

Social Network Analysis and Strategic Planning: A Case Study from the Italian Local Context

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Abstract This paper analysed the relationships between the institutional and the socio-economical stakeholders involved in the process of Strategic Planning for the Broad Area - Lecce (*Piano Strategico dell'Area Vasta - Lecce*), aiming at defining the most adequate organizational strategies to enhance networking efficacy. Quantitative and qualitative methods have been used to collect and to analyze data. Specifically, social networks analysis and focus group discussions helped to triangulate the analysis. Results showed that intersectional integration and confrontation between the partners involved in the planning were both aspects that the participants defined crucial as to improve the strategic planning process, and to ensure a good participation level and the development of more functional communication and decision-making strategies.

Keywords: *organizational processes, social network analysis, strategic planning, decision making strategies*

1. Theoretical Framework

Social research is important and useful not only when contributing to increase to the development of theoretical knowledge, but mostly when it aims to suggest improvement strategies oriented both to make organizations and their processes more efficient. In view of the above, applied research and specifically evaluation studies could be considered as a privileged field for the development of social surveys' relevant objectives, such as for instance to support decision making processes and to enhance institutional communication processes [1].

In this vein, organizational communication is seen from a pragmatic perspective which involves actions, relationships, and choices. Indeed, the nature of organizations is strictly linked to actions. Each organizational dynamic and process is reified through action, thus communication plays a central role since it could be conceived as the basis for most organizational actions [2,3]. Hence, it must be assumed that organizational communication eventually leads to action, although not all communication can, nor should it be, associated directly with a specific action [4]. In other words, communication could be seen as an action taking process since organizations actually are networks of communicative acts [5]. This perspective helps to identify the goals of organizational communication as far as they relate to different types of action while it also helps to define effective versus poor organizational communication. Moreover, organizations may be described as entities engaged in social, as well as economic, exchange: in a word as a complex network of relationships [6]. Since they cannot exist without social communication, action-oriented goals are complemented

by the relationship-oriented goals of communication, especially those addressed to external stakeholders [4].

Finally, the importance of communication to organizational functioning does imply, however, a strong relationship between organizational communication and organizational decision-making.

The policy making, which deals with strategy and assessment of performance in relation to accepted goals, involves somewhat different activities. These may include the development of criteria for decision-making, and the development of feedback measures which provide information about the adequacy of present organizational functioning. Feedback measures in principle can be constructed around any internal organizational process and around any continuing transaction between an organization and its environment [7,8].

In this perspective, the present paper aims at presenting a case study showing how psycho-social applied research could be used to improve organizational communication and decision-making processes within the theoretical and concrete framework of participatory planning. In particular, the paper has aimed at illustrating the usefulness of social network analysis [9,10] and focus group discussions [11,12,13,14] as precious tools to evaluate communication processes in the socio-institutional network activated by the Lecce Municipality Plan for the strategic planning for a large area, with the aim to strengthen them.

This investigation has been aimed to identify the network of strong and weak links, which have characterized the communication processes adopted by the various stakeholders involved in the strategic planning for the broad area – Lecce; (*Pianificazione strategica dell'Area Vasta– Municipality of Lecce*) in the South of Italy. Adopting a multi-method approach [15,16], the study has defined possible strategies to strengthen the

network in the next phase of planning and to identify the conditions which would best ensure the functionality of communicative, participatory and decision-making strategies.

Specifically, through the analysis of the stakeholders' positioning and participation, the centrality of each subject in the network has been analysed, as well as the overall level of efficacy of the network as promoter of *relational capital* [17]. In this case, the nodes highlighted by social network analysis have been the representatives of institutions which participated, in different way, to the strategic planning process.

Indeed, social networks analysis (SNA) has helped to look for the existing relations between the members of a group, then, with specific reference to the present study it has been a precious tool to analyses group structure and the role that each member has assumed in the network [18]. Therefore, social networks analysis has allowed focusing on relationships, rather than on individuals [10].

Social network analysis is becoming increasingly popular as a general methodology for understanding complex patterns of interaction. The network perspective examines actors that are connected directly or indirectly by one or more different relationships. Any theoretically meaningful unit of analysis may be treated as actors: individuals, groups, organizations, communities, states, or countries. Regardless of unit level, social network analysis describes structure and patterns of relationships, and seeks to understand both their causes and consequences [19].

While the network concept has deep roots in anthropology and sociology [20,21], standard techniques for studying the structure of social networks have been relatively recent developments. Several factors contribute to the growing popularity of network analysis in the social sciences. For one thing, the world is becoming more interdependent as reflected in overlapping corporate boards, international markets, specialized service economies, and the involvement of multiple levels of government in many aspects of daily life. Another factor is the applicability of network analysis across different units and levels of analysis. As Burt (1980) points out [22], social network analysis is a potentially powerful methodology for connecting micro and macro levels of social theory. A third factor has been advanced in computer technology, which makes it possible to design network studies and conduct complex network analyses which were impossible just a decade ago.

Therefore, being the relational data considered mostly referred to contacts, links and affiliations they could not have been reduced to properties of individuals agents [9]. Hence, social network analysis has been considered the most adequate method to study the relationship between social actors. Wasserman and Faust (1997) [23] have shown four important aspects characterizing social network analysis:

- the actors and their actions are interdependent;
- the relationship are vehicles to transfer tangible and intangible resources;
- the network causes opportunity but also coercion;
- the structure represents a long -lasting layout of bonding.

Moreover, social networks analysis can be conducted in two different ways:

- **Ego-Center analysis**, which focuses on the role played by each individual actors in the network;
- **Full network analysis**, which concerns the structural characteristics of the network [19].

More specifically, the second type supplies the chance to obtain a systematic representation of the reports within the sample of actors involved, rather than pointing out a single representation of the positioning of each actor within the network.

2. Methodology

Data collection took place between July and September 2008. It involved three different kinds of stakeholders, taking into account their different degree of participation, and adopted for each of them a different methodology.

More specifically, the first kind of stakeholder involved was the office for planning and socio-economical partnership. A semi-structured ad hoc questionnaire was adopted to collect data about the relevance played by each actor within the partnership's process while focus group discussions were used to investigate more accurately the information collected.

The second kind of stakeholder involved was the supervisor office. Semi-structured interviews were conducted with some of the mayors of the Lead municipalities.

Finally, regional programmers were involved through semi-structured interviews with assessors in the programming, planning and the chairman of the core evaluation of public investment in the Region. It should be noted some of the members of supervisors' office were personally interviewed, while for the office for planning and partnership only some representatives of institutions belonging to the agreement "Strategic Planning for the Broad Area - Lecce" were interviewed (i.e. an institutional contact person for the Province of Lecce and 5 mayors of each of the municipalities involved).

The focus-group discussions conducted with the stakeholders of socio-economical partnership involved only technical contact persons belonging to the protocols signed between the Municipality of Lecce (the leader of the Strategic Plan for the broad area from 2005 to 2015) and the various organizations (i.e. representatives of the trade unions, representatives of the confederation of local small-medium size industry, representatives of the Regional Health Office, representatives of the CNR – National Centre of research, the archbishop of the Curia, representatives of the Salento University).

3. Data Collection

Both for the complexity of the research object investigated and for the different kind of participants involved (both institutional and socio-economic actors), a triangulation of data analysis techniques was requested. Hence, as already stress the study used:

1. a questionnaire to investigate the relevance played by each actor within the partnership process,
2. two focus-group discussions with the socio-economic partnership and with the planning office (*Ufficio di Piano*) as to bring together elements to evaluate the implemented practices;

More specifically, the thematic areas explored during the discussion were:

- 1) strategic planning and implementation of the partnership (swot analysis of strengths and weakness);
- 2) future mechanisms and conditions of implementation;
- 3) communication modalities;
- 4) actors who play a central role in the network;
- 5) criteria for the definition of a strategic and quality project.

In order to obtain information about the role played by each actor (node) in the network, participants were given a questionnaire requiring to indicate the stakeholders who had participated actively in the participatory processes implemented and who had assumed a central position in the network. Moreover, through this combined methodology, our survey was a support to define the strategies which could be implemented in the new phase of plan, including the identification of conditions which would have assured the functionality of communication, and participatory decision-making processes.

4. Encoding Information Process for Social Network Analysis

In order to adopt social network analysis, the quantitative data collected through the questionnaire have been introduced in a matrix that synthesized the positions of each stakeholder within the network.

Within this “matrix of nearness” each actor interviewed was represented in row and in column; and each cell showed a numeric value indicating the presence or the absence of a contact between actors.

The total column indicates for each partner the number of nominations received from the other actors of the network (in-degree), while the sum of line indicates the number of nominations sent (out-degree).

Through the Software Cyram NetMiner 3.0 density and centrality of the partnership network was assessed [24]. Cyram NetMiner is one of the major and comprehensive software available for the treatment and the elaboration of “relational data”. Its usefulness is mainly motivated by two reasons:

1. it provides the opportunity to observe the results graphically;
2. it provides the opportunity to apply data to a wide range of possible analysis.

In this case, Neighbor Analysis was adopted as it allows examining the network as a whole, enabling researchers to obtain both a density index and a wide range of measures to investigate its integrity as, for example, *inclusion index*, the number of *isolated nodes* and *pending nodes* and *reciprocity* of trade. More specifically, density index measures the level of aggregation of a group or a community. This index is a value that ranges between 0 and 1.

The second step of data analysis was *Centrality Analysis*. NetMiner supplied several centrality indices and for each of them it showed a graphical display, concentric or radial.

Centrality analysis was useful to assess quantitatively the contribution of each individual actor to the development of the interaction network which characterizes groups and/or communities. The analysis of

density and centrality of the network will be described more specifically in the following subsections where also main results are discussed.

5. Results

5.1. The Density Index

As mentioned above, social network analysis allows assessing the overall cohesion of a network through density score: a dense network is, therefore, a network where actors communicate mutually with each other.

The present investigation allowed to determine the density of the network activated on occasion of the strategic plan for the broad area - Lecce, in order to establish whether and where they had created *bottlenecks* and *overlap*, which could compromise the quality of communication, not only with regard to the present situation experienced by the actors involved but also with reference to the future planning steps.

Density score was 0.25. Considering that this index can range from 0 to 1, one could infer that the network has not turned a dense communication among actors, but some methodological clarifications are needed since the data could be interpreted in different ways. Indeed, beyond the value of the density index, the analysis showed that the network was configured to be broad and varied, and there were no peripheral stakeholders. In other words, in the network analysed there were no pending nodes. Such result was confirmed by the fact that during data collection the number of nominations received (the index that helps the calculation of density) depended on the kind of project (and thus on the partnership table) that each actor had experienced. In other words, the network has certainly focused on the differentiation between sectors rather than on the integration processes between actors.

The analysis, then, revealed how strong was the strategic plan for the broad area in building a large network, which was totally missing isolated nodes/stakeholders and pending nodes - meaning that each actor was in the network because the other nodes had reported higher than the minimum contacts (one contact). More specifically, each node of the network was in connection with at least other two nodes. This was a strategic element useful for future planning processes as to maintain a level of internal cohesion among actors functional to achieve the network's objectives. As a final result, therefore, the analysis revealed the presence of a symmetrical and cohesive relationship between actors, pointing out a marked differentiation (participation in field projects) and integration between nodes. This element could be strengthened within the next planning phase as to improve the inter-communication level and also to allow other stakeholders to be part of an open and increasingly democratic process.

5.2. The Centrality of Actors

As stressed before, Social Network Analysis allows also recognizing the most central/relevant actors within the network. Two preliminary meetings with representatives of the Strategic Plan Office in Lecce were carried out to identify the stakeholders who played a role in the planning and therefore could be involved in the

research. By this, it was possible to describe how the network activated to manage Strategic Planning actions centralized around its most central points, through a centralization index. This index is expressed with a

percentage ranging from 0 to 100. In this case, the index of centralization was 26.85% IN (which refers to the nominations received) and of 79.63% OUT (which refers to the nominations expressed).

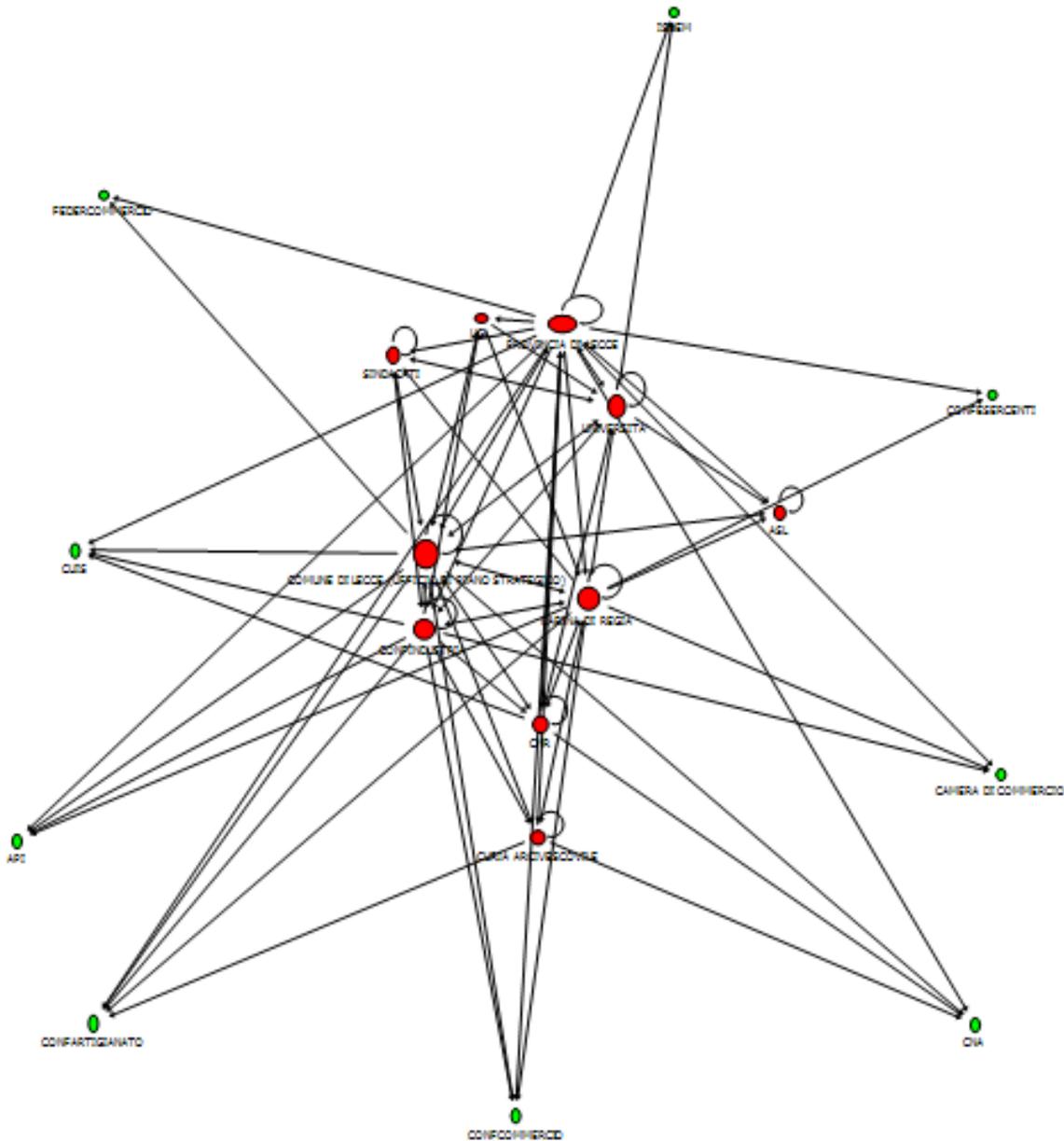


Figure 1. DENSITY NETWORK

More specifically, it is necessary to specify that the index obtained for the nominations expressed indicates that among the actors considered as potential nodes of the network, the 79.63% expressed their views about the importance of some specific actors in the Strategic Planning action because of the experience developed in the field. This result could be interpreted quite positively, since in no case a low level of participation and a low centrality of actors were found out. Moreover, it should be considered that not all the stakeholders involved had the chance to be present; therefore they did not have the opportunity to express their opinion on the centrality of the nodes of the network.

Also, if focusing on the centrality index which refers to the nominations received (IN: 26.85%), it could be observed that that such low value of the index of centralization might indicate that the network was not centralized around a single or few focal points, but it was held by many pillars which, each with its own special features, make the network dense and communicative. In other words, there was a *democratic network*, in which the centrality of some specific actors was not completely dominant over another. This was an extremely interesting result if reflecting on the ideology of partnership, seen as an opportunity to adopt a style of planning which could be actually shared, where all actors can take a central and strategic role.



Moreover, this index also reflected the specificity with which the various actors were involved in the *projects tables* and was consistent with the density index, that expressed as the network was characterized by inter-sectors differentiation rather than by integration processes between actors.

However, even if the network was not centralized, taking into account the so-called "centrality vectors", it could be noted that the planning office (IN: 0.50) and the chief cabin (IN: 0.39) were the actors who had taken the most central role within the planning process, compared with other actors who were totally peripheral, such as the confederation of dealers (Confesercenti -IN: 0.11), and the federation for commerce (IN: 0.11). Conversely, a central role was assumed by the University (IN: 0.388), by the confederation of industry (IN: 0.33), by the trade unions,

by the National Research Council, by the craftsmanship confederation, and by the Province of Lecce (IN: 0.28).

The analysis and interpretation of such indices is very important because it allows to understand who were the players, who were considered more central as to improve the planning process. However, it is important to note that these indices reflected the extend at which, in general, the various actors have been nominated, and this may depend mostly from the project tables to which each of the stakeholders has participated. For example, the confederation of industry and the University of Salento were central in the network, but from the analysis of the focus group discussions conducted it could be inferred that these two institutions have participated to several projects table.

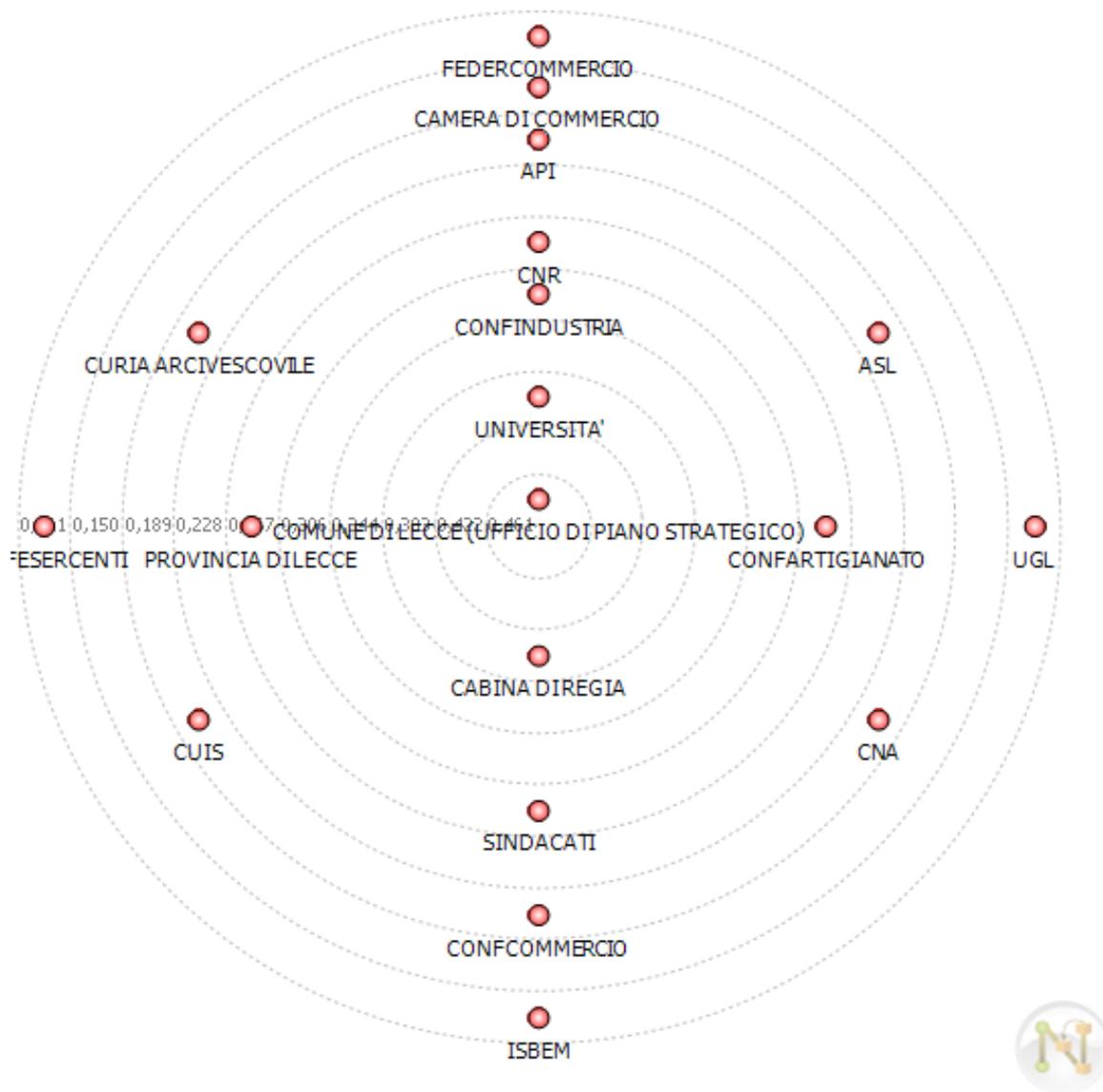


Figure 2. Centrality Network

6. Discussion

This section of the paper is dedicated to the discussion of the qualitative results, as to suggest, from the considerations and reflections collected from the stakeholders involved in

the planning, some implementation elements necessary for the near future of the strategic planning process.

First of all, a very important aspect highlighted by the study was the attention given by most of the organizations involved to the creation of a climate of confrontation and openness between the actors, which is not implicit in the

planning processes conveyed by a public policy. Indeed, during the discussions, the socio-economic partnership has repeatedly confirmed its attempt to develop a direct and symmetrical communication with the Municipality of Lecce.

Focusing on the definition of possible corrections to be made in the next steps of the process, some factors emerged as potentially weaknesses and thus as aspects to improve. The point of weakness that was stressed both by the Planning Office and by the socio-economic partnership was related to the difficulties, due to tight deadlines to work, to create opportunities for integration between tables / project groups. Furthermore, especially the socio economic partnership has highlighted how an uninformed participation of some actors might have had compromised in some cases the quality of communication, as well as the effectiveness of the process of project implementation. Even these elements needed to be improved.

A particularly significant aspect emerged from the interviews to the main office, which covers the area of institutional communication of the strategic planning. For the Mayors interviewed, in fact, the experience has been extremely positive and effective, but probably it has not focused on the diffusion of the contents easily communicable to the public audience and then it has been coded by public opinion as least culturally equipped and personally motivated on this issue. In other words, rather than increasing the communication between institutional actors, the next stage of planning should focus on the processes of extra-institutional diffusion, putting in motion mechanisms of transparency that can connect more easily institutions to citizens. In our view, these elements are significant if we reflect on the cultural impact that strategic planning should produce in this broad area.

Another important element, also in terms of expectations for future planning, was the difficulty manifested in particular by trade unions and mayors, to foreshadow the possible assessment criteria that will be used to select the best strategic projects, in order to decide the resources distribution.

The issue of the criteria is so very important also to understand if there was a consistency between the assumptions defined by stakeholders in the strategic plan broad area and the model of regional planning. To this end, the last step of the research has attempted to relate the two models of planning (and partnership of the City of Lecce and the Region), through what has emerged from the data collection of interviews with the referents of the plan (planning office, Mayors of the chief cabin, partnership and social contacts) and regional programs (Head of Planning; Assessor to Urbanism, and Director of the Regional Evaluation Unit of Public Investments).

7. The Broad Area and the Apulian Region: a Comparison between Two Decision-Making Models

The voice of the stakeholders of the Strategic Plan heard on the aspects of programming in the future scenarios of planning contributed to define a decision making model that we have called *participative* and

shared. In other words, regardless from a formal approval, the stakeholders involved in the study reported implementation's mechanisms and criteria for evaluation of strategic projects, which were already implicitly shared. The conditions for the implementation that were commonly identified by all stakeholders in the Plan, include:

- a the maintaining of a shared working style, namely participating and transparent;
- b the realization of a physical place that identifies the network;
- c the involvement of others actors that may be culturally effective (schools, professional associations, student associations, private social);
- d the strengthening of institutional public communication to multiply the involvement of the territory

The institutional actors and the social partnership expressed a common orientation also regarding to the criteria for the selection of strategic projects. In particular, they expressed their appreciation for those actions that showed:

- the capacity of weighting priorities and not only the preparation of lists of targets difficult to achieved;
- the shared construction of the development of territory with the support of stakeholders, also international (avant-garde techniques, business or social);
- the ability to achieve a coherent integration between different levels of planning (regional and local) and the physical, economic, social and environmental issues in individual projects to achieve really strategic fallout;
- the willingness to consider the possibility that interventions can be implemented by stakeholders different than those who have planned.

Moreover, this model could be defined as technically oriented for the presence of certain elements of merit in the definition of strategic criteria as:

- the correspondence between the planning of coordination and the Province and the coherence with the objectives of the European Union and the Regional Plans;
- the balance in time management and the flexibility of territorial action;
- the presence of important expected values that define the usefulness and the use of the results;
- The strong link between field analysis and the projects' aims;
- the ability to set up a strong monitoring and evaluation system of the action;

The attention to the technical processes of integration emerged from the strategic planning of regional planners was also evident in the possible negative effects that the implementation of the plans could lead to, namely:

- the proliferation of projects based only on the financial accessibility (lack of processes and ex ante evaluation);
- The lack of integration between levels of sectorial projects, but also between different levels (regional and local) programming (lack of monitoring and ongoing evaluation);
- The availability of technical and organizational resources to support the leaders of Municipalities in switching from the planning phase to the implementation and finally achieving the expected outcomes (lack of impact and ex-post evaluation).

8. Conclusion

The psycho-social study described within the present paper has shown how the partnership process activated by the Strategic Plan for the broad area-Lecce has distinguished itself for its extreme democracy and openness, as well as for its ability to manage internal communication processes.

In this sense, a decisive factor was the *institutional bridge* on which the network was centralized - Province - Municipality – Main Office.

Also other stakeholders have played a strategic role in the network enabled by the Plan: no organizations were showed isolated or pending positions in the network.

Another significant element, returned from qualitative data collection concerned the "communicability" of the two models of strategic planning which have emerged from the research: the participatory local technical model and the integrated regional model, both based on the same implementing conditions and on the identification of the criteria for the projects evaluation, aimed at balancing clear and measurable objectives.

The aspect which needed to be strengthened in the next implementation phase of the Plan was integration, not only in terms of the actors involved (horizontal integration) but also with reference to the decision-making levels (vertical integration) and to the processes of implementation (transversal integration).

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