Turnover and heterogeneity in top management networks - A demographic analysis of two Swedish business groups

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Abstract

A theory based on the demography of top management teams is used to explain membership turnover in two Swedish business groups, network analysis being used to define group membership. The results suggest these business groups possess a combination of financial and industrial experience as a group resource and the socialising strategy of control as a force counteracting the conflict-producing force of heterogeneity. An organisational demographic perspective focusing on opposing forces of heterogeneity and homogeneity is developed. It is shown that the perspective can be applied both to formal organisations and to informal ones such as networks.

1 INTRODUCTION

Organisational demography (Pfeffer, 1983) involves measuring the individual characteristics of persons belonging to an organisation, using these to describe the organisation and explain organisational outcomes. A common issue involved is that of explaining turnover, i.e., the exit of members of an organisation, especially members of top management teams (TMT), on the basis of such heterogeneity-related variables as differences in age, culture, tenure, education and functional experience (Daily and Dalton, 1995; Elron, 1997; Hambrick and D'Aveni, 1992; Keck and Tushman, 1988; Keck and Tushman, 1993; Kirkman & Shapiro, 2001; McCain, O'Reilly III and Pfeffer, 1983; O'Reilly III, Caldwell and Barnett, 1989; Pelled, 1996; Wagner, Pfeffer and O'Reilly III, 1984; Wiersema and Bantel, 1993, and Wiersema and Bird, 1993). A basic hypothesis concerns the 'similarity-attraction paradigm' (Tsui and O'Reilly, 1989) stating that persons prefer individuals who are similar to themselves, or more specifically that high heterogeneity triggers turnover.

A demographic perspective alone however, does not indicate which individual dimensions trigger turnover. While in some situations heterogeneity of branch, for example, can trigger turnover (Jackson, Brett, Sessa, Cooper, Julin and Peyronnin, 1991), it can, however, be expected to be negatively related to turnover in the case of business groups, as will be argued in this paper. There is thus the need for considering the context of the organisation when predicting the dimensions that are important in triggering turnover, as indeed has been argued by Alexander, Nuchols, Bloom and Lee (1995) and Milliken and Martins (1996). Additionally, the heterogeneity of even highly relevant dimensions does not necessarily influence turnover appreciably, since it is conceivable that countervailing forces of an integrative character may reduce the turnover effects of heterogeneity (Hambrick, 1994).

A demographic perspective has often been used to explain TMT processes and outcomes in formal organisations, and it has expanded to include boards of directors (Knippenberg *et al.*, 2004; Schippers *et al.*, 2003; Zajac and Westphal, 1996) and the relationships between the board and the TMT (Golden and Zajac, 2001; Daily and Schwenk, 1996; Kor, 2006). While Hambrick (1994), in an extensive review of the literature argues for studies focusing one level below the organisational edge, i.e., the business unit level, we contend that the level above the single organisation, when it exists, is as important to study as the other levels. Indeed, there are informal organisations such as business groups (Collin, 1998; cf. Gerlach, 1992) consisting of separate corporations linked by flows of ownership, management, board members, board directors, capital, and the like. It is, therefor, likely that some teams are based within more than one formal organisation. These groups take on the form of conglomerates or spheres of influence (Levine, 1972) for example, in the US, of konzerns and bank groups in Germany, of Keiretsus in Japan (Aoki, 1990), of industrial groups in France (Encaoua and Jacquemin, 1982) and of financial groups in Sweden (Collin, 1990). Business groups seem to consist of elite individuals, quite similar to 'the inner circle' in UK (Useem, 1984) and 'upper echelons' in US (Hambrick and Mason, 1984). They can be seen as basically equivalent to the TMTs of formal organisations. Thus, the paper extends the notion of TMT turnover to include top management teams other than formal ones.

However, lacking formal status, the TMTs of business groups cannot be identified through methods such as those of letting the position in the formal hierarchy determine whether a manager belongs to the TMT of the corporation or not. The present paper proposes that a TMT can better be identified through network analysis in which such criteria as possibilities for interaction and frequency of interaction are used to identify those managers who belong to the TMT.

The paper's aim is to predict turnover in networks of elite individuals identified on the basis of interlocking directorship data (this study is based on the data from 1975, 1980 and 1986) from the two largest business groups in Sweden (the Wallenberg group and the Handelsbank group). The theory put forward to explain turnover here states that the TMT of a business group possesses a combination of financial and industrial experience, that this branch heterogeneity represents a resource, and that a socialising strategy of control serves to counteract the potential conflicts which this heterogeneity tends to produce. The major contributions of the paper are the idea of countervailing forces affecting turnover, the application of turnover to elite networks and use of an operational definition of the TMT based on explicit group considerations.

The paper is divided into five sections. The first section describes the demographic perspective and deals with questions of turnover, heterogeneity and the definition of TMT that the paper is addressing. The second section examines turnover in Swedish business groups, first introducing the two largest Swedish business groups, and then developing a theory to explain TMT turnover in these business groups. The third section takes up the method by which the members of the TMTs of the business groups were identified, the data that were obtained and the measures that were employed. The fourth section presents the results of the analysis. The last section concludes the paper and considers

possible implications for research and offers a simple rule of thumb for management when composing a TMT.

2 THE PERSPECTIVE OF ORGANISATIONAL DEMOGRAPHY AND ITS APPLICATION TO TMT TURNOVER

A study of TMT composition using the perspective of demography has to be based on certain arguments concerning issues of both ontology and methodology. This section is devoted to the arguments a) that organisational demography should retain its objective character, b) that the study of TMT and its composition, i.e., turnover, is important since TMTs and the composition those have affect the organisation and can be regarded as a strategic resource for the organisation, c) that it is partly a substantive theoretical problem to determine which demographic dimensions that are relevant in predicting turnover, and finally d) that the operational definition of a TMT should be based on team characteristics, making it possible to study elite's in non-formal organisations such as networks and the forces behind their compositional characteristics.

The objective character of demography

Ever since the time of Malthus, researchers in economics have been interested in demographic variables. It was Pfeffer (1983) that has introduced demographic considerations into organisation theory as a perspective of its own after considering demographic variables in a number of empirical studies (McCain, O'Reilly and Pfeffer, 1983; Pfeffer and Leblebici, 1973; Pfeffer and Moore, 1980). Since Pfeffer's (1983) classical work, demography of organisations became a rapidly expanding field that an organisational perspective focused on culture and organisational economics has been.

The rapid expansion of demographic studies in organisational science not only can be attributed to the long-established tradition, but also to the possible use of quantitative and objective measures well suited to statistical analysis, as well as to employable data with few problems of access (cf. Stewman, 1988). All this have fitted with the Anglo-American research tradition of explanation and prediction based on use of statistics and statistical techniques, finding strengths in the use of such clearly objective variables as tenure, age and gender. Pfeffer (1983, p. 301) indicates that, whereas organisation theory often employs variables that in a methodological sense are subjective - specifically such conceptual constructs as norms and roles - demographic variables are facts which it is therefore possible to observe. However, the shortcoming of the demographic perspective is a conception of the individual through the prism of the demographic characteristics the perspective takes into account, moreover the intervening variables - such as communication, social integration and conflict- the subjective ones are still concealed in the darkness of the black box (cf. Bacharach and Bamberger, 1992; Lawrence, 1997; Pettigrew, 1992; Priem, Lyon and Dess, 1999).

However, recent research has been concerned with opening up this black box through the study of the intervening processes, measuring both direct effects and indirect effects of a group's demography (Ancona and Caldwell, 1992; Ancona, 1990; Kirkman and Shapiro, 2001; O'Reilly, Caldwell and Barnett, 1989; Pelled, 1996; Simons, 1995; Smith *et al*, 1994; Umans, 2008). Pfeffer's (1983) contention that the variance explained by the intervening process variables should be small has received mixed support, Smith et al (1994) obtaining negative support and Ancona and Caldwell (1992) positive. Yet the main objection that Pfeffer (1983) has against focusing on the process is both epistemological, involving the difficulties associated with observing subjective variables, and methodological, concerning the problem of accessibility. In the research referred to above, arguments for the possibility of observing intervening variables such as social integration (Smith *et al*, 1994), debate (Simons, 1995) and relative cohesiveness of groups (O'Reilly, Caldwell and Barnett, 1989) have largely been lacking. Despite this, the epistemological objection only casts doubt on the possibility of measuring the intervening variables, not on the impact these can have. In fact, it is impossible to comprehend the impact of demographics without theorising about the processes in which demographics are an input and turnover, for example, is an outcome. The present paper accepts the Pfeffer arguments for the strong rule of organisational demographics. The paper theorises about intervening variables generally and examines empirically the effect of demographic variables.

The importance of TMT and its composition

In the attempt to explain various organisational outcomes, organisational demographics could well concern itself with the demographic composition of the entire organisation. However, most of the efforts to explain organisational performance are focused on the top management team (Daily and Dalton, 1995; Elron, 1997; Ely and Thomas, 2001; Hambrick and Mason, 1984; Hambrick and

D'Aveni, 1992; Heijltjes, Olie and Glunk, 2003; Murray, 1989; Norburn and Birley, 1988; Priem, 1990; Smith, *et al*, 1994; Wagner, Pfeffer and O'Reilly, 1984), on strategic change (Keck and Tushman, 1988; Wiersema and Bantel, 1992), on innovation (Ancona and Caldwell, 1992; Bantel and Jackson, 1989) and on board composition (Westpal and Zajac, 1995; Zajac and Westphal, 1996). The rational behind such a focus is that the TMT and its composition influence the organisation. At this stage of research, the idea that top management makes a difference is becoming less an assumption (Meindl, Ehrlich and Dukerich, 1985) than an empirical conclusion, one that a variety of empirical studies have supported (e.g., Kosnik, 1990; Norburn and Birley, 1988; Smith, Carson and Alexander, 1984; cf. Furtado and Karan, 1990), especially from a strategic choice perspective (Eisenhardt, 1989; Wiersema and Bantel, 1992). Such intriguing conclusions as the following have been drawn: *"...it would appear that environmental determinism and strategic choice are not ends of a continuum but, rather, separate dimensions."* (Eisenhardt and Schoonhoven, 1990, p. 525). In these terms, there are certain degrees of freedom that a TMT can access, making the quality of the TMT an important variable for the organisation.

Recognising the importance of the TMT to the outcome of an organisation makes it possible to treat the top management team as a definite resource for the firm involved. The composition of such a team in terms of age, tenure, social background, experience, network connections, education, and the like can be considered as a quality of the TMT as a whole. Not only the individual members, but also the overall composition of the TMT can thus be regarded as a valuable and scarce resource that would be hard for competitors to imitate (Barney, 1986, 1991; Castanias and Helfat, 1991). Consequently, the composition of a TMT can be considered a strategic variable.

However, treating the composition of a TMT as a strategic variable assumes a causal link between strategy and the composition of the TMT, a matter which can be questioned (cf. Mittman, 1992). For example, the strategy and structure of an organisation, together with the composition of its external and internal labour pools (Haveman, 1995), determine the organisation's demographic composition. The demographic composition of an organisation can in turn influence strategy and structure of the organisation. Thus, determining causality can be a definite problem present in demographic studies. Bantel and Jackson (1989), for example, found innovation and top management team composition, just as Keck and Tushman (1988) found strategic reorientation and top executive team composition, to be correlated. Is it this team composition, then, that determines innovation and reorientation, or is it the other way around? Or is it perhaps, as Michel and Hambrick (1992) assert, a reinforcing spiral? Keck and Tushman's (1993) findings can be interpreted as supporting the latter view, although they primarily concern the influence of reorientation upon changes in TMT. To make the argument short, a TMT and its composition - despite certain causality problems - can be considered as a strategic variable for the organisation, thus merit scientific concern.

Demographic heterogeneity and turnover

The composition of a TMT can be influenced by the TMT itself. Westphal and Zajac (1995), and Zajac and Westphal (1996), showed that powerful CEOs tend to influence the composition of the board through promoting directors that are demographical similar to them. This result is consistent with the hypothesis, which Tsui and O'Reilly (1989) call 'the similarity-attraction paradigm,' that persons prefer individuals who are similar to themselves. One can suppose that human groups generally have a tendency to become homogeneous and to regard heterogeneity as disturbing (Jackson *et al*, 1991). One explanation of this general tendency of similarity-attraction is contained in self-categorisation theory (Turner, 1987), which Tsui, Egan and O'Reilly (1992) and Westphal and Zajac (1995) have applied to demographic studies, arguing that individuals shape their self-identity through categorisation and that in the pursuit of high self-esteem they prefer individuals who are similar to them in terms of these categorises. Another explanation of similarity-attraction is that individuals minimise their transaction costs in relationships through interacting with similar individuals, thus reducing the efforts necessary for gaining understanding. This is expressed by Kanter (1977, p. 58) for example as follows: "Social certainty, at least, could compensate for some of the other sources of uncertainty in the tasks of management."

A central hypothesis in demographic studies of organisations is that homogeneity, i.e., sameness with respect to certain dimensions, creates stability and ease of communication (Priem, 1990; Smith *et al*., 1994; Zenger and Lawrence, 1989) due to individuals' involved sharing similar experiences (Blau, 1977). Heterogeneity, in contrast, appears to readily create conflicts, reducing the ability to interact (Kirchmeyer and Cohen, 1992; Kosnik, 1990; Sutcliffe, 1994), although at the same time it is often associated too with such forms of change as innovation (Bantel and Jackson, 1989; cf. Watson, Kumar and Michaelsen, 1993), strategic change (Keck and Tushman, 1988; Wiersema and Bantel, 1992) and turnover (Wagner et al., 1984).

According to 'the similarity-attraction paradigm', as well, both strategic change and innovation are associated with heterogeneity. Keck and Tushman (1988) found support for the hypothesis that reorientation, representing a change in both strategy and structure, increases heterogeneity. The causality involved does not have to apply to both aspects of reorientation, however, since heterogeneity could well be caused, for example, by a change in the internal labour pool brought on by structural change. Such causality supports in any case there being a relationship between heterogeneity and change. In like manner, Bantel and Jackson (1989) obtained support for the hypothesis that innovativeness and functional heterogeneity are correlated. Their conclusion is as follows:

> *"On the one hand, heterogeneity has a positive effect on innovative and creative decision-making. On the other hand, heterogeneous (and thus, innovative) groups are subject to higher turnover, presumably because members find the increased conflict and decreased communication to be stressful."*(1989, p. 118)

Turnover and heterogeneity have been hypothesised to be correlated as well, studies such as those of Godthelp and Glunk, 2003, McCain, O'Reilly and P-feffer (1983), Wagner et al. (1984) and Wiersema and Bird (1993) being confirmative of this, whereas Wiersema and Bantel's (1993) study, for example, is disconfirmative. However, an important theoretical question concerns individual characteristics that tend to trigger turnover. Wagner et al. (1984) found that similarity in date of entry and age correlated positively with turnover, which has also been supported by the findings of Godthelp and Glink (2003). This is a cohort aspect of turnover that could be thought to apply to any type of organisation. As already indicated, a TMT composition characterised by heterogeneity, for example functional heterogeneity (Bantel and Jackson, 1989) or heterogeneity in years of education (Smith, *et al*, 1994), can be a valuable resource for a firm, partly due to the cognitive conflicts it produce (Amason, 1996). Countervailing forces of integration, i.e., of homogenisation, might likewise be found within the organisation. These could prevent the heterogeneity from triggering turnover and allow heterogeneity to be retained as a resource.

The homogeneity which groups tend to show have been suggested by Murray (1989) and Michel and Hambrick (1992) to be a phenomenon similar to that of the Ouchi'an clan. The broad and strong interaction within a clan and the long tenure of its members point towards group homogeneity, making homogeneity and clan membership, therefore, appear similar. Although such similarity can be considered to be basically valid, it can only be assumed to be found on those dimensions that constitute the clan. Obviously, clan members cannot be alike on all dimensions conceivable. The overriding problem is to identify those dimensions that are relevant when cohort similarity creates cohesion. Murray (1989) appears to conclude that it is not homogeneity per se, but functional homogeneity in particular, that explains the performance results obtained in his sample of oil companies. In another working group, in which functional heterogeneity was an imperative from the start, Murnighan and Conlon (1991) found for British String Quartets that homogeneity on dimensions such as age, sex and school background were positively correlated with success. Contrary to their prediction Alexander et al (1995) found a downward curvilinear relationship between heterogeneity in employment status and turnover in a sample of US nursing staffs, concluding "...that demographic heterogeneity does not operate similarly across all demographic attributes." (p.1477) This indicate one possible explanation to the reported (West and Schwenk, 1996) nonfindings between an aggregate measure of 12 variables measuring demographic homogeneity and performance. Demographic variables probably need to be treated with more care than summed up into one single measurement. Thus, it can be asserted that a theory predicting a certain relationship between heterogeneity and turnover has to consider the organisation in question, i.e., it is partly a substantive theoretical problem to determine which dimensions that are relevant in predicting turnover.

To summarise, human groups have a tendency towards homogeneity due to the shaping of self-identity and ease of understanding, thus creating groups characterised by stability. As an opposite, heterogeneity creates conflict and stimulate turnover but tends to be correlated with innovation due to the diversity of perspectives in the group. However, we argue that the general tendency of heterogeneity triggering turnover has to consider the specific group and its context. It is conceivable that there exists groups such as TMTs were heterogeneity is a valuable resource that can be retained through countervailing forces of integration, i.e., of homogenisation, thus preventing heterogeneity from triggering turnover.

Operationalisations of TMTs

Finally, turning to a methodological problem with ontological implications in TMT studies, one can note that studies of the team demographics of top management have concentrated largely on formal organisational aspects (Pettigrew, 1992), with the consequence that non-formal organisations have been neglected and TMTs have in large been only formally defined. Since it is difficult to verify the existence of a team in the true sense in any organisation (Hambrick, 1994), it generally is assumed that top management represents a team. Empirically, three different methods have been used to identify teams. One has been to define the TMT in terms of members' formal titles, such as those of vice president or higher (Wagner, Pfeffer and O'Reilly, 1984), as well as secretary and treasurer (Keck and Tushman, 1993). Defining teams in this way is quite arbitrary, however. Eisenhardt and Schoonhoven (1990) adopted a more qualitative approach, defining as a founding team those persons who were founders or were working full-time as executives at the time of founding. Such a method has the weakness of neglecting the importance of informal organisations (Hambrick 1994). A second method of identifying the TMT is to simply transfer the problem from the researcher to the CEO, letting the latter identify the TMT given either more thorough instructions (Bantel and Jackson, 1989; Boeker, 1997) or more general ones (Amason, 1996; West and Schwenk, 1996; Amason and Sapienza, 1995; Smith *et al*, 1994). This method has the disadvantages of a person who is not trained scientifically making the observations, and of its being impossible to measure the reliability of the observations since independent observers are lacking. A third method, used by Weirsema and Bird (1993) and partly by Jackson et al (1991) and Umans (2008), considers the frequency of meeting in executive committees to document the existence of a TMT. This method can be regarded as superior since group membership is determined by a dimension, i.e., frequency that is relevant in defining groups. It has the additional advantage of being consistent with the assumption of interaction that the similarity-attraction paradigm makes.

The focus on formal organisations has withheld attention from organisations that are not formal in character but have an elite group equivalent to a TMT, as exemplified by certain kinds of networks. In a pioneering paper, Pfeffer and Leblebici (1973) analysed the moving of executives to a new role or location as one form of interorganisational communication and coordination. Thus considered, there might appear to be no major ontological or methodological differences between analysing formal organisations and analysing informal organisations such as networks of organisations or persons. As Useem (1984), for example, has shown a network of organisations can be governed by an elite group of individuals, just as a formal organisation can be. To be sure, the top management that constitutes a team is as much a matter to be examined empirically as is a network of individuals that constitutes a team of a larger network. In examining non-formal organisations such as networks, however, the researcher cannot rely on formal positions or even on CEO opinions, but is forced to define a TMT theoretically.

In summary, based on the self-attraction paradigm, one of the relevant factors in identifying TMTs is frequency of interaction, which has the additional advantage of being possible to apply to non-formal organisations governed by an elite group equivalent to TMTs.

Concluding this section, we have argued for a demographic perspective using objective variables predicting turnover in TMTs on the general notion of heterogeneity, but with a consideration of the existence of countervailing forces in specific groups, such as elite groups of networks, and with the operational definition of a TMT being based on team characteristics. In the following, a specific type of network organisation that of business groups, is examined in this way.

3 TURNOVER IN SWEDISH BUSINESS GROUPS

In contrast to the UK and the US, Sweden has constellations of corporations, quite similar in certain respects to the Keiretsus of Japan, in which several corporations are connected through relations of ownership, interlocking directorates and financial service. The individuals who interlock and connect the boards of the various corporations in the group represent the group's elite; an elite that can be regarded as equivalent to the TMT of a single corporation, and in a similar vein represents a valuable resource for the group. The composition of this elite group can thus be assumed to be of importance of the group. The aim in this section is to formulate predictions concerning turnover based on the assumption that business groups possess as a group resource a combination of financial and industrial experience and, as a force counteracting the conflict-producing force of this branch heterogeneity, a socialising strategy aimed at control. The section starts with a brief account of Swedish business groups, since the reader may not be acquainted with them. It concludes with the deducting of

various hypotheses based on a demographic perspective, hypotheses predicting member turnover in the elite of the business groups involved.

A Digest on Swedish Business Groups

The Swedish industrial economy is dominated by some few business groups, each consisting of industrial and/or financial corporations connected through relations of ownership, interlocking directorates and financial service. Two groups of this sort, the Wallenberg-group (W-group) and the Svenska Handelsbank-group (SHB-group), are of special importance in Sweden since they in some sense controlled corporations that represented roughly 50 per cent of the stock value of all the corporations listed on the Stockholm stock exchange in the 90'ies and still dominate the Swedish economy.

Both groups are very old, having been created during the depressed years in the 1920s and 1930s (Sjögren, 1991). Their evolution has been viewed as a corporate response to financial problems and to problems of ownership (Berglöv, 1994; Collin, 1998). The groups have been centred around two large banks, Stockholms Enskilda Bank (the W-group) and Svenska Handelsbanken (the SHB-group). Although Swedish banks, as opposed to their German counterparts, have never been allowed to possess shares in industrial corporations, much of the early history of the two Swedish business groups is similar to that of their German counterparts (Chandler, 1990). Typically the groups contain multinational corporations, exploiting raw materials from Sweden, such as iron and wood, and utilising technical innovations. For example, in the year of 1986 (appendix 1.), the groups contained two similar corporations, Stora (belonging to the W-group) and SCA (belonging to the SHB-group), which utilised raw material from the large forests in the northern and central parts of Sweden. Others utilised technical innovations, for example Aga (gas, belonging to the SHB-group) and Astra (pharmaceuticals, belonging to the W-group). The corporations tend to be highly internationalised. For the year 1990, the non-domestic sales of the 20 largest corporations in the two groups were found to be 78 percent (median: 82) and their non-domestic employees to represent 48 percent (median: 57) of their working force.

The strong ties the member companies once had to the two banks have in large part been replaced by strong ties to two investment corporations: Investor (W-group) and Industrivärden (SHB-group). The W-group has been managed through control of "Investor" by the family heads of the Wallenberg clan, who until the 80's were Jacob and Marcus Wallenberg, then being governed by the new family head, Peter Wallenberg, son of Marcus Wallenberg, and recently a fourth generation assumed the power. The SHB-group has no such ultimate capitalists as the clan Wallenberg. Rather, it is much more nebulously based, cross ownership and historical relations playing a major role. In both groups interlocking directorates form a closely knit network linking all the corporations involved. The members of the boards are generally not employed by the corporation in question, the distinction between insider and outsider, so important in UK and US, being a non-issue in these groups, and in Sweden at large. The two business groups are very distinct, being clearly separated. There has only been one corporation, namely Ericsson, that has been shared by the two groups, each of which has an equal share of the votes and an equal number of directors on the board of that company. Each of the other corporations in the two groups belongs to either the one group or the other but not to both. In a manner similar to the inclusion of the member corporations within a single group, those persons linking the corporations of the one business group through interlocking directorships do not have extensive relations with persons or corporations belonging to the other group. Thus, the two business groups are quite distinct from each other, with very few overlaps. As opposed to the Japanese Keiretsu, the intercorporate trade is very slight.

The groups have been very stable in their structure during the whole 1900 and they appear rather similar today (cf. Collin, 2007), having the characteristics of highly international corporations controlled by a financial centre, utilising interlocks and ownership as control devices. The changes over the years consist mainly in some corporations being divested and some being added to the structure.

In sum, the two business groups, although lacking legal identity, build strongly on ownership ties and interlocking directorates, the investment corporations serving as centres. They divide a considerable part of the Swedish industrial economy into two separate camps. The elite of the interlocking directorates of these two groups can be regarded as conceptually closely comparable to the top management teams (TMTs) of formal organisations, making it only confusing to invent a new term for them, such as e.g., Top Directors Team (TDT). Both can be seen as being subjected to the same forces of inclusion and exclusion in connection with demographic composition.

A Demographic Explanation of Membership Turnover in Business Groups

In terms of the 'similarity-attraction paradigm', turnover can be explained on the basis of heterogeneity, and is treated as an attribute of the TMT (McCain, O'Reilly and Pfeffer, 1983). The heterogeneity possibly found in the original or the earlier composition of a group tends to decline through members who are dissimilar to the majority being separated from the group. Nevertheless, those dimensions with heterogeneity that trigger separation, i.e., the turnover of group members, should be identified. In this section, identification of the dimensions triggering turnover in the TMTs of the two Swedish business groups is dealt with, eight hypotheses being considered.

An obvious cause of turnover in elite networks is that of individuals' leaving the TMT due to retirement. The general tendency of elderly employees to have lower voluntary turnover compared to younger ones is thus not applicable on elite networks since they can be assumed to consist of rather old people. Additionally, younger members of the elite network presumably have no incentive to leave since there are no real alternatives to the group due to the fact that they are on the edge of the society. Accordingly, considering the specific group in question, the first hypothesis expresses the expectation that an increase in age will increase a person's probability of leaving the team.

H$_1$: Age is positively related to turnover.

The second hypothesis is the general cohort argument that the individuals belonging to a given generation tend to share similar norms and similar perceptions of reality (Wiersema and Bantel, 1992; Wiersama and Bird, 1993), this fostering cooperation. Differences in age imply difficulties in communication and understanding, leading to turnover of individuals who are dissimilar.

H$_2$: Age heterogeneity is positively related to turnover.

However, as previously argued, one has to consider the specific organisation. For one of the two Swedish business groups, the Wallenberg group, the fact that a capitalist family is the controlling principal creates a dynastic pattern which could be expected to result in a heterogeneity of age. Indeed, the age distribution in the sample that is to be analysed is skewed, the heterogeneity of age being greater for the W-group than for the Handelsbank group.[1] If the most deviant values on the age variable for the Wallenberg group are deleted, the difference in heterogeneity between the groups disappears almost entirely. This can be attributed to the Wallenberg group's being a family group in which one or two family members are installed early and leave late. In 1975 the third and fourth generations of the Wallenberg family belonged to the group. In 1980 the oldest brother in the third generation had died, and in 1986 the entire third generation was deceased. The first individuals from the fifth generation were recruited after the death of those in the third generation. Such patterns are presumably common in dynastic groups. One obvious explanation of this dynastic pattern is the family's need to educate the coming generations for the possible role of assuming the function of family head. Another explanation, based on the 'similarity-attraction paradigm' and analogous to the socialising strategy of control through rotation (Edström and Galbraith, 1977), is that an early recruitment to the group has the function of bridging the generation gap. Generational identity, just as is the case of cultural identity in international organisations, needs to be replaced by an organisational one, i.e., by family identity that fosters cooperation and control of the group. This serves to explain why one person tends to stay so long in the position of being family head. This reflects not only his being the pater of the family, which seems the most obvious explanation, but also the need of socialising younger generations so as to reduce generational discrepancies. The skewed age pattern makes it unwise to consider only persons below the age of 65, as Wiersema and Bantel (1992, 1993) did, for example, since here it excludes several of the most important persons in one of the groups. Thus, we expect that family membership resists turnover.

H$_3$: Family membership is negatively related to turnover.

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[1] Heterogeneity at the organisational level was measured by the coefficient of variation (standard deviation divided by the mean). There appears to be consensus that at the organisational level the heterogeneity of continuous variables should be measured in this way (Allison, 1978; Hambrick and D'Aveni, 1992; Keck and Tushman, 1988; Murray, 1989; Wagner, et al., 1984, Wiersema and Bantel, 1992). A t-test on the individual age data showed a significant difference (<.05) between the two groups on the age-variable. No significant differences on any other variables were found.

Returning to demographic aspects, the fourth hypothesis relates to differences in professional outlooks. Similar to the turnover effect of functional heterogeneity (Bantel and Jackson, 1989), experiences from different branches can be assumed to create different attitudes, norms and perspectives (Jackson *et al*, 1991). Since individuals according to the similarity-attraction paradigm can be expected to recruit similar individuals and to expel dissimilar, one could readily hypothesise that turnover would be triggered by heterogeneity in branch experience. In terms of strategy, there are definite arguments for there being an effect of this sort. The origin and survival of Swedish business groups have been viewed as being partly based on the success of such groups in finding solutions to corporate problems of credit supply and ownership control which would call for particular communality in matters of financial strategy. The organisational structure of the two groups considered is indeed more similar (see appendix 1.) to that of the financial holding company form (H-form), consisting of loosely coupled corporations whose major inter-transactions are the transfer of capital and of top management, than to that of the industrial functional form (F-form) or of the multi-divisional form (M-form), which both involve operations as a whole being more closely linked. Through particular emphasis being placed on the financial experience of their members, the selection of members of the TMT in Swedish business groups could, according to this line of reasoning, be expected to reflect a desire for a branch homogeneity directed towards the financial part of the economy, i.e., banks and investment corporations. The dominance of financial experience in the TMT that the branch homogeneity creates would in turn enforce the group's financial strategy.

However, there is a rather different logic that might be expected to apply to business groups, thus emphasising the need of considering the organisation in question when deducing predictions on demography. Ever since Hilferding (1910) wrote of the growing enterprises in Germany in which banks and industrial corporations were intertwined, the finance capital to which he referred has been regarded as a form of cooperation between industrial and financial corporations, something much resembling what is found in the two groups under consideration. If, as already indicated, these business groups represent a solution not only to financial problems but also to corporate governance problems, then it can be regarded as rational for industrial and financial experience to be mixed.

The TMT of a business group can be expected to represent the whole group, both internally and externally, and has therefore to reflect the cooperative trait between industrial and financial corporations. Due to this symbolic consequence of diversity (Hambrick, 1994; Ely, 1995; Milliken and Martins, 1996) heterogeneity in branch experience cannot be expected to trigger turnover. On the contrary, a decrease in heterogeneity in branch experience would insipid the symbolic impression of cooperation, and would therefore be avoided through selection and turnover.

Another consideration suggesting that branch heterogeneity does not trigger turnover involves the dynamics that heterogeneity creates. The business groups and their corporations, having been in business for at least 60 years, could be expected to have brought competitive advantage to the corporations of which they are comprised. According to studies of the relation between heterogeneity and performance, heterogeneity is related to innovation, high performance, high turnover (Murray, 1989) and growth (Eisenhardt and Schoonhoven, 1990). In the business groups in question, branch heterogeneity might therefore be expected not only to reflect the composition of financial and industrial capital, but also to be a competitive resource providing a balance between a financial and an industrial orientation to corporate governance. Thus, branch heterogeneity might best be seen as a coveted quality of the group and not something that would trigger turnover. In fact, if branch heterogeneity is indeed that which is desired, one would expect that a person with a similar branch experience as others who were in the group would be avoided as a member or be considered for replacement. In these terms, branch heterogeneity would be expected to have a negative triggering effect on turnover.

H$_4$: Branch heterogeneity is negatively related to turnover.

Functional heterogeneity has been shown to readily lead to conflict (Kosnik, 1990), reducing possibilities for communicating and interacting (Sutcliffe, 1994). The business groups can be thought to possess a centripetal force in the sense of homogenisation occurring in the sense of socialisation counteracting and thus reducing the conflicting and centrifugal force of branch heterogeneity. Accordingly, the fifth hypothesis concerns tenure, operationally defined as the proportion of one's career spent within the group. An integrating mechanism within a business group is the learning and transmission over time of norms and values, i.e., the indoctrination of ideology. One way of operationalising such a concept is by the use of the variable 'Tenure', measuring the length of exposure (Wiersema and Bird, 1993). However, such an operationalisation cannot separate age and indoctrination. Two persons, each with 10 years of tenure, but one of them with 20 years of additional experience from another organisation, and the other with the 10 years of experience in the group and

nothing more, differ in their degree of involvement in the organisation. It could be expected that the one with experience only from the current corporation would be more aligned to the corporate norms than the one having only one third of the corporate experience gained in the corporation under consideration. Thus, the transmission of norms and values is not simply a matter of length of service, but also of the proportion of the individual's career spent in the group. Focusing on socialisation thus rules out the alternative explanation, offered by Jackson et al (1991), that the members of the group are highly paid for performance and therefore are induced to tolerate conflict. The heterogeneity argument states here that individuals with a similar socialisation history in terms of having spent a similar proportion of their career within the group, tend to stay.

H₅: Heterogeneity in the proportion of one's career spent in the group is   positively   related   to turnover.

Turning to those individual characteristics of earlier origin, one might well expect such factors as class origin and education to influence turnover. Differences in the social origin of an individual lead not only to different experiences a person has had but also in different behaviour and manner of communicating. Thus, one might well expect a higher turnover for those most dissimilar in origin.

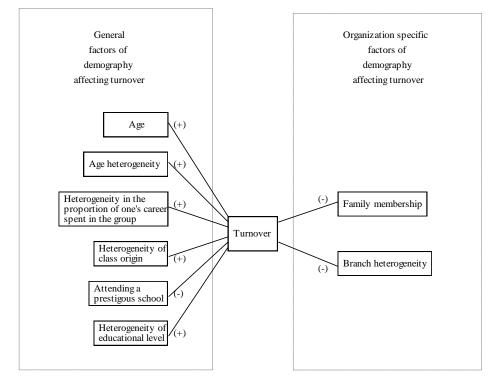**H₆**: Heterogeneity in class origin is positively related to turnover.

In Japan, education measured in terms of the prestige of the university attended has been shown to have impact on turnover (Wiersema and Bird, 1993). One might well have similar expectations for Sweden. Persons who have been educated at the same university tend to have had similar experiences and constitute according to self-categorisation theory an easily knowledgeable category in which people can be classified. Sweden also does have one prestigious private business school and one prestigious institute of technology, former students there presumably easily feeling an affiliation with the elite of Swedish society. Educational level could have a similar influence, making those educated at the university level dissimilar in experience and attitudes to those of lower educational level.

H₇: Having attended a prestigious business school or institute of technology is negatively related to turnover.

H₈: Heterogeneity in educational level is positively related to turnover.

Turnover in what amounts to the top management team in both of the Swedish business groups is thus predicted here to be influenced by the general factors of demography such as age, heterogeneity of age, the heterogeneity in the proportion of one's career spent in the group, and heterogeneity in social origin and educational characteristics. Turnover was also predicted to be influenced by organisational specific factors such as family membership and branch heterogeneity.

Figure 1: Eight hypothesis on turnover

4 METHOD

The TMT-equivalent for a Swedish business group can be constructed by the use of network analysis. The method section begins with a discussion of this and ends with an account of how the variables were constructed and how the data were collected.

The construction of a 'network' TMT

The two business groups in question, although frequently referred to in the Swedish press, do not exist as formally established entities. Before a business group and the equivalent to a TMT within it could be analysed, they had to first be identified. An initial step to doing this empirically was to select, from Sundqvist's (1986) systematic account of ownership links between corporations in Sweden, a total of 38 corporations listed on the Stockholm stock exchange that appeared on the basis of having large voting shares[2] to belong to one or the other of the two groups.

Data on the persons elected as board members at the annual meetings of shareholders of the corporations selected was obtained for the years 1975, 1980 and 1986. There are other persons on Swedish boards of directors, but they are excluded in this data set since they are elected by the white and blue collar unions or the government, thus not being representatives for the owners. The reason for selection to the board being used as a criterion for identifying TMT members is that the board of directors is considered to be one of the most important arenas for influencing a corporation (Tricker, 1993). Other important arenas, in particular industry-wide organisations and other pressure group providing political representation, would have been inferior alternatives due to the strategic importance that boards of directors have (cf. Stockman, Ziegler, and Scott, 1985; Useem, 1984). A rather long time interval between the measurement points was selected since the groups and their members seem rather stable. The networks were originally constructed to show the stability of the two business groups (as reported in Collin, 1990). The differing periods of time between the successive measurement points, 5

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[2] Sweden has had and still has different voting rights attached to shares. Old corporations, such as Ericsson, had as great voting differences as 1 - 1/1000 vote per share. The largest single owner in 1986, Industrivärden, had an equity share of 3.1 per cent but 22.3 per cent of the votes, whereas 48.1 per cent of the equity was owned by non-Swedes, who however had only 0.5 per cent of the votes. Thus, the voting shares, not the share of equity, is a relevant measure of influence.

years and 6, can be assumed to not have had an appreciable impact on the results.[3] Since neither the network analysis nor the descriptive statistics indicate any radical change in the groups over time, this difference appears to have had no disruptive effect.

From the sample of individuals who for the years 1975, 1980 and 1986 were on the boards of directors of the 38 corporations selected (n=237, 224, 205 respectively), the set of those persons who had positions on two or more boards was drawn (n=56, 73, 71) so as to provide a means of examining the interconnections between the corporations. A network analysis (not reported here, but available upon request), with hierarchical clustering using lamda sets (Borgatti, Everett and Freeman, 1992), confirmed there being clusters of two distinct sets of individuals, taken to represent the upper-echelon individuals of the two business groups.

Identification of the equivalent of a top management team in each was carried out using two criteria so as to construct a core set of persons from the sample of interlocking directors of the 38 corporations. The first criterion was that these company board members were all to have connections with each other, such that each of them met with each of the others on at least one board. Formally, it meant that the network had a density of one (1). The second criterion was that, under the restriction of density = 1, the frequency of connections inside the core network was to be maximised. The rationale for use of these two criteria was that a TMT was assumed to be a closely knit network of high density in which there were as many opportunities as possible for interaction. Other clustering techniques that were possible were unable to produce networks with high frequency of member contact under the restriction of the density equalling one (cf. Borgatti, Everett and Shirey, 1990). The density criterion was crucial since it is hard to imagine a genuine team in which some of the members never meet. The frequency criterion was based on the assumption that the team identity of the individuals depends to a large extent on the number of interactions (cf. Weirsema and Bird, 1993). This clustering procedure, reported in Collin (1990), created networks consisting of 4, 8, and 11 individuals for the Wallenberg group, and 6, 11 and 13 individuals for the Svenska Handelsbank group for the years 1975, 1980 and 1986, respectively. These two groups of individuals are distinct and separate from each other. Only a few members of the respective groups met with members of the other group. There were some few corporate boards where this could occur, for example on the board of Ericsson, the ownership of which is divided equally between the two business groups.

Data and Measurements

The dependent variable 'Turnover' was registered in 1980 and in 1986 as having either occurred or not occurred. In the present context, turnover signifies that an individual, even if excluded on the basis of the two criteria employed, may nevertheless have been present in the network of interlocking directors and be a member of one or several of the boards. Turnover thus represents not absence from the network but absence from frequent interaction with those members who are characterised by a high frequency of interaction, i.e., with those members belonging to the core network that constitutes the business group's TMT. This is a less rigorous indication of turnover than that which applies to a formal organisation in which absence means that the individual has left some formal position, even though one may still be present within the organisation. Yet, as Tsui, Egan and O'Reilly (1992) argue, turnover is a radical change in an individual's attachment to the organisation, psychological disattachment being less dramatic. Thus, turnover in an elite network falls in between these two extremes.

However, a more important point is that within the network the criteria of turnover are relational, exclusion of an individual from the TMT changing the network characteristics of all the individuals still included, as well as the possibilities for additional individuals being included. This means that turnover in terms of exclusion from the network is an empirical representation of there being lesser possibilities of interacting with the closely knit members of the top management team. An alternative to this dichotomous approach is to use the concept of team involvement, as measured for example by distance from the network centre. Although it is tempting to avoid the difficulties connected with dichotomous variables through use of continuous variables, the conceptual gain is small. Both logically and methodologically, team involvement requires the concept of a centre to which the individual's involvement can be related. The creation of a centre of this sort requires somewhat different

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[3] The selection of 1986 as the last year was due to its being the first year for which extended ownership data was available, making selection of the corporations to be studied a better informed one than it would otherwise have been. It would have been wise to take five-year steps backwards. However, the magic of the decade seems to have been the reason for selecting the years 1975 and 1980. A rational argument is that my data and results were easier to relate to other investigations of the Swedish economy since they too are restricted to the "decade magic".

assumptions and calls for clustering techniques, of which the one described below represents one possibility.

Demographic data on the individuals was collected from the annual reports of the corporations and from a Swedish publication 'Who Is That?' (Vem är det?, 1981; Vem är det?, 1985).[4] The data concerns those individuals present in the business groups in 1975 and in 1980, respectively. Since some of the individuals were present both in 1975 and in 1980, the population tested (N=29) is larger than the sum of the individuals involved (S=23).

Branch experience was divided into financial, industrial and other experience. The category 'Other experience' consisted of governmental service in different forms, research appointments and working in private organisations supporting trade and industry such as the Swedish Employers' Confederation. Functional heterogeneity, being the equivalent to branch heterogeneity, is seldom defined theoretically but arbitrary divided into traditional functions such as marketing, production, etc. The distinction between financial and industrial experience is conform to the theory and sufficient for the purpose of the theory of financial capital (Hilferding, 1910). It implies that financial experience is gained in financial organisations and industrial in industrial corporations. A person working in a financial department of an industrial corporation is considered as gaining industrial experience, whereas a person working in an investment corporation, mainly on the board of directors some one of the corporations it owns, is considered as gaining financial experience. Although such a categorisation is becoming less and less adequate due to increasing separation between the financial and the industrial operations of large corporations, e.g., through the creation of internal banks, it was still a feasible categorisation in the 70s. Since nearly all the persons in the sample gained the major part of their experience prior to the 80s, this categorisation was regarded as relevant. As a proxy for branch heterogeneity, financial experience measured as Financial experience/(Financial + Industrial + Other experience), that is, as the proportion of working-life experience gained in financial corporations, was selected. One could equally well have taken 'Industrial' experience in place of 'Financial' experience in the above ratio since industrial and financial are almost mutually exclusive, the category 'other', representing basically governmental or scientific service, being only a small category.

Tenure was measured by the variable 'Years Spent in the Group' (YSG), defined as the number of years the individual had been employed by one or more of the corporations belonging to the business group. In both groups the individuals in question had been in the group for some 20-25 years. As already indicated, such a measure has a serious deficiency in its reflecting both group indoctrination and age (the Pearson coefficient being 0.66, p <.000 for 'Age' and YSG). One way of removing the age component is to divide YSG by the variable 'Years of Working Life', defined as the difference between the present age and the age at first employment. This procedure creates the variable 'Proportion of one's Career Spent in the Group' (PCL), measuring the proportion of the individual's working life spent in corporations belonging to the business group (where the Pearson coefficient for 'Age' and PCL is 0.02, p=0.902).

Heterogeneity on the individual level was assessed by a network-equivalent measure of similarity, involving each individual's distance to the others in the network, a measure proposed by Wagner et al. (1984). The following expression defines the i-individual's distance:

$$D_i = \min_S \left[\frac{1}{n} \sum_{j \in S} (x_i - x_j)^2 \right]^{1/2}$$

where i and j belongs to a subgroup S, defined as all subsets with a largest integer size of (n+1)/2. An advantage of this measure is that it considers the structure of the whole group. As an example in the Wagner et al article indicates, a five-person group with years of entry of 1, 1, 3, 5, and 5 involves a lesser distance for the first and the second person than if they had been in a group with 1, 1, 5, 5, and 5 years of entry. The first-year-entry persons have a distance of 1.155 in the first group and one of 2.309 in the other.

Due to the Wallenberg-group having a dynastic pattern involving family members, a dummy was created with 1 for individuals with close kinship, i.e., related by blood, and 0 for those not belonging to the family or only related by marriage.

Class origin classified according to the father's occupation was the variable expressing class position. The classificatory scheme was a socioeconomic classification (Socioekonomisk indelning) used quite commonly in Sweden, defined by a governmental bureau with responsibility for statistics

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[4] The recording of data on individuals was permitted through a governmental license.

made available to public authorities (SCB, 1982). The prestigious-school variable was coded 1 if the individual had more than a year of education at the Stockholm School of Economics or at the Royal Institute of Technology, both schools without doubt the most prestigious in Sweden. Educational level was divided into four levels, the first three of these corresponding roughly to the North American levels: university level, senior high school, grade school, and a fourth level for those with only six years school, as was once possible.

It has been argued (Pelled, 1996) that the visibility of a demographic dimension influences the triggering effect of the dimension, clearly visible dimensions such as gender, race and age being most conflicting and thus stronger predictor of turnover. Gender and ethnical origin are highly visible dimensions and could be expected to be of some importance since, concerning gender, women have a high involvement in the wage labour force of Sweden and, concerning ethnical origin, most of the corporations in the business groups are highly internationalised in terms of sales and production. However, none of these variables was included due to lack of variance. All members in the business groups were simply Swedish men.

Results

Table 1 summarise the descriptive statistics. During the 16 years, 10 persons were subject to turnover, whereas 19 persons were still in the TMT of the group in question, suggesting Swedish business groups to be fairly stable. Turnover is strongly correlated with age and age heterogeneity, and is only slightly correlated with distance in proportion of one's career spent in the group (p=.15). The age variable indicates these persons to be relatively old, varying between 43 years and 83 years of age. The two distance measures, concerning heterogeneity of financial experience and proportion of the career spent in group, are comparable in the sense of the variable underlying each having a range of 0 to 1. On the average, distance is larger for financial experience than for proportion of one's career spent in the group. The same is true for the variation involved. Heterogeneity seems to be less for the proportion of one's career spent in the group than for financial experience, providing support for our proposed theory that branch heterogeneity is a coveted resource. However, one should observe that some of the individuals are ones who show low branch heterogeneity and high heterogeneity in the proportion of their career spent in the group and who thus, according to the theory presented, could be strongly expected to experience turnover.

Since the other measures of distance differ from these and from another in the range of the underlying variables, no direct comparisons between them are possible. However, one can note the small differences found in educational level, reflecting the fact that the majority of the individuals have university or business school education. Almost half of them attended the two highly prestigious schools, but as can be seen in the correlation matrix, attendance is not correlated with turnover, which is in accordance with the expectations here.

Table 1: Mean Standard Deviation and Correlation Coefficients for Dependent and Independent Variables (N=29)

	M	SD	2.	3.	4.	5.	6.	7.	8.	9.
1. Turnover	0.34	0.48	.51**	.39*	-.14	.27	.05	-.14	.24	.02
2. Age of individual	58.7	10.1		.30	.02	-.14	.46*	-.21	.21	.11
3. Distance in age	4.63	2.71			.19	.10	.30	$-.35^{\dagger}$	.04	.06
4. Distance in the proportion of financial experience	16.1	18.5				-.08	.29	.20	-.23	-.29
5. Distance in the proportion of one's career spent in the group	11.8	11.6					-.45*	.10	.11	-.19
6. Family membership	0.17	0.38						-.44*	-.15	.11
7. Distance in class	.31	.33							-.07	-.22
8. Distance in educational level	.09	.27								$-.33^{\dagger}$
9. Prestigious school attendance	.48	.51								

$^{\dagger}p<.1;$ $^{*}p<.05;$ $^{**}p<.01;$ $^{***}p<.001$

Table 2 presents the logistic regression equation in which the eight hypotheses are tested.[5] The model is significant at the 0.01-level and correctly classifies 86% of the cases, or 25 out of the 29. The age effect, as expected, is highly significant in predicting turnover, and contributes most to the model, as the R-statistics in the right-hand column of the table indicate. These R-measures, which range from -1 and +1, and are based on the Wald statistics, can be interpreted as the partial contribution of the variable in question to the model. Three other variables contribute to the model at a significance level of between .05 and .1. One of these is heterogeneity of age, a slight cohort influence on turnover being evident. Another is heterogeneity in the proportion of one's career spent in the group, likewise found to affect the probability of turnover. In addition, family relationship can be seen to have a negative influence on the probability of turnover, as predicted.

Table 2: Result of logit regression analysis (N=29)

	Turnover	Stand Errors	R
2. Age of individual	.41*	.19	.28
3. Distance in age	.73†	.38	.21
4. Distance in the proportion of financial experience	-.12	.07	-.12
5. Distance in the proportion of one's career spent in the group	.15†	.08	.19
6. Family membership	-8.2†	4.74	-.16
7. Distance in class	-.45	3.18	0
8. Distance in educational level	-.68	3.66	0
9. Prestigious school attendance	.69	2.03	0
Constant	-28.3*	11.8	
Model chi-square	20,88**		
Percent correct predicted	86.21		

†*p<.1;* **p<.05;* ***p<.01;* ****p<.001*

Branch heterogeneity, measured as distance in terms of financial experience, has the expected sign but is not even significant at a .1-level. However, the support for hypothesis here concerning the impact of branch heterogeneity upon turnover can be regarded as slightly stronger than the test involved indicates. In the regression presented here, heterogeneity of financial experience is used as a proxy for branch experience. A slightly different result would appear if one used industrial experience as the proxy for branch experience. Remember that three categories of branch experience were distinguished: 'financial', 'industrial' and 'others'. Accordingly, correlation between financial and industrial heterogeneity is extremely high (.87) but not equal to one, since there is a third category, 'others'. With the use of industrial experience as the measure of branch heterogeneity, the results are similar, the same number of cases being correctly classified and the chi-square of the model improving to 24.7, with an accompanying lowering of the significance level to .002. The significance levels and relative impact of the variables other than branch heterogeneity are not changed, branch heterogeneity being significant at a .1-level. Although there is only weak significance, the results can be interpreted as suggesting that branch experience can influence turnover in such a way as heterogeneity decreases, the probability of turnover becomes higher.

The social background variable and the educational variables had no significant impact on turnover. This supports the contention that, although these variables can surely have an impact on a person's possibility of starting the journey to the top, the social forces at the top within an organisation, such as those relating to branch heterogeneity, commitment and heterogeneity of the proportion of one's time spent within the group, and of age, are more narrow in time in the influence they have.

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[5] The regression of a qualitative variable represented by a dummy variable such as turn-over poses at least two problems of estimation (Montgomery and Peck, 1982). First, the estimated probabilities can assume meaningless values, specifically values tht are negative or greater than one. Secondly, the errors are not distributed normally. A solution to both problems is to apply a logit model as estimated via a maximum likelihood technique, creating an S-shape curve with asymptotes at 1 and 0 (Kennedy, 1984; Afifi and Clark, 1990), which Morita, Lee and Mowday (1993) argue to be an appropriate technique for predicting turnover.

It can be concluded that the theory of TMT turnover presented here, based on a demographic perspective, received a slight support from the TMT constructed here through network analysis. Although support for the model as a whole was found to be significant, the effects for most of the variables were only found to be significant at the 0.1 level. The results should be treated with caution since a logit regression requires larger sample size than n=29 in order for the findings to be considered robust. However, one should note that demographic studies employ rough variables such as age and functional heterogeneity in attempting to represent complicated social processes. As a result, such studies typically have a low capacity to explain the variance of the dependent variable.

5 DISCUSSION AND CONCLUSION

A demographic perspective can reveal important aspects of the functioning of organisations, aspects otherwise not easily detected, due partly to data access problems. This is true regardless of whether the organisations are formal ones or networks. Here it has been demonstrated that network organisations of a certain kind have counterbalancing forces. The business groups and their TMTs that were investigated as constructed networks were branch heterogeneous and characterised by long tenure. Age, heterogeneity of age and heterogeneity of group investment influenced turnover, whereas family membership and branch heterogeneity had only a slight and uncertain influence, although in the predicted direction of restraining turnover. These results can be interpreted as indicating that the business groups possess a combination of financial and industrial experience as a group resource and that the socialising strategy of control serves to counteract the conflict-producing influence of branch heterogeneity.

The empirical results were weak and have therefore to be regarded as preliminary. Nevertheless the result obtained imply the need for distinguishing theoretically between those dimensions characterised by heterogeneity, which is presumed to be conducive to turnover, and those characterised by homogeneity, which is seen as facilitating integration. Dimensions of these two opposing types may both be active and yet counterbalance each other. In taking account of forces of both an integrative and a separative type simultaneously, a demographic perspective can make a contribution to the science of organisations, where the latter tends to focus on integrative forces alone (Perrow, 1986). However, there is nothing in the demographic perspective itself that can distinguish which type of dimensions is involved. In the contribution to organisational demography by Pelled (1996), it is argued that job-relatedness and visibility relevant dimensions here, triggering conflicts and thus affecting turnover. Since the only means of identifying job-relatedness that is available is to have a substantive theory about the empirical phenomenon in question, a demographic perspective must rely on a theory that in relation to the empirical object can predict what dimensions are relevant. The present paper has emphasised this point by making a prediction of branch heterogeneity on the basis of a substantive theory of business groups, a prediction that is in opposition to predictions of many demographic studies using functional heterogeneity in a organisation as an equivalent. Heterogeneity was predicted to hamper turnover instead of promoting it due to branch heterogeneity being a resource valuable to the group. Accordingly, propositions in organisational demography has to consider the organisation in question

The model was significant, but except for the age variable, the significance of the individual variables was rather weak. There are at least two possible causes of this one could suggest: the small sample size and inadequate determination of the TMT's. The sample size was indeed quite small (N=29), making the influence of each of the observations on the results rather strong. Thus, outliers and misinterpreted observations of even a rather small magnitude can clearly influence the results. This can only be compensated for by increasing the sample size. Since Sweden only had, and still has two business groups of any particular importance, no other groups than these could be included. The sample size could be increased through use of the time trick as already used here, the size of the sample having been extended in the present case through observations of turnover not in one but in two different time periods (ending in 1980 and 1986, respectively). Thus, one method of enlarging the sample size would be to include a greater number of time periods. Another method would be to include business groups from other countries such as bank groups from Germany, Keiretsus from Japan and holding groups from Belgium. This would be possible now since business groups have been given more attention in research (cf. Yiu, Lu, Bruton & Hoskisson, 2007) thus making it possible to share data from different countries. As will be argued below, the fear of a strong cultural influence distorting the results appreciable when three or four countries that are culturally different are included is probably unfounded.

The definition of a TMT employed here, i.e., density being equal to one and frequency being maximised, might conceivably create a group lacking in empirical reality, making the correlation's

random and meaningless. However, the problem of defining the top group is present in every TMT study. In fact, as the paper argues, a network definition of a TMT ought to be a superior method for defining it since such a construction is based on such relevant group dimensions as density and frequency, no attention being directed at comparatively inferior dimensions as formal positions in the firm or CEO opinions. Despite the weak results, it can be concluded that the model offered has a bearing for predicting turnover in business groups but that the empirical test could be improved through increasing the sample size by including business groups from other countries.

The latter step would raise the question of whether the results obtained reflect primarily cultural factors. Since Sweden is known to be a collectivist society (Triandis, 1995), forces towards conformity should be strong, at least if one accept analogous arguments that Wiersema and Bird (1993) have put forward concerning Japan. Although the present sample, to be sure, is very small and Sweden did not have any other business groups similar to the ones studied, it does not appear that the results simply reflect Swedish conformity. If there are strong forces towards conformity in Swedish society generally, then forces of conformity that might be quite special for particular organisations such as those of group investment would not be expected to influence turnover since conformity is created in and by society. Put simply, there is no need of creating organisational conformity in a highly conforming society. Indeed, one can argue as we do here that the dynamic power which extreme heterogeneity provides is made possible by the countervailing force of homogeneity which the business groups endeavour to achieve. The cultural traits which are relevant here may not be those of either heterogeneity or homogeneity, but rather of other dimensions, the impact of each being a function of the cultural context. Heterogeneity of class, for example, could be expected to have a rather different impact in a more class-conscious society such as England. Similarly the prestige of a particular university could well have a protracted effect in a less informal society such as that of Germany, of France or, as Wiersema and Bird (1993) found, of Japan. In the Scandinavian countries, and possibly in other informal countries such as the US, the impact of having attended a prestigious university or business school can be expected to diminish quickly with age. Thus, the generalisability of results here is probably not appreciably hampered by culture.

The generalisability of the results is limited, especially by the gender invariance that was present. The sample consisted exclusively of men, making heterogeneity of gender a meaningless variable. This seems to be quite common in demographic studies of TMTs. The exclusion of gender in TMT studies is probably caused in part by the low variance of the gender variable. For example, Zenger and Lawrence (1989) excluded gender since only 4.3% in the sample were women, and Tsui and O'Reilly (1989) reported that in a group higher than middle management only 4% were women. The effect of the gender variable having been excluded due to low variance is that most results cannot be generalised to TMTs in general, but to the most frequent type of TMT, that consisting of males only. It is quite conceivable that groups in general and TMTs in particular could display other outcomes if faced with high heterogeneity of gender or if populated only by females. In fact, Tsui, Egan and O'Reilly (1992) found that men's attachment to an organisation diminished to a great extent when a mixed-gender group was involved than women's did. An interesting question is whether the hypothesised causal link between heterogeneity and turnover is as valid in female as in male groups. Even in Sweden, where the say of women is particular strong, e.g., with roughly 50% women in the parliament, such an investigation of TMT groups must await the advent of a greater number of women on the scene, recent data on the TMTs of the listed Swedish corporations having shown that only 18% were women (Berg, 2003).

One of the major contributions by this paper would appear to be the determination of a TMT through network analysis, allowing it to be defined on the basis of such team characteristics as frequency of contacts and density, instead of formal positions. Demography appears to be a viable concept for explaining outcomes and processes not only in formal positions and in formal organisations, but also in certain non-formal organisations such as the business groups considered here. The latter are elite groups basically similar to the TMTs of formal organisations. Not only can the network approach to assessing membership taken here be applied to formal organisations as well, but there are also phenomena somewhat similar to what was studied here which could be examined in a similar way, such as the cooperation, for example, between companies in science parks. The latter represent the assembling of different research organisations at a given geographical site, where service, support and other types of resources are exchanged. An interesting question is whether interactions of this type are based primarily on functional, personal or demographical considerations. Considering networks highlights certain problems concerned with the makeup of teams. Whereas one can reasonably assume that there are persons in the upper echelons of formal organisations who constitute a TMT, its being an empirical question who these persons are, the same assumption cannot be made for non-formal organisations without the help of empirical data. Data on cooperation and team-like

characteristics is indeed found in the case of Swedish business groups. For science parks, no such data has as yet to our knowledge been assembled. This emphasises the importance of regarding membership in a TMT as an empirical question that only can be answered after the analysis of patterns of interaction.

A limitation of the present study, that of its particular focus on networks, should be noted. An important difference between a formal organisation such as a corporation and an informal organisation such as a business group is that in the latter case the environmental forces influencing turnover are much more difficult to comprehend. This is particularly apparent when one considers performance, an important variable in TMT research (Keck and Tushman, 1993; Priem, 1990; Dess and Priem, 1995; West and Schwenk, 1996). Whereas the performance of a corporation can indeed be measured, certain difficulties notwithstanding (Murray, 1989), it is extremely difficult or even impossible to measure the performance of an informal organisation. The present paper has focused on group factors that influence turnover there. This leaves to further research the intriguing question of the effects of environmental forces on networks and on their upper echelons.
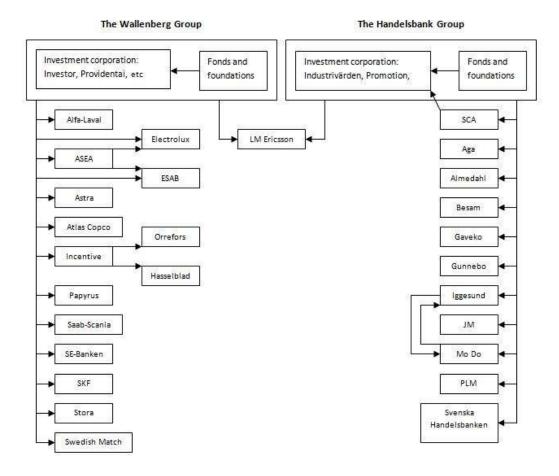
TMT demographics focuses on the composition of the TMT but generally considering only one of two compositional events, the turnover (Daily and Dalton, 1995; Hambrick and D'Aveni, 1992; Keck and Tushman, 1988; Keck and Tushman, 1993; McCain, O'Reilly III and Pfeffer, 1983; O'Reilly III, Caldwell and Barnett, 1989; Pelled, 1996; Wagner, Pfeffer and O'Reilly III, 1984; Wiersema and Bantel, 1993, and Wiersema and Bird, 1993). The other event which influences the composition of a TMT is the inclusion of a new member. Whereas decisions of hiring are often scrutinised in social psychological studies (Westpahal and Zajac, 1995), selection processes in the internal managerial labor market that create a pool of would-be TMT-members are an almost virgin area for demographic research. Few studies have concentrated on the inclusion of new members in TMTs it has been empirically researched by those concerned with board composition (e.g. Furtado and Karan, 1990; Westphal and Zajac, 1995) and have been highlighted by the innovative paper by Pfeffer and Leblebici (1973). Thus, although turnover is a rather well covered aspect of TMT composition, it is time to focus on the 'turn-in' or selection of TMT-members.

The balancing of integrative forces of homogenisation that create stability and of the separative forces of heterogenisation that create change is of genuine managerial concern. The functioning of a group, for example its capacity to process information (Thomas and McDaniel, 1990) and its performance in an ultimate sense, depends not only on the competencies of the individuals involved, but also on the group's composition. It is highly tempting to consider the possibility, however trivial it may appear, of recruiting for such business groups as the Swedish ones examined, a greater number of financially oriented individuals at times when the companies involved are under financial stress. The present results emphasise the importance of considering the total effects of recruitment and dismissal. The manager and the researcher face the same basic difficulty of distinguishing those dimensions for which heterogeneity has a noticeable effect on the group or company from those for which it has little or no effect. One possible rule of thumb could be one based on the idea of countervailing forces considered in this paper, i.e., the idea that in stable environments TMTs can be functionally and branch homogeneous without much effort needing to be spent on socialising the members, whereas in complex and turbulent environments diversity in branch experience and functional heterogeneity creates the need of homogenising through socialisation the individuals involved. Simply put, playing golf and holding dinners for the TMT are a necessary investment in homogenisation for corporations in medicine, for example, but a waste of money for corporations in the oil business.

APPENDIX

1 The Wallenberg group and the Handelsbank group in 1986

Only the largest corporations are included. The arrows indicate share ownership. Similarities between the groups are stressed at the expense of such dissimilarities as the fact that the Wallenberg group depends ultimately on non-contestable control of a few, large foundations, while the Handelsbank group has smaller foundations making the group slightly more vulnerable for control contests.

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