NETWORK ANALYSIS OF A TOURIST DESTINATION

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Abstract

This paper relates to the study of relationships within a tourist destination in order to prove the existence of structural models around which the entire supply system is developed. All this is made possible by the analysis of the links existing between businesses belonging to the destination.

We have focused on the role played by three families within the tourist destination assessing their role as an aggregating and driving force. This has been made possible by using one of the tools provided by SNA, namely Ego network analysis. This tool has allowed us to focus our attention on the role that individual businesses belonging to the three main families in San Vito Lo Capo (that we call Ego) play in the management of the destination. In particular, since the network of business relationships at this scarcely developed destination (i.e., in terms of density), the subjects are more likely to form relationships with those individuals who are acknowledged leaders. Within these tighter networks (Ego networks), the entities involved are urged to share norms and values that characterize the Ego and in this sense one can understand why leadership creates the social capital. It is easy to note that each business, when taken alone, cannot manage the entire destination but needs the help and support of the family of belonging to expand its sphere of influence. Only the coordination and cooperation of the three families can create an informal network that supports and sustains the entire destination.

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1. Introduction

Studies on tourist destinations have highlighted the diversity of the paths through which these change their structural and organizational structure over time.[2] This lack of homogeneity does not lie so much in whether or not one or more of the standard phases of the life cycle of the destination is lacking, or even in the different time frames of the transition from one phase to another. Rather, it is expressed in the different tourism models of the different territories. The specific geographic, historical, cultural, institutional and social conditions create a complex mix of factors in each territory, giving rise to forms of tourism configured differently and with non-homogeneous development paths.[3]

There are numerous elements of differentiation. These relate primarily to the provision of attractions, but also encompass the organization of the supply. This is a broad term that includes the manner in which attractors, and in general the set of tourist goods and services are offered and made available to visitors. Things being equal, territories that adopt different organizational models for supply create very different types of tourism. In fact, the organization model has an inherent intangible component, a qualitative trait that confers a degree of specificity and recognizability to tourism in a specific area. It determines its ability to compete in the market.

How can an organizational model that has proven to be successful for a destination be replicated elsewhere? The solutions depend on (i) the level to which the constitutive elements of the organization can be codified, (ii) the presence in these areas of a mix of contextual factors - territorial, institutional, social, cultural, etc. - similar to those of the successful destination, and (iii) the implementation of policies consistent with the specificity of the area and with the model to be replicated. In cases in which the organization of supply is highly codified, as is the case of models of mass tourism with a high degree of management control by tour operators, replicability is quite easy, since the organization does not depend very much on the context. Resorts are the most typical expression of supply models of this type; they create tourist 'enclaves' in local contexts located at the margins of the process.

However, when the organization is modeled on the characteristics of the local context, the degree of codifiability of organizational routines, both at the business and system level, is reduced and this makes the possibility of replication of the experience depend on the fact whether these areas to be developed feature conditions relating to the context - in the broadest sense - that are similar or comparable to those at the successful destination. However, in this case too, replication is not immediate and requires coherent policies that are able to shape further the organization in order to adapt them and increase their effectiveness in the new context.

These considerations constitute the basis for this work. It stems from the observation that many places in Sicily have launched tourism development projects that aim at establishing a type of tourist destination characterized by two elements: (a) demand comes mainly from do-it-yourself tourists who tend to organize their vacations by themselves and fit into the context of the destination, while respecting the environment and exploring potential relationships; (b) the supply

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[2] Some models (Butler, 1980) have tried to chart out these paths. However, destinations do not necessarily always go through all phases of the life cycle, from their initial discovery by tourists-pioneers to their maturity, and decline. And even when that happens, the time frames rarely overlap. It follows, therefore, that these models cannot be taken as the basis of "physiological prophecies" (Cooper et al., 2002, p.68) that allow the system to foresee the compulsory succession of development phases or even the time frames for transition between phases.

[3] This comes as no surprise since it is well known that standardization is a conceptual category that does not fit tourism at all, however and wherever you wish to apply it.

of tourism services comes from many small businesses mainly run by local entrepreneurs (Cooper et al, 2002).

It is a type of destination where the organization model is strictly inherent to the local context and, as stated above, can be replicated with intelligent adaptations and coherent policies.

It should be emphasized that the model described here is a destination model toward which a considerable part of the tourist areas in the region of Sicily and other parts of southern Italy are tending. The development of these locations, in many cases, is proceeding very slowly. Several years or even decades pass from the initial discovery phase where the target has reached a remarkable level of development. There are various reasons for this. One of these lies in the difficulty of providing a sufficiently complex and integrated supply of tourism goods and services, so as to form a whole (amalgam) that is internally consistent with the destination's identity. When this is achieved, the destination usually takes on the traits of a "holiday community-village": the whole area and entire community are involved in the mission of producing the holiday and the synergies between residents, visitors, businesses and public actors that become fully manifest.
In particular, the synergies between businesses are manifested in the development of productive and non-productive networks of relationships through which they develop external economies of various kinds, both at a strictly production-related level and, more distinctly, at an organizational level.

In a previous study we reconstructed and analyzed the network of relationships between enterprises within a tourist destination - that of the town of San Vito lo Capo - belonging to the type outlined above by applying the tools of Social Network Analysis. The study highlighted the fact that the density of the network of relationships is growing significantly among businesses whose owners are bound by family ties or ties of kinship. Within the network, therefore, relationships depend on "narrow" trust (Purpura, 1995) that is exchanged within circuits based on kinship. It is a fact already ascertained for other businesses engaged in industrial activities in Sicily, and reported as a possible constraint to business growth, and more generally to the broadening of relationships governed by the market for which "broad" trust based on impersonal rules governing the institutional sphere is essential.

In this study, we followed up the analysis conducted in the previous study with the aim of assessing the potential role of individuals acting as leaders within the network. The hypothesis that we are testing is that at tourism destinations that have the characteristics outlined above, the presence of leaders within relational groups based on kinship is a sufficient condition to ensure the maintenance and development of the network. In this way, the results already obtained are further consolidated. That is, in the specific case of these tourist destinations, and unlike in other sectors, the presence of groups based on relational ties of kinship is not a constraint to the growth of the destination, rather it is a strength; moreover, the growth of the destination can further benefit from the fact that within these relational groups based on kinship there are people acting as leaders.

The paper is organized as follows. Paragraph 2 presents the SNA model that will be applied to the analytical study concerning the role of leaders within the relational groups based on kinship. Paragraph 3 is an introduction to the analysis; paragraph 4 recalls and expands the concepts of ego network; paragraph 5 briefly illustrates the characteristics of the tourist destination of San Vito Lo Capo; and paragraphs 6 and 7 show the results of the analysis. Paragraph 8 presents the conclusions.

2. Application of SNA to tourist destination

A tourist destination is characterized by a group of subjects (hotels, attractions, transport, travel agencies and restaurants), that, although geographically dispersed within the territory, have personal and commercial relations that allow the destination itself to provide its tourism product. These formal and informal collaborations and networks have been extensively studied in the literature on tourism (Hall 1999; Bramwell and Lane 2000; Tinsley and Lynch 2001; Copp and Ivy 2001; Gibson, Lynch and Morrison 2005; Saxena 2005) and it was observed that the behavior of the subjects that belong to it changes to vary the structure of the relationship that they form (Mitchell, 1969).

The structure of the ties within which each player is inserted could facilitate or constrain their actions (Granovetter 1973; Kogut 2000). If increases the density of the ties in a destination, communication becomes more efficient (Rowley 1997) and this encourages conformity, inclusion and allows the cohesion of a destination (Pavlovich 2003). Instead, a low dense network tends to develop internally a few small core elites with strongly interconnected players and the remaining part of the players with a smaller number of ties (Scott 1992). In the latter case, through closer communication systems and more intense exchanges of information, these elites establish the institutional rules that govern their commercial relations. Study the tourist destination as a network or more generally as a complex dynamic system (Baggio, 2008), allows the use of techniques such as social network analysis. As argued by Galaskiewicz & Wasserman (1994):''*Instead of analysing individual behaviours, attitudes and beliefs, social network analysis focuses its attention on how these interactions constitute a framework or structure that can be studied and analysed in its own right*'' (p. 12). Social Network Analysis displays complex sets of relationships and simplify them (even through a graphical and tabular representation) in order to give a clear representation of the network (Cross, Borgatti, e Parker, 2002). The SNA provides managers the opportunity to understand the logic of operation of the network so as to learn about the features and critical aspects to achieve better destination governance (Baggio, 2007; Scott et al, 2008a, 2008b; Fontoura Costa & Baggio, 2009). It is an interdisciplinary methodology because, though developed in sociology, it has been implemented through the contribution of mathematicians, statisticians and computer scientists who have developed and formalized the technical features, making it suitable to represent relational networks in the economic field.

The multi-disciplinary origin of SNA has led to the creation of a wide range of quantitative measurements that allow identifying the main characteristics of the network (Scott 2000).

3. Social Network Analysis: a useful tool for analysis of tourism destination networks

In addition to dealing with the issue of the structural elements (Pearce; Cooper et al. 2002), the presence or absence of specific assets, the territorial dimension (Costa, 2000), and the role and composition of stakeholders and shareholders (Candela G, 2012), the literature on tourist destinations addresses some of the conditions that allow destinations to grow and develop (Scott, et al, 2012).

These are dealt with in a more widespread and thorough manner in the tourism cluster model whose main condition is the presence of a multitude of enterprises and the ongoing interaction between them.

In this paradigm, a tourist destination becomes a place of relationships and interactions between firms, or the place where there is business originating from economic, social and production relations.

This space of social and economic relations is composed of individuals who, like the nodes of a relational grid, albeit productive, are responsible for establishing or maintaining the set of formal, informal, economic and social relations underlying the operation of the entire tourist destination.

However, the presence of these relationships is not enough to explain the systemic operation of the destination. The reasons are to be sought in relational dynamics as well as in the role played by each subject within the grid. Therefore, the possible interactions and collaboration between firms do not often depend on individual determination or technical capacity, but is due to the role that these have within the destination. In particular, in some cases, it depends on the extent to which they are recognized as system leaders or have a dense consolidated network of trust relationships, such as to be identified as leaders of the system and central figures in its operation vis-à-vis other enterprises.

At many destinations, though, there are conditions of aggregation between enterprises, characterized by the presence of either leading enterprises that are recognized as being leaders of the system or satellite enterprises that keep out of the cooperation and collaboration system marginalizing their role.

Therefore, collaborating with a system of companies or being a satellite enterprise is a binary choice of the individual entrepreneur who decides to join a formalized system of established rules or to follow his own independent strategies.

The presence of different roles played by the enterprises and the various possible aggregations among them in a cluster or subcluster draws attention to how the network of enterprises is structured.

This paper aims at highlighting that the presence of formal, informal, intense, complex and concentrated relationships between firms does not explain per se how the tourist destination system works. In this network the presence of system leaders, satellite enterprises and groups of undertakings are to be identified to gain greater insight into the role of each.

The different relational configurations and different weights of the individual firms compared with the others in the system (better defined as nodes) can offer an overall view of the destination, revealing its strengths (relevant companies or leaders), and its weaknesses (satellite enterprises, uncooperative firms, marginal or marginalized businesses).

The need to cooperate in small tourist destinations, characterized as they are by the widespread presence of micro-businesses, albeit felt as necessary and often induced by tourism policies aimed at growth and development, encounters the main resistance or driving forces in the relational configuration and in the structure of the relationships between companies with different roles.

4. The destination of San Vito Lo Capo: history and economic developments

The analysis of the relational network was conducted in the territory of San Vito lo Capo, a Sicilian town, which is today one of the best examples on the island of a successful tourist destination.

Over the last ten years, the resort has grown in size evolving from a simple place with a tourist vocation to one with an increasingly systemic and structured configuration and is now defined a spontaneously growing tourist destination.

Collaboration and cooperation between operators and people living in the town are the driving forces of the growth of the destination, which independently and through self-management has been able to structure its supply consistently with the growth in tourist demand. The network created among the increasing number of new small tourism businesses that are connected together underpins a systemic make-up unique in its kind on the Sicilian tourism scene, revealing original and spontaneous aspects in its endogenous growth processes.

In the 2003-2012 period, overnights increased by 45%, from 352,980 to 508,659 (2012). However, these figures underestimate the actual number of visitors due to the large number of tourists who are lodged in private accommodations not covered by statistics. Increasing tourism demand has created a new supply of accommodations, homes and facilities in the non-hotel sector.

While in 2003 60% of accommodations were concentrated in the hotel sector—though consisting of small-to-medium sized establishments—in 2012 these consisted mainly of non-hotel accommodations and especially B&B's, accounting for over 70%.

Figure 1: Number of tourists from 2003 to 2012
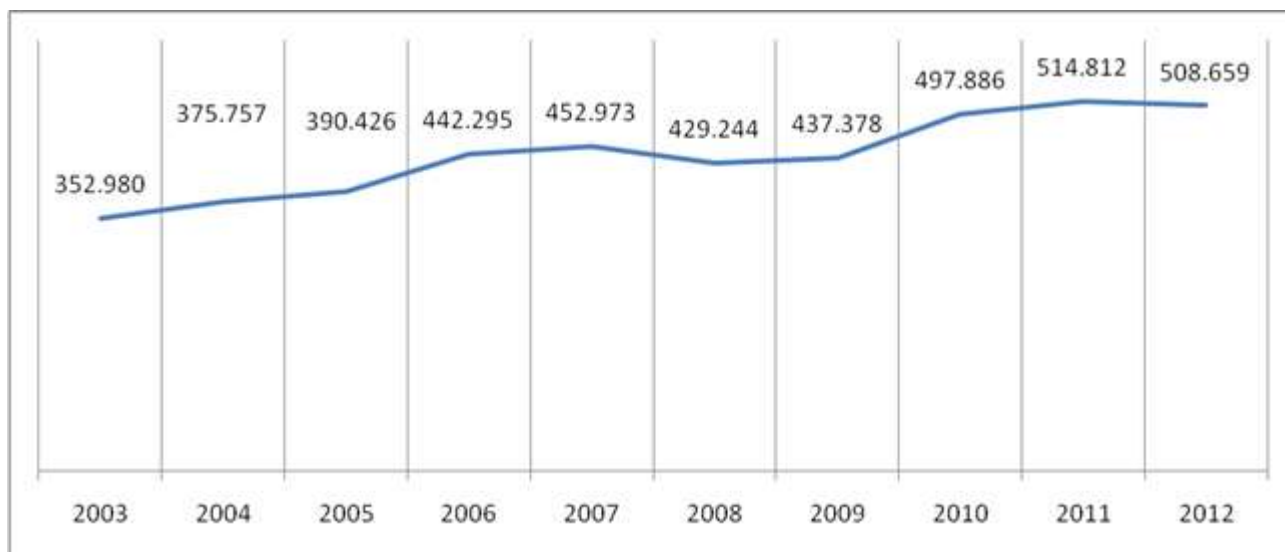
Source: based on Province of Trapani data

The data show a significant change in the local tourism system at the center of which lies widespread entrepreneurship. In fact, the production of tourism services sees almost the entire local community engaged and this is also the case when it comes to programming. On the one hand, this situation has prevented the rise of the conflicts well known in the literature (Candela, Figini, 2012) between operators and the local population and, on the other hand, it has allowed both public and private interests to be consistent and shared by all the players at the tourist destination.

The uniqueness of the experience of San Vito lo Capo raises the question on what are the factors that have contributed to the forming of this "host community", and specifically on what the density

of the ties, both productive and non-productive, is between the firms and what economic, social and cultural conditions these are based on.

The presence of this "host community" is to be sought for in the network of relationships of mutual trust and guidance toward a balanced and widespread development open to all.

5.   Social Network Analysis: Ego-network analysis

An ego-network is a network *consisting of a single actor (ego) together with the actors they are connected to (alters) and all the links among those alters*"(Everett and Borgatti 2005). These networks are also known as " *neighborhood networks of ego*" or "*first order neighbourhoods of ego*". One of the first contributions to focus attention on research into ego-networks is that of Bott (1957) who understood that within small networks it is possible to "*exert consistent informal pressure on one another to conform to the norms, keep in touch with one another, and, if need be, to help one another*." The ego tends to create links with those entities that are consistent with their *schematic expectations* (Kilduff & Tsai, 2003) in order to better manage the structure of the links that it forms around itself (Janicik & Larrick, 2005). This ability to choose the entities that will become part of one's own network is facilitated in a global structure of links in which there is a low density (Bott 1957). In the latter situation, there is a lack of a set of shared institutional rules and this leads entities to be more likely to establish relationships with those that are recognized to be leaders. Within this tighter network, the entities involved are urged to share norms and values that characterize the ego and in this sense, one can understand why leadership creates the social capital (Pastor, Meindl, & Mayo, 2002). Therefore, the ego is led to invest in relationships with the others, adding and/or subtracting players from its network in order to improve its performance and that of the network (Sparrowe, Liden, Wayne, & Kraimer, 2001) and be present in the other networks (which it is not part of) through the *alters*. These two motivations have different impacts on the *whole network*. For the enterprises, the first characteristic entails the opportunity to have a common growth basis (as is that of a small network) (Powell, Koput & Smith-Doerr, 1996) and allows them to create new ties (Gulati & Gargiulo, 1999) with entities with which they did not have relations before but which know themselves through the ego-network. Ongoing interaction in time and the exchange of information can yield innovations in services and products (Hargadon & Sutton, 1997). The second characteristic, on the other hand, improves management of the *whole network* because it allows the players (or nodes) to be able to reach one another through the least number of ties (Kogut & Walker, 2001).

This leads to a micro-analysis of the ego-networks using some indices such as density, connectivity (Burt, 1992) or the location of the *alters*. The reason why the focus is not limited only to density lies in the fact that, as Mitchell argued (1969): "*our interest is primarily in reachability since norm enforcement may occur through transmission of opinions and attitudes along the links of a network. A dense network may imply that this enforcement is more likely to take place than a sparse one but this cannot be taken for granted. The pattern of the network must also be taken into consideration.*"

6. Data and Method

The tourism companies of San Vito Lo Capo reported in the table belong to several economic sectors are enterprises which formed the analysis unit of the survey.

Tab 1.– San Vito Lo Capo Survey – 2010

Code	description	N° Tourism businesses
HAC	Hotels and similar establishments	32
AAC	Room rentals for short stays, vacation homes and apartments, B&B, apartments, housing connected to farms	27
RES	Restaurants with service	18
OTH	Other booking services and related activities	6
CAC	Camping grounds and areas for campers and trailers	4
TRA	Transportation by taxi, car rental with driver	2
REC	Car and light motor vehicle rental	2
ADV	Travel agency and tour operator activities	2
RAC	Tourist Villages	1
	TOTAL	**94**

Source: Based on data of the network of Chambers of Commerce

The network players were administered a questionnaire, which asked, among other things, to reply to the following questions, referring to the relational situation in 2010: 1. *Which of the following enterprises have you had business relations with during the year to provide tourism services to your customers (accommodation, transfers, excursions, restaurants, suggestion of other facilities, leisure services, etc.)?* 2. *Which business owner(s) of the following enterprises do you have family ties with?*

The questionnaire had a grid with the names of the tourism businesses of San Vito Lo Capo, so that each respondent could indicate the presence (1) or absence (0) of commercial or family ties with other local businesses. The questionnaires were administered to business owners and filled out by them with the assistance of a data collector.

The answers of the respondents were collected and placed in a *data matrix*, defined *adjacency matrix,* according to the SNA methodology. Two square matrices were obtained: **1.** The *commercial matrix:* processes the data relating to question 1, useful for the analysis of business relations; **2.** the *relative matrix*: processes data relating to question 2, which allows to study family ties among enterprises.

The calculation of the specific SNA indices shows the presence of a complex grid of relationships, which are illustrated and analyzed in the paragraphs below.

7. Results

In order to be able to understand the role that the three families play within the destination of San Vito Lo Capo, the behavior of the individual members belonging to them needs to be analyzed. Specifically, the Ucinet 6 software application (Borgatti, S. P., Everett, M. G. and Freeman, L. C. 2002) made it possible to build the reference network (Ego-network) for each of the 18 enterprises (Egos) belonging to the three families. Table 2 shows the 18 ego-networks and their characteristics.

Table 2 Characteristics of the ego-networks

	Size	Ties	Pairs	Densit	AvgDis	Diamet	EgoBet	nEgoBe
res 1	35.00	222.00	1190.00	18.66	1.99	4.00	257.14	43.22
hac 30	25.00	238.00	600.00	39.67	1.61	3.00	48.27	16.09
res 15	22.00	144.00	462.00	31.17	1.77	3.00	68.25	29.55
res 2	22.00	108.00	462.00	23.38	1.87	3.00	86.54	37.46
hac 23	21.00	156.00	420.00	37.14	1.68	3.00	48.25	22.98
aac 1	21.00	130.00	420.00	30.95	1.78	3.00	66.65	31.74
hac 2	20.00	124.00	380.00	32.63	1.74	3.00	54.33	28.59
cac 3	19.00	134.00	342.00	39.18	1.66	3.00	39.35	23.01
hac 17	18.00	118.00	306.00	38.56	1.68	3.00	37.47	24.49
hac 1	16.00	96.00	240.00	40.00	1.63	3.00	27.01	22.51
hac 7	13.00	72.00	156.00	46.15	1.56	3.00	14.62	18.74
aac 6	12.00	56.00	132.00	42.42	1.62	3.00	16.43	24.90
aac 14	12.00	54.00	132.00	40.91	1.64	3.00	16.63	25.20
hac 4	10.00	42.00	90.00	46.67	1.58	3.00	9.82	21.81
hac 28	10.00	40.00	90.00	44.44	1.78	3.00	16.53	36.74
aac 5	10.00	28.00	90.00	31.11			21.67	48.15
aac 7	6.00	24.00	30.00	80.00	1.20	2.00	0.60	4.00
hac 31	6.00	12.00	30.00	40.00	1.93	4.00	6.50	43.33

Legend: Size: Size of ego network; Ties: Number of directed ties; Pairs: Number of ordered pairs; Density: Ties divided by Pairs; AvgDist: Average geodesic distance; Diameter: Longest distance in egonet; Ego Betweenness: Betweenness of ego in own network; Normalized Ego Betweenness: Betweenness of ego in own network
Source: Data processed by the authors

The first feature that characterizes the ego-networks is their size (size column), which depends on the number of direct ties that each enterprise has. The enterprises have a different position in the table depending on the number of ties.
Looking at the composition of the ego-networks (table 3), it can be observed that each of them has several enterprises belonging to the same family and in 78% of cases there is at least one member of the other two families as well. This shows that the enterprises cooperate with one another regardless of membership in another family.

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Table 3 Presence of members of the three families in each ego-network

	hac 30	hac 28	hac 23	hac 4	hac 1	hac 7	hac 2	aac 14	aac 1	aac 5	aac 6	cac 3	res 1	res 15	res 2	hac 17	aac 7	hac 31
hac 30	0	1	1	0	1	1	0	0	0	0	0	1	1	1	0	1	0	0
hac 28	1	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0
hac 23	1	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0
hac 4	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0
hac 1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
hac 7	1	0	1	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0
hac 2	0	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0
aac 14	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	0
aac 1	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1	0
aac 5	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1	1
aac 6	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1	0
cac 3	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
res 1	1	0	1	1	0	1	1	1	0	1	1	0	0	0	0	0	1	0
res 15	1	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0
res 2	0	0	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	1
hac 17	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
aac 7	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0
hac 31	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0

Source: Data processed by the authors

The *tairs* and *pairs* indices, (table 3) show the degree of connectivity within each ego-network. High values of the indices correspond to a greater degree of connectivity. The data show that when the number of members of the same family increases, connectivity within the ego-network improves. This high level of cooperation can only be explained by the fact that the firms are bound together by ties based on trust (Purpura, 1995; Adobor, 2005).

Another significant result emerges from the high values reached by density index. This shows that there is actually considerable cooperation between the enterprises that belong to each ego-network. Finally, by combining the values of the density and Normalized Ego Betweenness indices, it is clear that the enterprises that are involved in the ego networks present at the destination recognize the leadership of the ego enterprise (Balkundi and Kilduff 2006) and therefore of the family of belonging.

Based on the results of the analysis of the indices, it can be stated that at the tourist destination of San Vito Lo Capo, each enterprise belonging to the three families has no ego-network large enough to manage the entire system.

It is the family, among the three identified, which manages to directly influence the greatest number of firms. However, the single family cannot manage and coordinate the commercial relations of the whole system on its own. The three major families are able to reach and influence 91.3 % of the enterprises (equal to 73 units) at the tourist destination of San Vito Lo Capo.

8. Final considerations and policy for the construction of a tourism destination

As seen within the tourist destination of San Vito Lo Capo, the leading role is played by a set of entities that are bound together by ties of kinship. It was observed that each enterprise alone cannot influence the entire destination because its scope of influence is limited to the size of its ego-network. To overcome this problem, and to be crucial at system level, enterprises are using their kinship ties as an informal network system to coordinate actions. The presence of coordination is known within the individual ego-networks in which management of member activities is supported both by the other members of the same family and by members of the other two families.

All this involves the determination of the rules of conduct that are shared by all three families and that are reiterated within each ego-network.

Within each ego-network, the enterprises share these rules of conduct that go on to become rules of the system. These system rules and the ensuing behaviors tend to remain relatively stable over long periods of time (as argued by Hayek, 1973). These cultural norms, supported by the system of kinship, produce compliance, govern the interactions among individuals and allow the development of the tourist destination.

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