
A SOCIAL NETWORK ANALYSIS IN A LABOUR MANAGED FIRM: AN EMPIRICAL STUDY OF MANAGEMENT TEAM'S POWER

Alfonso Carlos Morales Gutiérrez

Universidad de Córdoba

José Antonio Ariza Montes

Universidad de Córdoba

Sumário: 1. Introduction; 1.1. The role of a manager in self-managed firms; 1.2. A conceptual framework to systematise the research findings; 1.3. The "specific" frame of action of managers in labour-managed firms: some findings; 2. Social networks analysis and hypothesis regarding the governing of a worker owned company; 2.1. The main contributions of the networks analysis; 2.2. Hypotheses; 3. Empirical study; 3.1. Methodology; 3.2. Analysis of results; 3.2.1. Work environment: an organizational index of effectiveness; 3.2.2. A vision of the strong bonds in the social network; 3.2.3. Hypothesis; 4. Way of a conclusion: final reflections

ABSTRACT

The difficulty of directing self-managed companies has been one of the arguments put forward in economic literature to show the unfeasibility of this model. There are not many people with the necessary talent who are willing to direct owner-worker, and to take on collective decision-making proceedings, with the implications regarding unsustainable incentives for this very particular type of business. However, the growth of self-managed businesses has shown that it is possible to achieve, thus the facts give the lie to the unfeasibility argument. This paper endeavours to make an analysis of corporate governance in a labour managed firm with an organizational methodology: the network social analysis (Granovetter, 1973; French, 1956; Fombrun, 1983; Waserman, 1994; Hanneman, 2001). It is divided into four sections. The first summarises the findings of socio-economic studies concerning the perspectives for analysing corporate governance in employee-owned enterprises - worker cooperatives and other labour managed firms. The second explains the main topics of the network analysis and the approaches to empirical research. The third deals with empirical research applying this methodology to a SAL with thirty-three workers. Finally, the scope of these ideas from the empirical analysis is evaluated and possible lines of useful research are suggested.

Key-words: network social analysis, labour managed firm, leadership, corporate governance.

1. INTRODUCTION

1.1. THE ROLE OF A MANAGER IN SELF-MANAGED FIRMS

Two central, inter-related imbalances are found in self-managed enterprisesⁱ: in the balance of work and capital and the balance of productive work and management work. In general, one of the factors which make this type of enterprise successful is the capacity to achieve an optimum equilibrium between the ideals of equality and solidarity and the market-imposed requirements of functionality. To achieve such equilibrium requires setting up two decision-making bodies with comparable authority, one to defend the ideals of the human group and the other to defend the business development requirements. It is, therefore, advisable to differentiate the representative function (the governing body) and the management function and to keep these scrupulously apart, whenever the size and economy of the cooperative make this possibleⁱⁱ.

When the predominant concept is one which advocates the priority of the human group, that is to say, what is important is to get on well together, and attempts are made to merge the representative function and the management function, that is to say, what we need is one visible head, this generally tends to restrict the development of management professionalism and affects greater efficiency in the organisation of the work. Therefore, it is not very surprising that the figure of the manager has been one of the most debated subjects in cooperative

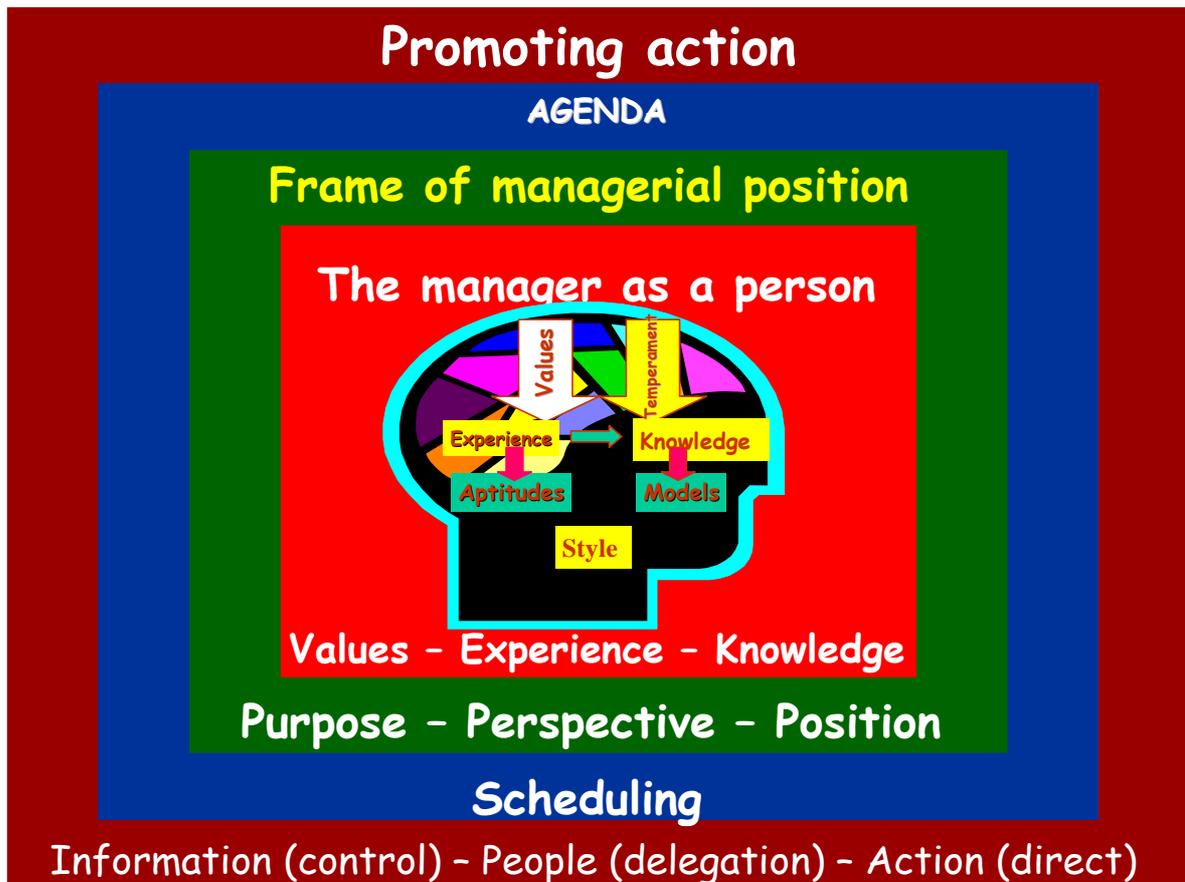
movement theory. The subject of debate is not so much the need for a manager, which is obvious, as the manager's place and responsibilities within a self-managed enterprise.

The theoretical difficulties involved in directing self-managed companies have been one of the arguments maintained in economic literature to show the unfeasibility of this model (Webb y Webb, 1920; Alchian y Demsetz, 1972; Willianson, 1985). The findings of empirical studies show that the co-operatives employ fewer managerial workers at significantly lower rates of pay than their counterpart private firms (Barlett, Cable, Estrin, Jones, 1992). The growth of self-managed businesses has shown that it is possible to run them, so the facts give the lie to the unfeasibility argument: the existence of people with the necessary talent who are willing to direct owner-workers, and to take on collective decision-making proceedings.

1.2. A CONCEPTUAL FRAMEWORK TO SYSTEMATISE THE RESEARCH FINDINGS

The conceptual models used to explain the figure of the manager and the work he does are extremely varied. There are classical models (Taylor, Fayol, Urwick, etc.), neo-classical models (Drucker) and models which stress the human relations approach (Mayo, McGregor, Argyris, etc.), to cite only a few. One of the most frequently used models due to its originality and its applicability to management work, is that of Henry Mintzberg, developed in a number of works (1973, 1983, 1989, 1992, 1997).

Figure 1. A manager analysis model



Source: own preparation, based on Mintzberg (1997)

In his latest reflections on the work of the manager, this author identifies four levels of analysis: the person (values, experiences, knowledge, management models and management style), the frame (purpose, perspective, strategic positions), the agenda (time management) and managing action: interpersonal roles (figurehead, liaison), informational and information control roles (monitor, disseminator, spokesperson) and decisional roles (entrepreneur, disturbance handler, resource allocator and negotiator).

This frame in which the manager moves raises a series of questions which have been noted in a number of works on the person (What are the values of social economy enterprise managers? Which management models do they use? What are their management styles?), the frame (What factors affect their positions?) and the managing action level (How do they organise their work? How do they distribute their resources to achieve action? What emphasis do they place on acting directly, on controlling information and on delegating?)

The conceptual framework on the running of Mintzberg (1997) re-drafted and briefly explained can be of use to us for revising and synthesising the main findings concerning the figure of the Director in self-managed businesses. The selection of empirical studies has been made from the biographical research and consulting editions from public institutions related to these entities (Ministry of Employment and Social Affairs), specialised scientific institutions (CIRIEC, School for Co-operative Studies), from studies carried out by representative associations (COCETA) and an unpublished Doctoral Thesis. We have classified the studies found in the economic, sociological and psychological literature on this subject in Spain in accordance with the following categories (Table 1): *conceptual framework* (the person, the frame, the agenda and management action), *methodological components*¹¹ and *Scope and Subjective components* (type of company, geographical context and sample size).

Table 1. Empirical studies of managers in employee-owned enterprises

| Conceptual Framework (Mintzberg, 1997) | Variables of interest | Author, year | METHODOLOGY | | | SCOPE | |
|--|---|--|-----------------------------|--|-------------|---|-------------------------------|
| | | | Epistemological approach | Focus and strategy in relation to subject | Perspective | Type of employee-owned enterprise | Geographical scope and sample |
| The manager as a person | Values | Ayerbe (1994) | Psychology | Direct and Hypothetical/Deductive | Comparative | Co-operatives | Basque Country |
| | Gender perspective | Escola Universitària d'Estudis Empresarials (1999) | Sociology | Direct and Descriptive | Descriptive | Workers' co-operatives | Valencian Community (125) |
| | Management styles | Fondo Formación (1992) | Sociology | Indirect and Descriptive (training needs in co-operatives) | Descriptive | All types of co-operatives | Andalusia |
| | Management styles, Person-to-job fit Commitment | Ariza and Morales (1998) | Sociology of Organisations | Direct Hypothetical/Deductive | Comparative | Workers' co-operatives, public organisations and capitalist companies | Andalusia |
| -Purpose - Perspective - Position | Organisational models and relations between government bodies | García Blanco (1990) | Sociology of Organisations | Indirect and Descriptive | Comparative | Workers' co-operatives and labour companies | Asturias |
| Scheduling | Scheduling | Orleans (1995) | Company Economics | Direct and Descriptive | Descriptive | Cooperatives | Valencian Community (27) |
| Information People Action | Types of climate | Delicado, Bellmunt (1991) | Psychology of Organisations | Indirect and Hypothetical/Deductive | Descriptive | Co-operatives | Valencian Community |
| | Conflict management | Morales and Sanchez (1996) | Sociology of Organisations | Indirect and Hypothetical/Deductive | Comparative | Education co-operatives | Andalusia (30) |
| | Knowledge of the sector | COCETA (1998) | Business Management | Indirect and Descriptive | Descriptive | Social initiative co-operatives | Spain |

Source: own preparation

1.3. THE "SPECIFIC" FRAME OF ACTION OF MANAGERS IN LABOUR-MANAGED FIRMS: SOME FINDINGS

Managers in social economy enterprises are constrained by two dynamics. The first, the upward dynamics of the enterprise, can be deduced from the manager being subordinate to the governing board. From this point of view, one of the most important tasks of the manager is to properly define his functions as regards the governing

board, at formal level which involves responsibilities taken on and at informal level which entails a considerable degree of trust in order to be able to manage critical situations. The other is the downward dynamics of the workforce, where, above all, the manager must, perform administrative and/or co-ordination tasks with regard to the traditional aspects of production or marketing.

The main conclusions reached by the various studies of managers at the frame level are largely confined to their position, their situation as a nexus between the governing body and the organisational structure of the enterprise. The studies which

have directly or indirectly touched on this question are those of García Blanco and Gutiérrez (1990) on labour companies and Fondo Formación (1992) on co-operatives. The main data on the subject may be summed up in the following working hypotheses:

- *The management frame is constrained by the organisational environment which, in the system of a participative organisation, tends towards either a more participative model in small enterprises or a more representative model in the larger enterprises.* The Assembly and the Council are the means for exercising control or participating in the management of the company which are preferred by the members and the workers. However, not all workers of employee-owned enterprises in general, and labour companies in particular, explicitly prefer a participative organisational model despite the fact that their legal form is of this type. García Blanco and Gutiérrez (1990) found a preference for the Assembly rather than the Board of Directors among workers who favoured the *participative* model, while among those who opted for the *representative* or more traditional model, the preferences were far more evenly split, although the balance remained in favour of the Assembly. Despite these distinctions, the Assembly generally appears to be the organ through which the workers prefer to exercise their right of control as owners. This may be explained by the fact that, although the workers are aware of the possibility of an Assembly being swayed by influences, particularly since the usual voting method is the show of hands, it remains the most valid (or the least bad) means of making their voices heard and their votes count, in however limited a fashion, in the enterprise. Moreover, used sparingly, it is the least 'costly' in terms of individual effort, as well as being the most deeply-rooted in the traditional culture and practice of the labour movement. On the other hand, there is a certain feeling of distrust or suspicion towards the Boards of Directors, as the workers are not very satisfied with the information they receive concerning their enterprise and feel relatively distanced from the management, consequently they demand more control rather than more participation.

- *At the workforce dynamics level, managers must do their jobs within a simple but decentralised structure where informal group type relations predominate.* The Fondo Formación (1992) study of cooperatives asked two questions concerning their organisational design. What type of organisational structure they had adopted, from four choices (*simple-decentralised, complex-functional, hierarchical-centralised* or *family type*) and the basis of their personal relations (*profession/trade-individual, interests-team, function-post, camaraderie-group*). Regardless of whether the co-operativists understood the implications of these structures or not, the two most frequently chosen were *simple-decentralised* (45%) and *family type* (34%), while for personal relations the majority choice (64%) was *camaraderie*, where the group takes precedence. These data can be interpreted as the result of organisations with little formal structure as a logical consequence of their having been formed recently and the fact that of them are small in size.

In this paper we try to make an empirical study with an "original" approach to corporate governance and the manager in an LMF (Labour Managed Firm): the network analysis. It is divided into four sections. The first delimits the main topics of this sociological methodology. The second sets out the hypothesis concerning governance and interpersonal relations. The third examines the results obtained in a real case. Finally, the scope of these ideas and results is evaluated and suggestions are made for possible lines of useful research.

2. SOCIAL NETWORKS ANALYSIS AND HYPOTHESIS REGARDING THE GOVERNING OF A WORKER OWNED COMPANY

2.1. THE MAIN CONTRIBUTIONS OF THE NETWORKS ANALYSIS

The social networks analysis, which is also termed structural analysis, is an instrument of sociological investigation which enables a vision of the social structure of a group. In this paper, the analysis focuses on the relations between the players, the governing team and the directors of the company compared with the rest of the

worker-proprietors, and their attributes. Analyzing these relations we can discover the degree of influence of the company management team and the level of social support given to their work. Thus, the level of solidarity, moral density and complexity of the network social organization can be explained based on the differences between how the members of a group connect.

The examination of the number and type^{iv} of relations among players helps us to clarify the level of opportunities, influences and power that the individuals have. Sometimes, the players who are connected by many kinds of ties and relations might be more exposed to receiving a diversity of information. Consequently, the strongly connected individuals might have more influence and, at the same time, might be more influenced by others. Resentments and rumours flow quickly in these cases, and also make the information easier. The groups which have sound connections mobilize the resources better and contribute many perspectives which help to solve problems. The governing teams could have these social synergies at their disposal in order to facilitate their management work, although this is what all labour managed firms aspire to day to day.

2.2. HYPOTHESES

A) A governing team will be more effective if most of its components have a "close social distance". This will allow greater influence to be exerted and certain opportunities to be taken advantage of through the gathering of internal information.

The distances between players in a network may be an important aspect of the social networks as a whole. This indicator is very useful for determining how the players are embedded in the network. Thus, the individuals with closer distances have better opportunities as compared with those with greater distance, who will have greater restrictions. For example, when the distances are greater, more time may be needed to spread certain information among the members of the group. In addition, the variability of subject distances helps to classify and stratify them because the subjects who are nearer others may exert more power than those who are more distant.

B) A governing team will be more effective if it has a high level of

"cohesion" with the rest of the company members. This will enable the spread of wider options and the obtaining of information.

Sometimes it is more useful to consider all the possible ties affecting players instead of evaluating the distance between particular persons. Thus, the cohesion measures enable a general impression of the total degree of connection within the members of a social network. The relation intensity depends on the sources available to the player to enable him to send out information^v. In order to evaluate the degree of cohesion among the members of a group, we can estimate the total number of connections between couples of players over the total number of possible connections between them.

C) A governing team will be more effective if it has a high level of centrality. This will allow greater options to influence decision making.

Power is a fundamental aspect of social structure. Network thinking concludes that power is an inherently relational quality, and considers that power and centrality are two closely related concepts. An individual does not have power in the abstract, he has power because he can dominate others and vice versa. Since power is a consequence of patterns of relations, the amount of power in social structures can vary. Thus, in high-density networks there are more opportunities to achieve higher levels of power.

The way that a player is embedded in a relational network determines the constraints and opportunities it provides. Those players who face fewer constraints and have more opportunities than others are in favourable structural positions. This means that a player may extract better bargains in exchanges, and that the player will be a focus of deference and attention as regards those in less favourable positions.

D) A governing team will be more effective if it has high levels of "internal cohesion" and "overlapping with other groups". This will allow greater levels of coherence and unity of action with respect to the rest of the components.

It is of great use to know the sub-structures that may be present in a social network. Networks are built up by combining dyads and triads into larger, but even more closely connected structures. The

contentment of sub-groups can support or prevent the social relations in the organization. Where the groups overlap, we might expect that conflict is less likely than when the groups do not overlap. In addition, mobilization and diffusion may spread rapidly across the entire network.

Knowing how an individual is embedded in the structure of groups within a network is also a critical factor as regards understanding his behaviour^{vi}. The differences concerning integration in the social system structure of sub-groups lead to serious consequences as regards how persons perceive their work, which affects their daily behaviour. In this paper, we propose that the members of the governing team bring about a related sub-group which is very close to the team and also involves substantial overlapping with other sub-groups of the organization.

E) A governing team will be more effective if their components have high levels of "structural equivalence" or "social roles". This will be an indicator of the recognition or status of each one of its components.

The analysis of the relation models of the persons enables us to make generalizations on the behaviour and the social structure of one group. The final objective is to group together players who are more similar, and describe what makes them similar, and what makes them different, as a category, from the members of other categories. In an intuitive manner, we could say that two players have the same position or role insofar as their pattern of relationships with other players is the same. The structural analysts propose to define some categories through regularities in the patterns of relations among players and not the attributes of the players themselves. The category concept (or social role or social position) depends mainly on its relation with another category. Therefore, structural equivalence tries to determine the degree to which a group of players is similar in terms of their relation patterns. This information is extremely useful as regards distinguishing them from other groups whose approach to relations is different.

3. EMPIRICAL STUDY

3.1. METHODOLOGY

The main objective of this paper is to describe the governing team of a Labour

Managed Firm. To this end, we use a set of statistical measures based on the analysis of social networks. These indicators help us to explain the effectiveness of the company.

The selection of the company was not random. We selected an organization with a good working atmosphere and excellent financial results. For the purposes of this study, we carried out a survey of all the partners of a Labour Managed Firm, whose main activity involves studies and projects for the execution and maintenance of all types of hydraulic work. The shareholding of the company is distributed among 31 working partners. These replied to a questionnaire drawn up to find out their social relations and investigate the predominant social atmosphere within the company. This study is made up of the following two parts:

1) CONFIRMATION STUDY. This endeavoured to evaluate the "necessary condition" to demonstrate the previous hypotheses, that is to say, that the company shows a satisfactory level as regards the work atmosphere. A questionnaire with 58 items was applied in order to evaluate the following factors: *My work, my head, work in teams and coordination, focus on the client and on quality, leadership and organizational progress, communication and participation, Working conditions and compensation, organization and resources, general work satisfaction.* The working partners responded to this part of the questionnaire in the Liker scale.

2) SOCIAL NETWORK ANALYSIS. This part takes in four items. The working partners had to state the following: a) the co-workers you would choose to make up a work team; b) the co-workers who think that they have been chosen; c) the co-workers who would not be chosen to make up a work team; d) the co-workers who think that they have not been chosen.

The working partners responded to the questionnaire in the month of November 2004. In order to guarantee confidentiality, it was delivered in a sealed envelope. Six of the 31 respondents, who will be identified by abbreviations, did not respond to the questionnaire (RDC, PFM, JFS, JGC, LNC and FRR). This fact does not eliminate them from the complete analysis. Although they did not choose or reject any of their co-workers, they may have been chosen or rejected by other members of the group. The members of the Boards of Directors are JEC, AGR, RAC and AAF. In contrast, the management team is made up of three persons: DMH, AMAM and LPM.

The data processing on the work atmosphere was carried out with SPSS 11.0, whereas the social network analysis was made with Ucinet 6 for Windows, developed

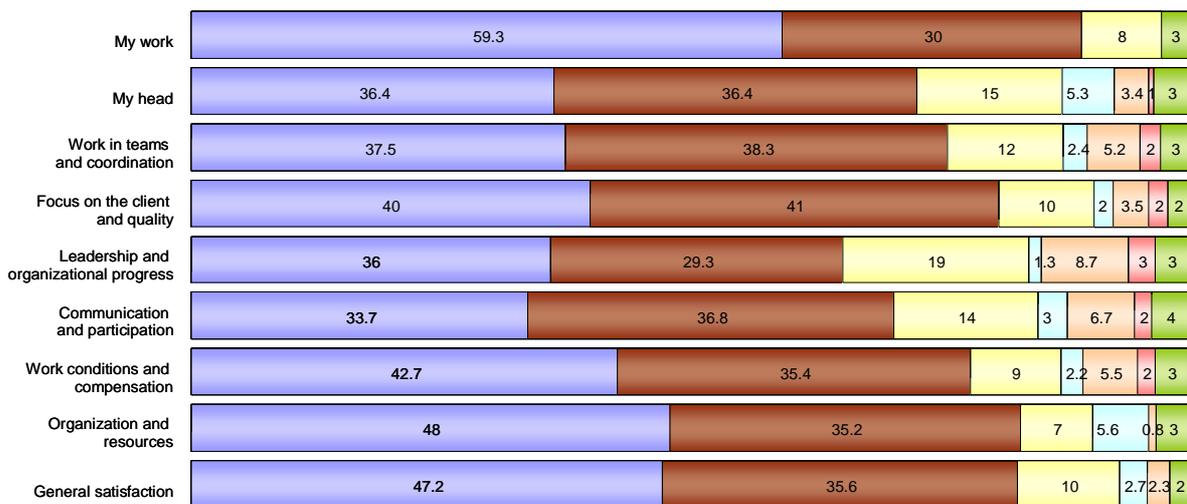
for this purpose by Borgatti, Everett and Freeman (2002).

In this paper, we consider that the performance of the governing team is a critical factor in the work environment of the company. A satisfactory work environment improves the effectiveness of the operations and the enterprise because it facilitates interpersonal relations and the application of the practices and policies of the management. Thus, the first step in this paper will be to measure the work atmosphere in the company is. The main results are shown in figure 2.

3.2. Analysis of results

3.2.1. Work environment: an organizational index of effectiveness

Figure 2. The work atmosphere



The results are satisfactory. These show that the working partners are quite satisfied with the content and implementation of their work. This work implication is reinforced by the positive evaluation of the working conditions and compensation. Furthermore, there is a strong feeling of pride and ownership as regards the organization. The work atmosphere can be summed up within the dimension of general satisfaction, which obtains one of the highest scores of all the aspects measured.

3.2.2. A VISION OF THE STRONG BONDS IN THE SOCIAL NETWORK

Size is critical as regards the structure of social relations. Thus, the number of logically possible relationship grows exponentially when the number of players increases. If the possibility of establishing relations is increased, differentiated and fragmented groups can arise. In fact, the network complexity increases with size. In this investigation the

network size is 930 ($k * k - 1$; k = number of players).

The density of ties is defined as the proportion of all the ties which could be present and actually are. In our case, the density of elections is 41.7%, whereas the density of rejections is 15.2%. To accept that you do not like someone is more difficult than stating the opposite.

The direct graphs of friendship choice and rejection among the network members appear in figures 3 and 4. This type of representation, which only shows the mutual relations of two individuals, facilitates the visualization of the results since the size and density, mainly of the choices, of the social network would hinder its understanding.

The direct graph of friendship choices is dense. There are only three players who do not maintain any reciprocal social bond with other group members, The figure shows nine players because six of them did not answer the questionnaire. The rest of the working partners create strong, mutual, social bonds. In the middle of the network are LRO, PSU, FCB, JEM and JLS. In addition, it can be seen that the Board of Directors comprises a group with a high degree of cohesion and that its

members maintain an excellent relationship with the management team. The sole exception is player DMH, who has been estranged from his co-workers in the governing team).

The direct graph of friendship rejections shows low density. Very few members are affected by these negative relationships. Only seven players are involved in this social problem: the complete Board of Directors, a member of the management team, and two persons who do not participate in the governing team (AMUM and AFM). The rejections involve these difficult players and the other five members of the governing team.

Figure 3. Direct graph of friendship choices

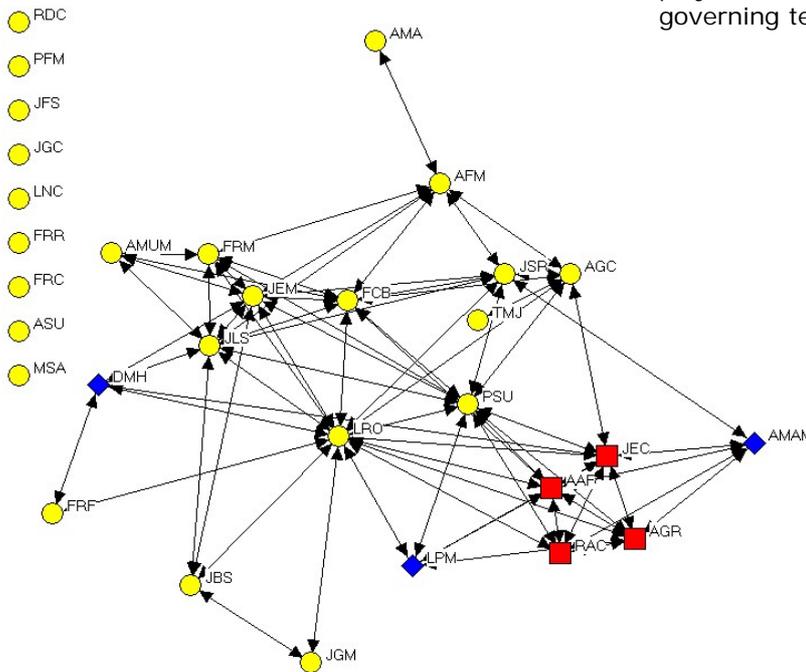
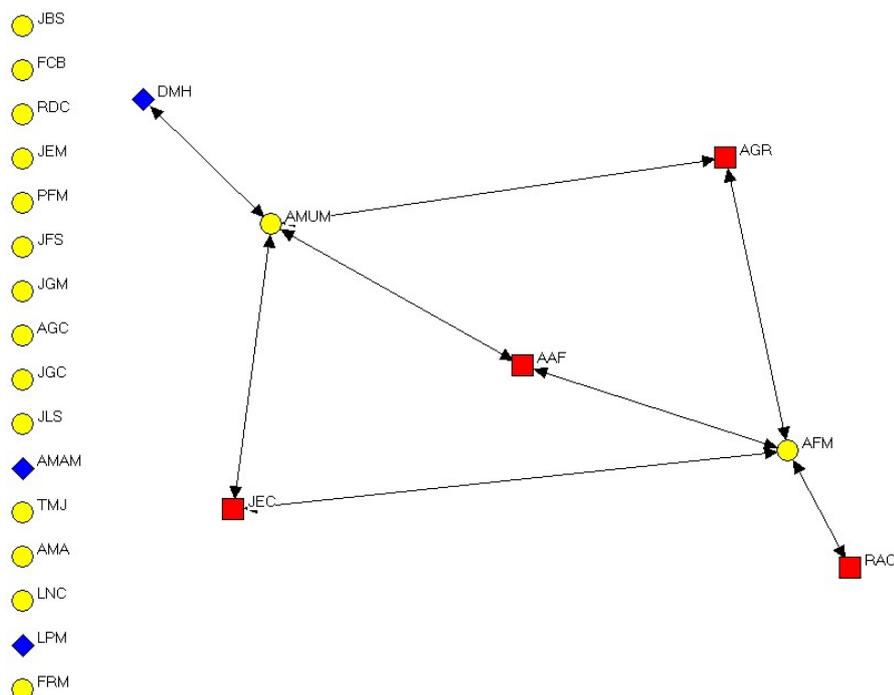


Figure 4. Direct graph of friendship rejections



3.2.3. Hypothesis

A. Distance between players

The first hypothesis considered that the effectiveness of the governing team would be greater if the distance between its members were reduced. For this purpose, we have used the algorithm of *geodesic distance*. The geodesic distance is the number of relations in the shortest possible path from one player to another. Therefore, the geodesic distance measures the optimal connection, or the more efficient tie concerning two players.

As the network is dense, the geodesic distance is necessarily small. The longest geodesic distance for each player shows a measure of how far a player is from the one who is farthest away. No member of the organization is more than three steps away from any other. This suggests a very compact network where the flow of information is rapid^{vii}. The average distance is 1.461. This distance is reduced to 1.43 as regards the Board of Directors and increases to 1.58 in the management team. Excluding the seven members of the governing team, the rest of the players show an average distance of 1.45. These results confirm the proximity of all the governing team members, which is similar to the global proximity in the whole network. These findings confirm the reasoning of the first hypothesis.

The importance of proximity has already been indirectly dealt with in other studies involving middle managers (García Blanco, 1990).

Thus in comparison with other types of companies, there is a significant increase in the weight of the immediate superior as the channel for complaints and initiatives. In principle, this seems to be positive as it means that the "natural" channel of the organisation is used to direct the verbal

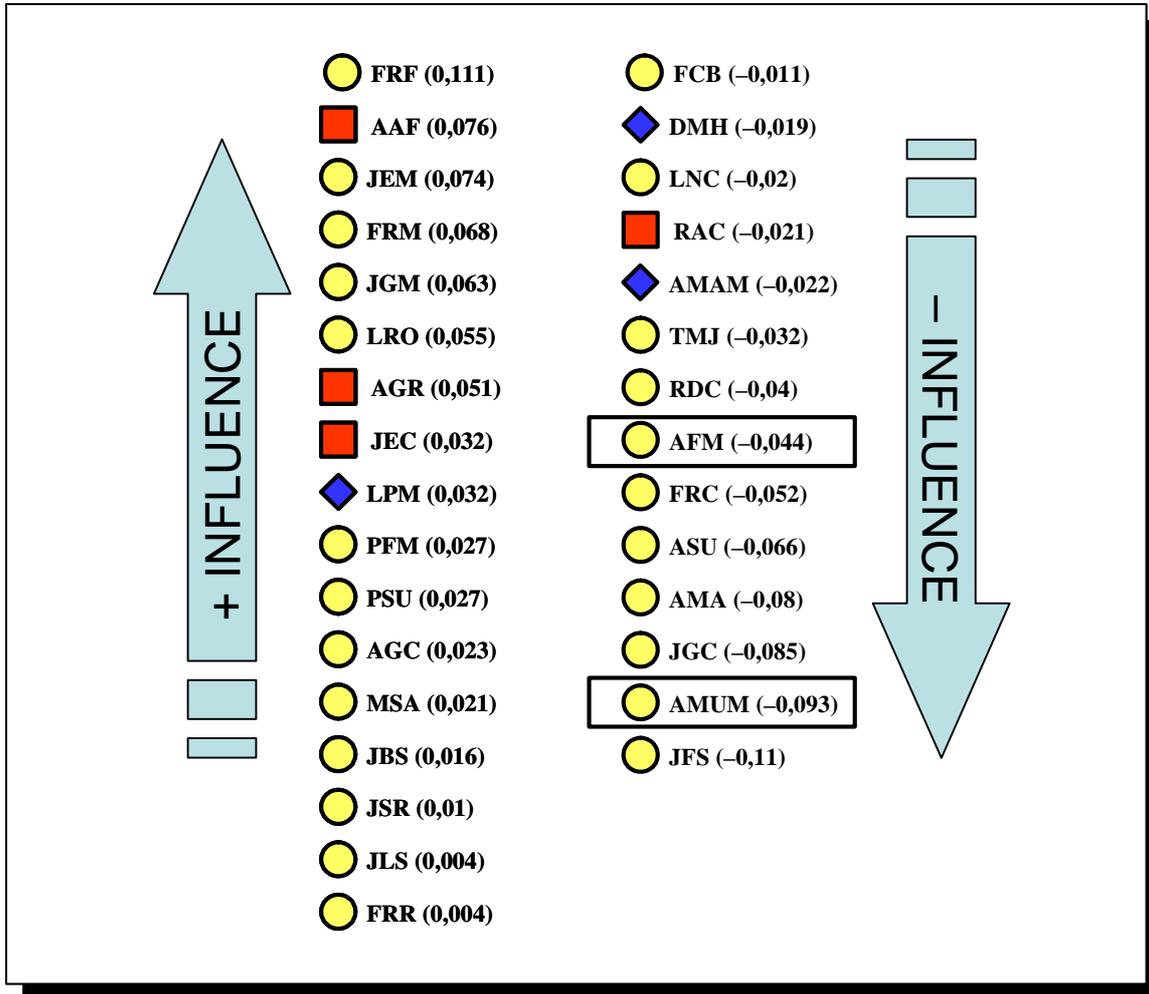
communications. This, in turn, implies that the channel must be cared for by the company since the intermediate manager, exercising his control and supervision functions, may appear as less legitimate in the eyes of the subordinates who are also owners, and may be seen as a peer or their equal as he is not usually armed with specific technical qualifications which might reinforce his status as regards his subordinates. As can be seen, the potential tension in the command- employee relationship in a labour company do not appear to operate in this case, as this is the instance which is most highly valued by the employees. This conduct seems to indicate an effort on the part of the intermediate managers to adapt to the increased demand for accessibility and attention from the employee-owner.

B. Cohesion

We think that good results in the work environment are partially motivated by the high degree of cohesion among the members of the governing team. This is the aim of the second hypothesis of this paper. Several approaches have been developed in order to calculate the connection between pairs of players, taking into account all the connections between them. These measures have been used to evaluate cohesion and influence.

Thus, the Taylor influence uses all the connections between pairs of players while analysing the balance between the sending connections of each player (marginal row) and their receiving connections (marginal column). Positive values then reflect a preponderance of sending over receiving as regards the other player of the pair, which is the balance of influence between the two. People with positive results will exert more influence on the social system. These results appear in figure 4. In the left hand column appear the working partners with more influence. In the right hand column appear players who obtain negative scores and have less possibility of influencing others.

Figure 5. Influence on the social network



FRF is the player with more influence on the social network. As we note, this player is not a member of the governing team. However, three of the members of the Board of Directors and one of the three members of the management team are people with great influence. From a negative perspective, we note that three members of the governing team display a negative balance of influence (one advisor, RAC, and two managers, DMH and AMAM) although this is not the worst. AFM and AMUM, who are both controversial players, have a limited capacity to influence the social system, principally AMUM who occupies the penultimate position.

Consequently, these results show that there is a high degree of influence of the governing team. This contributes to success and organizational effectiveness and so confirms hypothesis 2.

C. Centrality and power

The player position in the social network determines his opportunities. Network analysts describe the location of

individuals in terms of how close they are to the centre of the action in a network as there are several reasons why central positions tend to be powerful positions. Various measures have been developed to estimate the position of the players in the social network structure.

C.1. Degree centrality.

On average, players have a degree of 12.484 including as many in-degrees (receiving) as out-degrees (sending). The greater variability of out-degrees means that the standard deviation of the emissions (10.342) is greater than that of the receptions (3.741). This suggests that the population is more homogenous with regard to in-degree 'prominence' than with regard to out-degree 'influence'. On the other hand, the measure of global centralization, which considers the social network as a whole, gives a score of 60.333% for out-degree and 25.889% for in-degree. These values indicate that there is a moderate level of concentration or centralization in the

network. That is to say, the power of individual players varies quite substantially, and this means that, over all, positional advantages are unequally distributed within this network. An effective measure of a player's centrality and power potential is the degree. The degree is the number of connections that a player has. It is important to distinguish centrality based on in-degree from centrality based on out-degree. If a player receives many ties, they are often said to be prominent, or to have high prestige. Players who display high out-degrees are players who are able to exchange information with many others and they are often said to be influential players. This indicator has been suggested by Linton Freeman. All members of the governing team have more than ten emissions, one of them, RAC, has twenty. Some members even make 100% of all the possible elections. Particularly, the two subjects identified as more conflictive, AFM and AMUM, who have an average degree: 15 and 14 respectively. On the other hand, none of the members of the governing team is among those more chosen even though they receive a higher average number of elections (more than ten elections in all cases). A member of the Board of Directors, JEC received 16, whereas the CEO, LPM, is the one who obtains a smaller number of votes: 11. Finally, The less chosen players are MSA and FRR with only six votes.

C.2. Betweenness and Centrality.

This measure views a player as being in a favourable position to the extent that the player lies on the paths between other pairs of players in the network. That is to say, the more people depend on me to make connections with other people, the more power I have. There are variations in the interference that players can exert, from none as regards MSA, RDC and others, to the 47.955 of LRO. Players LRO, AGC and AFM are the most central, therefore, they are the most powerful. Generally speaking, the betweenness centrality of the governing team is average, although it is reduced in the case of the CEO, LPM, and AGR (a member of the Board of Directors). Nevertheless, another manager, DMH, displays an elevated betweenness centrality. In the social network, this player appears far from the nucleus formed by the governing team and near to the rest of the working partners. Possibly, this manager may act as a mediator to solve conflicts in the organization. The variability among players is confirmed if we observe the standard deviation, which is 12.353 over an average of 9.935 interferences). Finally, the total network centralization is reduced (4.52).

C.3. Analysis factor: eigenvector of geodesic distances.

This approach endeavours to find the most central players, i.e. those nearest the others in terms of the global structure of the network. Thus, the factor analysis pays less attention to patterns which are more local. This method identifies dimensions of the distances between players. The location of each player with respect to each dimension is called eigenvalue, and the collection of such values is called the eigenvector. The first dimension captures the global aspects of distances between players; secondary and further dimensions capture more specific and local sub-structures. One hundred per cent of all of the distances between players is a reflection of the main dimension or pattern. This value means that the dominant pattern fully describes the data. If we turn our attention to the scores of each of the cases on the first eigenvector, we observe that two of the management team are the most central players in the main pattern of distances involving all of the players (LPM and AMAM). In any case, the descriptive statistical standard deviation = 0.171; average = 0.055 and this indicates that there are substantial inequalities regarding player centrality or power.

The third hypothesis of this paper has endeavoured to prove the degree of centrality of the governing team. We have demonstrated that these persons show the following characteristics: a) an upper-middle level centrality; b) a medium betweenness centrality; and c) the most powerful players, in terms of the global structure of the network, are two members of the management team. Therefore, the structural position of those people who are governing the company is quite good, and so contributes to improving the work atmosphere.

D. Analysis Clusters

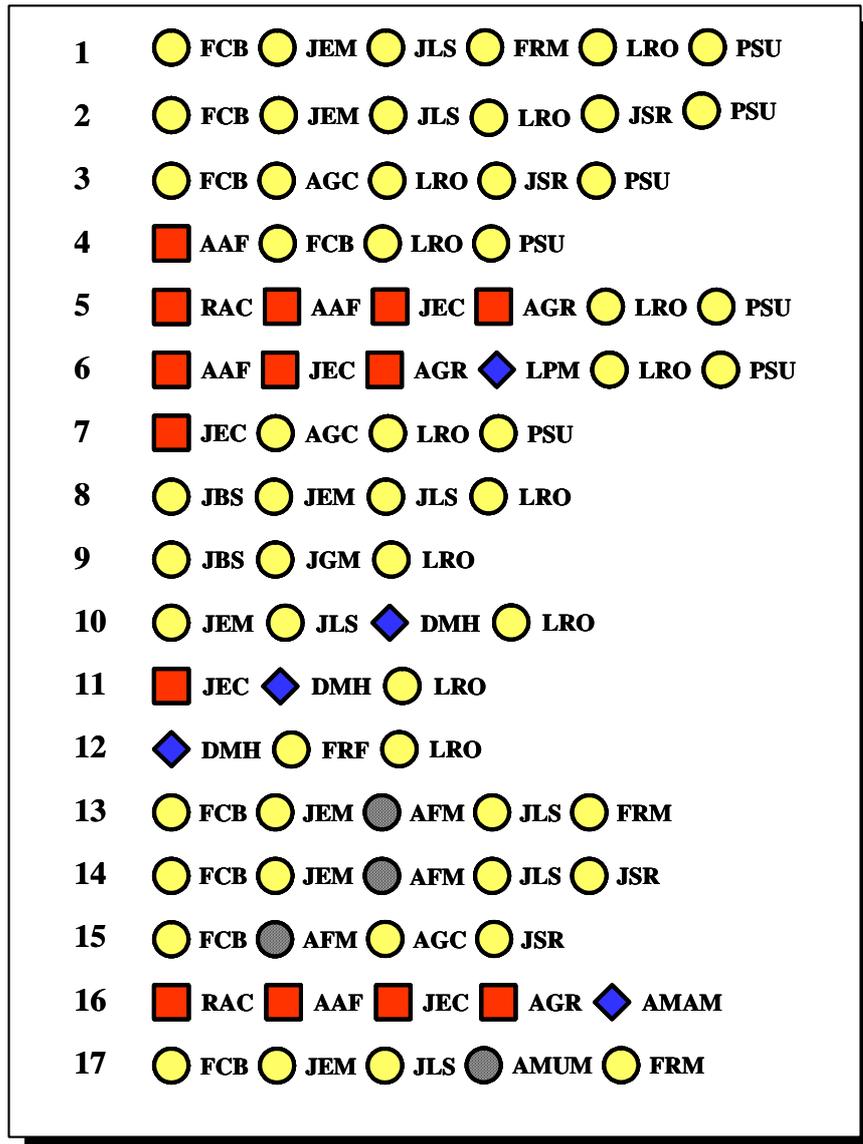
The fourth hypothesis investigates the cohesion level in the governing team and the overlapping with other sub-groups. A sub-group (or clique) is simply a sub-set of players who are more closely tied to each other than they are to players who are not part of the group.

For the purposes of this paper, we analysed all the groups of three who have all the possible ties relating them (this is the strongest possible definition of a clique). There are seventeen sub-groups in the social network (see figure 6). The four largest groups are composed of six players. Moreover, there are five sub-groups of five players, five of four members and three sub-groups of three players. The governing team

is a very close group, again with the exception of DMH who appears to be far from the nucleus formed by the governing team. DMH only overlaps with one of them, JEC, in one sub-group. In addition, there are eleven players, who are all estranged from the governing team and who do not overlap with

other players in at least one clique: RDC, PFM, JFS, JGC, TMJ, LOVES, LNC, FRR, FRC, ASU and MSA. Finally, AFM and AMUM overlap with other players in several sub-groups, but they do not coincide in any clique.

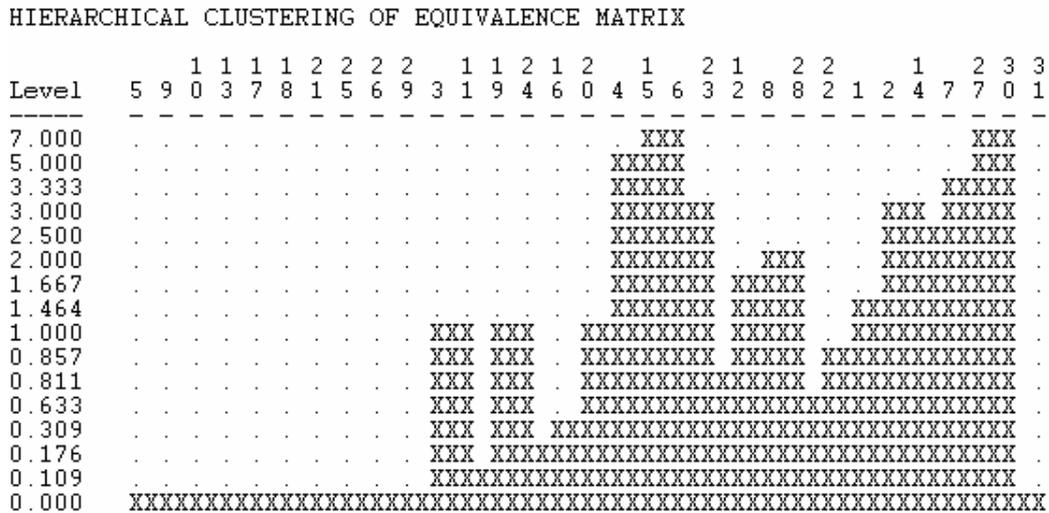
Figure 6. Cliques in the social network



We can take this kind of analysis one step further by using single linkage agglomerative cluster analysis to create a joining sequence based on how much clique membership players have in common. In figure 7 we see two different groups. On the left, FCB, JLS, JEM, FRM and AMUM have

several groups in common. LRO, PSU, JEC, AGR, RAC, AAF and LPM appear on the right. LRO and PSU are persons who chose all the others, therefore, it is logical that they appear in many sub-groups. The rest are the four members of the Board of Directors and the CEO of the company.

Figure 7. Cluster analysis



These results confirm the fourth hypothesis in the sense that the governing team has high levels of internal cohesion and overlapping with other influential members of the organization. This event helps to improve the good work atmosphere and improve the relations among players in the social structure, at the same time, it contributes to greater organizational effectiveness.

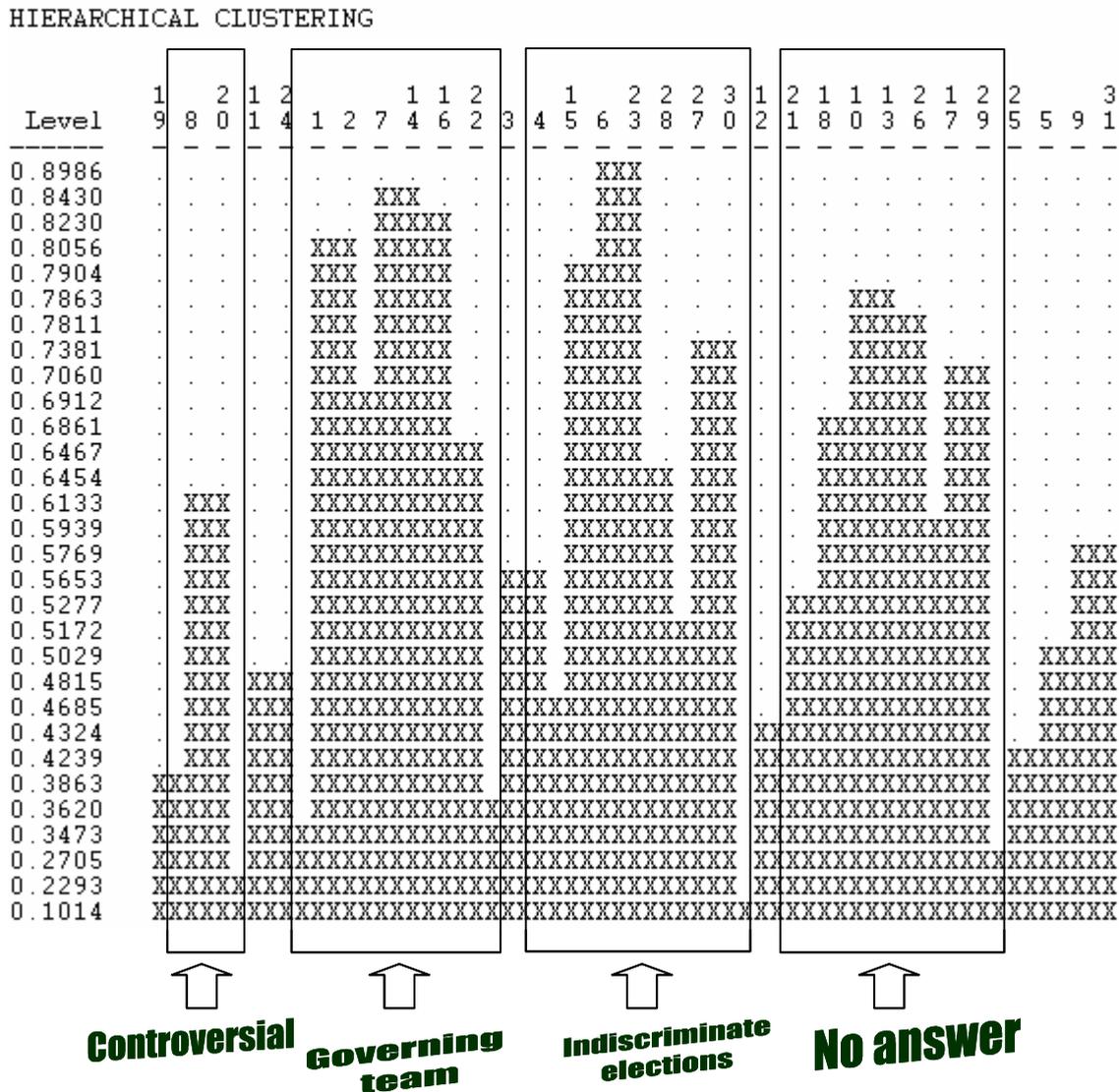
E. Structural equivalence

The structural equivalence analysis determines the extent to which several players have similar patterns of relations. The fifth hypothesis expressed that the governing team would be more effective if the structural equivalence of their members is more elevated. As exact structural equivalence is likely to be rare (particularly in large networks), we are interested in examining the degree of structural equivalence rather than the simple presence or absence of exact equivalence. Therefore, we will identify groups of individuals who are similar to others and we will distinguish them from other groups. Two players may be said to be structurally equivalent if they have the same patterns of ties with other players. That is to say, if the results of sending and receiving ties are similar to another. With this procedure, we obtain an index number to summarize how close to perfect structural equivalence each pair of players is. Thus, we

will use the Pearson correlation coefficient which informs us of the strength of the relation rather than its simple presence or absence.

The governing team is very similar because most of the numbers are positive, and many are substantially high. Again, the only exception is DMH. This player shows different behaviour from the rest of the co-workers. One way of getting an even clearer summary of the results is to perform a cluster analysis on the matrix produced (see figure 8). What this does is to group together the players who are more similar first. The two controversial players are in the first cluster. The second cluster is the most significant for the purposes of this study because it includes almost all of the governing team (again with the exception of DMH). This means that the relation patterns of all these players are very similar. The last clusters are less significant: the third is created by the people who chose everybody else and the fourth is composed of the persons who did not respond to the questionnaire.

Figure 8. Hierarchical clustering



The previous results confirm hypothesis 5. That is to say, the structural equivalence of the governing team is substantial and will, therefore, contribute to organizational effectiveness.

4. BY WAY OF A CONCLUSION: FINAL REFLECTIONS

The importance of social relations in corporate governance is not considered to be a key question in the development of the business. The big enterprises clearly differentiate their corporate level and employee level: they have different dynamics and rarely do their agents coincide. The companies which are owned by the workers are an exception in this area, and the daily interpersonal relationships at work can

Interfere with, or facilitate the dynamics of corporate decisions. Thus, "The fact of having granted representative powers to a management team is no obstacle to the perception that the values and attitudes of this team may be far from those of the workforce, nor does it prevent a demand for greater 'closeness' in the sense of demanding a greater understanding of values that signal limits to the workings of the economic standards of efficiency and competitiveness" (García Blanco and Gutiérrez, 1990).

Therefore, it is important to analyze these relations and their structural quality. The network analysis has confirmed that the social structure of the company is a necessary but not sufficient condition as regards facilitating management, to the extent that the governing team is not "distant from its social base", is united internally and with the group, and its components are leaders and have prestige.

We must continue to apply this methodology to other real cases in order to detect the problems that can interfere with the development of the company at this level of corporate reality, that is to say, the

interpersonal relations in the group. Moreover, we must seek the routes which lead to solutions which prevent these problems from affecting other areas of business activity.

REFERÊNCIAS

- ABELL, P. (1983), *The Viability of Industrial Producer Cooperatives*. New York, John Wiley & Sons, **International Yearbook of Organizational Democracy**, vol., 1, p. 73-106.
- ALCHIAN, A., DEMSETZ, H., (1972), *Production, Information costs and Economic Organization*, **American Economic Review**, vol. 62, nº 5, p. 777-795.
- ARAGONES SIGNES, J. (1988). **Cooperativismo, participación y poder**, Centro de Educación Cooperativa, Valencia.
- ARIZA, J. A., MORALES, A. C. (1997), *Flexibilidad y compromiso: cemento de las estructuras organizativas emergentes*, Estudios Financieros, 175, p. 95-150.
- AYERBE, M. (1994), *Valores de los directivos cooperativos*, in **Anuario de Estudios Cooperativos**, 1994, Universidad de Deusto, Bilbao.
- BARTLETT, W., CABLE, J., ESTRIN, S., JONES, D.C. and SMITH, S.C. (1992): Labor-managed cooperatives and private firms in North Central Italy: an empirical comparison, **Industrial and Labor Relations Review**, Vol. 46, Nº 1, oct, pp. 103-118.
- CLARKE, T. (1984), *Alternative Modes of Co-operative Production*, Economic and Industrial Democracy, 5, p. 97-129.
- COCETA (1998); “*Las cooperativas de iniciativa social*”. See <http://212.4.103.6/coceta/dpto-sectorial/iniciativasocial/urec/home.htm> (14-02-03)..
- DELICADO, FERNANDEZ and BELLUMT (1991), *Cultura organizacional cooperativa en el País Valenciano*, **IPFC, Consellería de Treball y Afer socials**, Comunidad Valenciana.
- ESCUELA UNIVERSITARIA DE ESTUDIOS EMPRESARIALES (1999); “*La mujer directiva en empresas cooperativas*”; <http://212.4.103.6/coceta/publicaciones/cuadernosmujer/primer/index.htm> (14-02-03).
- FONDO FORMACIÓN (1992), **Las necesidades de formación en las cooperativas**, Junta de Andalucía, Sevilla.
- FRENCH, J. R., RAVEN, B. (1968), *The bases of social power*, in D. Cartwright and A. Zander (eds.), **Group Dynamics**, New York, Harper and Row.
- GARCIA BLANCO, J. M. (1990), **Defendiendo el Empleo**, Informes del Ministerio de Trabajo y Seguridad Social.
- JENSEN, M. C., MECKLING, W. H. (1979), *Rights and Production Functions. An Application to Labor-Managed Firms and Codetermination*, **Journal of Business**, vol. 52, no 4, p. 469-506.
- KANTER R. M. (1977), **Men and Women of the Corporation**, New York: Basic Books, 1977.
- LEVIN (eds.) (1984), *Employment and Productivity of Producer Cooperatives*, in R. Jackall & H. M. Levin (eds.), **Worker Cooperatives in America**, pp. 16-31.

- MINTZBERG, H. (1989), **Mintzberg y la dirección**, Madrid, Díaz de Santos. [Mintzberg on Management]
- MINTZBERG, H. (1992), **El poder en la organización**, Barcelona, Ariel (first version in English 1983 [Power in and around organizations])
- MINTZBERG, H. (1997), *Managing on the edges*, **International Journal of Public Sector Management**, Vol. 10 No. 3, p. 131-153.
- MONZÓN, J. L., MORALES GUTIÉRREZ, A. C. (1996), **Las empresas de trabajo asociado**, in BAREA TEJEIRO and MONZÓN CAMPOS, Informe sobre la situación de las cooperativas y las sociedades laborales en España, **CIRIEC-ESPAÑA**
- MORALES GUTIÉRREZ, A. C. (1998); **Competencias y valores en empresas de trabajo asociado**, Valencia, CIRIEC-ESPAÑA.
- MORALES GUTIERREZ, A.C., SANCHEZ PORRAS, A. (1996); *Gestión del Conflicto en organizaciones cooperativas: un estudio empírico*, **Cuadernos de Realidades Sociales**, no. 47-48, p. 393-411.
- ORELLANA, W. (1995), *El futuro del trabajo directivo*, CIRIEC-ESPAÑA Valencia.
- ORELLANA, W. (2002), *El control en las empresas de trabajo asociado. Revisión crítica desde una perspectiva de agencia, de los principales mecanismo de control, y de sus repercusiones organizativas*, **CIRIEC-ESPAÑA, Revista de Economía Pública, social y cooperativa**, no. 42, November, p.49-80
- SALAS, V. (2002), **El gobierno de la empresa**. Barcelona, La Caixa. Colección de Estudios Económicos.
- SCHEIN, E. (1985), **Organizational Culture and Leadership**, San Francisco, Jossey Bass.
- VANEK, J. (1989), *The basic Theory of Financing of Participatory Firms*, **Cornell Department of Economics Working Paper**, no. 27, Ithaca, N. Y., Reprinted in J. Vanek (ed.), **Self-Management, Economic Liberation of Man**, p. 445-455.
- WEBB, S, and WEBB, B. (1920) **A constitution for the socialist Commonwealth of Great Britain**. London. Longmans, Green.
- WILLIANSON, O. (1985). **The Economic Institutions of Capitalism**. New York: Free Press.

Alfonso Carlos Morales Gutiérrez
Professor da Universidade de Cordoba
E-mail: acmorales@etea.com
Telefone- 34.957.222157
Fax- 34.957.222101

José Antônio Ariza Montes
Professor da Universidade de Cordoba
E-mail: ariza@etea.com
Telefone- 34.957.222157
Fax- 34.957.222101

-
- i In Spain, collective action by workers to set up their own businesses can take on two legal forms: workers' co-operatives, which have a long tradition of legislation, or labour companies, which entered the statute books in the eighties. The current legislation on both provides that they share a certain limitation to their *capital* (worker-controlled), their *egalitarian* nature (none of the members or partners may hold a controlling share of the company) and their *personal* nature (registered shares, conditions concerning their transfer). However, the workers' co-operatives obey *obligatory* principles of the co-operative movement such as democratic voting on a personal basis and a distribution of surpluses based on co-operative work (as in a general partnership), whereas these criteria are *optional* in the labour companies, where both the voting rights and the profit distribution can be based on the paid-up capital (as in a capitalist company).
- ii Explicit recognition of the existence of a manager may seem too obvious to warrant comment. However, many of the studies conducted in Spain (González, 1987; Palacian and Albers, 1989; Monzón and Barea, 1991; COCETA, 1998) show that not all the enterprises in the social economy report the existence of a manager (other than the Governing Council) in their organisation. This partial, explicit or implicit recognition of the figure of the manager enables us to discern three basic management models in enterprises which are self-managed at the governing level: a single-collective model with no individual manager figure (although the function is performed by various bodies), a single-individual model where the function is performed by the most powerful person on the representative body and a dualist model that has both the function and the figure. The studies summarised in the following pages refer above all to the organisations that explicitly recognise the existence of a manager. This situation appears to hold true irrespective of the sector to which the organisation belongs. In the case of social initiative co-operatives (COCETA, 1998), for instance, the management function is performed collectively in one of every four (in 17% by the governing body, in 4% by the Assembly and in a further 4% by all the members), 41% of these co-operatives have a general manager (in 33% this person is a member and in 8% he or she is under contract) and in 29% the chairperson of the co-operative performs the duties of the manager.
- iii *Methodological components* which can help to establish the scope of the findings in this study. From this perspective we can point out the following: (a) epistemological approach (psychological, economic, sociological...); (b) research strategy (descriptive or hypothesis-deductive); (c) focus (direct -if the study is centred on the figure of the director, or indirect - if the question of direction is treated as another variable-); and (d) perspective (relative -comparing with another kind of company- or absolute -delving deeper into one aspect with no immediate external reference point).
- iv A network that has a predominance of reciprocated ties over asymmetric connections may be a more equal or stable network than one with a predominance of asymmetric connections (which might be more hierarchical).
- v For example, if A needs to send a message to B and can only trust in one person to convey this message, the connection will be weak, however, if he could trust in several persons to carry out this mission, the connection would be stronger.
- vi Some people may act as "bridges" between groups. Some players may be part of tightly connected and closed elite, while others are completely isolated from this group.
- vii We cannot estimate the geodesic distance for the players who have not responded to the questionnaire.