).

**Towns:** 23.

**Capital:** Sabadell i Terrassa.

**Tourist Brand:** Catalunya Central.

**Province:** Barcelona.

**Audiovisual Production:** 50 (2011).

Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

The city is situated at foothills of the Natural Park of Sant Llorenç del Munt. It is a university and industrial city, with vast cultural and artistic patrimony. The city organizes many festivals regarding music, dance and theater. The tourism activities in the city are: industrial tourism, modernism, gastronomy, cultural and natural tourism and meetings tourism (Ajuntament Terrassa, 2012).

In 2006 was founded the Parc Audiovisual de Catalunya in Terrassa. The Park is an audiovisual production center with services oriented to audiovisual production industry, companies and professionals. The Park has established a network of professionals, entrepreneurs who aim to promote economic development of the Catalan audiovisual sector (Parc Audiovisual de Catalunya, 2012)

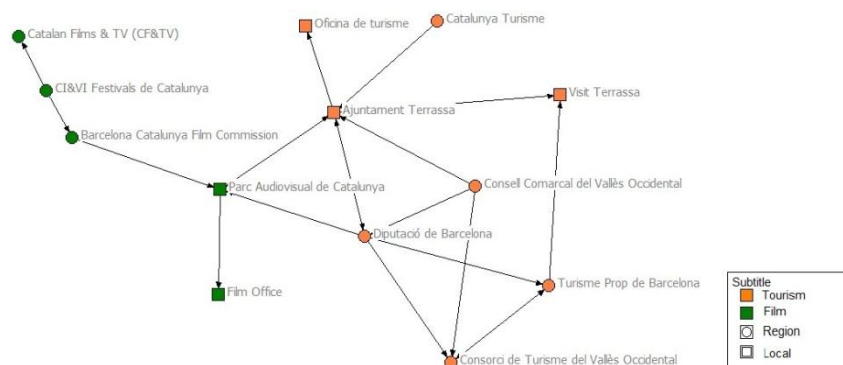
The company in charge of managing the center is the Parc Audiovisual de Catalunya SL, divided between the Terrassa City Hall (80% of ownership) and the Institut Català de les Indústries Culturals (20% of ownership). The counts with the facilities: stages, business cluster, storage, production and dressing rooms, locations, backlots, space for events among others (Parc Audiovisual de Catalunya, 2012)

## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

The Parc has its own Film Office that coordinates all on-location production in Terrassa, managing permits, logistic, public work, and other. Marketing the city to the entertainment industry as potential filming location is one the film office's actions. (Parc Audiovisual de Catalunya, 2012). Terrassa is the third city that received most productions (50) in 2011. (Balança Annual Barcelona Catalunya Film Commission, 2011). Total of productions from 2008 to 2011 in Terrassa show a decrease from 71 productions (2008) to 50 (2011). (Memòria ICIC, 2011).

The resulting graph (09) and table (14) of Terrassa's film and tourism websites are presented below.

**Graph 9: Network graph of Terrassa's Film and Tourism websites.**



**Table 14: Network indicators of Terrassa's film and tourism websites.**

Terrassa	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Ajuntament Terrassa	4.000	4.000	13.793	16.000	26.500
Diputació de Barcelona	4.000	2.000	13.187	16.000	11.500
Consell Comarcal del Vallès Occidental	3.000	0.000	7.692	18.182	0.000
Parc Audiovisual de Catalunya	2.000	3.000	13.793	15.190	18.000
CI&VI Festivals de Catalunya	2.000	0.000	7.692	20.690	0.000
Turisme Prop de Barcelona	2.000	2.000	16.438	9.091	1.500
Barcelona Catalunya Film Commission	1.000	1.000	8.333	16.216	8.000
Consorci de Turisme del Vallès Occidental	1.000	3.000	16.667	9.023	0.500
Catalunya Turisme	1.000	0.000	7.692	17.143	0.000
Visit Terrassa	0.000	2.000	20.690	7.692	0.000
Film Office	0.000	1.000	14.815	7.692	0.000
Oficina de turisme	0.000	1.000	14.815	7.692	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	8.333	7.692	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	1.538	1.538	12.611	12.946	5.077
Standard Deviation	1.393	1.216	4.099	4.641	8.274
Sum	20.000	20.000	163.941	168.303	66.000
Variance	1.941	1.479	16.798	21.541	68.456
Minimum	0.000	0.000	7.692	7.692	0.000
Maximum	4.000	4.000	20.690	20.690	26.500



## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

In the case of the Terrassa's network analysis, some actors identified as individuals on the methodology, such as Terrassa Film Office and Tourist Offices are under the internet website domain of the Parc Audiovisual de Catalunya and Visit Terrasa, respectively. Therefore, the matrix for the analysis of Terrassa was built with the identification of those actors separately in order to position them in the network as individuals.

As the website is the same for those actors, the hyperlinks could have had the risk of double checking, because they originate from the same source. Thus, in order to avoid duplications of the links, the hyperlinks from the mentioned actors were checked only once as adjacent from the main website.

In general, the measures of indicators of centrality degree, closeness degree and betweenness degree applied to the network of the websites of film and tourism organizations in the city of Terrassa present few interactions.

The degree centrality measure indicates that the city hall is the most popular website of the destination, followed by the Parc Audiovisual and the Consorci de Turisme del Vallès Occidental.

The closeness degree shows that Visit Terrassa and the Consorci de Turisme del Vallès Occidental are those which present higher in-closeness, being those websites the most quickly reachable in the network. The closeness centrality indicates that the Terrassa Film Office is quickly accessible, as it also happens with the city's tourist Office, but as it is also demonstrated on other analyzed cases, such as Girona, Lloret de Mar, Tarragona, and Roses, their out-degree result is low. Terrassa Film Office and Tourist Offices websites are not able to reach many other actors.

The betweenness centrality of the websites show that the city hall and the Parc Audiovisual act as highly intermediates between pairs of other websites.

In general, in the case of Terrassa the most central actors are Terrassa City Hall, Diputació de Barcelona and the Parc Audiovisual de Catalunya. Those actors present high results regarding degree centrality, closeness centrality and betweenness centrality. In this case, Parc Audiovisual de Catalunya can represent a connection between film and tourism local and regional actors, representing a potential instrument for joint actions regarding film tourism.

#### 4.11 Torroella de Montgrí

Torroella de Montgrí is located in the region of Baix Empordà, at the province of Girona. The figure (12) situates the city and provides a brief introduction of the region.

**Figure 12: General information about the la Baix Empordà region.**



#### **Comarca Baix Empordà.**

**Surface area:** 701,7 km<sup>2</sup>.

**Population:** 133.116 (2011).

**Towns:** 36.

**Capital:** la Bisbal d' Empordà.

**Tourist Brand:** Costa Brava.

**Province:** Girona.

**Audiovisual Production:** Not Informed (2011).

Source: Generalitat de Catalunya (2012). Barcelona Catalunya Film Commission (2011).

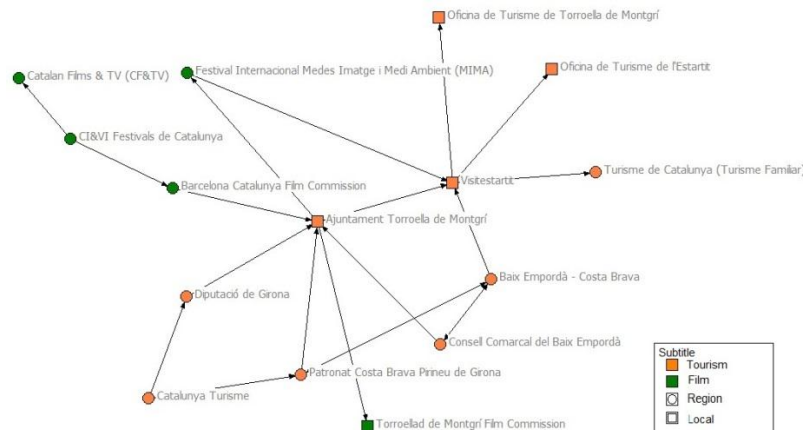
Torroella de Montgrí occupies a territory, in which 90% of the municipality is not urbanized, being under Natural Protection. The city is limited by the Montgrí Mountain and Ter River, while a kilometer offshore emerged the Medes Island marine reserve. In addition to the old town of Torroella there are other small population nucleuses, being one of them the seaside town L'Estartit. The main attractions are L'Estartit, Medes Islands, museums and musical festivals (Catalunya Turisme, 2012).

The Film Commission de Torroella de Montgrí I l'Estartit was established to offer quality services facilitating audiovisual productions and managing shooting procedures and permits. The Film Commission is under the responsibility of Economic Promotion and Commerce (Ajuntament Torroella de Montgrí, 2012).

The resulting graph (10) and table (15) of Torroella de Montgrí's film and tourism websites are presented below.

## Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism

**Graph 10: Network graph of Torroella de Montgrí's Film and Tourism websites.**



**Table 15: Network indicators of Torroella de Montgrí's film and tourism websites.**

Torroella de Montgrí	Degree Centraliy		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Visitestartit	4.000	4.000	17.949	10.938	35.000
Ajuntament Torroella de Montgrí	3.000	5.000	18.667	10.853	37.667
Baix Empordà - Costa Brava	3.000	2.000	8.284	15.217	8.333
Patronat Costa Brava Pirineu de Girona	2.000	2.000	8.284	14.894	7.167
CI&VI Festivals de Catalunya	2.000	0.000	6.667	14.000	0.000
Catalunya Turisme	2.000	0.000	6.667	18.667	
Consell Comarcal del Baix Empordà	2.000	1.000	8.187	14.894	1.000
Festival Internacional Medes Imatge i Medi Ambient (MIMA)	1.000	1.000	16.867	10.606	0.000
Diputació de Girona	1.000	1.000	7.143	11.570	2.833
Turisme de Catalunya (Turisme Familiar)	1.000	1.000	16.092	10.526	0.000
Barcelona Catalunya Film Commission	1.000	1.000	7.143	11.570	7.000
Torroellad de Montgrí Film Commission	0.000	1.000	19.718	6.667	0.000
Oficina de Turisme de Torroella de Montgrí	0.000	1.000	18.919	6.667	0.000
Oficina de Turisme de l'Estartit	0.000	1.000	18.919	6.667	0.000
Catalan Films & TV (CF&TV)	0.000	1.000	7.143	6.667	0.000

Descriptive Statistics	Degree of Centrality		Closeness centrality		Betweenness Centrality
	OutDegree	InDegree	In-closeness	Out-closeness	
Mean	1.467	1.467	12.443	11.360	6.600
Standard Deviation	1.204	1.310	5.431	3.560	12.026
Sum	22.000	22.000	186.648	170.401	99.000
Variance	1.449	1.716	29.497	12.674	144.614
Minimum	0.000	0.000	6.667	6.667	0.000
Maximum	4.000	5.000	19.718	18.667	37.667

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

In the case of the Torroella de Montgrí's network analysis, some actors identified as individuals on the methodology, such as Torroella de Montgrí's Film Commission and Tourist Offices are under the internet websites domain of the Torroella de Montgrí city hall and Visitestartit, respectively. Therefore, the matrix for the analysis of Torroella de Montgrí was built with the identification of those actors separately in order to position them in the network as individuals.

The measures of indicators of centrality degree, closeness degree and betweenness degree applied to the network of the websites of film and tourism organizations in the city of Torroella de Montgrí present low indicators values.

The degree centrality measure indicates that the city hall is the most popular website of the destination, followed by the tourism department of the city (Visitestartit).

The closeness degree shows that the Torroella Film Commission and tourism offices are those which present higher in-closeness, being those websites the most quickly reachable in the network. As presented on previous cases such as Girona, Lloret de Mar, Tarragona, Roses and Terrassa, their out-degree result is low. Terrassa Film Office and Tourist Offices websites are not able to reach many other actors.

The betweenness centrality of the websites show that the city hall of Torroella de Montgrí act as highly intermediates between pairs of other websites.

In general, the most central actors identified on the website network analysis of Torroella de Montgrí are: the tourism website of Visitestartit, Torroella de Montgrí city hall and Patronat Costa Brava Pirineu Girona. In this network, film and tourism actors are not integrated, as portrayed on the graph (10). Each film and tourism actors relates to each other's types of actors.

### **4.11 General Results**

Barcelona website network results indicate that actions regarding joint action between film and tourism should use the city hall and the Institut Català de les Empreses Culturals (ICEC) for providing information and promotion of the actions. As presented on previous sections the use of the hyperlinks on the web is viewed by some private or public organizations as a strategic resource (Park and Thelwall, 2003; Vaughan, Gao, and Kipp, 2006), but in this case, for the development of film tourism in the case of Barcelona, film and tourism websites actors are mostly separated on their areas of interests, not presenting much interactions with each other

## **Network Characteristics of Film Tourism websites in Catalonia: an application of network analysis in tourism**

The Anoia Film Office is under the responsibility of the Consell Econòmic i Social de la Comarca de l'Anoia. (CESCA), being a regional council and as the most recent established (2011) it includes tourism in its objectives. The Anoia Film Office has more tourism organizations because it represents a region and several municipalities and their entities. Their relations are based on the relations between each city hall and its higher government institution and the main actors are the Diputació and the Igualada's City Hall, which is the capital of the region. The Anoia Film Office is mainly connected to the city halls. The Film Festival is integrated, but with results under the average.

The Girona Film Office is part of the department of culture of the Girona City Hall. The main actor in the case of Girona is the city hall that has most of the websites under its responsibility, representing the power of the city hall over its departments. The city has many tourism organizations, as well as film festivals, museums and film related activity, but on the website analysis presented the city hall is the one with most influence.

The Sitges Film Office is directly related to tourism, since the tourism board is the department responsible for its development. It is possible to highlight Sitges as the most successful Film Office, since it received most of productions registered in 2011, which might be a result of the partnership with the tourism board. The only problem regarding Sitges Film Office is the broken links on its website, that can be seen on the lower rates indicated in the table (09) of results. The city hall and the Diputació also play a significant role, but the film festival is also well connected.

The Lloret de Mar network structure is simpler, there are not many film actors present neither involved. In this case the Film Office is also under the responsibility of the tourism department of the city hall, but it presents much simple structure than the one seen in Sitges. The city's tourism board and the city hall are the most influential websites.

The case of Tarragona, the most central websites are, again a City Hall, regional tourism board and the Diputació. In this case the Film Office is under the department of commerce and tourism, and it is dependent on the city hall's website. The city has its own tourism board website, but the film office is not mentioned on it. Film festival and related activities websites present low rates, not being well integrated.

Roses Film Office is also under the tourism department, and the city hall also represents the most central website of the network. The Film Office is on the tourism

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board of Roses website, but its section present error in content. This, regarding on line marketing represents a problem for the image of the Film Office, since its website does not provide accurate information. This is also a problem, since the hyperlinks can be considered a strategic resource by private and public organizations (Park and Thelwall, 2003; Vaughan, Gao and Kipp, 2006).

Terrassas Film Office is under the responsibility of the Parc Audiovisual de Catalunya, being independent from tourism board and the city hall, but general connectivity is low, comparing to the other examples. The city hall still represents the most central website.

The Torroella de Montgrí Film Commission is under the responsibility of the department of Economic Promotion and Commerce of the city hall. The city hall and the city's tourism board are also the most central is this case.

Film actors identified were those responsible for planning and promoting audiovisual activities at the city. Therefore film offices/commissions, film festivals, Consortium for Catalan films and TV and festivals coordinator entity of Catalonia (CI&VI) were included as common actors to all cities analyzed.

The other aspect of the present work was the identification of local and regional tourism actors. The tourism actors included were those that represented characteristics and potential for development of projects, joint actions and business opportunities with the audiovisual sector. Tourist office and visitor centers are included for their potential of reaching tourists and providing information, being a valuable tool for promotion of film tourism related activities.

In the case of Catalonia, the film offices/commissions are established by city hall and the cultural department (Barcelona and Girona), tourism department (Sitges, Lloret de Mar and Roses), regional economic and social council and audiovisual companies (Anoia), commerce and tourism (Tarragona), Audiovisual Parc (Terrassa) and economic promotion and commerce (Torroella de Montgrí).

With the aim of analyzing the extent of relations between film and tourism organizations of Catalonia the present work applied the network analysis, using measures and indicators of degree centrality, closeness centrality and betweenness centrality.

The application of the network analysis on film and tourism websites of each case permitted the elaboration of graphs and table that enable a visualization of the

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actors and their positions on the network. In most cases film and tourism actors are not much related, being their main interactions with each other (film actors between film actors and tourism actors between tourism actors). The

One factor that limited the present work was that some film offices don't own their website, being dependent on other actor's website. This represents a positive side, as the main websites show high interactions between several actors, and consequently they also present the possibility of interacting with those. In each case central actors were identified and their central position enables them to be most active when regarding joint activity between film and tourism.

In the Barcelona website network case, actions regarding joint action between film and tourism should use the city hall and the Institut Català de les Empreses Culturals (ICEC) for providing information and promotion of the actions.

In the case of Anoia the Diputació de Barcelona, Consell Comarcal de l'Anoia and Ajuntament de Igualada are the most central and should be recognized as informational channel to the other actors.

In the case of Girona the Girona City Hall is the most central. Most relations occur through the city hall website, including film and tourism actors. Other actors that present potential for joint actions are the Patronat de Turisme Costa Brava Pirineu de Girona and the Convention Bureau.

Sitges network analysis showed that the actors that present the highest indicators of centrality are in local level the city hall, tourism promotion agency, and Sitges Film Festival. In regional level they are the Turisme a Prop de Barcelona (tourism promotion and development project), CI&VI Festivals and the Diputació de Barcelona. This results indicates that local and regional levels are related, and also that film and tourism actors websites show connections. This represents great potential opportunities for the development of film tourism in the city, using the already established relations between the presented actors.

Lloret de Mar presented the city's tourism board (Patronat) as the most central actor.

In the case of Tarragona the city hall is the central, as indicated by the results. For the development of joint actions for film tourism, the Tarragona city hall represents the central location and possible connections to film and tourism actors.

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In general, the most central websites of Roses network are the Roses city hall, Visit Roses, and the regional tourism board (Patronat Costa Brava Pirineu Girona).

In the case of Terrassa the most central actors are Terrassa City Hall, Diputació de Barcelona and the Parc Audiovisual de Catalunya. In this case, Parc Audiovisual de Catalunya can represent a connection between film and tourism local and regional actors, representing a potential instrument for joint actions regarding film tourism.

In general, the most central actors identified on the website network analysis of Torroella de Montgrí are: the tourism website of Visitestartit, Torroella de Montgrí city hall and Patronat Costa Brava Pirineu Girona.

Therefore, city hall represents the main centrality in most cases, and joint actions between tourism and film actors should use this local government agent for support and promotion of their actions.

Most Film Office mentions that their objectives are mainly attracting film production companies and facilitating procedures. As seen in literature review (Riley, 1994) film commission are centering their activities on audiovisual production, and projects and investigation of the secondary effect of film productions, such as tourism visitation and activities are not being taken into account.

### **5. Conclusion**

Film tourism is a new field of study on tourism research. Film tourism mainly refers to the attraction of audiovisual productions to destination, and as second effect results it can attract tourists, promotion of destination, business and labor. The destinations that receive productions are faced with the attraction and support to the producers, facilitating procedures and assisting on the development process; and at the same time with tourism visitation and an increase of tourist flow and their expectations and requests.

In order to contribute to this field of research this work presented an analysis of the film and tourism websites to examine the extent of the relations between film and tourism in Catalonia, based on network analysis approach. On this study it is take the assumption that the network of websites represents a reliable sample of the socioeconomic dynamics between companies. Therefore, with the application of the network analysis and the measures indicating centrality degree, closeness degree and



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betweenness degree, it was possible to identify the extent of the relations, based on the virtual world and identify the most central actors.

In the Catalan websites case, it was revealed that tourism and film websites are directly related to local government websites. Film Offices are under the responsibility of local Tourism Boards (Sitges, Tarragona, Lloret de Mar and Roses); cultural department (Barcelona, Girona), economic promotion and commerce (Torriella de Montgr), regional planning council (Anoia) and an Audiovisual Parc (Terrassa). There is no pattern regarding its organization and structure, depending on the responsible organization. Some film offices, as in the case of Girona have developed cost advantages, other like Lloret have the taxes police presented and no mention of exemptions.

Regarding film actors, there is a variety of film festivals that are integrated, but the regional network of BCFC is not fully active based on the website analysis results. The website for Catalan Films and TV is isolated and not much active in the website analysis. The website that gathers local film festivals interacts mainly with local festivals and to the Catalan Films and TV and BCFC websites. Tourism organizations should be more connected to this websites, in order to advertise locations and tourism services.

Therefore the mains characteristics of film tourism websites are that city halls represent the main centrality in most cases, and joint actions between tourism and film actors should use this local government agent for support and promotion of their actions; and most film offices/commission center their objectives on attracting film production companies and facilitating procedures.

The present research shows a contribution on the approach of film tourism and local websites, applying network analysis.

Further research could add interviews with the main actors identified so that the research inference could base on both research material and real world statements. Another proposal broadening the study of the web and include the Web 2.0 and its implications on tourism and film industry. Also could add the profile of the tourists of the destinations, in order to better define products and verify if the existing routes are being used.

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