Interfirm Network Analysis in Marginal Tourist Destinations: The Mediator Company in Business Relationships

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The literature on tourist destinations and the use of empirical approaches evidence the need to adopt this model to increase tourism economies. In model application, the enterprises, and local stakeholders, sometimes represent limitations or opportunities. This article opens the view to tourist destination networks, described as relational structures that can influence and determine the destination-building process. The Network Analysis methodology offers a better understanding of inter-firm relational dynamics when applied in a small context, and in this case, the application was undertaken on the island of Sicily, in Menfi town and its hinterland. Findings show the presence of a company that assumes a central role in the network, maintaining a solid web of relationships between others. In this way, a mediator company is essential in remote tourist destinations. Policymakers need to facilitate the development of tourism companies, thereby increasing the relationality and business network ties among them.

Key Words: network analysis, tourism destination, cooperation, development, tourism enterprises

Introduction

There are extensive and detailed studies on tourism destinations, understood as unique places for tourism analysis. However, aspects relating to the organisational conditions and constraints that make a tourism destination effective and efficient in terms of operation and performance have been barely investigated.

In this context, reference is made to the theory of networks, particularly to Social Network Analysis, which provides an opportunity to illustrate and further analyse the relationships among enterprises graphically. However, alongside the simple representation of commercial networks among enterprises at the tourism destination, there is also a need to investigate further the bonds that develop among firms and that form the basis of their commercial relations. In this regard, the climate of widespread and mutual trust, a set of rules and behavioural expectations, may give rise to a higher level of interaction or ties among enterprises.

The idea to analyse a network of relationships among enterprises at a successful tourism destination developed spontaneously by the authors and not as the result of specific tourism policies or initiatives of external investors. This article proposes a descriptive analysis of the relational framework existing in a peripheral tourist destination, in this case of Menfi, a little town on the island of Sicily. Findings show the presence of a single company that assumes a central role in the network, maintaining a solid web of relationships between others. This mediator company is essential in this remote tourist destination. Policymakers need to facilitate the expansion of tourist companies increasing the relationality and the business network ties among them.

Tourism Destination

A tourist destination can be a place where enterprises work together due to stable business connections and management approaches (Hunziker & Krapf, 1942). From a network point of view, coordination, cooperation, and interaction between tourist operators are essential

for genuine tourism development (and consolidation) at the destination. Local operators must work together in an integrated way because the competitiveness of a destination, based on an integrated supply of goods and services capable of meeting demand, derives from this (Comas, 2005; Tynsley & Linch, 2001) and results in the proper functioning of the destination. The tourist industry at the destination consists of different activities (accommodation, transport, food and beverage), including those of a complementary nature (entertainment and customised services) and support activities (institutions, public administrations and so on). Combining these activities can generate an integrated supply of tourist products to satisfy different needs and preferences.

The literature discusses the various conditions that can ensure effective and efficient tourism operation at the destination (see Katemliadis, 2022). Now, more than ever, the focus is centred on meta-management of the destination, with attention on the organisation(s) that take(s) on the leading role at the destination, providing tourists and all those participating in the tourism offering the necessary coordination, correct functioning of services and oversight. This approach, which tends to identify the control and coordination systems of the tourism destination, often meets difficulties in its application. The presence of scarcely cooperative enterprises, the lack of communication of public entities and enterprises, the lack of trust and the absence of commercial relations among enterprises are the main causes of reduced functioning of the tourism destination and its failure to develop (Ruggieri & Iannolino, 2012).

The failure of these elements threatens the proper functioning of the tourism system and are to be found partly in the network of relationships within a destination whose protagonists are businesses. To learn more about the relational networks existing among firms, which lies at the core of the tourism destination and its functionality, it is necessary to explore the web of relationships and chart out the network of relationships among them.

Enterprises may establish mutual relations, i.e., bi-directional (Granovetter, 1973, 1985), and this often occurs inside a subgroup so that it can be stated that these enterprises have solid mutual bonds. In this case, the enterprises share the same level of knowledge and

information, thus drawing an advantage for themselves and their destination (Burt, 1992). In other cases, there are no mutual relations among the enterprises belonging to a subgroup, or these are so limited that it can be stated that these ties are weak (Granovetter, 1973). It may also happen that the network of a destination is characterised by a subgroup of enterprises with solid mutual links and isolated enterprises that create structural holes in the network (Burt, 1992) .

In gaining further insight into what lies at the basis of economic relations among enterprises, strong or weak as these may be, it is assumed that there is a bond of trust. Building relationships of trust allows enterprises to exchange information and knowledge among themselves to benefit economic performance. Trust in relations among enterprises (Luhmann, 1988) can be based on confidence that the enterprise has collaborative expectations about the behaviour of the other enterprise(s). When a relationship based on trust is established, the connection with the other enterprise is expected to yield a future benefit in terms of mutual exchange, fairness and cooperation (Belussi, 2007; Bernheim, 1994). It must be considered that the relationship of trust between two enterprises can be based on family ties that facilitate sharing rules and behaviours (Ryan, Mottiar & Quinn).

Tracing the network of links, whether strong or weak, existing among enterprises within a tourism destination provides a representation of the relational network of potential contacts and existing links (Rowley, 1997). Exploring the reasons that lie at the basis of a well-structured network among enterprises at the destination, some authors (such as Brusco, 1990) argue that if at a destination, there is a climate of trust and knowledge, then, values are shared (social capital of the destination), resulting in enterprises which are strongly linked together in a complex mix of cooperation and competition.

Several authors (Powell, 1990; Thorelli, 1986; Lorenzoni & Ornati, 1988; Jarillo, 1988; Belussi & Arcangeli, 1998; Nooteboom, 1996; Belussi, 2000; Powell *et al*., 1996) have sought to understand the origin of this shared social or cultural capital. While some (Granovetter 1992, Wasserman & Galaskiewicz 1994) claim that social capital stems from relationships among enterprises thanks to the cultural and personal characteristics of the entrepreneurs,

Table 1: List of Network Effects

Effect	Explanation
Rapid Growth	Network can expand rapidly and widely, because its members benefit from adding new links and, therefore, they seek to make new linkages.
Rapid Diffusion	As more nodes are added, the network diffuses information and resources more and more widely through its links. This diffusion effect allows networks to spread ideas and generate feedback rapidly.
"Small World" Reach	A network can bring people together efficiently and in novel combinations because it provides remarkably short "pathways" between individuals separated by geographic or social distance. When two people in a network create a "bridge" across distance or social category, the connection is available to other nodes in the network.
Resilience	A networks can easily withstand stresses, such as the dissolution of one or more links, because its nodes quickly reorganise around disruptions or bottlenecks without a significant decline in their functionality.
Adaptive Capacity	The network can assemble capacities and disassemble them with relative ease; it can adapt nimbly. Links among people or organisations can be added or severed, or they can become 'latent,' meaning they are maintained at a very low level of connectivity, or more active.

Source: Net Gains Handbook, 2016 pg.18

others (Powell, 1990, Thorelli, 1986; Lorenzoni & Ornati, 1988; Jarillo, 1988; Belussi & Arcangeli, 1998; Nooteboom, 1996; Belussi, 2000, Powell *et al*., 1996) have shown that this capital derives from the awareness that cooperation yields greater economic performance.

The Network Analysis Literature Background

Social Network Analysis (SNA) is an interdisciplinary methodology developed in sociology, which is suitable to represent relational networks in the economic field. The seminal works of Jamal and Getz (1995), Tremblay (1998) and Hall (1999) in the configuration of the network's theoretical corpus seem to be applicable in the tourism field (Baggio, Scott & Cooper, 2013).

This technique makes it possible to understand how a network is articulated through studying the attributes of the players and the composition of the network (Afuah, 2013). Analysis of the differences in how players are connected is used to understand the players' characteristics and behaviour (Scott, 2017). Multiple ties imply that people can more easily share the rules that favour economic networking until conformity with values and institutional practices is achieved (Powell, DiMaggio & Chiesara, 2001; Meyer & Scott, 1992).

The multidisciplinary origin of SNA has led to the creation of a wide range of quantitative measurements which allow the identification of the main features of a network (Scott, 2000).

A social network is a system of social ties that link people to achieve personal or collective goals (Casanueva *et al.,* 2016). It's not just the elements / composition of a system that matter, but how they are put together, because actors affect each other (Borgatti, 2002). Peter Plastrik and Madeleine Taylor (Net Gains, 2016) present three main case studies of networking successes:

Pine Street Inn achieved high efficiency because they shared deep specialisation;

Barr Foundation shows an increased impact through better leverage in the market system;

Traynor is more efficient because can easily mobilise people and organisations.

Building from these cases, Table 1 presents a list of general network effects which are identified. The benefits of building a network are grouped into three main categories (Lynch P.A., 2007):

i. Learning and Exchange

ii. Business activity

iii. Community

Table 2: Benefits of Networks for Building Profitable Tourism Destinations	
Benefit category	**Identified Network Benefits**
Learning and Exchange	• Knowledge transfer • Tourism education process • Communication • Development of new cultural values • Accelerating speed of implementation of support agency initiatives • Facilitation of development stage of small enterprises
Business activity	• Co-operative activities, for example, marketing, purchasing, production • Enhanced cross-referral • Encouraging need-based approaches, for example, staff development, policies • Increased visitor number • Best use of small enterprise and support agency resources • Extensions to visitor season • Increased entrepreneurial activity • Opportunities for business development interventions • More repeat business
Community	• Fostering common purpose and focus • Community support for destination development • Increases or reinvents a sense of community • Engagement of small enterprises in destination development • More income staying locally
	Source: Gibson, Lynch & Morrison, 2005

These are related to the ties a business (node) can establish with others: Informational, Commercial and Social (Table 2). Even if it sounds odd, cooperation in a settled network results in higher yields than when in competition - co-operation has to be the first step in developing a destination. Only when the network is mature can it shift to a competitive stage. Following this path, the potential contribution of each network member of the destination is enhanced (Lynch, 2007).

A successful destination features a strong social network comprising all the firms involved in tourism supply, which can develop spontaneously, as happened in the case of San Vito lo Capo in Sicily (Ruggieri *et al*., 2012) or by using an external leader as Adventa in Monmouthshire in UK (Haven-Tang, 2012), while the lack of cooperation and communication negatively impacts tourist destinations (Di Giovanni, 2011). SNA shows the presence or not of relationships / links between firms and the structure of the network through a series of indicators (Table 3) provided by *Ucinet 6* software (Borgatti *et al*., 2002).

Some specific indices were used when defining the relationships of the enterprises operating at a tourism destination with SNA. These are as follows.

Density is one of the main statistical descriptors, and it is used to indicate the level of cohesion among the enterprises. Density summarises the distance between the situation of maximum integration among the network's enterprises and the level measured (Di Maggio & Powell, 1983; Scott &Meyer, 1983). The greater the number of bonds linking the enterprises, the denser the network.

Extremely dense networks ensure a circulation of information among the enterprises, and thus a system of shared behavioural expectations is created. Within this context, the leading enterprise can control organisational actions more effectively. Baum and Oliver (1996: 1386) argued that as a population

grows and its social or public impact becomes more widely recognized, other social actors take an increasingly active role in monitoring

Table 3: SNA Indices	
Index	**Description**
Density	number of lines (relationships) of a network compared to the maximum possible number of lines (relationships
Geodesic distance	It calculates the length of the shortest path connecting two points
Average distance	It is the average of geodesic distances
Distance-based cohesion	cohesion index based on the distance between two enterprises. It varies between 0 and 1; the closer it is to 1, the tighter the network is
Degree centrality	It measures the centrality of a point by calculating the number of other points, which it is adjacent to. A point is central if it has a high degree
Betweenness centrality	It expresses the extent to which an enterprise can play the part of "mediator" with a potential control over the others
	Source: Ruggieri. G. & Iannolino, S., 2012

population members' activities ... and shaping the rules and standards about what are legitimate activities and outputs for the population.

Rowley (1997) showed that a high density allows extremely central enterprises to carry out 'compromising actions' according to the pressures exerted by stakeholders. By contrast, less important enterprises in networks with a low density are subject to external forces. In the latter case, the major organisations act with greater discretion to assert the influence of stakeholders (Pavlovich 2003).

We measure the path as a sequence of different points and lines connecting two players as a ***geodesic distance***. The number of lines constituting it gives the length of a path. The geodesic distance between two points is the length of the shortest path connecting them. If the distances are great, the relationship between two firms is more rarefied and passes through other enterprises, which are mediated or indirect.

Regarding the centrality index, we can argue that an enterprise is central if it is 'at the centre' of a certain number of relations (***degree centrality***). This implies that the bonds are of considerable importance to the network. In other cases, an enterprise plays a mediating role between different enterprises, becoming central to the network (***betweenness centrality***). In this case, the enterprise is essential in the coordination functions. Weaker or less central enterprises seek to establish links with the more central ones to receive benefits (Baum & Oliver, 1991).

The Menfi Case Study

Menfi is a small rural town located in southwest Sicily. The town comprises 113.2 km^2 with a current population of 12,690. Agriculture is the primary sector, with over 6,000ha of vineyards, followed by other crops like olives, grains, horticulture, wine, and Extra Virgin Oil productions. The evolution of tourism in Menfi increased in the years, from 2010-2019. The average overnight stay is more than seven nights. Seasonality aspects are present in the tourism demand. From a supply-side view, an increase in the number of apartments, B&B, and houses connected to farms are registered. Other offerings include restaurants which have only recently entered the hospitality industry.

The survey which forms the basis of this research involved all the tourism businesses registered at the Companies of the Chamber of Commerce, these businesses have been classified according to the ATECO 2007 national classification system.

The questionnaire planned to analyse the ties between firms through their contribution to networking. The on-site administration of questionnaires lasted two weeks. Follow up (20% of respondents) questionnaires were sent via mail or answered by phone in other instances. On a total of 46 firms, 40 answered; one was not found, and five expressed the desire not to cooperate. The questionnaire respondents are the owners or the managers and are mainly under 50 years old.

ATECO 2007 Classification System	Tourism Businesses	Code	Questionnaires	Filled Out
	Table 4: Tourism Companies in Menfi – ATECO Classification			
49.32	Transportation by Taxi, Car Rental with Driver	TRA	6	4
77.11	Car and Light Motor Vehicle Rental	TRA	6	6
55.1	Hotels and Similar Establishments	HTL	10	8
55.20	Room Rentals for Short Stays, Vacation Homes and Apartments, B&B, Apartments, Housing Connected to Farms	PAC	11	9
55.3	Camping Grounds and Areas for Campers and Trailers	CMP	1	1
56.10.11	Restaurants with Service	RES	12	12
TOTAL			46	40
	Source: Chamber of commerce enterprises list and survey information			

Respondent were codified as follows: HTL = Hotel, RES = Restaurant, PAC = Private Accommodations, B&B and Holiday Houses, TRA = transport and rental, CMP = Camping.

Most of the 40 respondents are male (only 25% are female), of which 12 are under 40 (30%), 21 under 60 (53%) and seven over 60 years old (17%). The average level of study is gymnasium level (23), and only four are linked to the tourism or restaurant sector, 12 have a bachelor's degree and only five a primary school level. 73% of the businesses are not part of any association or consortium, and only recently firms have become involved as Menfi tourism consulting members.

Among other questions to research business ties and to analyse the network, firms were asked to answer the following question:

> *With which of the following enterprises do you have commercial relationships during the year to realise the tourist services provided to your customers (overnights, transfer, excursions, food and beverage, suggestion/advice for other structures, entertainment services…)?*

Answers were translated into a binary code: (1) presence of ties or (0) no ties. The responses of the interviewed operators were collected and included in a commercial matrix which elaborates the data concerning questions on commercial relationships to analyse it. Relationship

and information matrix analysis is ongoing due to the complexity of the matter. Only the commercial matrix results are shown; data description is limited to central node analysis of the network. The data analysis was performed using ***Ucinet 6*** software (Borgatti, Everett, & Freeman, 2002).

Map of Italy Illustrating Location of Menfi

https://upload.wikimedia.org/wikipedia/commons/3/35/Italy_map_blank.png

Figure 1: Network of Commercial Relations Between Tourism Businesses - Menfi
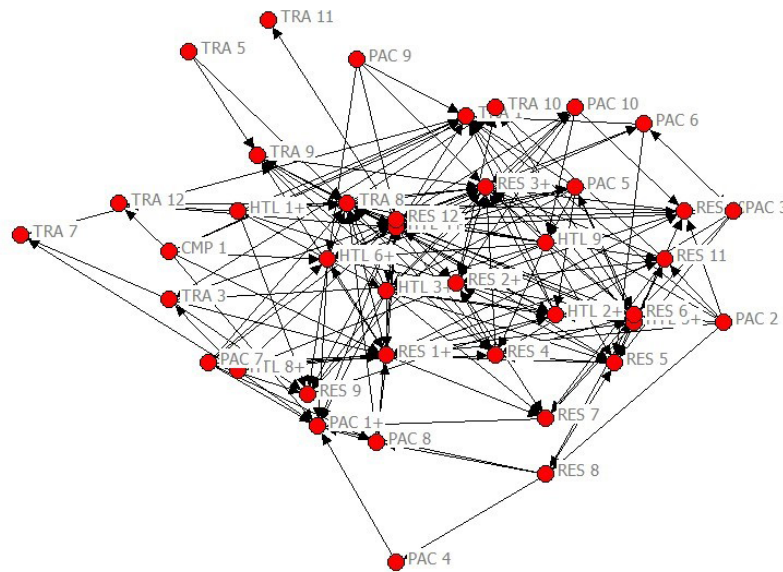
Source: network output- Ucinet software

Results and Analysis

In Menfi, the density index is 0.1903, which means there are only 19% of all possible ties. Considering the group of 44 firms, the analysed network has a very low relational capital on a commercial level. In low-density networks, as in this case, ties are weak. This means entrepreneurs can use the internal resources needed to focus on creativity instead of maintaining the network (Wang *et al*., 2015). Moreover, weak ties provide new, less redundant information (Burt, 2001) and new business opportunities (Choia & Chang Lee, 2016). Figure 1 shows these results graphically.

Inside the commercial network, there are a few key nodes. The most representative is around RES12 (Figure 2), most nodes are restaurants, hotels, and TRA8, while other nodes (PAC and TRA) are at the periphery, showing fewer interactions.

Figure 2: RES 12, the Central Node

Source: Network Output- Ucinet Software

Table 5: Reachability Matrix

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                          1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 4 4 4 4
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
          H H H H H H H H H R R R R R R R R R R R R P P P P P P P P P P T T T T T T T T T T T C
 1 HTL 1+ 0 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 2 HTL 2+ 1 0 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 3 HTL 3+ 1 1 0 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 4 HTL 4+ 1 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 5 HTL 5+ 1 1 1 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 6 HTL 6+ 1 1 1 1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 7 HTL 7+ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 8 HTL 8+ 1 1 1 1 1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
 9  HTL 9 1 1 1 1 1 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
10 RES 1+ 1 1 1 1 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
11 RES 2+ 1 1 1 1 1 1 0 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
12 RES 3+ 1 1 1 1 1 1 0 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
13  RES 4 1 1 1 1 1 1 0 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
14  RES 5 1 1 1 1 1 1 0 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
15  RES 6 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
16  RES 7 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
17  RES 8 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
18  RES 9 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
19 RES 10 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
20 RES 11 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
21 RES 12 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
22 PAC 1+ 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
23  PAC 2 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
24  PAC 3 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
25  PAC 4 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
26  PAC 5 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
27  PAC 6 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
28  PAC 7 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1
29  PAC 8 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 1 0 1 0 1 0 1 1 1 1 1 1
30  PAC 9 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 1 0 1 0 1 0 1 1 1 1 1 1
31 PAC 10 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 1 1 1 1 1 1
32  TRA 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 1 0 1 0 1 1 1 1 1 1
33  TRA 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
34  TRA 3 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 1 0 1 1 1 1 1 1
35  TRA 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
36  TRA 5 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 0 0 1 1 1 1 1 1
37  TRA 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
38  TRA 7 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 0 1 1 1 1 1
39  TRA 8 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 1 1 1 1
40  TRA 9 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 0 1 1 1
41 TRA 10 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 0 1 1
42 TRA 11 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 0 1
43 TRA 12 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 0
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Source: network output- Ucinet software

Calculating the reachability index shows that for each pair of nodes, there is a path of any length that connects them, directly or indirectly (Table 5). One actor is 'reachable' to another if there is a set of connections that can be traced from the source to the target actor, no matter how many other actors there are.

The matrix shows nodes or firms that are connected/reachable: all actors are reachable by all others. There are no entirely isolated nodes in the network, even if some firms are not reachable through the network, such as HTL7+, TRA4 and TRA6, which refused to participate in the research, and TRA2 which has no commercial ties.

Calculating the geodesic distance, the matrix shows companies with direct ties and some with indirect links. The more that companies connect with firm A via firm B (instead of connecting directly), the weaker and more complicated the relationship is. The Average distance among reachable pairs is 1.922, meaning that each network company needs a mediation. Mediation is possible by a broker who connects different parts of the network, accessing non-redundant information, controlling information flow and facilitating the spread of resources, information, and knowledge. These brokers gain an economic advantage, especially in small networks, as a payoff for shortening the distance between ties (Gallo, 2009; Walther, 2014; Saunders et al. 2017). A broker facilitates matchmaking between two social actors to the benefit of each (Obstfeld, 2005). In developing networks with low density, brokers strengthen the alignment between actors and facilitate the adoption and diffusion of initiatives (Walther, 2014).

Calculating the Geodesic Paths between pairs of points, the matrix shows how many ways or paths influence a specific node or how many ways an actor can reach other nodes or address others. Recapping, the results from this research identified an immature network, with only 19% of ties and few neuralgic nodes central to the network and actively cooperating as RES12.

Further research is needed focusing on the social ties matrix and information share matrix and their correlation with commercial matrix results. At first glance, it seems that the more RES12 shares information with others, the more they receive back, even if the transfer of information in unidirectional - this communication appears to be led by friendship ties. Commercial ties and social reputation must also be analysed in other cases. A study on the role of individual nodes as ego networks can help to understand the stronger relationships in the tighter regions of the network.

Considerations for Destination Analysis

The research results show a low-density network in the Menfi case, with few firms actively cooperating and assuming leadership. In this way, companies are needed to mediate relationships. The research found the centrality of a restaurant in the network, connecting many enterprises of the system. It has also been found that centrality is noted in terms of commercial relations or among those most active in the destination. Moreover, this operator results in one hundred links of knowledge. We can conclude that an operator such as this is central to a network. They have multiple relationships and can activate and maintain them over time. This operator is a central node in the dialogue, ensuring links and information transmission between all companies. The presence of the centrality of one enterprise implies that, within the overall network, the enterprises share rules of conduct established endogenously within the system and by the system, and that these behaviours tend to be relatively stable over long periods (Hayek, 1973). These cultural rules centred on mutual trust, supported by the system of kinship, result from the evolution of trust systems, produce compliance and regulate the interactions of individuals (Bernheim, 1994).

This leads to some recommendations:

- Municipality and Local Action Groups have to proactively play the role of facilitators inside the entrepreneurial environment and work through a Product-Destination.
- Tourism firms must be innovative, fully committed, risk-taking and willing to co-operate first and compete after. Otherwise, Menfi and its hinterland will never flourish as a tourist destination.

Tourist destination networks must be expanded with information and social links and explore the role played by the firms with stronger ties inside the network.

In broader terms, this work can be of interest for peripheral tourist destinations in territories characterised by difficulties in local development, such as islands, mountain sites, border areas and marginal places.

The article has some limitations due to the behaviour of the companies and reflects only a single point in time, while networks are dynamic. An important area of future research will be to simulate past and future destination networks based on their current characteristics. Further research in this field could observe dimensions contributing to a description of the mechanisms which foster or hinder cooperative behaviour.

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