

Inter-Organizational Networks and Third Sector: Emerging Features from Two Case Studies in Southern Italy



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Abstract Social Network Analysis is a useful technique for studying emergent behaviours of cooperation, intervention and governance in inter-organizational networks. In this work, an empirical study of two networks of organizations operating in local territories in Southern Italy and focusing on Third Sector and welfare activities is presented. The actors are committed to experimenting a model of coordinated intervention induced by two corresponding egos which are local Caritas centres. The nodes of the two graphs are determined by combining ego-network and whole-network approaches. The weighted edges representing mutual knowledge and collaboration between nodes are determined through interviews with all actors of the local groups. It is shown that metric properties of the networks can be useful indicators to monitor and evaluate endogenous features, e.g. relational and structural embeddedness, and exogenous features characterized by homophilic mechanisms. The analysis provides insights on the networks governance of the social interacting organizations and reliable descriptors of the social processes that govern their functioning.

Keywords Network governance · Social network analysis · Third sector · Inter-organizational networks · Network effectiveness

1 Introduction

The graph-based modelling of inter-organizational networks has been demonstrated to be a useful tool for the analysis of social interactions.

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The aim of this article is to show how the metric properties of the collaboration networks can be useful indicators to monitor and evaluate the network governance of social interacting organizations, and to act as coherent and reliable descriptors of the social processes that govern their functioning. In this regard, we will present some methods of analysing the network structures of public and Third Sector nodes starting from two case studies. The empirical analysis is carried out by considering the networks promoted by the Caritas centres operating in the local territories corresponding to two dioceses in Southern Italy, i.e. Aversa and Benevento. These two centres are the egos of the networks, while the other nodes of the graph are determined based on some specific ongoing activities. The combined use of ego-network and whole-network strategies is proposed as a methodological approach for the identification of the network boundaries: a leading ego node is chosen by considering its high representativeness with respect to the specific network goal of interest; then all nodes of the ego-network are interviewed by using a whole-network perspective, thus determining the weighted collaboration among the actors. The weighted graph resulting from this procedure is called the “ego-whole” network.

The study of structural parameters of the two ego-whole networks will provide information on the “health status” of the analysed networks and their effectiveness. The analysis of the structural components that we propose can be considered as an essential preliminary step for studying the elements which contribute to the effectiveness of governance in this type of networks [1], and for identifying suitable actions aimed at improving the network’s interactions and strategies [2–4].

The rest of the work is organized as follows: In Sect. 2 a state of the art overview on the existing results showing the usefulness of SNA for real inter-organizational networks operating in the Third Sector is presented. Then Sect. 3, by presenting some empirical findings, synthesizes why and how the recent Italian welfare system legislative reorganization indicates a central role for networked actions among social entities. Section 4 presents the two local initiatives considered as guidelines for the proposed analysis. Section 5 proposes a brief description on the existing approaches for evaluating the effectiveness of community welfare networks. The technique is then applied to the two case studies: Section 6 shows how the networks data are obtained. Section 7 describes the main results achieved; Sect. 7.1 is about the structure of the networks, related to their relational and structural embeddedness, while Sect. 7.2 proposes a similarity analysis based on structural equivalence and blockmodelling of the two real networks. Section 8 concludes the paper with the discussion of the results and the indication of possible directions for future research.

2 The Network Perspective in the Analysis of Inter-Organizational Systems

Inter-organizational networks can be defined as intentionally created relationships among at least three autonomous but interdependent organizations that cooperate in order to achieve a common result (*output*) or to jointly produce an expected

emergent behaviour (*outcome*). For instance, one can think at organizations that share information and resources for counteracting certain social problems, or for promoting innovations in social, educational and environmental interventions ([5, 6]; for further information on the topic of network governance see [7, 8]).

In the Italian social context, the transformations of local welfare and the introduction of the “Third Sector Code” have recently given new impetus to the debate if and how new forms of collaborations among civil society actors would be able to face the challenges of these changes and contribute to the development of territorial communities. Within the vast universe of the Third Sector, forms of synergy and partnership have been recently tested and considered good practices to be promoted since they generate significant results in terms of sharing resources and coping with local needs. Despite the ongoing fragmentation and diversification of regional and local welfare systems, the idea that the expansion of the “public sphere” can positively influence the effectiveness of public policies in the social, health, cultural and environmental fields has been consolidated [9–11]; this public sphere obviously requires a virtuous collaboration between the various actors operating on the territory under the forms of partnerships and networks of different kind of organizations and institutions. This awareness does not derive only from the well-known reduction in resources allocated to the financing of interventions in the public dimension, but also from the need to direct the action of welfare systems on the basis of value and functioning frames that are consistent with the complexity of the phenomena (such as in the case, just to give an example, of the so-called generative welfare or even of community welfare) [11–13]. In these new contexts, one of the most important issues undoubtedly consists of understanding the forms of institutional integration that allow those objectives and, above all, whether the various actors are aware of and prepared to face the challenges of this networked substantial reform of the local welfare.

The Title VII of the new “Code of the Third Sector”, art. 55 and 56, introduces some fundamental principles in the regulation of relationships between Third Sector entities and public institutions; in particular, it is expected that the latter will ensure the active involvement of the Third Sector entities, through forms of network governance. The new rules will clearly require significant changes in the implementation of the local welfare systems. On the other hand, the new regulatory framework represents an opportunity to systematize those co-planning experiences that have already been developed for some years, albeit in a fragmented way, in many areas of the Country. Such experiences should no longer constitute meaningful episodes by their “exemplarity”, and they should become widespread practices in the relations between Third Sector organizations and these institutional entities [14]. The use of the concepts of *network*, *network intervention* and *network governance* has been a rather widespread refrain in many local welfare systems; however, in most areas this reference remains at an essentially evocative level without leading to widespread and shared network strategies, based on theoretical and methodological awareness. The rare studies carried out on this issue in Italy show a considerable difficulty, if not a real reluctance, by the Third Sector organizations, to promote and develop forms of partnership that can effectively be considered as network-governed

partnerships [15]. However, it is possible to find experiences around the Country that describe a significant effort by the most sensitive Third Sector organizations. They promote a vision for which the construction of collaborative systems which involve institutional entities and the Third Sector can generate virtuous effects both within the same networks and towards the served community. The growing literature on social capital (among others [16]) and, more specifically, on network governance [17, 18] is an indicator of this sensitivity.

Following Raab and Kenis [6], it is important to distinguish between two types of network: the first type refers to a structure of relationships of informal interdependence between collective social actors that “emerges” from their dyadic interactions, without further specification of objectives, timing and ways of “being together”—a mode that does not necessarily create awareness and collective identity in the members. The second type, on the other hand, is more concerned with network governance, whereby the systems of interdependence between collective entities are intentionally created to achieve certain goals—modalities that instead envisage the construction of specific identity frames.

A central question in this debate is how the effectiveness of network governance can be assessed [19–21]. The effectiveness of a network can be defined as “the attainment of positive network-level outcomes that could not be achieved by individual organizational participants acting independently” [7, p. 4]. Provan and Milward [1] correctly observe that the assessment of network effectiveness must necessarily take into consideration a plurality of aspects, such as the impact of network activities in the served community, the role of individual members and the nature of the interactions between them, the evaluation of the stakeholders and, obviously, the characteristics of the structure of the interaction network. Social Network Analysis (SNA) is an appropriate and comprehensive methodological perspective that can help in studying the effects of the network structure on governance and outcomes, as well as in supporting the management of these governance processes [8, 22]. SNA makes available to scholars and practitioners a set of methodological tools and techniques to verify if and how the structural configuration of those relationships generates effects both on the governance of the network and on its outcomes [23, 24], thus encouraging the involvement and empowerment of collective actors operating at the level of local communities [25, 26]: the intuition on the importance of working together and sharing resources can be anchored through SNA into a solid and validated conceptual and theoretical framework.

3 Networks and Welfare Systems in Italy: Some Empirical Findings

The literature on empirical experiences of inter-organizational networks realized in Italy in the framework of local welfare systems is anything but extensive. Most of the analyses consider case studies limited to specific territorial contexts. Among these

experiences we can mention a study on the propensity of some Italian Third Sector organizations—especially social enterprises—to build innovation networks with the aim of evaluating their performance compared to the level of cooperation in the network [27]. The authors, by adopting SNA techniques, argue that the highlighted innovation is the result of the nodes interactions inside the network, which, unlike what one could expect, has a rather low level of cohesion (measured through the usual density parameter). Furthermore, it is pointed out that innovation networks are more effective when the nodes adopt an “open” approach for building new connections with entities that are outside the formal boundaries of the partnership. SNA techniques have been applied in the recent work of Delle Cave for studying formal and informal networks between Third Sector organizations in the Municipality of Naples [28]. The analysis therein verifies that the outcomes of local welfare policies are not much connected to the “performance” of the single actors; indeed, the key element is represented by the development of collaborative practices among a multiplicity of interdependent actors that exchange different kinds of resources in order to face needs of collective relevance. The adoption of the SNA framework allows one to identify significant relational areas within the network such as those of the centre and the periphery [29], to evaluate the most relevant and active actors (the “core” of the network), the “structural holes” present in the structure [30], the cliques and the actors who assume a leadership role in the development of the sector. The practice of network collaboration represents a strategic step in the development of the sector, especially in scenarios where a gradual and massive reduction of resources is present; however, the results of the research reveal the importance played by some specific “nodes”, compared to others, in the processes of construction, maintenance and development of networks, according to their economic and organizational strength. Delle Cave points out that consortiums of cooperatives represent the main protagonists of the evolution of the Neapolitan Third Sector, also because of their propensity to cultivate a specific competence in local and supra-local networking. Similar conclusions were already proposed by Corbisiero [31] who highlighted the multi-centred structure of the network describing the informal relationships among Neapolitan Third Sector organizations. Moreover, the author also demonstrates that the network characterized by formal agreements among the nodes clearly shows the high centrality of few nodes which are the most structured organizations.

By adopting the SNA perspective, Salvini [32] analyses the relationships of knowledge, exchange and collaboration between voluntary organizations operating in three different territorial areas of Tuscany. The “structural” network parameters reveal a rather singular situation, which denotes a clear self-referentiality of the Third Sector, with a very low level of density, particularly in the exchange and collaboration networks, a high level of centralization, and a low level of reciprocity and transitivity. Moreover, the high levels of centralization reported in the survey outline a clear dependence of many organizations on the resources exchanged with a limited number of nodes, which instead enjoy a position of privilege and centrality. These studies show the usefulness of SNA for interpreting the structure and the relational dynamics that characterize the experiences of partnership and collaboration

among Third Sector organizations and other public and private players. The existing literature shows that such networks are essentially characterized by low levels of density and reciprocity, and a high level of centralization—which describes the polarization of network relations around some “strategic” nodes that play the role of “key players” in the “control” of the flow of resources. Although the characteristics outlined here are not found in all networks constituted by these classes of actors—and with the same intensity—it is evident that these features reduce the networks effectiveness, especially from the point of view of their governance.

The analysis of the networks developed in the collaboration partnerships described above allows one to gather useful elements for the analysis proposed in this work which focuses on the networks of collaboration between two sets of local actors in two contiguous but different territorial areas.

4 The Collaboration Networks of the Caritas in Aversa and Benevento

The two egos of the corresponding networks considered in this article are the Caritas of the Diocese of Aversa (RCA) and the Caritas of the Diocese of Benevento (RCB), both active in Southern Italy. Two elements justify the choice of type and location of the selected case studies. Firstly, the national Caritas organization has recently stimulated a general reflection on the importance of improving local networked organizational forms in order to respond in a synergic and coordinated way to the social needs of the served communities, thus overcoming the fragmentation and self-referentiality of the local welfare agencies. Furthermore, the choice of the two inter-organizational ego-whole networks is motivated by recent efforts spent on these territories for experimenting a model of intervention founded on the valorization of Third Sector community networks [33, 34]. More specifically, the two local groups of Caritas have set themselves the goal of generating inter-organizational networks, promoting exchange projects and collaborations involving Third Sector entities, local governments, educational institutions and church organizations. In this generative process, the Caritas of the two dioceses have played a role of animation and coordination, aimed at promoting the creation of networks according to the different project opportunities that were created on the territory. The characteristics of the two networks, however, differ because of the dissimilar cultural and organizational contexts in which they operate, the peculiarity of the issues identified as targets for their actions, and the governance style adopted.

The two networks have been promoted and supported by egos belonging to the ecclesial community whose nature and organizational structure are characterized by specific references in terms of vision and mission. Then, it is interesting to point out that within cultural frames in which hierarchical relationships play a significant role, clear awareness has matured about the strategic nature of building networks, as well as open and widespread cooperation in order to efficiently achieve specific

objectives and appropriately serve the territorial community. Such awareness is even more significant if we consider that the international literature on SNA exhibits very rare evidence regarding situations of network experiences and interventions that directly involve churches and church organizations. One of these studies considers SNA for evaluating the experimental participation of two US Catholic parishes in the implementation of health programs and interventions in two communities of Massachusetts [35]. The results showed that the networks which involved more volunteers and were characterized by a lower level of centralization (for example, less polarized on the role of the parish priest) realized a more effective achievement of the intervention's objectives.

Another study focused on the social capital generated within some ecclesial congregations in Australia, which was compared with the social capital generated in the broader social community where those congregations operated [36]. These studies have shown how faith communities can be significant repositories of social and relational capital and that the exploitation of such wealth is strictly related to the configuration and properties of the relational structures (networks) through which they operate [37].

5 Assessing Inter-Organizational Networks

Different approaches can be used to evaluate the effectiveness of community welfare networks. Three main mechanisms which relate the analysis of structural parameters to the network action can be identified: two of them are endogenous (*relational embeddedness* and *structural embeddedness*), while the third is exogenous (*relational homophily*). The two endogenous mechanisms were identified by Granovetter [38] and reported by other authors afterwards [20, 39]. By considering the purposes of maintaining and developing the network, the former endogenous approach reveals the importance of the strength of the dyadic bonds (measured through *reciprocity*), while the latter concentrates on the relevance of the dynamics of composition and interdependence between the various subsystems of the network (measured through *transitivity* and *clustering*). From the results of these researches, it emerges that the organizational design of governance networks—and therefore the governance “style” adopted by the members, as well as the level of informality/formality of the network—can positively influence these mechanisms and the corresponding indicators, generating desirable structural features. For example, the absence or lack of reciprocity effects in the network are indicators of a circumscribed level of “relational” embeddedness, i.e. a sign of inadequate levels of dyadic collaboration. However, the lack of transitivity effects and triadic exchanges can reduce the capacity for mutual influence, to establish multiple social bonds within the network, and ultimately to build what the authors define “structural” embeddedness, which is a “distributed” collaborative context and goes beyond dyadic relationships [20]. The

exogenous mechanism of homophily, instead facilitates and promotes the creation of stable dyadic relations and the “closure” of areas inside the network, although based on criteria of similarity related to the attributes of the nodes. The effects of homophily may be desirable in order to generate areas of greater connection in the network, but at the same time they can also generate homogeneous clusters that are not able to convey differentiated network resources, if not properly connected to each other.

These mechanisms will be considered in our analysis for assessing whether and under which conditions they are present in the two cases of study. More in details, the main objectives of the study concern the analysis of the structure of the two inter-organizational networks with the network governance perspective and the analysis of the role played by the two Caritas organizations as promoters for the development of the corresponding networks.

The three structural mechanisms defined above will be detected by using the level of relational embeddedness and structural embeddedness as indicators of endogenous effects in network operation processes. More specifically, high values of the two kinds of embeddedness are interpreted as indicators of a network configuration that promotes collaboration between nodes and effectiveness in governance (regardless of the specific outcomes of the interventions). The presence of relational homophily will be also detected, a mechanism whose activation exerts a significant influence on the network functionality, which does not always or necessarily correspond to positive connotations.

Regarding the role played by the egos in the networks analysed, it is worth mentioning that previous works dealing with inter-organizational networks in Italian social contexts showed the typical presence of nodes with high centrality sometimes responsible of a differentiated access to resources for the other nodes. Krebs [3] and Anklam [2] argue, on that point, that the role of these “hubs” for a correct network development is not to polarize the system of relationships around oneself and to one’s own action, binding or influencing in this way the action of the other nodes to one’s choices, but to favour the realization of multi-hub configurations, in which the structure of relationships is widespread and characterized by complementarity. In the present work we will show if and how the network actions of the two Caritas nodes are aimed at intensifying the links and “delivering” to other nodes the role of promoters, thus encouraging the achievement of ever-increasing levels of connection and exchange of resources.

As a side effect of the study proposed in this article, by connecting the analysis of the two ego-whole networks with the three mechanisms we will provide a SNA perspective which could be potentially useful for the analysis of similar community welfare networks in Italy.

6 The Research Plan: Ego-Whole Network Construction, Data Collection and Analysis

The analysis of the two Caritas networks is carried out through the development of three consecutive phases:

- Identification of the nodes of the two networks under investigation;
- Data collection;
- Analysis and interpretation of data.

The first essential step consists of determining clearly the boundaries of the network by identifying the nodes that are part of it; we proceeded through a combined strategy of *ego-network* and *whole-network*. The Caritas of the two territories were considered as the ego node of the network, which was asked, through the name generator technique, to indicate the other nodes (“alters”) that are part of their network, current or potential, that is, those organizations or entities to eventually involve into project activities. The boundaries of the network, therefore, are established by the ego (the Caritas), which we have called “node generator”. In this way we were able to build a first-level network, composed of ego and all the elicited alters at a distance of one (weighted) link from ego. Following the most consolidated data collection practices in ego-network mode processes, at this point the researcher usually asks ego, through a technique called “network interconnector”, to indicate if—based on their knowledge—there are links between the elicited alters—so as to reconstruct the configuration of the relationship structure between the alters. This way of constructing the (ego)network—which is the most widely used due to its economy—is also one of the most evident limits of the ego-network technique, given that the networks obtained are essentially the outcome of an ego cognitive process, which obviously introduces bias and distortions that are not completely controllable [40]. To overcome this limit, the construction phase of the network was completed by submitting the knowledge questionnaire to all alters organizations elicited by the ego. They were asked to specify the existence and intensity of the link with each of the alters, choosing one of five increasing levels of “strength” of the relationship: no knowledge, lack of knowledge, good knowledge, relationship of exchange, cooperation. The resulting directed graph is what we call “ego-whole” network.

“Ego” contributed to define the boundaries of the network, but the relational system has “emerged” through the interviews carried out with each individual alter, according to what is commonly done in whole-network investigations; consequently, it was not necessary to use the *name interpreter* (the tool for the collection of attribute data, that is, of the characteristics, of the individual nodes), as it is normally performed in surveys with ego-centred techniques. The only bias that must be taken into account is, of course, the presence of at least one node with a degree equal to the size of the network, i.e. the Caritas nodes. However, it has been preferred not to exclude the “generating nodes” from structural analyses since the distortion performed from above outdegree of the Caritas nodes is offset by the

Table 1 Composition of RCA and RCB networks by type of organization (category), distinguished by their ego whole-networks and the number of nodes which answered to questionnaires (answers)

Abbr.	Category	Caritas network Aversa (RCA)		Caritas network Benevento (RCB)	
		Total	Answers	Total	Answers
AS	Associations	19	11	12	10
CP	Cooperatives	1	1	7	7
OS	Second-level organizations	0	0	1	1
EM	Religious organizations	1	1	2	2
GI	Informal groups	4	4	0	0
ES	Social-health care institutions	6	6	3	3
SU	Schools–universities	7	4	6	6
AL	Others (parishes, private organizations)	6	3	9	6
	Total	44	30	40	35

procedure adopted for the network construction, which obviously take for granted the existence of reciprocation in the considered relationship.

The representatives of the Caritas of Aversa and Benevento were asked to indicate which institutional entities, Third Sector and ecclesial organizations they would eventually contact for carrying out intervention and project activities in the context of the territorial community welfare. The ego-whole network generated by the ego Caritas of Aversa (RCA) consists of 44 nodes, while the network rising from the ego Caritas of Benevento (RCB) consists of 40 nodes in the case of RCB. The data gathering phase was developed through questionnaires to egos and alters during the semester between April 2017 and September 2017. Table 1 shows the composition of the networks by type of organization. The two networks are characterized by a high presence of Third Sector associations and educational and socio-health institutions, with an interesting difference between the two territorial areas relative to the presence of social cooperatives, which are more consistent in the RCB. The answers received to the questionnaires correspond to 75.0% of the RCA nodes and 87.5% of the RCB nodes.

It is useful to highlight some differences between the two networks. In RCA the organizations operate mainly within restricted territorial areas, often coinciding with the district or with the country in which the legal or operational head offices are located. The network is consolidated mainly around local initiatives, and its mobilization takes place through sporadic participation in Caritas activities and specific interventions of solidarity and voluntary work. The organizations of RCB have widened the range of their interventions throughout the diocesan territory, demonstrating greater involvement in the proposed reticular initiatives. These nodes are active in searching for relationships with differentiated territorial partners and in sharing resources and skills for accessing funding channels provided by national and international institutions. Furthermore, in RCB there are more social cooperatives than in RCA, and a second-level organization is established, consisting

of a consortium of social cooperatives; in general, RCA is characterized by less structured organizational coordination. In both networks, organizations active for more than 10 years and with a medium-high level of committed human resources prevail.

7 Main Results

7.1 *The Structure of Networks: Relational Embeddedness and Structural Embeddedness*

Figure 1 shows the directed graphs corresponding to RCA and RCB. It is interesting to note that the interviews showed the awareness, by most of the alters, of belonging to the corresponding Caritas network. This confirms the proper definition of the networks boundaries which included the most significant informal relationships that connect the pairs of nodes.

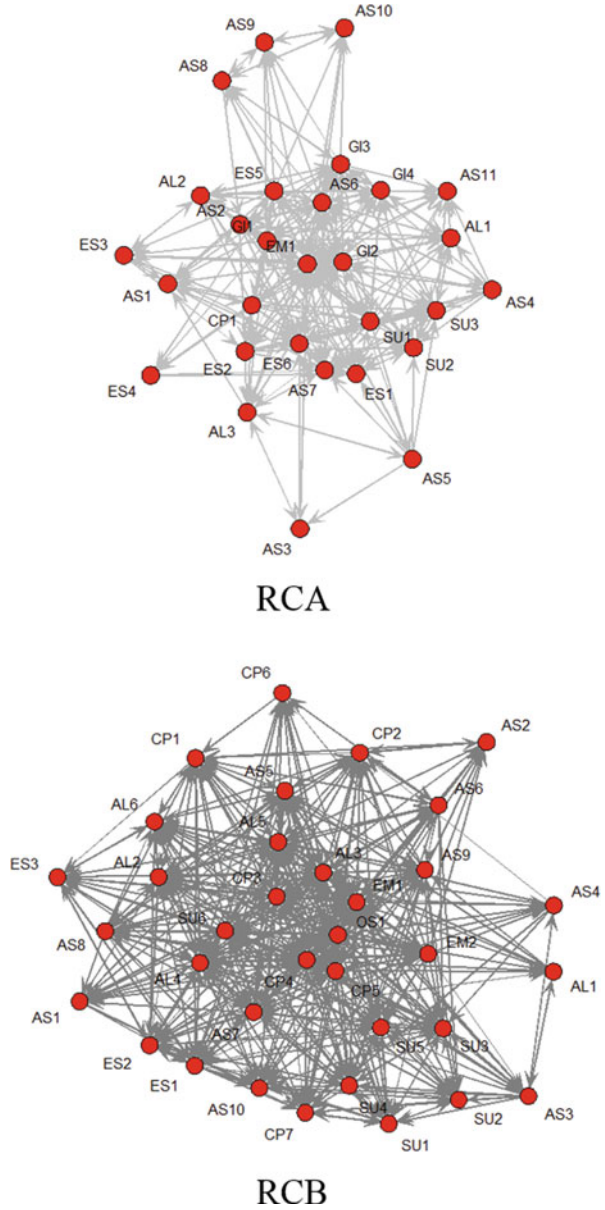
In Table 2 the descriptive parameters of the two networks are illustrated and classified by the type of relationship between the various nodes. Since the graph is directed, the number of potential ties has been considered to be $n(n - 1)$, where n is the number of nodes of each network. The structural measures show some substantial differences between the two networks in terms of the presence and strength of the ties.

Considering all types of relationships, including those of lower intensity, the density is equal to 0.58 for the Aversa network and 0.75 for the Benevento network; especially for RCB, the density assumes rather high values. The centralization index is higher where the density is lower, particularly in RCA, where relations therefore depend more on the activity of a limited number of nodes. The values of these global properties are sensitive to the different types of ties between the nodes, so as evident by considering the merged ties classes reported in Table 2. Density and centralization also depend on the different binding classes. The density significantly decreases by considering the ties based on exchange, collaboration and good knowledge, while the centralization grows in correspondence to the decrease of the density. From the analysis of these data it is possible to conclude that the two networks have characteristics, albeit in different intensity, which confirm a typical feature of relationships in Third Sector networks. We are in the presence of high levels of mutual knowledge, but also of low levels of collaboration and exchange, which are usually polarized around the activities of a few organizations—generally the most structured and consolidated from the point of view of the management of human and economic resources. However, there are further observations to be done with specific reference to the analysed networks. The degree of reciprocity in the network, if we consider all the links, is quite high: 0.63 for RCA and 0.80 for RCB; this is a sign that one, albeit generic, mutual knowledge of the organizations on the territory is consolidated. However, these values tend to decrease when evaluating

Table 2 Descriptive parameters of RCA and RCB networks, classified by (a) the type of relationship between the various nodes (lack of knowledge, good knowledge, exchanges, collaboration), (b) the combined relationship between the same nodes (collaboration + exchanges, collaboration + exchanges + good knowledge), (c) the whole-networks (lack of knowledge + good knowledge + exchanges + good knowledge)

	Lack of knowledge	Good knowledge	Exchanges	Collaboration	Collaboration + exchanges	Collaboration + exchanges + good knowledge	Whole-network
<i>Caritas network Aversa—RCA</i>							
No. of ties	190	80	49	154	203	283	473
Density	0.23	0.09	0.06	0.19	0.25	0.34	0.58
Centralization	0.28	0.19	0.09	0.69	0.74	0.67	0.43
Clustering	0.28	0.17	0.03	0.50	0.52	0.52	0.65
Reciprocity	0.22	0.10	0.16	0.51	0.56	0.55	0.63
<i>Caritas network Benevento—RCB</i>							
No. of ties	320	150	115	313	428	578	898
Density	0.26	0.12	0.09	0.26	0.36	0.48	0.75
Centralization	0.27	0.17	0.08	0.49	0.54	0.53	0.25
Clustering	0.32	0.20	0.11	0.59	0.61	0.62	0.79
Reciprocity	0.32	0.19	0.09	0.58	0.62	0.64	0.80

Fig. 1 RCA (up) and RCB (down) networks



only the relationship based on good knowledge and the exchange of information and resources while decreasing less if we consider the ties based on collaboration. The data related to reciprocity is particularly important to understand the strength of the ties at the dyadic level (and hence the measure of *relational embeddedness*) and the functioning of the system [20]; a low degree of reciprocity indicates a

differentiated access to the resources mobilized and a low propensity to the mutual use of those resources. The combined analysis of the parameters shows that the two networks (especially for RCA) have “unequal” access to resources, above all due to the dependence of many organizations on the resources made available by a few nodes, which in turn do not need to draw on the resources of others. In addition, a low degree of reciprocity is an indicator of poor sharing and agreement about the contents and objectives that drive the relational structure, as well as the rules that should inform the whole-network [20]. The level of agreement and awareness of those contents, objectives and rules is an important indicator of the functioning of the governance system, although the analysed networks are based more on informal relationships than on formal agreements. In both situations we can observe a *weak degree of relational embeddedness*, not so much on the level of an abstract awareness of the importance of collaborating to achieve collective goals, but regarding concrete experiences of cooperation based on mutual exchange of resources. It can therefore be considered that the reference to “collaboration” is more of an evocation, also ethically oriented, than a concrete experience of mutual sharing of resources and competences aimed at achieving common goals. From this point of view, the reference to the exchange appears obviously more coherent with the mathematical parameter of reciprocity. It is not by chance that the level of reciprocity in the exchange—however strange it may seem—is very low. This does not mean that there are no resource flows in the network, but that these flows do not provide for reciprocation mechanisms. The degree of *structural embeddedness* can be analysed through the measurement of the *clustering coefficient*. The level of reciprocity it could lead one to expect a not particularly positive performance with respect to clustering. It is possible, on the other hand, to observe that both networks have a very high global coefficient, which remains robust in the relational structures marked by “good knowledge” and “collaboration”—while it is reduced, as expected, in “exchange” relations. The high level of the clustering coefficient suggests that the structure of the two networks is sensitive to the formation of “clouds” of nodes based on some aggregation criterion. It therefore emerges that for the two networks, the degree of structural embeddedness has a consistency, which however is decreasing in the relationship subsystems more concretely founded on the exchange of resources and information. In other words, this means that the potential for mobilization—and cohesion—is high, unlike what has been experienced in the two networks in terms of effective experiences of sharing resources in non-dyadic forms. At the global structure level, the presence of a high clustering could favour—following the most well-known theories of social capital and structural holes—mechanisms of “closure” of the many open triads, and therefore the achievement of higher levels of cohesion of the network. This eventuality certainly appears to be desirable if the network governance concerns projects aimed at achieving specific goals and relations systems legitimated by formal agreements. In situations such as those analysed, in which networks are mainly informal networks to be activated gradually based on the specific project opportunities, it is more desirable to maintain a “hub and spoke” or “centre-periphery” type structure, as reported by several authors. A high level of clustering

(as in the case of the two networks analysed) is certainly useful for achieving these forms of governance, provided that the centralization rate is not too high. In general, RCB shows characteristics that are more consistent with a “hub and spoke” functioning of governance, while in RCA the structure is even more dependent on the activity of a few organizations, including the promoter (Caritas Aversa). These are informal networks certainly founded on the willingness to collaborate, but in which the practice of that collaboration in a case depends essentially on the organizational role of some specific entities, in the other on a coordinated and reciprocal action of a higher number of organizations.

An evident characteristic of the two networks, especially for RCA, is the high degree of centralization of the network, which is a symptom of the tendency towards the polarization of collaboration relationships around a limited number of nodes. This means, in turn, that the distribution of the degree of the nodes shows considerable variations, which deserves a more extensive analysis. By focusing our attention to the five nodes that present the highest centrality indegree—excluding the two “generating nodes”—we can see that in RCA they are public institutions (schools or social-health services) and national associations with local agencies, while in RCB they are social cooperatives.

On the other hand, if we consider the five nodes with the highest outdegrees, we find organizations of a similar nature, mainly local associations and church offices in RCA and social cooperatives in RCB. It is also useful to observe which are the nodes that present a consistent difference between indegree and outdegree centrality: the most popular but less active nodes (high indegree and low outdegree) are national associations (therefore very well known in the local area and connected to the Caritas networks only for specific activities) and organizations belonging to the School/University category. The youngest organizations in the networks are among the most active but less popular nodes (high outdegree and low indegree). Another node of this type corresponds to an organization whose manager is also referent of other organizations—and therefore constitutes a *trait d'union* among many actors. In RCB, social cooperatives are particularly significant both in terms of indegree and outdegree, and are dynamic entities characterized by considerable practical initiatives. By classifying the node centrality within the sub-networks related to different intensity (and type) of relationships, the results shown in Table 3 highlight that the first three nodes are also listed as those with the highest degree in each of the four relationship intensity classes.

Beyond the confirmations related to the presence of specific organizations with high degree within the sub-network of relationships characterized by lack of knowledge, it should be noted that in the Aversa network the most dynamic nodes (for activity and popularity) in terms of collaboration are entities belonging to the church field, while in the Benevento network they were born by “budding” from the Caritas node. This element suggests that cooperation develops more easily between similar nodes, because of homophily mechanisms. The construction of the network structure is sensitive both to the presence or absence of endogenous factors, such as reciprocity and clustering, and to exogenous ones, such as the level of similarity of the node attributes. These aspects indicate a level of network

Table 3 Classification of the nodes having the higher degree centrality related to different types of relationships (sub-networks)

Sub-networks	Caritas network Aversa—RCA		Caritas network Benevento—RCB	
	No. of ties	Nodes with higher degree centrality	No. of ties	Nodes with higher degree centrality
Lack of knowledge	190	<i>RCAAS10</i> (24)	320	<i>RCBAS2</i> (33)
		<i>RCAASI</i> (21)		<i>RCBCP2</i> (28)
		<i>RCAESI</i> e <i>RCAASI1</i> (19)		<i>RCBAS3</i> (28)
Good knowledge	80	<i>RCAAS6</i> (16)	150	<i>RCBSU6</i> (21)
		<i>RCACPI</i> (15)		<i>RCBAS7</i> (17)
		<i>RCASUI</i> (12)		<i>RCBAL2</i> (16)
Exchanges	49	Caritas (13)	115	<i>RCBOS1</i> (17)
		<i>RCAAS7</i> (8)		<i>RCBCP4</i> (15)
		<i>RCAESI</i> (7)		<i>RCBAL4</i> (13)
Collaboration	154	Caritas (42)	313	Caritas (52)
		<i>RCAG12</i> (23)		<i>RCBCP5</i> (45)
		<i>RCAG11</i> (22)		<i>RCBCP3</i> (36)

development that is not yet particularly “mature” towards the achievement of the aforementioned “hub and spoke” composition [3]. Therefore, in order to better understand the operative conditions of the governance networks it is useful to provide a deeper analysis of the similarities of the nodes. To this aim, the collected data have been elaborated by using the blockmodelling technique and the structural equivalence. This type of analysis will provide information about the presence of clusters between organizations possibly characterized by high levels of similarity in terms of their positions in the network.

7.2 *Structural Equivalence and Blockmodelling for the Analysis of Similarity*

Homophily is usually referred to similarity based on specific individual characters (attributes) of the nodes. The identification of such characters for the inter-organizational homophily is difficult to accomplish, since the nodes could be similar for a specific aspect, but very different from others. Therefore, it is useful to use the blockmodelling technique in order to analyse the way in which the nodes of the network are distributed within subsets according to the mechanism of structural equivalence [41]. Two nodes are defined structurally equivalent if they exhibit the same configuration related to incoming (indegree) and outgoing (outdegree) ties. A “block” consists of a set of network links that connect pairs of the subsets thus constructed; in this way it is possible to anchor the similarity to the structural position covered by the nodes within the network. From an interpretative point of view, the nodes belonging to the same sub-group or group are subject to similar opportunities or constraints of a structural nature—and can be considered structurally homophiles.

The blockmodelling analysis has been carried out by deriving the binary adjacency matrices of the two networks. In particular, the relations “lack of knowledge” and “good knowledge” have been merged by assigning to these relations the value 0, i.e. no link, while the ties “exchange” and “collaborate” have been associated to unitary links. The binary matrices allow us to concentrate on the existence of links with highest intensities between the nodes, i.e. those described by exchange and collaboration relationships. Structured equivalence was measured by using the CONCOR (CONvergence of iterate CORrelation) algorithm as a clustering method. Figure 2 shows the block matrices of the Aversa and Benevento networks with the corresponding clusters of structurally equivalent nodes. In the case of RCA, four blocks of ties are identified, while three blocks of ties in the case of RCB, which indicates a lower level of differentiation in the Benevento network. Let us shortly analyse the composition of these blocks. As it was expected, in RCA the Caritas node constitutes a block in its own, an aspect that confirms the relevant role of the “generating node” within the network. Blocks #2 and #3 are the densest areas of interactions, particularly between #2 and #3 and between #3 and #4; block #4

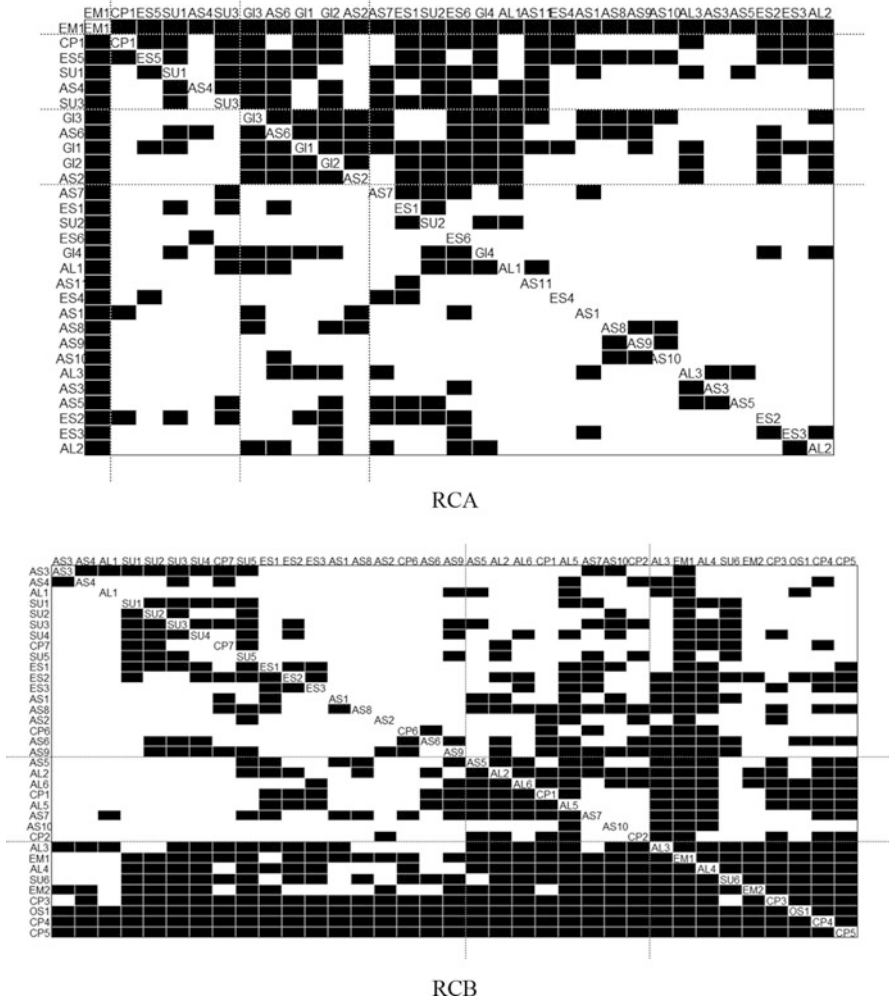


Fig. 2 Blockmodels of RCA (up) and RCB (down) networks, created by using CONCOR (CONvergence of iterate CORrelation)

is the largest in terms of nodes but also the least dense in terms of interactions between nodes and between blocks. By observing the single blocks, it is possible to detect different internal levels with respect to the type of nodes. More specifically, block #2 is formed by quite heterogeneous entities (a cooperative, a social-health care institution, two schools/universities, an association), while block #3 consists of three informal groups and two associations, therefore relatively similar entities; block #4 collects all the other nodes, consisting essentially of associations, social and health care institutions, educational institutions. The “core network” of RCA, therefore, consists of the generator node, and two sets of nodes that are certainly

heterogeneous with each other and with a different degree of internal homogeneity: weaker in one and more marked in the other.

By considering the RCB network, the three blocks are internally more numerous than those of RCA. More importantly, the “generator node” of RCB does not constitute a block, but belongs to block #1, which corresponds to the block with highest density of interactions both between the nodes belonging to it and the other two blocks. In this subsystem there are four organizations that show a very high level of internal and external connections similarly to that exhibited by the Caritas node. Consequently, the role of promoter of the network is shared between different organizations, although the latter have characteristics that make them very close to Caritas itself, being three social cooperatives and a religious moral entity. A second-level organization, two parishes and a school belong to the same block. The second block consists of 5 entities of the Third Sector (two cooperatives and three associations) and 3 private entities (including the parishes); block #3, the one that exhibits the lowest density of internal and external relations, includes public institutions (educational and social-health care) and Third Sector organizations.

A compact representation of the relations between blocks is evident from the “reduced” blockmodels illustrated in Fig. 3 for both networks. The nodes of these “reduced” networks are the blocks and the links indicate the existence of relations between the blocks, i.e. between some nodes of the corresponding blocks. The thickness of the lines is proportional to the density of the ties: a thicker line indicates the presence in the original network of a larger number of ties connecting the organizations of the two blocks. The lines do not have a direction, thus showing the existence of some level of reciprocity. In the case of RCA, most of the relational activities focus around block #1 and branch off to block #2, #4 and #3; the residual activities are placed in the paths between blocks #2 and #3, #2 and #4 and #3 and #4. In the case of RCB, most of the relational activities are concentrated between blocks #1 and #3 and between blocks #1 and #2. The structure of the two “reduced” blockmodelling networks indicates, first of all, that the relational triads that connect

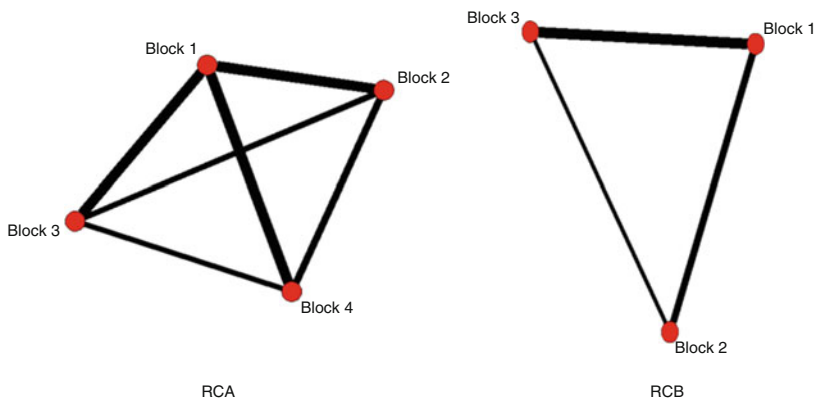


Fig. 3 Reduced blockmodels of RCA (left) and RCB (right) networks

the various nodes (blocks) are closed, a circumstance that however denotes the existence of connections between all the blocks of the network. Moreover, the block containing the generating nodes is particularly strategic for the holding and development of the two networks, particularly in RCA, since the most important lines of activity branch off from block #1. In RCB, as already noted, the smallest number of blocks and the triadic structure of the relations show a greater diffusivity of interactions.

The homophilic mechanisms act in different ways in the two networks. In RCA the role of the “generator node” is strategic in “keeping together” the various subsystems of the network, which differ from each other by their degree of internal heterogeneity of the nodes. The presence of relationships of exchange and collaboration between different entities is legitimated, therefore, not because of belonging to the same class of organizations (by legal nature or by sector of activity) but based on criteria that are independent from the attributes of the nodes, such as having taken part to networks built for specific project initiatives. The role played by the generating node in terms of “network holding” in the RCA network in RCB is covered by an entire block of organizations and relationships, which constitutes the “core network” of the overall network. This circumstance allows us to make two further considerations. Firstly, the Benevento Caritas node operates such that the responsibility for the “tightness” of the network is shared with other nodes, thus promoting a network configuration which is similar to a “hub and spoke” model. Secondly, the nodes to which this responsibility has been “transmitted” are closely related—substantially similar—to the Caritas node. In the RCA network, the homophily mechanism seems to operate independently of the attribute characteristics of the individual nodes, but based on the events (previous and present) that characterize the relationship system (for example, the fact of having shared the same design experiences). Instead, in the RCB network the homophily mechanism operates in terms of greater diffusion of the relational activities between different nodes, which nevertheless constitute in some cases a derivation by budding of the generating node. In this case it is more difficult to conjecture that homophily is independent of the individual attributes of the nodes, or at least some of them.

8 Discussion and Conclusions

Two inter-organizational networks developed within a “community welfare” experience in two territorial areas of the Campania Region in Italy have been analysed through SNA techniques. It has been shown that the SNA perspective offers an adequate theoretical and methodological tool for understanding how the structure of the relationships influences the behaviour of the inter-organizational networks governance. The international literature on inter-organizational networks operating in welfare contexts is not so vast and just few practical studies have been proposed regarding Italian territories. The analysis of the empirical experiences proposed in

this paper is aimed at contributing to the construction of formal procedures for the exploitation of network parameters in the evaluation of the so-called “network effectiveness” of systems of relations among organizations active in the field of community welfare. The usefulness of organized second-level forms (partnerships, synergies, networks), more or less formalized, in order to achieve the objectives of social and health-care welfare at local level is a consolidated awareness. The creation of this type of networks has been further stimulated in Italy by the most recent social legislation—including that relating to the Third Sector Code, which encourages public administrations and Third Sector entities to practice co-design and co-planning in social interventions. The adoption of forms of distributed governance within inter-organizational systems appears to be a fundamental strategy for achieving those objectives—a situation already active in many areas of the country, although not very known. The development of these heterogeneous inter-organizational networks implies the necessity to involve specific skills in terms of managing network governance and assessing network effectiveness. This type of evaluation is a complex and certainly multi-factorial operation. In this framework the study of the structure of inter-organizational relations is a strategic element to understand the network governance and for identifying structural properties that more than others have the ability to “enable” effective governance.

The study described in this paper introduces two main original contributions with respect to what is consolidated in the literature dedicated to the topic [35, 36], and especially with reference to the Italian context. The first innovation rising from the article is methodological: for the identification of network boundaries we proposed a method which combines the classical ego-network and whole-network strategies, thus leading to what we called “ego-whole networks”. At the best of our knowledge, this approach is original for the type of investigations considered, at least in the national panorama. The ego-whole network allows one to overcome the limitations of ego-centred analysis through a follow-up inclusion of the alters indicated by the “generator node” and by reconstructing the boundaries of the network through the usual modes of whole-networks. The second innovation that emerges from the analysis proposed in this paper is the demonstration that parameters usually adopted for the analysis of inter-organizational networks can be included in a simple but effective conceptual framework, which allows a more accurate interpretation of the sense of empirical SNA parameters—such as density, centralization, centrality, reciprocity and transitivity. Following, in particular, Robins et al. [20] three theoretical-methodological areas have been considered: the first two refer to the endogenous factors that contribute to the realization of the network and to the achievement of better performances in the network governance, which concern with the *relational embeddedness* and the *structural embeddedness*. The third one refers to the most recurrent exogenous factor in network theorization, i.e. the presence of some homophily mechanism in the preferential connection processes between the nodes of the network. The ego-whole network technique allows one to better interpret the role of the “generator node”, highlighting how the structural position of that organization can influence the definition of the network configuration and the functioning processes. The analysis of two case studies showed that the two

networks exhibit, albeit in differentiated modes and intensities, a weak degree of relational embeddedness, measured through the degree of reciprocity. Moreover, it is pointed out a more consistent level of structural embeddedness, measured through the coefficient of clustering and transitivity, although by weighting the potential mobilization of the network more than the actual experiences of collaboration and exchange of resources. The structural configuration of the RCA network is undoubtedly characterized by the role of coordination played by Caritas, oriented to activate clusters of nodes to some extent already connected to each other for some reason—such as having experienced in the past actions of mutual collaboration. The RCB network structure, on the other hand, appears less centralized and more widespread, although the nature of the nodes that have supported Caritas as a hub is very close or similar to that of the “generative node”.

For a detailed analysis of homophilic mechanisms, the blockmodelling technique was adopted, which allowed us to investigate the clustering aggregation within the two networks. The RCA presents a broader clustering within a governance framework where the coordination is managed by a single hub, while the RCB presents a less clustered structuring, in which there are several organizations that are structurally equivalent in the coordination functions. It emerges, however, that these organisms are very similar to the Caritas node in their nature, thus reducing the opportunities of creating a richer and more differentiated social capital. Although structurally the multi-hub characters in RCB is more evident than in RCA, there is the risk that in the former network mechanisms based on nodal similarity are reproduced. The strategies of development and improvement of the functionality of the two networks are therefore different based on the structural differences that emerged. The immediate goal of network governance should be to reduce the level of dependence of the nodes from the coordination action carried out by Caritas and to distribute this mobilization capacity to other players, which can connect and integrate the different subsets (blocks) that have emerged thanks to the analysis of blockmodelling. Such a strategy would lead to enhancing the tendency towards the clustering of RCA through the work of various hubs—possibly differentiated from one another—aimed at connecting the different clusters to each other. In RCB, it would be necessary to proceed towards a re-formulation of the roles of the already numerous hubs present in the network, by enforcing organizations with less homophily with respect to the current hubs to gradually assume roles of coordination and activation. An essential point in the growth and maturation of networks links in the development of reciprocity in exchanges and forms of collaboration. This exercise is useful not only for a more uniform flow of resources inside the network but also to strengthen relations, promote the sharing of governance rules and convergence on that meta-cultural dimension which gives meaning to being together and sharing a common enterprise at the service of the local community.

Despite the conceptual and methodological innovations that have been experimented in this empirical investigation, there are several limits that must be highlighted. First of all, it is well known that in the evaluation of network effectiveness, the study of the structure of relations in inter-organizational systems is essential but not enough [21]. There are many other aspects that should be taken

into account in order to reconstruct a more complete picture of the governance network, such as the role of the stakeholders of the nodes and the point of view of the beneficiaries of the network actions. Moreover, one should be able to perform analyses of a more strictly qualitative nature, oriented to understand the meaning making of the various organizations of the network (cf. [15, 42]). In this way it would be possible to enter deeper into the network interactions between the nodes, as to bring out the “micro” processes that preside over structural transformations within the network. A second limit is in the cross-sectional character of the survey, which prevents or constrains the possibility of making statements that go beyond the descriptive dimension of the studied dimensions.

The proposed blockmodelling analysis, although it has a nature that is still purely “exploratory”, is a technique that is able to make the characters of the network more “visible” [20]; however, in order to better appreciate the role of reciprocity, transitivity and homophily in the implementation of the network, as well as the effects of covariation between these parameters, it would be appropriate to test ERGMS models, now consolidated in the SNA’s assets. Finally, from a cognitive point of view, it would be very useful to connect network effectiveness indicators with the performance of inter-organizational networks in terms of the impact of their action in the served community, although it is not easy to make adequate measurements of network outcomes in the frame of welfare community.

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