SOCIAL NETWORK ANALYSIS IN ORGANIZATIONAL STUDIES

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─**Abstract**─

There has been an increasing interest in organization theory field towards network theory and methodology during the recent years. Academy of Management Review which is one of the most important journals in this field published a special issue concerning the organizational networks. Social embeddedness theory of Granovetter (1985) can be seen as a milestone for the widespread usage of social network methodology in the field of economics and management. Network research methodology has gained importance to measure the social capital of the organizations (Bordieu, 1983 and Coleman, 1988) for understanding institutional effects in an organizational field (DiMaggio and Powell, 1983; Galaskiewicz and Wasserman, 1989) and to map resource dependency relations between organizations (Pfefer and Salancik, 1978). Networks research methodology can also be used to determine some micro issues in organizations like coalition groups, cliques, social capital formation tendency of the actors.

The purpose of this study is to provide information to the potential researchers about basic aspects of social network theory, usage areas in organizational research field, data collection, data entry, measurement items, data analysis and software tools for analyzing social networks.

Key Words: *Social network analysis, organizations, social capital*

JEL Classification: M10, Z13

1. INTRODUCTION

Social network theory has taken the attention of a considerable number of theorists, researchers and several individuals who deal with the pragmatic aspects of the theory. The research on the

interactions patterns between the elements is a major field of study in natural sciences. The efforts to explain behavior of sub atomic particles (quantum physics), genetic studies, neurology and the field of ecology all focus on the networks which emerge from the relationships between different elements. Complexity theory as a new version of general systems theory mainly focuses on how the interactions lead to emergence and self-organization of micro and macro level living systems (Holland, 1995). Some authors classify social networks studies as a sub field of complexity theory because researchers try to explain nonlinear behavior of the living systems by examining interactions between nodes (Hammond and Glenn, 2004). These main scientific fields of inquiry have generated some tools to understand structure, behavior and change of the networks.

Social network theory has significant differences comparing to the traditional science in terms of basic epistemological and methodological assumptions. Newton mechanics has shaped theory development and research activities in social sciences as well as all scientific disciplines. Network theory, which developed from the efforts of scientists who are against Newton's paradigm, is an anti-reductionist and a nonlinear approach. Social network analysis refuses the basic assumption of "social behavior is sum of individuals' behavior" traditional sociological inquiry and examines patterns of relationships between actors (Emirbayer and Goodwin, 1970: 1414). Social network analysis focuses on the data which come from the interactions of the actors instead of using a collection of data from independent behaviors of the actors (Parkhe, Wasserman and Ralston., 2006: 561). The relationships of the actors with each other are very important in social network analysis, because these patterns define the communication paths which transfer the information between individuals, groups and organizations (Monge and Contractor, 2001:441-442). This main framework of social network analysis and methodology represents a departure from the classical scientific approach of social sciences. Network analysis doesn't deal with the definition of laws, propositions or correlations; it broadly and comprehensively examines the social structure (Emirbayer and Goodwin, 1970:1414). So, it won't be false to emphasize that social network theory symbolizes a shift from old to new paradigm of scientific inquiry.

Network theory and methodology which is quite different from traditional approach has gained a critical role in the field of economics and management during the last 3 decades. Social network methodology has served as a tool to solve the problems concerning how social interactions shape the economies and organizations. It is necessary to take a look at these theories to understand the implication field of this alternative research methodology.

2. IMPORTANT THEORIES FOR NETWORK RESEARCH IN ECONOMICS AND ORGANIZATIONAL STUDIES

2.1. Social Embeddedness of Economic Action

The existence of markets driven by social relations indicates a problematic competition structure in markets according to classical and neoclassical economic models, and it is hard to conceptualize such an economic system (Kripner, 2004: 19). These models assume economic actors as independent behaving agents who are making optimized decisions with sufficient information about price (Beckert, 2003: 769). Markets ideally shaped by the actions of the fully informed buyers and sellers who don't need to have a social connection or relation with each other (Granovetter, 1985: 483). Rational actor assumption was heavily criticized by some of the authors

because of being unrealistic. This antisocial viewpoint shaped by the individualistic choices is impoverishing the field of economics and decreasing the relatedness of the discipline with the current economic problems and causes discussions even in most rigid groups (Rodrigues, 2004: 190).

Economic action is socially constructed like all other actions and it is impossible to explain it without considering individual motives (Granovetter, 1992). It's impossible for the actors to behave independently from the societal context and social relations can inevitably effect the economic action (Granovetter, 1985). Economic action is a type of social action and economic institutions are socially constructed according to social embeddedness theory (Swedberg and Granovetter, 1992:6). Polanyi (1992) defines the importance of social ties in economy as,

> *"One of the remarkable findings of the recent historical and anthropological studies has shown that human being's economic life is embedded in ongoing social ties. Individuals don't attempt to protect material elements related to his or her self interest, they try to protect their social standing in society"*

The defenders of rational actor assumption claim that the industrial revolution transformed society and changed the close social ties to arms-length ties transaction relations between parties (Whiteman and Cooper, 2003). But, a group authors (Granovetter, 1992, 1995 and Uzzi, 1996) opposed this idea by stressing that modernization have not changed or minimally changed the effect of social relations on economic action. Social embeddedness as the major concept of new economic sociology shows us a world shaped by the social networks consist of interaction patterns between individuals and organizations.

If we assume economic action is socially embedded, this idea will lead us to reinterpret the fundamental concept regarding business life and economy. Demand and supply, transactions between parties, financial decisions and the structure of competition between actors is determined by social networks in the case of high level of embeddedness. Uzzi (1999: 481) states that the possibility of access to the credits and the costs of obtaining these credits highly depend on embedded relations. Thus, an important (central, brokerage) position in a social network provides competitive advantage by increasing opportunity to reach valuable resources (Gnyawali and Madhavan, 2001: 432). When sociologists carried embeddedness argument to organizational level analysis; they showed the social structures have an effect on economic outcomes like fixation of prices, elimination of small firms and flow of information regarding to production installation standards for production (Rao, Dawis and Ward, 2000: 268). In general, social embeddedness approach assumes economic actors are embedded in social relations and cooperative networks with varying degrees (Uzzi, 2004: 320).

Despite originality of the idea, some aspects of social embeddedness approach have been found insufficient by some authors to bring a concrete explanation. The concept of embeddedness is quite useful to explain why do the neoclassical models fail, but it can't clearly explain how social ties affect economic outcomes (Uzzi, 1999: 483). Embeddedness idea is not an alternative for the rational actor model according to Beckert (2003: 768). Uzzi (1999: 483) emphasizes the insufficiency of theoretical and empirical studies to demonstrate the benefits of embedded relationships for the economic actors.

When the relevant literature is examined, it is not surprising to see that social network researchers (Granovetter, 1973; Burt, 1992, Uzzi, 1999,..) have led the scientific efforts to measure social embeddedness in the field. It is an obligation to focus on the social ties and their characteristics to understand the level of embeddedness. Social network methodology provides useful tools to measure and to bring a clear explanation to the concept.

2.2. Social Capital

Social capital concept has become popular since it first used by the social scientists Bordieu (1983) and Colleman (1988). There are a number of definitions in the literature concerning social capital, but the most recognized version is the concrete and abstract benefits that can be gained through mutual network relations based on familiarity or friendship (Gargulio and Benassi, 2000: 184). Several authors made different definitions about the concept according to their area of interest. Tsai and Ghosal (1998: 464) used the concept to define relational resources that can be useful for the development of individuals in the society; Paxton (1999:89) defined the concept as an approach which is based on the idea of providing resources via social ties between individuals and groups; Bueno, Salmador and Rodriguez (2004:557) interpreted the concept as current and potential benefits that can be gained through network of relationships formed by an individual or a unity; social capital known as the position of an actor in a structure consisting of network relations and explains how some actors become privileged with the help of network ties according to Burt (2005:4).

Social capital might be embedded in biggest social groups (countries), organizations and even in the smallest ones like families (Kostova and Roth, 2003: 301). In business life, social capital can sometimes determine a worker's and a firm's success. The number of personal ties of an individual and collection of all workers' social relationships in an organization can be used to obtain required information and to reach critical actors in business life to influence their decisions. Social capital may have various micro and macro level benefits. According to lots of numerous researchers social capital effects professional success, helps individuals during the job search and application process, simplifies transfer of resources between departments in organizations, strengthens the relationships with the suppliers and ensures inter-organizational level learning (Bueno, Salmador and Rodriguez, 2004: 558). This concept forces us to reconsider organizational level performance indicators. Organizations which have broad social networks can gain a great competitive advantage by using social ties to effect external environment for their own benefit. A board member who has strong social ties with the political authorities can create an effect on the legal regulations to the benefit of the organization.

Social capital is not an asset owned by the individuals or organizations, it's a common asset of an organization and its members (Leana and Buren, 1999:540). Recruitment or promotion of individuals who have a broad social network to the managerial positions can increase social capital of the organizations. But, this strategy doesn't guarantee that the workers show great intention to share their network resources for the organization's benefit. In the relevant literature, managers are seen as the organizational actors mostly lean on their social ties to conduct their business. Managers not only bring their expertise and experiences to the organizations but also their assets gained through social relations (Gargulio and Benassi, 2000: 183).

Measurement of social capital is an important issue to determine the social strength and information access capacity of an actor into an economy. Social capital can be measured at individual, departmental, organizational level and even in a sector or in an economy. Network methodology gives us tools and items to make a rating between actors in terms of social capital. The number of network ties and strength or importance of those ties for the actor can be an effective measurement item. But, measurement items of social capital may change depending on the theoretical approach regarding the structure of the network. There are three different and competing theoretical considerations that try to explain what type of network formation is the most beneficial one for the focal actor.

2.3. Three Approaches to Evaluate Effectiveness of Different Network Formations

2.3.1. Strength of Strong Ties

The traditional approach related to social capital defends that close social ties (Coleman, 1988) can lead to production of common social norms and harmony which ease constitution of trust and trade relationships between parties (Gargulio and Benassi, 2000: 184). Trust is a prerequisite to form a bridge between unconnected parts in a social system because, parties who have trust based relations may have a higher chance to guess other's behavior (Burt, 2005: 95,97,99). Strong ties between parties can transfer large amount of information if it's compared with arm's length ties according to Podolny (2001: 24). More intense and long lasting relationship networks provide advantage to the actors according to comprehensive research results conducted by network researchers (Dore, 1983 and Uzzi, 1996).

The high level of social interaction for a long period of time between parties is required to strengthen the relationship; business connections of the past will guarantee future collaborations (Burt, 2005: 1011). Strong ties may emerge between employees working in the same department, sharing the same office environment or people having same educational background in the organizations. If we assume socially intense relations are more beneficial for the actors, people will attempt to form strong ties with the others in the organizations. This behavior of employees may cause emergence of closed network groups in organizations. The number of strong ties with the powerful actors and others in the organization can be defined as social capital of the focal actor. In this case network researchers not only calculate the number of ties of the focal actor to the others, but also the weight of those relationships according to social intensiveness.

2.3.2. Strength of Weak Ties

Granovetter (1973) found that people mostly prefer their weak ties instead of strong ties for the job search and application process in his impressive study. Weak ties which are rare and non-social ties can transfer technical and professional knowledge more effectively (Granovetter, 1983: 205). Uzzi (1999: 483) defined those kinds of relationships as the rare and weak transactions interactions operating without any kind of social closeness (Uzzi, 1999: 483). Individuals who have numerous weak ties have an advantage over the others to access information and to reach the critical actors from remote parts of the social system. Intense relationships inside a social network may prevent the flow of information between groups or industries and may restrict information flow and sharing inside the group (Burt, 2005: 15). According to Burt (1992: 26) weak ties undertake an integrative role in the society by establishing ties between unconnected social sets.

Individuals who have less intensive but a large number of ties in and outside the boundaries of their organization can gain access to various kinds of actors in business life. The amount of network ties instead of weight of the ongoing relationships of an individual or an organization becomes important to determine level of benefit from networks. Network research efforts have to focus on degree of centrality of an employee or an organization in a social network. It is quite easy to have many arms-length relationships in a short amount of time. But, the formation of trust based strong ties requires long time than weak ties.

2.3.3. Strength of Brokerage Roles in the Social Networks

Structural holes theory (Burt, 1992) focuses on the position of the actors in the social networks instead of the characteristics of their ties. A structural hole is a state of not connected parts in a network. If there is a social connection between A and B, A and C but not between B and C; the situation between B and C is a structural hole. The structural hole between B and C gives A a brokerage role between B and C. Numerous structural holes in a social network create brokerage opportunities and the actors who undertake these roles can control information flow between unconnected sides according to Burt, (1992). Organizations which connect the structural holes by their management and cooperation networks function as bridges in their field can learn faster and can be more creative in production than the others (Burt, 2004: 357). Burt (2005: 23) defines three benefits of building bridges over structural holes: (1) Ability to access alternative visions and applications. (2) Early access to new ideas and thoughts in the social system. (3) Transfer of information to the groups if there is an advantage to be gained.

Network centrality is not an item which shows power of an actor in a social network according to structural holes theory. It is also not related to the hierarchical status of an actor in an organization. Any kind of position (clerical or secretarial) in organizations can naturally give an individual a chance of being a broker in the system. But, people's awareness of their positional power depends on their perceptions and experiences (Burt, 2005: 23).

Figure-1: Weak Ties & Structural Holes
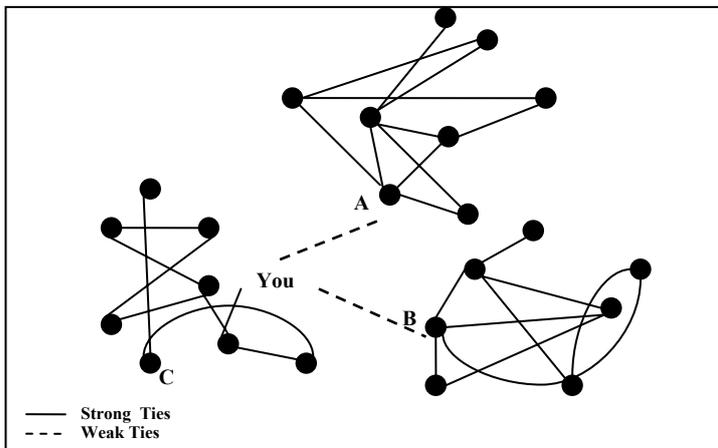
Source: Burt, 1992: 27

Burt (1992) clearly represents how brokerage roles can be used in social networks with the Figure-1. Burt (1992: 27) indicates that structural holes emerge in two different ways in the representation of a sample network. Imagine that you have a relation with the actors in two different network groups. First structural hole emerges between the members of two groups and your group members. Your group members and the members of the other two groups depend on you to access the others. Other structural hole emerges between two unconnected groups. You have a brokerage function between the other two groups because you have a relation with two actors who are members of two different groups.

Structural holes theory shows the importance of a position in a network in terms of social capital. A broker can be a centre of information by connecting different network sets with a few connections. Thus, strong brokers in organizations, in a sector or in an economy can gain considerable advantage over the others. Sözen (2007) found that, some of the big and very well known organizations in the technology intensive sectors in Turkey are hiring strong brokers to transfer technical know-how. Structure holes theory changes the focus of network research toward finding the actors who occupy brokerage positions in social networks. Actors who fill structural holes with a few connections can be more powerful than the actors who are in central position in a network. There are similarities between strength of weak ties (Granovetter, 1973) and structural holes theory (Burt, 1992) but, the major difference is the emergence of brokerage roles through weak or strong ties.

3. A BRIEF OVERVIEW OF SOCIAL NETWORK ANALYSIS METHODOLOGY

Social network analysis has fundamental differences from other fields of sociological inquiry in terms of methodology and area of focus (Emirbayer and Goodwin, 1970; Monge and Contractor, 2001; Parkhe, Wasserman and Ralston, 2006; Dhanaraj and Parkhe, 2006). Social network analysis focuses on defining the nature of communication patterns between individuals, groups and organizations. This methodology refuses the reductionist perspective of traditional research methods as we mentioned before.

Knowledge which flows through network ties can be classified under two groups according to (Jablin and Putnam, 2001):

(1) *Mobile knowledge* (designs, personal ideas, books and computers) that can easily flow from one actor to another and shared by the others.

(2)*Embedded knowledge* is created by professional relationships between individuals and groups. Flow of this type of knowledge through network ties is more difficult and it's hard to analyze. Embedded knowledge covers craftsmanship, individual skills and attitudes.

The Matrix algebra has been used as a common tool to represent and to analyze networks. The generally accepted method for data entry is to form a matrix by symbolizing the existence of a relationship with 1 and the absence of a relationship with 0 (Hanneman, 2001). The terms used for the elements of networks are *nodes* or *actors* and the relationships between those elements are *connections*, *edges* or *ties*. There can be two types of possible relationships between node A and B.

**Figure-2: Symmetric and Nonsymmetric Relationships**
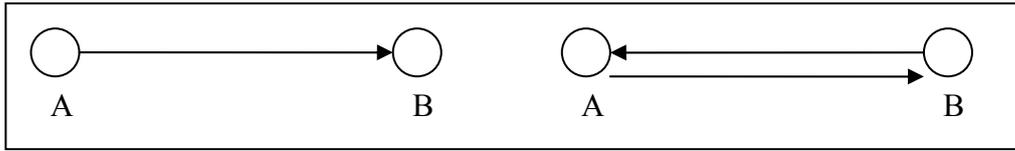
There is a relationship from node A to B, but that doesn't mean B also has a relationship with A. Sometimes people in organizations assume themselves as very popular and they assert they have many close social relationships with the others, but this depends on others comments. A two way relationship emerges if the others also think they have social ties with the focal actor. In the case of second situation at Figure 2 there is a two way symmetric relationship between node A and B.

Imagine we want to determine the social relationships between 5 employees working in an organizational unit. To determine the connections between the nodes, we simply ask the employees to give the names of the others with whom they have social closeness[1]. After we get their responses we can enter 1 and 0's into the matrix. The size of this network is 5x5. This means there are 25-5=20 possible network connections between 5 employees.

Figure-3: Data Entry into the Matrix

	A	B	C	D	E
A		1	1	0	1
B	1		0	0	1
C	0	1		1	1
D	1	1	0		1
E	1	1	0	1	

Figure-4: Graphical Representation of the Sample Network

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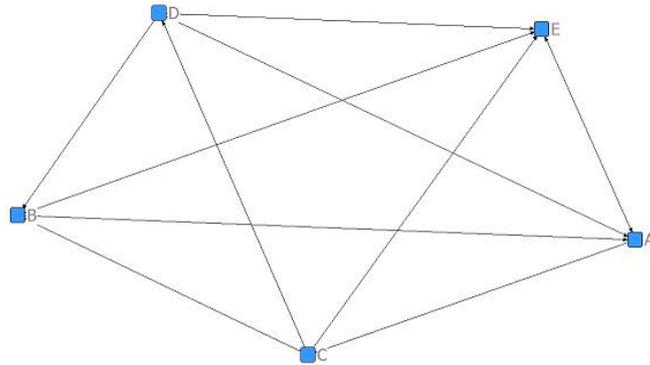
[1] The network connections can also be determined by observing the employees

The above given network diagram is the graphical representation of the matrix. The social network of 5 employees was built in respect to existence or absence of social ties between employees. But, this social network doesn't show the social intensiveness of the network ties. Some of the employees may have less some others may have more intense social interactions. Some employees may have superficial relationships (they talk only popular or job related subjects), some prefer to share his or her private life and some may have close friendship (to have lunch together, family friendship,..ect.) with some others. It is required to classify existing social ties of the network of 5 employees according to the strength of the relationship. Otherwise it is not possible to make a correct measurement of the total social assets of the actors because actors who have less but strong ties will be located at the peripheral parts of the network. It is required to measure the social strength of the relationship with a scale instead of just putting 0's and 1's into the matrix. This can be done by asking to the respondents to give a score ranging 1 to 10 (multiple scales can be used to weight the ties) according to the social strength of the existing ties. Let's reconsider the sample network of 5 employees and imagine that we assign weights to the existing ties after we get responses of the employees.

Figure-5: Assigning Weights to the Links

	A	B	C	D	E
A		7	5	0	1
B	4		0	0	3
C	0	2		1	1
D	1	1	4		6
E	1	2	0	1	

Tie strength is a very important measurement item in micro and macro level organizational research. If a researcher's theoretical approach concerns with the characteristic of network ties instead of the position of the actor in the network, the tie strengths should be measured. The weak (Granovetter, 1973) or strong ties (Bordieu, 1983 and Coleman, 1988) in a network can only be determined by assigning weights to the existing ties. Sub groups like cliques and clans formed by mutual strong relationships and actors who attempt to reach to the remote points of the social system via arms-length ties can be explained by using this technique in micro level organizational research. Tie strength is more important in macro level because even a few strong ties with the critical actors or numerous weak ties with various organizations or individuals can create a major effect on organizational outcomes. Assigning weights to network ties also change the analysis results of different items.

3.2. Measurement Items to Analyze Social Networks

Total number of nodes which forms a network represents size of the possible connections. For example there are (40x40)-40=1560 connection possibilities for a network of 40 nodes. The diameter of a network is the length of the longest path to be found in the network (**Benta, 2003**). It means the indirect connection between two nodes which passes through maximal number of nodes. Density of a network is another important measurement item for social networks analysis. It is usually defined as the sum of the values of all ties divided by the number of possible ties (Hanneman and Riddle, 2005). Measurement of density is very important in micro and macro level organizational research. In micro research it represents degree of social intensiveness, integration

between employees and existence of strong relationships between organizational actors of a network. In macro level research density shows the degree of social embeddedness (Granovetter, 1985) in an organizational field.

Centrality is a main variable in network research which shows the effectiveness of an actor in a social network. There are different measurement methods to determine centrality of the actors in a network. Some of the important measurement items defined by Jablin and Putnam (2001) are:

Degree: The total number of direct ties of an actor to the others.

*Indegree:* The total number of ties from other actors to the focal actor (incoming links).

Outdegree: The total number of ties from focal actor to the others (outgoing links).

Closeness: The degree of closeness or ease of access of an actor to the others. It usually calculated by taking the average of path distance (direct and indirect ties) from an actor to the others. While direct ties get a value of 1 the indirect ones get lower values.

Betweenness: The degree of mediator or brokerage position of an actor between two other actors. It usually calculated by taking the average of all dual relations in the network.

The different measurement items show that centrality concept in a network may change according to the researchers interests. If somebody attempts to find the actors in an organization who are trying to be popular by increasing the number of interactions with the others, outdegree will be an appropriate measurement item. Indegree can show popular employees who have a power to affect others or the potential leaders in an organizations.

Figure-6: Indegree and Outdegree Centrality
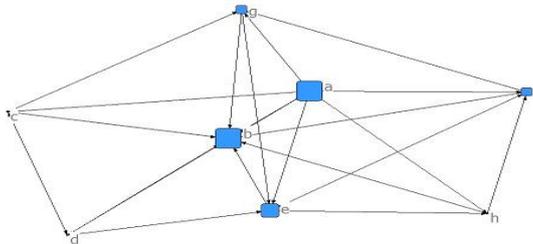
There are roles to define the actors' positions inside the networks. A *star* is an actor who has high level of centrality in the network, a *broker* connects two or more groups which have no relationship, a *bridge* is an actor who is member of two or more groups, a *gatekeeper* is an actor who controls flow of information between parts of the network with a single tie, *isolates* are the actors who have no ties or a few ties with the others.

4. SOCIAL NETWORK ANALYSIS FOR ORGANIZATIONAL RESEARCH

Organizational research efforts by using social network paradigm should be classified under two major groups. Interorganizational and intraorganizational networks have been two different levels of studies for the researchers. Interorganizational network studies deal with tie formations between organizations in sectors or in an economy. Intraorganizational network studies focus on determining relationship patterns between employees, units and departments.

The studies about interorganizational networks have started forty years ago and it has taken the attention of a large number of researchers during the last quarter of the century (Monge and Contractor, 2001: 41). Organizations, like individuals also attempt to expand their social networks to gain power in their field. The reasons and the conditions of tie formation between organizations have been the fundamental research topics concerning interorganizational networks (Oliver, 1990: 241). Mutual cooperation based relationships between organizations start with low trust, less risky, small and official interactions (Ring and Van De Ven, 1976: 25). These interactions turn into embedded relations with passing time and the members of the network gather considerable amount of information about skills, trustworthiness and appropriateness of others during this period (Gulati and Gargulio, 1990: 1440). There are three main characteristics of inter organizational relations according to Van De Ven (1998: 296): (1) These ties aim at reaching common objectives or self-interests. (2) Independent processes emerge through sharing tasks and functions. (3) An interorganizational network behaves as an independent entity and it has a separate identity from relevant organizations. Organizations form social ties with the others by supplier relationships, resource flow, membership to trade unions, employees who are acquainted with the others working in different organizations, interlocking directorates and strategic cooperation. There are many reasons of the organizational attempts to form a network of relations with the others. Organizations show tendency to form network ties with the others when the resources are scarce and they have difficulties to obtain them from their external environment (Oliver, 1990: 250-251). Hammond and Glenn (2004: 26) emphasize that information exchange as an important motive that forces organizations to form social relationships with each other and the information coming through different parts of the network provides their adaptation to the environmental changes. Network ties create opportunities for the organizations to communicate and monitor others' responses (Kraatz, 1998: 622). So, it is possible to indicate that network ties serve as a mechanism for the organizations to decrease the level of uncertainty by carrying the information on others' actions in their environment. Burns and Wholey (1993) found that hospitals which are located in a central position of the interorganizational network adapt to the innovations faster than the others. In summary, organizations which are more central in the networks have an opportunity to control the organizational field compared with the less central ones (Koka, Madhavan and Prescott, 2006:722).

Research on interorganizational networks can also bring explanations to some popular theories in management and organization literature. Resource dependency theory (Pfefer and Salancik, 1998) which focuses on dependency relationships between organizations has many similarities with network theory. To cope with uncertainty, organizations usually form ties with the others that have required resources and skills which may help them to manage their environment and to meet their needs (Gulati and Gargulio, 1999: 1440). Mutual social relationships of the organizations with important suppliers, customers, strong brokers and decision makers may create an environment of trust and decrease level of dependency to the external environment. A second approach which has gained popularity in sociological inquiry of the markets, defends that the ties between actors are not solely provide resources, they also transfer knowledge containing clues about legitimacy (Podolny, 2001: 34). Some of the authors are claiming that interorganizational network studies may provide important tools for neoinstitutional theory (DiMaggio, P. J. and Powell, 1983). Besides reaching information about latest innovations and new organizational design alternatives

the employees who have direct or indirect relationships with the colleagues in other organizations may also have an idea concerning acceptable and not acceptable behaviors in their institutional environment (Galaskiewicz and Wasserman, 1989: 456). High level of embedded relations in an organizational field is a sign of pressures over organizations towards institutional isomorphism. Leblebici and others (1991) found that organizations show no intention to adapt to the dominant organizational practices in less embedded fields and they can adapt to new practices more easily independent from institutional effects. So, network ties of the organizations' are vitally important to increase legitimacy and status, to live in a stable and more certain environment (Baum and Oliver, 1991: 189).

In micro level organizational research, social network analysis can be used in various fields. Network analysis can be an important tool to determine the potential leaders and to validate some leadership theories. The central locations in an intraorganizational network may represent existing and potential leaders. Network research can also be used to explain distribution of power in organizations in terms of information control. Ordinary employees who position themselves as strong brokers in an organization can be sometimes as powerful as top managers. Network research can bring new insights to the concept of motivation. Isolates individuals who are located at the periphery of the network represents people deprived of social needs. Those, who excluded from the social structure, can be found by using network analysis and the causes which lead to other's reaction can be searched. Clique and clan formations and other several micro topics are in the coverage of network research.

Data collection is an important and problematic aspect of network research. Simple questions and observation are sometimes sufficient to collect data from the respondents in micro organizational research. People often avoid answering direct questions which may decipher their personal relationships. The same problem is also valid in macro level research. But, information technology gives network researchers many opportunities and tools to collect secondary data regarding to interorganizational networks from the cyberspace. Nowadays people are giving their personal network data voluntarily to some popular web based social network programs.

5. CONCLUSION

Network theory and research can help organizational scholars to bring an explanation to the business life which might shaped by the dynamic social interactions between the actors. This paradigm may also be helpful to understand how some countries, organizations or individuals become successful only by increasing their social capitals. But, this alternative research approach requires theoretical and empirical efforts of enthusiastic researchers.

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