Industriens Utredningsinstitut
THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

A list of Working Papers on the last pages

No. 316, 1991

TEAM COMPOSITION AND EXTERNAL NETWORK

by

Eva M. Meyerson

December 1991

Postadress
Box 5501
114 85 Stockholm

Gatuadress
Industrihuset
Storgatan 19

Telefon
08-783 80 00
Telefax
08-661 79 69

Bankgiro
446-9995

Postgiro
19 15 92-5

11.89 10.000

Team composition and external network

by

Eva M. Meyerson

The Industrial Institute for Economic and Social Research
Box 5501, 114 85 Stockholm, Sweden

Abstract
In the present study it is shown that the more integrated an executive team is the more the members' external network contains strong and overlapping contacts. This type of network are suggested to be efficient in restraining and mobilizing others for actions. The less integrated executive team establishes an external network efficient in information accrual. These networks are based on weak and nonoverlapping contacts external to the team. Finally it is found that executive team members' weak ties seldom are overlapping. The statistical analysis is based on data from 29 Swedish publicly owned firms and their executive team members internal and external relationships.

Financial support from the Tore Browald and Jan Wallander funds is gratefully acknowledged.

TEAM COMPOSITION AND EXTERNAL NETWORK

Introduction

The entrepreneurial[1] owned firm's executive team tend to have direct access to the financial capital through the establishment of a partnership between the CEO and the entrepreneur. The ease with which the owner can be mobilized for an investment project increases the team's discretion. Those executive teams with no partnership, typically investor-owned[2] firms, on the other hand, have difficulty mobilizing the owners. These teams have to rely on other resources for financial assistance. (For a more elaborat discussion see Meyerson 1991a.) Composition of the executive teams varies with the existence of a partnership. In the case of a partnership the CEO typically selects an executive team that is differentiated and information accrual oriented. When a partnership is absent, the team is integrated and decision-making oriented. It is not, however, the internal relational structure alone that differs between the two types of executive teams, but the team's external relational structure as well.

It is suggested below that the members of an integrated team compensate for their poor access to financial capital (their ability to mobilize the investors) with a special type of social capital. The integrated team members try to increase their control over their environment by utilizing a part of their social capital, i.e., their external network through which they can mobilize their strategic environment. An external network with a mobilizing

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[1]The entrepreneur dominates the ownership of a firm often having a large portion of personal assets in the firm. The concept of the entrepreneur is given a variation of meanings in the research literature of economics and organization theory. In present context the concept of the entrepreneur is understood as a capitalist, i.e., a risk bearer, with an overall decision-making capacity, and who has the belief that he can exploit an opportunity which he is also able to monitor. An owner with dominant share in a corporation is most likely to hold an undiversified portfolio (Bergström and Rydqvist 1990).

[2]The investor is an owner with a comparatively small shareholding who diversifies his portfolio in order to reduce his risk exposure (Demsetz and Lehn 1985). The investor, with the Hirschman's (1970) vocabulary, exit the firm as soon as they are dissatisfied and take their wealth elsewhere. Hence, inverstors tend to be less stable owners compared to entrepreneurs who stand by the firm.

purpose is argued to contain a specific relational structure among resource individuals.

On the other hand, the differentiated executive team members with their relatively easy access to financial capital through the established partnership with the entrepreneur do not have to mobilize their external network for financial capital to the same extent. Instead, it is suggested that since their main task is to accrue novel information, they will develop an external network conducive to receive novel information.(See Meyerson 1991b for a more elaborate discussion).

The two types of developed social capital mentioned are structured in different ways. A mobilizing external network is suggested to be built on strong, redundant (overlapping) ties. This relational structure is suggested to be conducive to the sharing of values and to the establishment of norms that enable the members to influence their ties. The relational structure will restrain or activate strategic individual actions in the team members strategic external network. An external network conducive to information accrual is argued to be built on weak and non-overlapping ties. These types of ties are argued to increase a team's reach to new networks which can carry novel information, and to crowd out routine information.

Organization of the paper

In the first section I argue that the efficiency of social capital must be related to its purpose. Consequently, executive teams that are assigned varying tasks and hence have a contrary composition exhibit a different structure of their social capital. In the second section it is argued that weak ties more often are nonredundant than redundant (overlapping). In the third section, it is suggested that the social capital of an executive team (in this case the external relational structure) is structured in a way to give the integrated team an external network with a mobilizing function, while the differentiated team's efficient social capital is more oriented towards information accrual. Furthermore, it is suggested that a mobilizing external network contains strong and redundant ties whereas the information-accrual network is structured by weak and nonredundant ties. In the fourth section the derived hypotheses are tested. Finally, some conclusions are drawn.

The executive teams and the structure of their social capital

An important idea within network research is that a person's relationships are resources for instrumental action (Lin 1982; Lin and Dumin 1986).[3] Burt refers to social networks as a form of social capital analogous to human capital. Human capital is defined as the array of valuable skills and knowledge a person has accumulated over time. Social capital is the array of valuable relationships a person has accumulated (Burt 1991, 2).[4] According to Burt, a network is not only a device to receive resources, but a network is also a device to create resources such as networks, that in turn create resources and opportunities, i.e., social capital. "*Your social capital gives you opportunities to turn a profit from the application of your human capital*" (Burt 1990, 5).

Burt (1990) defines the efficiency of a network by the total number of people one can reach through primary contacts (people to whom an individual is connected through nonredundant ties, i.e., nonoverlapping ties) and by the reach or access to new spheres of circles. Burt also introduces the concept of effectiveness. The effectiveness of a network is defined by the total number of contacts reached with primary contacts which yield the largest size of a

[3]There is a great research variety that presents networks from different perspectives, yet there is not to be found an integrated systematic theory of networks. The concept of a network is often used as a metaphor. The problem with metaphors, especially in science, is that the concepts in use become unclear and therefore difficult to interpret (Mitchell 1969). There are however suggestions as to how to define a network and its body of concepts.

A frequently used definition is that network is a set of direct and indirect social relations centered around a given person, object or event (see Mitchell 1969). Anderson and Carlos (1979) state that these links are instrumental in the sense that they serve to attain certain ambitions or goals and to communicate aspirations and expectations.

Links/ties that connects different actors in a network can be expressed as strong or weak, and as positive or negative. Ties are dynamic by nature and likely to change.

[4]Burt suggests that research within this stream may be divided into two sections. In the first network is seen as something that provides you with specific resources, for example becoming wealthy, or getting a job (Lin 1982; Lin and Dumin 1986; Granovetter 1973). The second line of research suggested by Burt is how the structure of your network is a form of capital in its own right (see Burt 1990, 3).

network (Burt 1990, 10).[5]

The two characteristics of network efficiency and effectivity as defined by Burt are too restrictive in my view. Coleman defines social capital more broadly. "*Social capital is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions by actors, whether persons or corporate actors within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible*" (Coleman 1988, p. S98).

The crucial factors in deciding how an efficient and effective network should be structured is the social context of the involved actors. One type of relational structure may be instrumental in a specific social structure where another type is not. The effectiveness and the efficiency of the relational structure, i.e., of the social capital, I propose, is contingent on the strategic situation. In accordance with Coleman's definition, social capital can be applied for different purposes given different contexts, and hence will be structured differently in order to be both efficient and effective.

The CEO in the investor-owned firm who lacks access to an entrepreneur, and thus lacks access to easily mobilized financial capital, has to rely totally on his social capital for financial assistance. The CEOs in entrepreneurial-owned firms, on the other hand would want a social capital conducive for information accrual hence this team's social capital is expected to be differently structured than the mobilizing-oriented social capital.
Before the differences in executive teams' structure of social capital, first some conceptual differences between scholars over a crucial type of tie need to be discussed and clarified.

[5]The structur of networks is desisive for the benefits yielded. Information benefits occur in three forms according to Burt access, timing and referrals. Access refers to receiving a valuable piece of information and knowing who can use it."*Timing is making sure that you are informed at the right time. Referrals gives you opportunities for the future*" (Burt 1991, 7).

Nonredundant ties are likely to be weak

Granovetter presented the thesis that a specific type of weak tie, the bridge tie, is more instrumental for access to novel information than strong ties (Granovetter 1973). Granovetter defines a bridge tie as a tie that links two networks with each other that otherwise would not be connected. The bridge tie is typically weak since the process of cognitive balance tends to eliminate unbalanced triads that make all three persons interconnected (Granovetter 1973, 1364-1365).

Burt's definition of nonredundant ties is similar to Granovetter's definition of a bridge tie. According to Burt "*Nonredundant contacts reach diverse groups of people. Two contacts are redundant to the extent that they lead you to the same people, and the same network benefits*" (Burt 1990, 6).[6] The definition given by Granovetter and Burt differ in their characterization of the efficient tie. Burt suggests that an efficient tie is strong and nonredundant, whereas Granovetter's idea is based on the notion that an efficient tie is a bridge tie, which is by definition weak and nonredundant. In order to reduce the confusion due to all the network concepts used Table 1 can clarify the distinctions.

Table 1. Concepts used by Burt and Granovetter

Scholar	Network concept			
	Strong ties		Weak ties	
Granovetter	nonredund	unlikely	redund	nonredund **bridge ties**
Burt	redund	nonredund	redund	nonredund

Burt (1990) contends that an ideal contact network is high in velocity, trust,

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[6]The terminology used by Burt is more instructive. Hence, instead of the term bridge ties, I prefer to use the term nonredundant ties. Yet when referring to the scholars' work, their choice of terminology is used.

size and diversity. Velocity refers to the rate at which information circulates through the contacts. Network benefits depend on contacts actively communicating with one another. Trust, according to Burt, refers to *"your confidence in the information passed and the care with which your contacts look out for your interests"* (Burt 1990, 6).

According to Granovetter the bridge tie, the weak nonredundant tie, is the element that increases the reach to new networks, i.e., that increases the diversity and the size of the network. Burt on the other hand claims that the tie conducive to increasing reach ought to not only be strong but also nonredundant. I argue that Burt's two first characteristics of ties, namely velocity and trust, are not conducive to network diversity and increasing the size of networks. My argument is as follows. Active communication, extensive contacts, trustworthiness (i.e., having confidence in and a care for the one you communicate with) are probable characteristics of a strong tie. As argued above, if the network is made up of strong ties, each person can entertain fewer ties than when the network is made up of weak ties. Strong ties take more time to maintain, hence given a time constraint it is possible to maintain more weak ties than strong ties. Consequently, if the network consists of strong ties, the network size, as well as its reach is restricted. Furthermore, strong ties in a network tend to become overlapping ties, redundant over time. This argument is derived from the concept of cognitive balance discussed above. A strong tie between two individuals increases the likelihood that their other contacts, such as friends, will be introduced to each other (Granovetter 1973). Consequently, I suggest that if an executive team's network is made up of strong ties, the members will have a larger overlap in the network than if the network is based on weak ties. The degree of overlap in a network will decrease a network's reach.

Apart from the theoretical conjecture that weak ties increase the number of nonredundant ties, existing empirical research suggests that instrumental nonredundant ties tend to be weak. For instance, Granovetter's own empirical investigation shows that the most efficient way to get a new job is through bridge ties (Granovetter 1973, 1373). Freidkin's (1980) test of the

Granovetter thesis also showed that novel information tends to flow through bridge ties (weak nonredundant ties) and not through strong or weak redundant (overlapping) ties.

Social capital for mobilizing or for information accrual?

The effectiveness of an executive team's social capital is not always a question of diversity or size. I suggest that the social capital of an executive team will contain networks (social arrangements of relationships) based on weak nonredundant ties if the task of the team is to accrue novel information. If, on the other hand, the task of the team is to mobilize others to act in a desired way, the network is more likely to be based on strong redundant ties that in turn connect to valued and desired resources of the team members. The argument to explain the differences in the external network of the two types of executive teams is that team members develop an instrumental network, i.e., social capital.

Strong ties are less conducive to carrying novel information than are weak nonredundant ties. On the other hand, strong ties re-enforce cohesion. For instance, cohesive groups create norms that affect the individual's choice of action, but also their choice of refraining from action (Pinard 1968; Merton 1968; Granovetter 1973, 1974; Coleman 1988; see also Meyerson 1991b). An executive team's network that is made up of strong external ties is also likely to have a high degree of overlap (redundant ties). (See discussion above.)

The theoretical ideas and the empirical results presented above imply that a differentiated team is connected to its external network mainly by weak ties. The differentiated team's members are not connected to each other by strong ties, hence team members have no group consensus to protect. Therefore, they are free to establish external ties without any restriction set by the team, nor by consideration of the other team members. An integrated team consists of team members connected through strong ties. According to the ideas presented above, these members are not likely to choose external ties without considering the consensus of the team, and the opinions of the other members.[7] Hence,

H1: An executive team's degree of integration is likely to decrease the team's access to weak external ties.

Going one step further with the idea of cognitive balance and time constraint, we should expect that integrated team members introduce their external contacts to the other team members. Friends introduce their friends as integrated team members introduce their external strong ties to the other team members. The network is cohesive, having the potential to both restrict and provide opportunities for joint actions. An individual in the network who falls out of the expected and desired behavior will confront a cost that hurts him, i.e., he receives a bad reputation that may lead to exclusion.

Differentiated team members with weak external ties and with the ambition to accrue information do not have the motivation to introduce their external contacts to the other team members. Thus, nonredundant ties will be weak (bridge ties). Hence,

H2: The number of external weak ties tends to decrease the team's number of nonredundant ties.

For the purpose of gaining influence, the strong redundant ties are instrumental in exercising influence and mobilizing or restraining others' actions. The existence of strong ties and redundant ties suggest that the member of an executive team belongs to a group configuration with a rigid system of norms. Effective norms demand what Coleman labels closure. "Where there is an interdependence between two or more individuals there is a risk for actor 'a' to impose externalities on actor 'b' if no efficient norms

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[7]I also believe that the members of a differentiated team have no one to protect them (allies) in case of an unfriendly takeover or an undesired change of control owner. Hence, it is of vital interest for them to develop a network of their own with a reach and access to different resources such as information about new job openings (see Meyerson 1991a for a discussion about leadership organization and its effects on the labor market for managers).

have emerged to restrict unwanted actions" (Coleman 1988, p. S105). The interdependence between individuals such as described above where the actors pay a very high cost to leave the interdependent relationship is argued to create a cohesive network based on strong ties of business associates with emerging norms.[8]

The integrated team, that has restricted control over the economic capital (the owner capital) has good reason to develop an external network with a mobilization capacity. A network with this characteristic is built upon strong overlapping ties conducive to the team's ambition to influence its environment.

H3: The more integrated an executive team is, the more likely the team is to have a network conducive to mobilization of strategic resources.

Size and social capital

The efficiency of an executive team's social capital is a question of size. Burt's last two variables for creating opportunities through networks are diversity and size. It was suggested above that weak nonredundant ties (bridge ties) create diversity. Additionally, weak nonredundant ties by definition increase the size of a network.

Individuals with a large number of ties and large networks are better off in their access to resources than are individuals with few ties and small networks (Laumann and Pappi 1976; Berkman and Syme 1979). However, there are limits to how large a network can grow. Granovetter (1973, 1974, 1982) proposes that a network based on strong redundant ties does not expand as much as does a network based on weak nonredundant ties/bridge ties. It is also assumed that size is positively correlated with the frequency of nonredundant ties (Burt 1990, 7).

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[8]However, these ties are of course of no use if they do not yield access to valuable resources for the CEO. The strong overlapping network is not instrumental unless they mobilize relevant resources. In this special context our focus is on the structure of the network given its access to resource contacts.

The integrated team members would want as large an external network as the differentiated team members. However, the cost associated with a mobilizing external team, i.e., an external network based on strong and overlapping ties restricts the number of ties it is possible to maintain in the network.

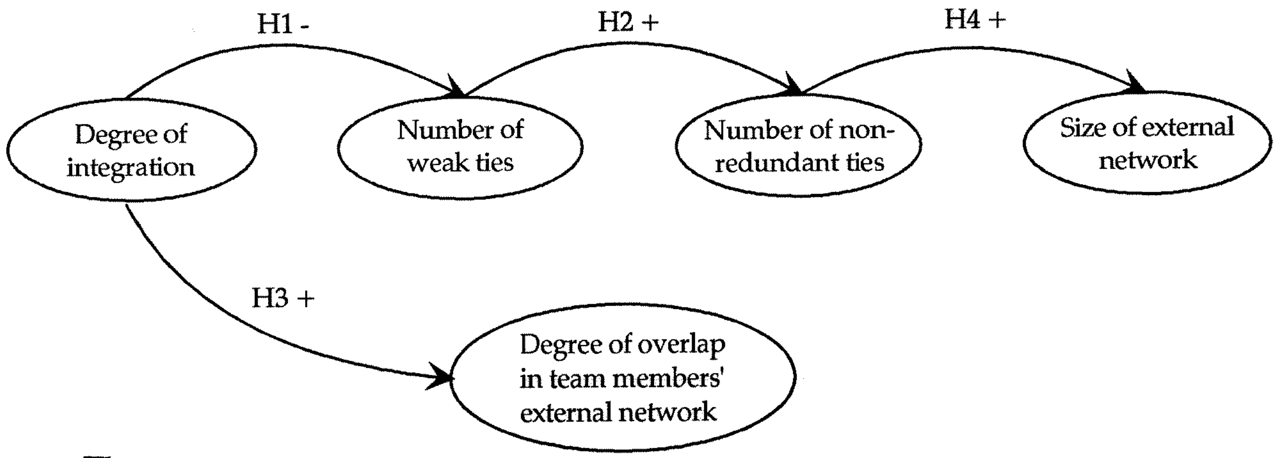
Hence, executive teams having external networks based on weak nonredundant ties ought to have larger networks than teams with networks based on the opposite type of structure. However, in accounting for this the number of team members ought to be considered. The whole of a team member's social capital, not only the external network, but also the internal network, has to be considered. A team with many members takes time away from an individual's exploration of external ties, though each tie and each team member is given little attention. A team with few members may contain individuals who give their colleagues a lot of attention, however, they are so few that they also have time to engage in several outside relationships. Nevertheless,

H4: Integrated teams have smaller external networks than differentiated teams have.

Results from the empirical investigation

The main purpose of this section is to test empirically the suggested relationships between the team's degree of integration and the size and the structure of its external network, i.e., the relationship between team composition and the prerequisite for efficiency of information accrual. A path model of the suggested hypotheses is presented in Figure 1.

Figure 3.1 A path model expressing the four hypothesis



The structural relationships between the variables in the hypotheses H1, H2 and H4 are investigated by a LISREL model. Hypothesis H3 is tested by a regression analysis. (The correlations for all variables in the hypotheses are presented in Appendix 4 and the characteristics of the univariate distributions are presented in Appendix 1.)

The selected sample

The empirical data contains a sample of 29 firms and their executive teams drawn from a population of public companies in existence on the Swedish Stock Market both in January 1980 and in December 1985. The 32 firms that experienced the strongest negative crisis signal during 1985 were selected howeverm members of three executive teams did not consent to participate. The crisis signal was measured by abnormal return, i.e., the difference between expected return and realized return, for each firms during 1985. (See Appendix 2.) Since the sample is not randomly selected no general conclusions can be drawn about the relationship between recruitment procedures and exectuive team composition. However some light may be shed on factors affecting team composition in firms confronted with a crisis signal.[9]

The statistical analysis is based on aggregated team member data. The data collected is rather unique. Seldom is one allowed to investigate manager

[9]The criterion for the sample selection originated from a study of the effects of ownership structure, team composition and social capital (social network) on firm performance in which the present study is part of.

respondents about their relationships with their colleagues and about their social network. Furthermore, a description of the whole executive suite is seldom captured in a systematic way. In light of this, I will describe in more detail the collected data below. Definitions of variables, their transformation and the characteristics of their univariate distribution are shown in Appendix 1.

It is a common view that businessmen are very well integrated in their immediate business community. However, the data in this sample show another picture of the managers' establishment of relationships with their colleagues.

The team members were asked about their relationship to the other members of their team. Four questions were asked of which three were used in the statistical analysis. The four questions were if the members (1) socialized, (2) confided in each other, (3) shared values, (4) exercised any hobby or sport together. (See Supplement.) The frequency of team members who socialized with others in the team is depicted in Table 8 in Appendix 4. The variable Socializing is computed as the share of all socializing relationships of the total possible team relationships. The variables Confiding, Shared values and Exercising a hobby are computed in the same way as the socializing variable, i.e., the team's share of the variable over the total possible relationships in the team.

The average share of a team member's socializing relationships with other team members is .33, with .22 being the median. 57% of the team members claimed they socialized with less than 30% of the other team members. The average share of a team member's mutual confiding relationships with other in the team is .42, with .4 being the median. 50% mutually confide in less than 30% of their colleagues. The average share of relationship where the member share a hobby with other team members is .34 with .33 being the median. 47% share a hobby with less than 20% of their colleagues. Sharing values is the most common aspect of integration. The average share of a member's relationships sharing values is .61, and with .62 being the median. 56% of the team members share values with 60% of the others in the team (see Appendix 3. Frequency tables 4:9 - 4:12).

The mean value for sharing the same values among team members is .47 for the sample. The mean value for mutual confiding among team members is .32 and the median value for the degree of socializing among the team member is .25. (See Appendix 1, the univariate distribution.)

In order to capture the team's connection to an external resource network, i.e., their social capital, information about each member's most important external ties was collected. Each team member was asked about his ties to resource persons outside the firm and the executive team.[10] Information was collected about these persons as to their age, their profession, and whether the member and these persons socialized and/or confided in each other. Furthermore, the members were asked if, to the best of his knowledge, these persons had ties among each other.

Most team members mentioned between 3 to 13.5 contacts as their main resource persons: nine was the mean number of external ties per team member. 57% had less than 30% external ties with whom they mutually confided. For 54% of the team members, the crossover between having external ties and socializing with these external ties was less than 40%. However, team members seem to be more inclined to socialize with their external ties than with their own colleagues (see Appendix 3, compare Table A3:1 with Table A3:6). Furthermore, for 56% of the team members, the incidence of external ties with whom they both socialized and confided was less than 20%.

Finally, 48.2% of the team member had an external network with less than 40% ties who were acquainted with each other. 37% of the team members had more than 60% of their external ties acquainted with each other. (See the univariate distribution Appendix 1.)

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[10]When respondents are asked about their resource persons outside the firm it is likely that the they mention those individuals the respondents have most frequent contact with, like the best or socialize and confide in. Those that they may have as a resource person but do not socialize and confide in may not be mentioned as readily. Hence, there may be a selection bias of the mentioned external ties i.e., the external networks for all the team members may be systematically biased towards strong ties. However, results from comparing different executive team's structure of external network is not affected by this bias since the tendency of members answering in the same "biased" way is assumed to be the same for all members.

The test of the hypotheses

The structural relationships between the variables in the hypotheses are investigated by two covariance structural models. The testing and the estimation of the models are performed by SIMPLIS. SIMPLIS is a user-friendly program for the analysis of covariance structural models such as LISREL models (Jöreskog and Sörbom 1986). A LISREL model contains two main elements: a structural model and a measurement model and is a combined path analysis and a factor analysis (LISREL VI 1984). In the proceeding, the structural model is the focus of the analysis. The structural model is based on the assumption of relationships existing between the unobserved variables (latent variable) represented by the concepts in the conceptual path model. The parameters that measure these relationships are analogous with regression coefficients. The measurement model creates the latent variables used in the path analysis. Direct measurable indicators are assumed to be caused by a latent variable. The correlations between the indicators therefore are explained by this common factor, expressed by the latent variable.

The input in the statistical LISREL analysis is a correlation matrix. A comparison is made between the correlation matrix and the matrix produced by the theoretical model to see if the specified model fits the data (for more elaborate information on LISREL, see Jöreskog and Sörbom 1987; Loehlin 1987; Colbjörnsen, Hernes and Knudsen 1984).

A LISREL analysis of the hypotheses H1, H2 and H4

The three hypotheses are simultaneously tested by two LISREL models, one where team size is considered and one where it is not. The LISREL models contain one explanatory variable: the degree of integration. The degree of integration is measured by three indicators: cohesion index for socialization (GS), cohesion index for mutual confiding (GP, discussing personal issues), and the cohesion index for sharing mutual values (GV) (see Appendix 1 for variable definitions).

The explained variables in the LISREL model are the number of weak ties per team, the number of nonredundant ties per team and the number of external ties reported per team. The three questions were based on the question: With whom do you have regular contact outside the team and the firm regarding issues such as legal matters, media matters, political matters, financial matters, discussion partners?

To distinguish between strong and weak ties, the respondents were asked if they socialize with and/or discuss private and personal matters with (i.e., confide in), the persons they are connected to. If the respondent is neither socializing with nor confiding in the contact, the tie is to be considered weak.[11] The variable weak ties is measured by two observed variables. The first is the sum of weak ties per executive team (WEAK). The second variable is standardized for team size and is computed by the number of weak ties per team divided by the number of individuals in the team (STANWEAK).

The explained variable in the second hypothesis, the number of nonredundant ties, is computed in two ways. The first measure is the number of unique external ties per team (NONRED). A tie is defined as unique if only one of the team members is connected to the tie.[12] The second measure is standardized for team size. The number of nonredundant ties is summed

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[11]Numerous measures for the strength of ties have been used in the aftermath of Granovetter's first article on the strength of ties. The most common measure used has been the indicators "closeness of a relationship"; thus close friends are coded as strong ties while acquaintances are weak ties. Other measures are not only the closeness of two parties but also the source of the tie, such as relatives or neighbors. Granovetter (1973, 1982) has used frequency of contact in combination with closeness. Friedkin used mutual acknowledgement of contact as a measure of strong ties in a scientific community. Marsden and Campbell (1984) came to the conclusion that closeness or emotional intensity of a relationship is on balance the best indicator. The measures duration and frequency of contact were badly contaminated by the foci around which ties may be organized. These two measures are suggested by Marsden and Campbell (1984) to be avoided. The measure personal confiding is little used as a measure of tie strength and hence cannot be well evaluated in the Marsden and Campbell study. In this study the three indicators of strength are all aspects of closeness, socializing, mutual confiding, i.e., the respondents opinion on the degree of intimacy he entertains with the party.

[12]There may be a problem with the link between reported primary contacts of the team members (a primary contact is someone to whom you are connected through a weak nonredundant tie) (Burt 1990). The primary contacts may know each other and hence limit the uniqueness of these contacts. This we do not know from the collected data.

over all team members and divided by team size (STANNRT).

The explained variable, the size of an executive team's external network, is measured by two observed variables; the sum of the team members' external ties (TOTEXT) and a standardized measure where the team's total external network is divided by team size (EXT).

In order to consider the standardized measures, two LISREL models are tested, one with nonstandardized measures and the second with standardized measures. Nevertheless, team size is controlled for in both versions. It is plausible that team size has an effect over and above the standardization. The fact that a team member is part of a large team may have an effect on the frequency of weak ties.

The structural model containing the latent variables described above and their relationship is described in the path model given in Figure 1. The measurement model for the degree of integration (Degree of Integration 2) is a one-factor model measured by two indicators, Gpersonal and Gsocializing. Hence, the latent variable Degree of Integration 2 differs from the previous latent variable Degree of Integration in chapter II. As will be shown, the reason for the modification is, that the cohesion indicator for sharing values goes in a different direction with respect to its effect on the structure of a team's external network, as compared to the other two indicators. Consequently, a new latent variable is constructed by the cohesion index for values (GAL).[13]

The two LISREL models: the LISREL model 3:1 with no standardized indicators is depicted in a path diagram in Figure 2 and the LISREL model 3:2 with standardized indicators is depicted in a path diagram in Figure 3. The size of the team is considered in both models.

The outcome of the statistical test is presented with the standardized solution. The estimates of the parameters are based on the assumption that the latent variables (circled) have a variance equal to 1. The partial regression

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[13]The modification indices may indicate strong relationships between variables not considered in the original hypotheses. If these relationships give significant results in the LISREL analysis they are reported in the LISREL models below.

coefficients can then be compared with each other. (The standard errors are depicted within parentheses.) Apart from the modelled relationship only significant stuctural parameters are presented in the Figures 2 and 3. Since the sample is small, and the number of parameter estimates in these two models are large, the result has to be interpreted with caution.

Figure 2.LISREL model 3:1. Degree of integration, number of weak nonredundant ties and the size of the external network[14]

The test for the fit of the model is acceptable with a chi-square equal to 11.4 and with 9 degrees of freedom and a probability of .24. The LISREL analysis shows that the hypotheses cannot be rejected. The more integrated a team is, the fewer are the weak nonredundant ties and the smaller is the size of the external network. The latent variable sharing values have, contrary to the latent variable degree of integration 2, a significant and positive effect on the number of weak ties. Team size plays an important role both for the access to weak ties, to nonredundant ties and for the total number of ties. Hence, the larger the team, the more weak nonredundant ties are connected to the team. Furthermore, the larger the team, the larger is the size of the external network. However, the individual member's tendency to develop a large external network made up of many weak and nonredundant ties is of interest. How does the fact that one belongs to an integrated team affect the individual member's external network?

Two direct effects on the size of the external network of a team are worth noting. The first direct effect is caused by the latent variable sharing values (.13). The second direct effect stems from the number of weak ties (.18). The LISREL model 3:2 standardize for team size is shown in Figure 3.

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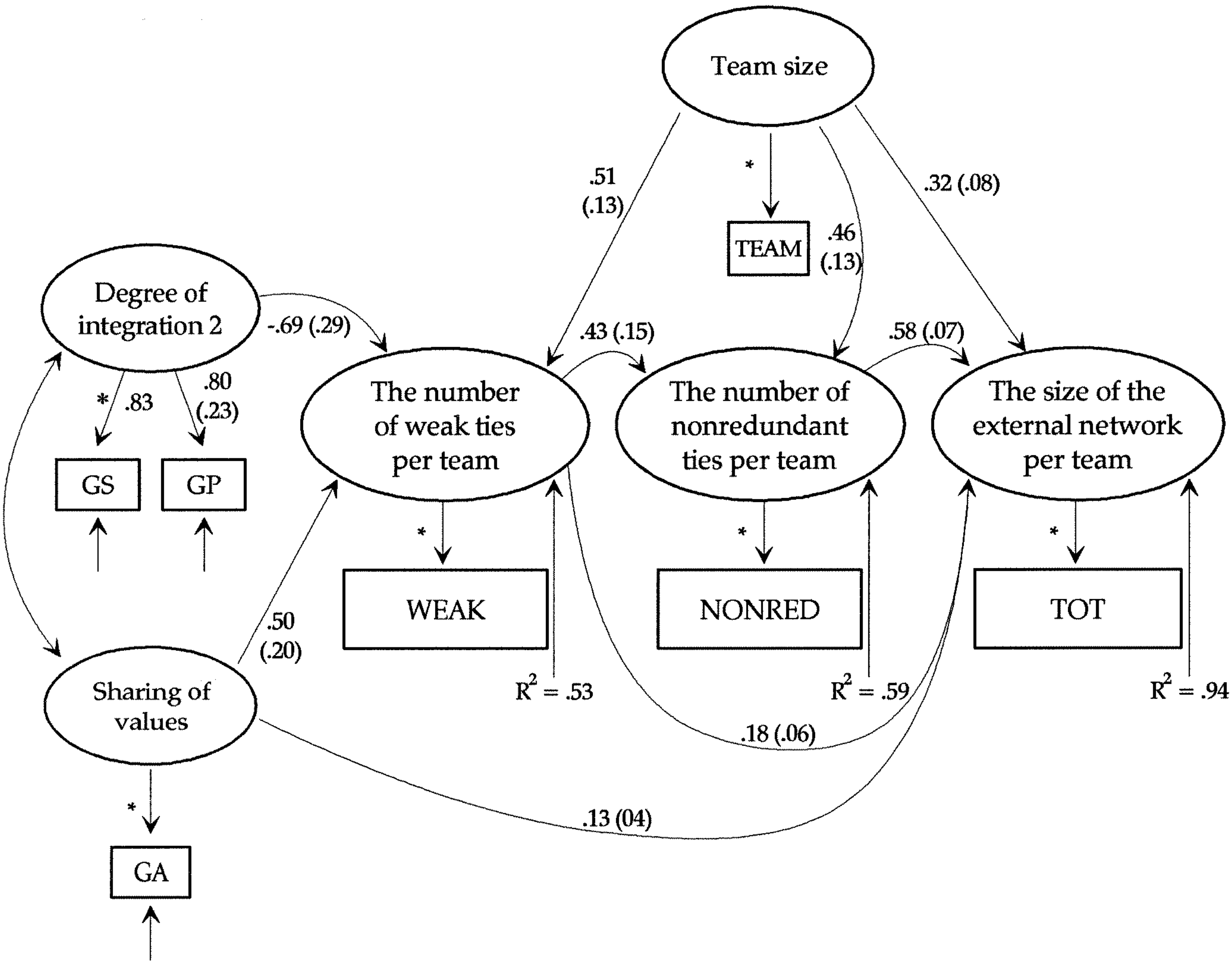
[14]LISREL has the ability to take measurement error into account. Two alternative approaches exist. One is a simple relationship between an observed variable and the corresponding latent variable. The parameter in this relationship is fixed to one which means identity between these two variables. The other type of measurement model is a factor model with several indicators. In this case it is necessary to fix the scale of the latent variable to get the model identified. In the presented model below for instance the latent variable degree of integration, the observed indicator GS is chosen as the scaler.

Figure 2. LISREL model 3:1, Degree of integration, number of weak nonredundant ties, and the size of the external network



* = fixed parameters are inserted to make the measurement model identified[11]

$X^2 = 14.48$ df = 9 p = .24

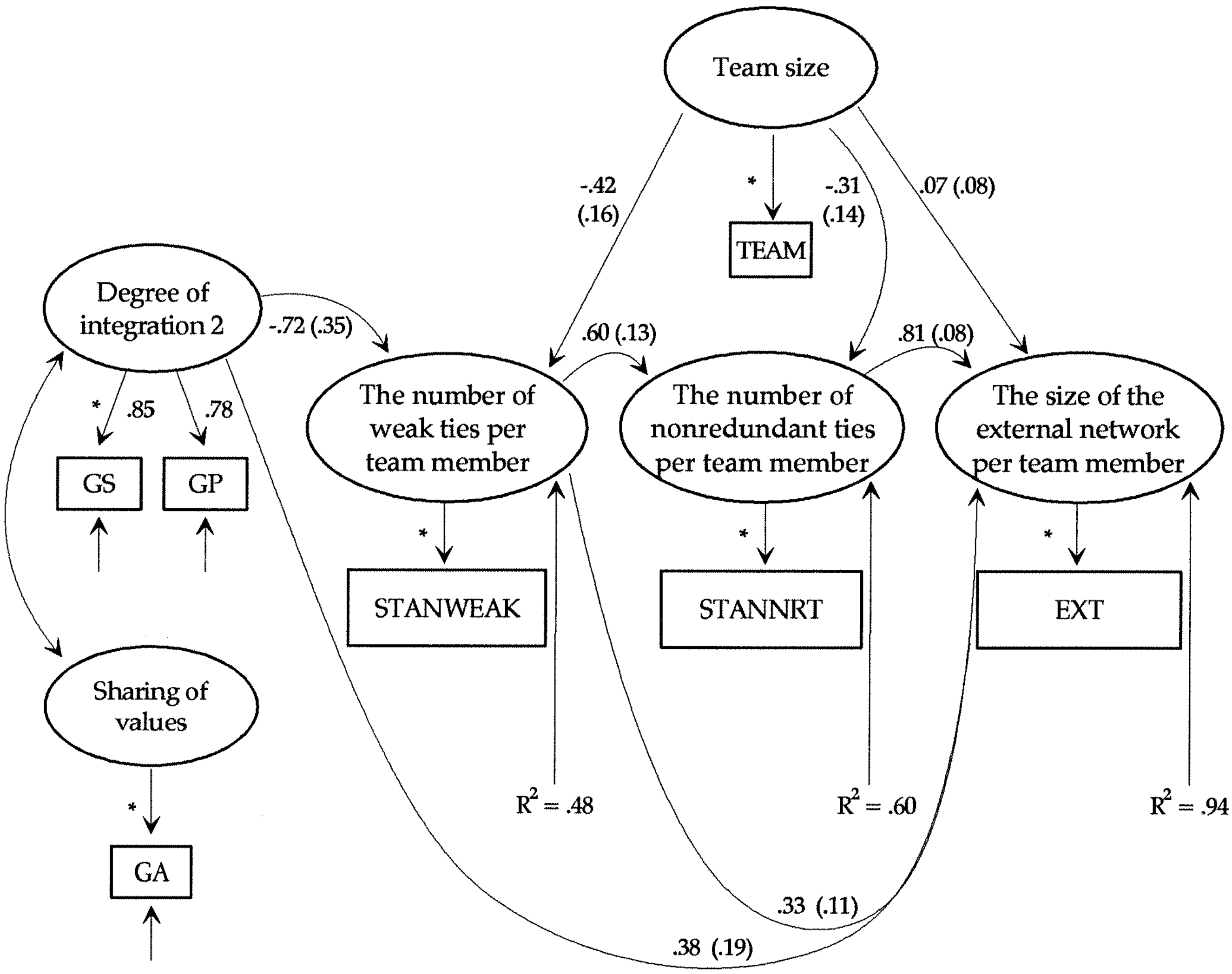
[Figure 3. LISREL model 3:2, Degree of integration, number of weak and number of nonredundant ties and the size of the external network standardized by team size]

The test for the fit of the model is acceptable with a chi-square equal to 12.2 and with 8 degrees of freedom and a probability of .14. The hypotheses cannot be rejected by the test of the LISREL model 2b. However, some interesting changes of team-size effects occur on the structure of network. The fact that someone belongs to a large team does not affect the size of his total network when factors such as the effect of team-size on weak and nonredundant ties have been accounted for. When all other factors have been accounted for, the effect of the team-size on the number of weak and nonredundant ties is negative, i.e., belonging to a large group tends to restrict the members' access to weak and nonredundant ties. Furthermore, the effect of the cohesion index for sharing values yields no significant results. The effect of sharing values on the endogenous variables not shown in the Figure 3, but which can be found in Figure 2, are not significant in the standardized model. Though the latent variable sharing values loses its effect, both on the number of weak ties per team member and on the size of the external network per team member, the effect of the degree of integration is stronger on the number of weak ties(-.72) compared to the non standardized model (-.69). However, the coefficient of determination is slightly lower for the standardized version (.48) than for the non standardized relationship (.53). Still, the overall coefficient of determination is not changed in the standardized model. Finally contrary to the non standaridzed model the standardized model showed a significant direct effect by the degree of integration on the number of external ties per team member.

The third hypothesis

The third hypothesis is that the more integrated an executive team is, the more likely the team is to have a network conducive to the mobilization of strategic resources. As shown above, there is a negative and significant

Figure 3. LISREL model 3:2, Degree of integration, number of weak, nonredundant ties, and the size of the external network



* = fixed parameters are inserted to make the measurement[11] model identified

$X^2 = 12.22$ df = 8 p = .14

relationship between the degree of integration and the number of weak and nonredundant ties. However, a mobilizing network can also be captured by the degree of overlap in each team member's external network, labelled by Coleman as the degree of closures in each team member's external network (Coleman 1988). Unfortunately, no information is available on the type of relationship the external individuals have to each other, whether they are close friends or if they confide in each other. The only available information at our disposal is the team members' awareness of whether or not his contacts are acquainted.

Hence, the explanatory variable is the degree of integration measured by the two indicators: cohesion index for socializing and cohesion index for mutual confiding. The cohesion index for sharing values, GAL, is treated as a separate variable. The explained variable is measured by the degree of overlap in the team member's external network (KONTAND).

Path model 3:1. The degree of overlap explained by degree of integration

Degree of overlap(KONTAND) = b1 * integ2 + GAL * b2 + TEAM * b3

Coefficients	b1	b2	b3
Estimates	.81	- .18	.02
Standard errors	.42	.29	.23
Significant level of t-test	1.92	-.64	-.12
Significant,	barely	no	no

The explained variation of degree of overlap in team members' external network is .39. Belonging to an integrated team (measured by the two indicators: the degree of socializing and the degree of mutual confiding) increases the likelihood of there being a high degree of overlap in the members' external network, i.e., that the individuals in the external network are acquainted. However, the path coefficient (.81) is barely significant partly caused by the small sample size. Notable is that if the degree of overlap is explained in terms of all three integration indicators separately in a path analysis, the path coefficient for the indicator degree of socialization is significant.

Conclusions

Two main points are suggested from the present analysis. First, an external network does not necessarily have to be based on weak nonredundant ties in order to be instrumental to the team. The structuring of social capital is contingent on the team's access to the financial capital provided by owners. Integrated teams can benefit from strong and overlapping external networks in order to mobilize their strategic environment. Differentiated teams, on the other hand, benefit from an information-accrual facilitating network based on weak nonredundant ties. Hence, an analysis of the efficiency of a network benefits from being seen in terms of intentionally acting individuals confronting different opportunity structures.

The second point is that nonredundant ties seldom are strong. Granovetter's definition of a bridge tie as being weak and nonredundant and not as Burt suggests, strong nonredundant, is more in line with the empirical findings. Despite that fact that it would have been natural for team members to list their closest external contacts as their resource persons (they were restricted to give only 15 of their most important resource contacts outside their company. See Appendix 1 for definition of variables), most of the external contacts were reported as being weak and nonredundant. Hence, the tie that is supposed to increase diversity and size, as well as increase the reach to new networks (the creation of new social capital), i.e., the nonredundant tie, is more often weak than strong.

The empirical findings support the formulated hypothesis that an executive team's degree of integration affects the team's external network. Hypothesis 1 was confirmed, which suggests that the degree of integration affects the number of weak ties the members have access to, irrespective of whether the explained variable is standardized for team size or not. Integrated teams have access to fewer weak ties than more differentiated teams. However, a member of a large team has fewer weak ties than a member of an integrated team (or a less integrated team).

Hypothesis 2 was also confirmed. Access to weak ties eases access to nonredundant ties. Teams with access to weak ties increase their access to nonredundant ties. The significant positive relationship remains even when team size is considered.

Hypothesis 3 was supported by data. The degree of integration increases the likelihood of a high degree of overlap in the individual member's external network.

The results from the testing of hypothesis 4 are that the size of a team's external network is explained by the type of ties in the network and the size of the executive team. An executive team's external network grows with the number of nonredundant ties.

Apart from the effect that belonging to an integrated group has on restricting the team member's external network, there is a team size effect working in the opposite direction. In the standardized LISREL version, the team size factor exhibits an effect on the structure of the team member's network over and above the number of individuals. The fact that a member belongs to a large team implies that he has fewer external ties than a member who belongs to a small executive team. Belonging to a small team increases the individual team *member's* external ties. Hence, one conjecture to this contradictory result is that integrated team members, although they devote a lot of time to their team colleagues, have time over to develop outside ties. Yet, members of large teams have many colleagues to spend time on, and hence they have less time to spend outside the team developing external ties. Another conclusion could be that the integrated team members use their external network in a way in which the bulk of the external ties are important individuals, whereas the differentiated team members use their external environment in a more exclusive manner, so that size does not matter. Whatever the explanation, group size ought to be more carefully studied as an artiefact.

APPENDIX 1. Definition of variables, their transformation and the characteristics of the univariates

The selection criterion of a public firm confronting a crisis signal from the stock market was a strong negative abnormal return. The 106 public firms on the stock market both in 1980 and in 1988 were ranked according to their strongest negative abnormal return any month during 1985. From that list 32 firms were selected. The characteristics of the univariate distribution of the 106 firms and 32 firms are shown in Table A1:1.

Since no assumption is made about the variable being normally distributed, a complement to the mean (Mean) and the standard deviation (Sd) is given by the median (Md), the skewness (Skew) Kurtosis (Kurtos) and the minimum (MIN) and maximum (MAX) values.[15]

Table A1:1. Characteristics of the univariate distribution for the variables negative abnormal return for 106 firms and negative abnormal return for 32 firm

	Mean	Sd	Md	Skew	Kurtos	MIN	MAX
Negative abnormal return (population of 106 firms)	-.124	.091	-.112	-2.605	12.607	-.684	.0.12
Negative abnormal return (Sample of 32 firms)	-.222	.103	-.187	-3.164	12.509	-.684	-.148

The *ownership concentration* is measured by the concentration ratio (CR) which is the largest shareholder's percentage of votes. (The information on ownership structure was collected from Sunqvist 1984, 1985, 1986, 1987 and 1988). The univariate description of ownership concentration for the sample is shown in Table A1:2.

Table A1:2. Univariates of the variable ownership concentration

N=29	Mean	Sd	Md	Skew	Kurtos	MIN	MAX
Ownership concentration(CR)	44.25	16.55	45.6	.14	-.54	15.6	82.2

[15]Under the normal distribution assumption skewness is equal to 0 and kurtosis is equal to 0 (see definition and computation of kurtosis in SAS Elementary Statistics Procedure p. 11 from SAS Procedures Guide. Release 6.03 Edition).

The distribution of CR shows similar traits with a normal distribution. The distribution is more flat than the normal distribution which is natural since a public company cannot be owned by one single owner to 100%. The distribution is almost symmetric, although slightly skewed to the right (skewness of .14 compared to the normal distribution of 0). This is also natural, since even a public company has to be owned by someone.

Two indicators of *firm size* are computed. The first is the market value of the firm (MV) and the second is the number of employees (EMPLOY) in the firm (total figure irrespective of location).

Table A1:4. Characteristics for the univariate distribution for the control variables

N = 29	Mean	Sd	Md	Skew	Kurtos	MIN	MAX
Number of Employees	6090	13763.99	2157	4.663	23.419	10	74320
Market[16] value (MSEK)	990.29	1469.50	504	3.039	10.424	15.00	7052

The size of the firm, whether measured by the number of employees or by the market value, varies considerably.

The indicator *team size* is the number of individuals in the executive team (TEAM).

Table A1:5. Characteristics of the univariate distribution of team size

	Mean	Sd	Md	Skew	Kurtos	MIN	MAX
Size of team	5.00	2.26	4	.63	-.77	2	9

Indicators of team cohesion

D*egree of integration* is measured by three indicators:

[16]The figures of a firm's market value are divided by 100 000 in the statistical analysis.

1. *mutual values* (GV),
2. *personal confiding* (GP)
3. *socializing privately* (GS)

The questions posed to each team member were: With whom on the team do you (1) socialize with (family-wise)? (2) discuss private and personal matters? (3) share common values about business and life? (See Questionnaire in Supplement 1, questions No. C1-5.)

A relation matrix is constructed showing each team member's relationship to all the other team members using all three dimensions of integration. From the matrix a cohesion index is constructed for each aspect of integration. The index G divides the number of mutual choices in a binary matrix of direct ties by the maximum possible number of such choices (Knoke and Kuklinski 1983, 50). Only the symmetric ties are counted, that is, only when both the respondents claim they relate to each other in a certain integration aspect is the tie counted.

The cohesion index is measured by

$$G = \frac{\sum_{i=1}^{N} \sum_{j=i+1}^{N} (z_{ij} z_{ji})}{(N^2+N)/2} \quad \text{where} \quad i \neq j \tag{1}$$

and where the term $(z_{ij}\, z_{ji})$ takes the value of 1 if both elements are 1s, and 0 if either of the elements take on the value of 0. The cohesion index ranges from 0 to 1. A large value indicates that a greater proportion of network relations are reciprocated. A small value indicates that a greater proportion of the network relations are not reciprocated (Knoke and Kuklinski 1983, 50). The cohesion index transforms the binomial indicator into an interval-scaled indicator (at least it is treated as if it were possible to assume interval scale here). The cohesion index for socializing (GS), the cohesion index for sharing values (GV), the cohesion index for personal confiding (GP), and the cohesion index for spending time outside work at sports or other hobbies (GH) are all indicators of integration. For illustrative purposes, an index containing all the cohesion indicators is constructed and labelled INTEGR. INTEGR is computed by summing all the cohesion values for each team, except that for spending time outside work that is not used in the analysis. A univariate description for degree of integration indicators GS, GV,and GP is shown in Table A1:11.

Table A1:11. A univariate description of integration indicators

	Mean	Sd	Md	Skew	Kurtos	Min	Max
GV	0.47	0.28	0.46	0.12	-0.16	0	1
GP	0.32	0.33	0.26	0.95	-0.29	0	1
GS	0.25	0.27	0.16	1.45	1.87	0	1
INTEGR	1.05	.76	.83	1.01	1.13	0	3
INTEGR2 (GS,GP)	.57	.56	.37	1.28	1.09	0	2

Table A1:12 A univariate description of the indicator socializing for sample size equal to 23 (used in chapter IV)

N=23	Mean	Sd	Md	Skew	Kurtos	Min	Max
GS	0.28	0.29	0.14	1.57	2.17	0	1

Indicators of external network structure and size

Total number of weak ties per team is measured by summing the ties where the parties claim that they neither mutual confide nor socialize with each other. (A strong tie is defined as a tie between two who claim that they either confide in or socialize with each other privately.)

Stanweak is the standardized version for weak ties.

Unique ties connect a contact outside the team and firm to only one of the team members and are also known as nonredundant ties (NONRED).

The standardized version of unique ties is the number of unique ties divided by the team size (standex).

The *size of a team's external network* is the number of ties per team member

(TOTEXT). The standardized version of size of external ties is the size of the team's external network divided by team size (EXT).

The *degree of overlap* in each team member's external network is computed by asking the member whether the external ties mentioned are acquainted with each other or not to his knowledge (KONTAND).

Table A1:13. Some characteristics of the univariate distribution of the indicators for number of weak ties number of nonredundant ties and size of external network

N = 29	Mean	Sd	Md	Skew	Kurtos	Min	Max
Size of the external network(TOTEXT)	41.86	16.10	40	.085	-0.420	9	74
Size of the external network per team member(EXT)	8.88	2.62	9	-.257	-.178	3	13.5
Number of weak ties (WEAK)	21.72	11.90	21	.127	-1.151	1	42
Number of weak ties per team member (STANWEAK)	4.56	2.35	4.12	.54	.10	.33	10.5
Number of nonredundant ties (NRT)	38.44	14.71	38	.083	-.205	8	70
Number of nonredundant ties per team member(STANNRT)	8.21	2.59	8	-.14	-.047	2.66	12.66
Degree of overlap in team member's external network (KONTAND)	.541	.50	.213	.648	-.146	.24	1.00

The min and max values show a large variation in the size of the external networks. The values of kurtosis and skewness indicate no large deviation from a normal distributed variable.

APPENDIX 2. Abnormal return

Abnormal return (AR) is a measure taken from the field of financial theory. It is postulated that individuals make consistent and rational decisions, and that all expectations are realized since no one acts on the wrong premises (Hansson and Högfeldt 1988, 636). Financial theory analyzes the economic effects of both time and risk on resource allocation and gives a rational economic explanation for seemingly random changes in stock prices using stochastic theory. Three major ideas are incorporated in financial theory: information efficiency, diversification and arbitrage principles. The idea of information efficiency is of relevance in our study.

From Hansson and Högfeldt (1988) the following description on the information efficiency assumption is drawn: When new information enters the market, investors evaluate it and change their portfolio to exploit potential profits from the new knowledge. The new equilibrium prices therefore contain the information. Prices are an efficient information bearer and price changes reflect the market's joint evaluation and response to new information. This implies that investors base their decisions only on the information that has already been exploited by the market. This intuition is called the market efficiency hypothesis; market prices reflect all relevant information. The analysis testing the hypothesis shows that the Swedish market is at least semi information-efficient.

It is assumed that the investors not only base their actions on historical information (weak information efficiency), but also on economic information that is accessible to the public. For example, announcements made revealing a firm's specific information are easily and quickly processed by the actors, and the stock market prices reflect this process. However, empirical analysis shows that insider information is not reflected in the stock prices. Trading with insider information may give abnormal returns. In general, previous studies have been interpreted to support the information efficiency hypothesis because insider information cannot give an ongoing abnormal return for long, since other investors will discover the abnormal returns and try to exploit them.

The expected rate of return is given by the CAPM approach, Capital Asset Pricing Model (Sharpe 1964) or the more general model of APT, the Arbitrage Pricing Theory (Copeland and Weston 1983). The CAPM predicts that security rates of return will be linearly related to a single common factor, the asset's systematic risk. The APT is based on similar intuition but it is more general. CAPM can be viewed as a special case of the APT when the market rate of return is assumed to be the single relevant factor.

Investors put together portfolios by evaluating the stock's expected rate of return and its risk. Risk is defined as the volatility in the returns. A share with high variability is classified as a share with high risk and vice versa. Because the variability of risk for different shares are not perfectly correlated, investors may reduce risk by diversifying their portfolio. Risk may be divided into unsystematic (or firm-specific) risk and systematic risk (variation due to the market return). The latter is compensated for by investors diversifying their portfolio (Hansson and Högfeldt 1988).

Even though there is a theory behind the CAPM, and not behind the market model, the latter is chosen. The market model is easier to compute (DeRidder 1988, 16). Furthermore, a data set of firms on the stock market during the period of 1980 - 1985 already exists, as well as does a program for computing abnormal return values based on the market model, Also there is evidence that the output from the two models, the market model and the CAPM yield the same results (DeRidder 1988).

Abnormal return for a particular share is defined as the difference between the actual and the expected return. A share's expected return is given by the CAPM as:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \epsilon_{i,t}$$

where

$R_{i,t}$ = the share i's return in period t

$R_{m,t}$ = return of the market portfolio, R_m, at the period t

α_i, β_i = the share specific parameters

ϵ_i = error term with the expected value of zero

The expected rate of return given by model is determined by the unsystematic risk, alpha, and the product of $\beta_i R_{m,t}$, determined by the market. The market factor beta indicates how much a share's return is expected to change given a certain change in the market portfolio (approximated by Affärsvärldens "general index"). Given the use of the model the abnormal return is expressed by

$$ar_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t})$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ is estimates of the share specific parameters. $\hat{\beta}_i$ is defined as the covariance between R_i and R_m divided by the variance of the market portfolio

$$\beta_i = Cov\ (R_i, R_m)\ /\ var(R_m)$$

Summing all the single observations of AR and dividing by the total gives us an average abnormal return AR_t.

Some shortcomings of the selected measures and computation are a) abnormal return and information efficient markets, b) the problem of estimating betas, and c) the problem of thin trading. (DeRidder 1988; Hansson and Högfeldt 1988; Claesson 1989; Berglund et al. 1989) The problem with adjusting betas is especially worth noting. A crisis signal as defined here, as some radical new information appearing, which of course could change the risk of the firm's share, i.e., the true beta. However, this is not taken into account in our estimation, which is a drawback.

Appendix 3. Frequency tables

Table A3:1. Share of socializing relations of total within the team

%	Frequency	%
0 - 9	54	34.6
10 -19	12	7.7
20 -29	23	14.7
30 -39	18	11.5
40 -49	9	5.8
50 -59	13	8.3
> 50	27	17.3

Table A3:2. Share of confiding relationship in total relationship

%	Frequency	%
0 - 9	37	23.7
10 - 19	6	3.8
20 - 29	23	14.7
30 - 39	12	7.7
40 - 49	15	9.6
50 - 59	17	10.9
> 50	46	29.5

Table A3:4. Share of relationships that shared values

%	Frequency	%
0 - 9	10	6.4
10 - 19	1	0.6
20 - 29	10	6.4
30 - 39	17	10.9
40 - 49	11	7.1
50 - 59	20	12.8
60 - 69	19	12.2
70 - 79	17	10.9
80 - 89	11	7.1
90 - 99	1	0.6
10 -	39	25.0

Table A3:5. Percent of team members sharing a hobby or a sport activity

%	Frequency	%
0 - 9	45	28.8
10 - 19	8	5.1
20 - 29	21	13.5
30 - 39	24	15.4
40 - 49	12	7.7
50 - 59	12	7.7
60 - 69	11	7.1
70 - 79	5	3.2
80 - 89	4	2.6
10 -	14	9.0

Table A3:6. Size of external network per team member

	Frequency	%
0 - 5	41	28.22
6 - 10	60	41.1
11 - 16	45	30.7

Table A3:7. Share of a team's externa ties socializing

Percentage of ties that socialize	Frequency	%
0 - 9	28	19.6
10 - 19	9	6.3
20 - 29	17	11.9
30 - 39	9	6.3
40 - 49	15	10.5
50 - 59	23	16.1
60 - 69	11	7.7
70 - 79	10	7.0
80 - 89	13	9.1
90 - 99	1	0.7
100 -	7	4.9

Table A3:8. Share of a team's externa ties and confiding

Percentage of ties that confide	Frequency	%
0 - 9	43	30.1
10 - 19	10	7.0
20 - 29	16	11.2
30 - 39	13	9.1
40 - 49	15	10.5
50 - 59	17	11.9
60 - 69	10	7.0
70 - 79	5	3.5
80 - 89	4	2.8
90 - 99	1	0.7
100	9	6.3

Table A3:9. Share of both socializing and confiding external relationships for a team

	Frequency	%
0 - 9	45	31.5
10 - 19	16	11.2
20 - 29	20	14.0
30 - 39	14	9.8
40 - 49	16	11.2
50 - 59	15	10.5
60 - 69	6	4.2
70 - 79	3	2.1
80 - 89	2	1.4
90 - 99	1	0.7
100 -	5	3.5

Table A3:10. Degree of team member's external ties that are acquainted

Degree of overlap in team member's external network	Frequency	%
0 - 10	17	12.4
11 - 30	27	19.7
31 - 50	42	30.7
51 - 70	21	15.4
> 71	20	18.3

APPENDIX 4. A correlation matrixes for all variables

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 29

	GP	EXT	TOTEXT	NRT	STANNRT
CR	0.00690	-0.30559	0.16888	0.14472	-0.37328
	0.9717	0.1069	0.3812	0.4538	0.0461
EMPLOY	-0.08098	0.02372	0.22724	0.17828	-0.03438
	0.6763	0.9028	0.2358	0.3548	0.8595
TEAM	-0.30809	-0.47639	0.83613	0.72574	-0.45988
	0.1040	0.0090	0.0001	0.0001	0.0121
GV	0.57096	0.21469	0.20063	0.09445	-0.00334
	0.0012	0.2634	0.2967	0.6260	0.9863
GS	0.66951	0.09828	-0.34058	-0.42623	-0.15963
	0.0001	0.6120	0.0706	0.0211	0.4081
GP	1.00000	0.12817	-0.23536	-0.30519	-0.09225
	0.0	0.5076	0.2190	0.1074	0.6341
EXT	0.12817	1.00000	0.03150	0.09403	0.89869
	0.5076	0.0	0.8711	0.6275	0.0001
TOTEXT	-0.23536	0.03150	1.00000	0.92945	0.00123
	0.2190	0.8711	0.0	0.0001	0.9949
NRT	-0.30519	0.09403	0.92945	1.00000	0.20071
	0.1074	0.6275	0.0001	0.0	0.2965
STANNRT	-0.09225	0.89869	0.00123	0.20071	1.00000
	0.6341	0.0001	0.9949	0.2965	0.0
WEAK	-0.36376	0.06389	0.80038	0.72927	0.04874
	0.0524	0.7420	0.0001	0.0001	0.8018
STANWEAK	-0.20597	0.68159	0.12291	0.16256	0.65420
	0.2838	0.0001	0.5253	0.3995	0.0001
KONTAND	0.34115	0.08391	-0.31969	-0.42015	-0.11360
	0.0701	0.6652	0.0909	0.0233	0.5574
INTEGR	0.89232	0.17145	-0.15198	-0.25303	-0.09950
	0.0001	0.3738	0.4313	0.1854	0.6076
INTEGR2	0.92970	0.12534	-0.30956	-0.39376	-0.13429
	0.0001	0.5171	0.1022	0.0346	0.4873

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 29

	WEAK	STANWEAK	KONTAND	INTEGR	INTEGR2
CR	-0.09585 0.6209	-0.41045 0.0270	-0.30676 0.1055	-0.02109 0.9135	0.05548 0.7750
EMPLOY	0.23713 0.2155	0.08162 0.6738	0.09794 0.6132	-0.03877 0.8417	-0.03745 0.8471
TEAM	0.65962 0.0001	-0.21866 0.2545	-0.32567 0.0847	-0.24759 0.1953	-0.36264 0.0532
GV	0.05874 0.7621	-0.06111 0.7529	0.27108 0.1549	0.81118 0.0001	0.60101 0.0006
GS	-0.47580 0.0091	-0.26432 0.1659	0.58669 0.0008	0.85018 0.0001	0.89603 0.0001
GP	-0.36376 0.0524	-0.20597 0.2838	0.34115 0.0701	0.89232 0.0001	0.92970 0.0001
EXT	0.06389 0.7420	0.68159 0.0001	0.08391 0.6652	0.17145 0.3738	0.12534 0.5171
TOTEXT	0.80038 0.0001	0.12291 0.5253	-0.31969 0.0909	-0.15198 0.4313	-0.30956 0.1022
NRT	0.72927 0.0001	0.16256 0.3995	-0.42015 0.0233	-0.25303 0.1854	-0.39376 0.0346
STANNRT	0.04874 0.8018	0.65420 0.0001	-0.11360 0.5574	-0.09950 0.6076	-0.13429 0.4873
WEAK	1.00000 0.0	0.54011 0.0025	-0.19899 0.3007	-0.30989 0.1018	-0.45335 0.0135
STANWEAK	0.54011 0.0025	1.00000 0.0	0.00246 0.9899	-0.20867 0.2773	-0.25417 0.1833
KONTAND	-0.19899 0.3007	0.00246 0.9899	1.00000 0.0	0.46274 0.0115	0.49482 0.0064
INTEGR	-0.30989 0.1018	-0.20867 0.2773	0.46274 0.0115	1.00000 0.0	0.95492 0.0001
INTEGR2	-0.45335 0.0135	-0.25417 0.1833	0.49482 0.0064	0.95492 0.0001	1.00000 0.0

SUPPLEMENT: Questionnaire

RESPONDENTS NAME:

FIRM:

(D) DEMOGRAPHIC DATA

D1. YEAR OF BIRTH

D2. PLACE OF ADOLESCENCE

D3. FATHER'S PROFESSION AT THE TIME OF RESPONDENT'S UPBRINGING

D4. MARITAL STATUS

D5. EDUCATION

D6. YEAR OF EXAM

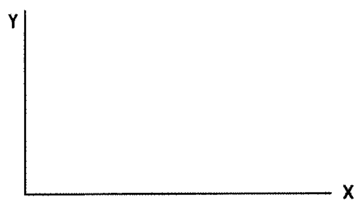
D7. PLACE OF EDUCATION/EXAM

(R) RECRUITMENT DATA

R1. IN THE SYSTEM OF CO-ORDINATES BELOW PLEASE FILL IN ON THE X CO-ORDINATE THE YEAR OF A JOB CHANGE AND THE JOB'S LOCATION FROM THE PERIOD WHEN YOU STARTED WORKING AFTER YOUR EDUCATION UP UNTIL NOW (1989).

R2. ON THE Y CO-ORDINATE FILL IN THE NAME OF THE PERSON OR INSTITUTION THAT MEDIATED THE NEW JOB.

R3. FILL IN AT THE SAME PLACE YOUR RELATION TO THE RECRUITMENT SOURCE.



(C).TEAM MEMBER RELATIONSHIPS

CHARACTERIZE YOUR RELATIONSHIP TO ALL THE OTHER TEAM MEMBERS

C1. DO YOU SOCIALIZE, WITH X,Y,Z?

C2. DO YOU DISCUSS PRIVATE AND PERSONAL MATTERS WITH X,Y,Z?

C3. DO YOU SHARE VALUES WITH X, Y, Z?

C4. DO YOU SPEND YOUR SPARE TIME TOGETHER WITH X,Y,Z, PARTICIPATING IN A HOBBY OR A SPORT OF SOME SORT?

(E) TEAM MEMBER'S EXTERNAL NETWORK

E1. CONSTRUCT A MATRIX OF YOUR EXTERNAL CONTACTS. NAME UP TO 15 IMPORTANT RESOURCE PERSONS OUTSIDE THE FIRM WHOM YOU CONTACT REGARDING STRATEGICALLY IMPORTANT ISSUES (EXAMPLES: LAWYERS, INVESTMENT BANKERS, OTHER FINANCIAL ADVISERS, POLITICIANS, JOURNALISTS, SPEAKING PARTNERS, HEADHUNTERS OR OTHERS.

E2. FOR EACH OF THESE PERSONS SPECIFY HIS AGE, HOW LONG YOU HAVE KNOWN HIM, WHERE HE WORKED IN 1985, AND

E3. FOR EACH OF THESE EXTERNAL CONTACTS NAMED, DO YOU SOCIALIZE WITH HIM, YES OR NO?

E4. FOR EACH OF THESE EXTERNAL CONTACTS NAMED, DO YOU CONFIDE IN EACH OTHER, YES OR NO?

E5. TO YOUR KNOWLEDGE WHICH OF THESE EXTERNAL CONTACTS KNOW EACH OTHER?

References

Anderson, B., and M.L. Carlos, 1979, "A Political Brokerage and Network Politics in Mexico", pp. 1-32, in Anderson, B. and D. Willer, (eds.), *Social Exchange Networks: The Elementary Theory and its Applications,* New York: Elsevier Press.

Berglund, T., E. Liljeblom and A. Löflund, 1989, "Estimating Betas on Daily Data for a Small Stock Market", *Journal of Banking and Finance 13: 41-64.*

Bergström, C., and K. Rydqvist, 1990, "The Determinants of Corporate Ownership: An empirical Study on Swedish Data", *Journal of Banking and Finance, 14:237-253.*

Berkman, L. F. and S.L. Syme, 1979, "Social Networks, Host Resistance and Mortality: a Nine-year Follow-up Study of Alameda County Residents", *American Journal of Epidemiology, 109:186-204.*

Burt, R.S., 1990, "Tertius Gaudens, A Study of Structural Holes as Social Capital", paper presented at the Interdisciplinary Perspectives on Organization Studies held at NIAS, May-June, in Wassenaar.

----, 1991, "Structural Holes", in Swedberg, R. (ed.), *Explorations in Economic Sociology. The Social Structure of Competition*, forthcoming.

Claesson, K., 1989, "Anomalier på aktiemarknaden", *Skandinaviska Enskilda Banken Kvartalsskrift 1.*

Colbjörnsen, T., G. Hernes and K. Knudsen, 1984, "Samfunnsvitenskapelig årsaksanalyse: En introduksjon til LISREL - systemet", *Tidsskrift för samfunnsforskning* 25:5-34.

Coleman, J.S., 1988, "Social Capital in the Creation of Human Capital", *American Journal of Sociology*, 94 Supplement: S95-S120.

Copeland, T.E., and J.F. Weston, 1983, *Financial Theory and Corporate Policy*, Massachusetts: Maddison-Wesley Publishing Company, second edition.

Demsetz, H. and K. Lehn, 1985, "The Structure of Corporate Ownership: Causes and Consequences", *Journal of Political Economy, 93(6):1155-1177.*

DeRidder, A., 1988, *Börsstopp och kursutveckling på Stockholmsbörsen,* Stockholms Fondbörs - Industriförbundet skriftserie nr 5.

Freidkin, N., 1980, "A Test of Structural Features of Granovetter's Strength of Weak Ties Theory", *Social Networks*, 2:411-422.

Granovetter, M. S.,1973, "The Strength of Weak Ties", *American Journal of Sociology* 78(6):1360-1380.

----, 1974, *Getting a Job: A Study of Contacts and Careers*, Cambridge: Harvard University Press.

----, 1982, "The Strength of Weak Ties Revisited." in Marsden, P.V. and N. Lin (eds.), *Social structure and Networks Analysis*, pp. 131-145. Beverly Hills: Sage.

Hansson, B. and P. Högfeldt,1988, "Finansiell ekonomi: tre grundläggande principer", *Ekonomisk Debatt*, 8:635-647.

Hirschman, A.O.,1970, *Exit Voice, and Loyalty*, Cambridge: Harvard University Press.

Jöreskog, K.G. and D. Sörbom, 1984 LISREL VI, *Analysis of Linear Structural Relationships by Maximum Likelihood, Instrumental Variables, and Least Squares Methods*, ISSN 0348-2987, University of Uppsala Department of Statistics.

----, 1986, *SIMPLIS, A Fast and Simple Version of LISREL*, mimeo, University of Uppsala.

----, April 1987, New Developments in LISREL, from *Data Analyst*, Vol.4, No.1.

Knoke, D., and J.H. Kuklinski, 1983, *Network Analysis*, Series Quantitative Applications in the Social Sciences. Sage University Paper, No. 28, second printing.

Laumann, E. O. and F.U. Pappi, 1976, *Networks of Collective Action: A Perspective on Community Influence Systems*. New York: Academic Press.

Lin, N. 1982, "Social Resources and Instrumental Action" pp. 131-145, in Marsden, P.V. and N. Lin, *Social Structure and Networks Analysis,* Beverly Hills: Sage.

Lin, N. and M. Dumin, 1986, "Access to Occupations Through Social Ties," *Social Networks, 8:365-385.*

Marsden, P.V. and K.E. Campbell, 1984, "Measuring Tie Strength", *Social Forces,* 63(2) (December):482-501.

Merton, R.K., 1968, *Social Theory and Social Structure,* second edition, New York Free Press.

Meyerson, E.M., 1991a Ownership Structure and Recruitment Procedures, working paper, No. 314 The Industrial Insitute for Economic and Social Research.

Meyerson, E.M., 1991b, Recruitment Procedures for Exectuive Teams, working paper No. 315, The Industrial Institute for Economic and Social Research.

Mitchell, J. C. 1969, *Social Networks in Urban Situations*. Manchester: University Press.

Pinard, M., 1968, "Mass Society and Political Movements: A New Formulation", *American Journal of Sociology,* 73(6)(May):683-690.

SAS, Procedures Guide, 6.03 edition.

Sharpe, W.F., 1964, "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk", *Journal of Finance,* 19:425-442.

Sundqvist, S-I., 1984, *Sveriges Största Börsföretag,* AB Marieberg.

----, S-I., 1985, *Ägarna och Makten*, AB Marieberg.

----, S-I., 1986, *Ägarna och Makten*, AB Marieberg.

----, S-I., 1987, *Ägarna och Makten*, AB Marieberg.

----, S-I., 1988, *Ägarna och Makten*, AB Marieberg.