mir vol. 41, 2001/2, pp. 109–129

mir
Management
International Review

Irene Goll/Rakesh B. Sambharya/Louis A. Tucci

Top Management Team Composition, Corporate Ideology, and Firm Performance[1]

Abstract

- This study examines the relationships between corporate ideology, top management demographic characteristics and firm performance. Three dimensions of corporate ideology were measured with a survey of 645 U.S. firms. Top management demographics and firm performance were obtained from archival sources. Data were analyzed with a covariance structure model.

Key Results

- There was significant support for a model in which demographic characteristics influence ideology, ideology influences firm performance, and demographics influence firm performance.

Authors

Irene Goll, Associate Professor of Management, Kania School of Management, University of Scranton, Scranton, PA, USA.
Rakesh B. Sambharya, Associate Professor of Management and International Business, School of Business, Rutgers University – Camden, Camden, NJ, USA.
Louis A. Tucci, Assistant Professor of Management and Marketing, Department of Management and Marketing, College of New Jersey, Ewing, NJ, USA.

Manuscript received October 1998, revised July 1999.

There is a growing emphasis within the field of strategic management on the importance of top management teams (TMTs) and their influence on firm performance. Upper echelon theory suggests that the demographic characteristics of top management influence decision-making processes which, in turn, affect organizational outcomes. The present study examines the relationships between top management demographics, corporate ideology, and firm performance. Corporate ideology is expected to mediate the relationship between top management demographics and firm performance. This study attempts to answer several questions. First, do top management demographics influence ideology? Second, does corporate ideology influence firm performance? Third, do top management demographics exert a direct effect on performance?

Literatur Review

Upper echelon theory suggests that the characteristics of an organization's key decision-makers influence strategy and subsequent performance (Hambrick/Mason 1984). Studies have linked top management demographic characteristics to organizational performance. Murray (1989) reported that the heterogeneity of TMTs showed a positive relationship to long-term performance in the oil industry but not in the food industry. Norburn and Birley (1988) found that age, tenure, functional background, and education influenced firm performance. Krishnan, Miller, and Judge (1997) found that complementary functional backgrounds of top management between acquiring and acquired firms had a positive effect on performance.

Top management demographics research has also addressed the issue of executive turnover. In their study, Wiersema and Bantel (1993) found that top management turnover showed a significant relationship to tenure but not to team heterogeneity. Other researchers reported that demographic distance measured in terms of age and date-of-entry similarity had a positive effect on TMT turnover (Wagner/Pfeffer/O'Reilly 1984). TMT turnover was related to group heterogeneity in the banking industry (Jackson/Brett/Sessa/Cooper/Julin/Peyronnin 1991). Wiersema and Bird (1993) reported that mean age, the heterogeneity of age and tenure, and prestige of university attended were strong predictors of TMT turnover in Japanese organizations. In their study, Datta and Guthrie (1994) found that R & D intensity was associated with the selection of CEOs with technical functional backgrounds as well as those with higher levels of education. Datta and Rajagopalan (1998) reported a link between industry and the demographic characteristics of CEO successors.

Research has also examined the influence of top management demographic characteristics on strategy. Chaganti and Sambharya (1987) linked tenure and functional background to the Miles and Snow typology of strategy. In another study, Sambharya (1996) related foreign experience of TMTs to the firm's inter-

national diversification strategies in U. S. multinationals. Wiersema and Bantel (1992) found that age and organizational tenure showed a negative relationship to diversification changes whereas team tenure, education levels, and heterogeneity of educational specialization were positively related to diversification changes. On the other hand, Michel and Hambrick (1992) argued that diversification posture influences the composition of the TMT. In their study, Hambrick, Cho, and Chen (1996) found that heterogeneous teams were slower in their actions and responses and were less likely than homogeneous teams to respond to the initiatives of their competitors in the airline industry. In another study, Hambrick, Geletkanycz, and Fredrickson (1993) found that tenure in industry was strongly related to status quo in strategy and leadership.

The literature links top management demographic characteristics to innovation and growth. A recent study reported that innovation in the banking industry was related to greater levels of education and functional diversity (Bantel/Jackson 1989). Size of TMT, tenure, and heterogeneity of industry experience were linked to higher growth in new U.S. semiconductor firms (Eisenhardt/Schoonhoven 1990).

Theory

Upper echelon theory (Hambrick/Mason 1984) suggests that managers bring a cognitive base and values to the decision-making process that restrict their field of vision. The cognitive base acts as a filter between stimuli and subsequent perception. The upper echelon perspective suggests that demographic characteristics act as observable measures of the 'givens' that managers bring to the decision-making process. The assumption underlying the upper echelon perspective is that demographic characteristics serve as surrogates for the beliefs, values, and cognitions of managers.

Pfeffer (1983) suggested that demographics influence intervening variables and that these intervening variables affect organizational outcomes. In their review of the demographics literature, Smith et al. suggest three main clusters of concepts within upper echelons research: demographics, process, and organizational outcomes (Smith/Smith/Olian/Sims/O'Bannon/Scully 1994). Their study lent empirical support to a model of partial mediation in which demographics influence process, process influences outcomes, and demographics also exert a direct influence on outcomes. A study by Knight, Pearce, Smith, Olian, Sims, Smith, and Flood (1999) also found support for partial mediation. Top management influenced group processes, group processes influenced strategic consensus, and diversity had a direct effect on strategic consensus.

Our review of the literature suggests a fourth concept of interest within upper echelons research in addition to the three concepts identified by Smith et al. (1994):

contextual variables. The literature linking environmental conditions to demographics suggests that the fit between top management attributes and environment influences outcomes (Keck 1997, Priem 1990). Another contextual variables identified in the literature is strategy. Thomas, Litschert, and Ramaswamy (1991), for example, suggest that the coalignment between executive characteristics and strategic orientation influences performance. Other studies have examined the moderating effects of managerial discretion (Finkelstein/Hambrick 1990), interdependence in the firm (Michel/Hambrick 1992), and industry (Datta/Rajagopalan 1998).

There is increasing interest in investigating the intervening processes or mechanisms by which top management demographics influence the firm. Researchers suggest that if the upper echelons approach is to further contribute to our understanding of TMTs, then there is a need to elaborate on the process variables (e.g., Lawrence 1997, Pettigrew 1992, Smith et al. 1994). The upper echelons perspective has been criticized for ignoring the 'black box' in which mediating process variables are assumed to act as links between demographics and organizational outcomes (Pettigrew 1992). Recent studies have begun to examine the relationships between top management demographics and perceptions or beliefs. Markoczy (1997) found significant relationships between some demographic characteristics and expected beliefs.

TMTs are important determinants of organizational outcomes as they are at the boundary between environment and organization. There is a growing body of literature that links managers' mental models to the decisions they make. These mental models can also influence actions at the organizational level (Knight et al. 1999). We believe that top management demographics influence organizational frames of reference which influence strategies and other outcomes.

The present study introduces corporate ideology as an intervening variable, one that is expected to reflect the composition of the TMT and mediate the relationship of demographics to performance. Starbuck (1982) defines corporate ideology as the beliefs and values that provide a reference frame to members of an organization. Top executives play a key role in developing and maintaining a firm's ideology (Beyer 1981). As a result, it is expected to be heavily identified with these key managers (Dunbar/Dutton/Torbert 1982). Ideologies are cognitive phenomena that are socially generated and transmitted. Therefore, we expect the company's ideology to reflect the composition of the TMT as measured in terms of its demographic characteristics.

Ideology is of particular interest to us as it is an important component of corporate culture and has an action-impelling quality (see Pettigrew 1979). Corporate ideology is expected to influence the performance, growth, and survival of the firm (Beyer 1981). Ideologies include the identity, purpose, and character of an organization. These beliefs claim unique accomplishments and are held with sentiment (Clark 1972). Beliefs regarding the identity of the organization guide

future actions, justify prior actions, and engender commitment from members of the organization (Sproull 1981).

The present study examines the relationships between top management demographics, corporate ideology, and firm performance. We view corporate ideology as an intervening variable that reflects the composition of the TMT. It is expected to mediate the relationship between demographics and firm performance. In addition, top management demographic characteristics are expected to exert a direct influence on firm performance (Hambrick/Mason 1984). We will test the following propositions:

Proposition 1: Top management demographic characteristics influence firm performance.
Proposition 2: Corporate ideology influences firm performance.
Proposition 3: Top management demographic characteristics influence corporate ideology.

Hypotheses

Top Management Demographics – Firm Performance

Age

Age is expected to be inversely related to risk taking and to the value placed on risk. Younger TMTs may pursue risky strategies (Hambrick/Mason 1984). Studies by Child (1974) and Norburn and Birley (1988) indicate that younger TMTs show superior performance. Younger managers are also expected to be better educated and have more current technical knowledge (Bantel/Jackson 1989). As flexibility decreases, rigidity and resistance to change increase, and risk-taking propensity are expected to decrease with age (Wiersema/Bantel 1992) we will argue that:

Hypothesis 1: The mean age of top management will have a negative relationship to firm performance.

Tenure

Managerial tenure is one of the more studied demographic characteristics of top management. Longer tenure is likely to be associated with a greater commitment to status quo (Bantel/Jackson 1989, Hambrick/Geletkanycz/Fredrickson 1993, Michel/Hambrick 1992). This, in turn, may lead to less scanning of the environment and a limited search for alternatives which can result in poorer quality decisions.

Although we expect a negative relationship between tenure and performance, the literature suggests that this relationship may be influenced by other factors (eg. Borokhovich/Parrino/Trapani 1996) such as industry or environment. While we acknowledge that contextual variables may moderate the relationship between tenure and performance, we expect tenure to have a negative influence on firm performance and that this relationship may be stronger in some contexts rather than others.

Hypothesis 2: The mean tenure of top management will have a negative relationship to firm performance.

Education

Both the level of formal education and the type of education (business or non-business) provide us with some measure of an individual's knowledge and skill base (Hambrick/Mason 1984, Hitt/Tyler 1991). TMTs with higher levels of education and with business degrees are expected to generate a wider range of creative solutions when faced with complex problems. Level of education has been linked to firm performance (Norburn/Birley 1988), degree of firm innovation (Bantel/Jackson 1989), and change in corporate strategy (Wiersema/Bantel 1992).

Hypothesis 3: The mean education level and proportion of business degrees of top management will have a positive relationship to firm performance.

Heterogeneity

The literature also suggests that the heterogeneity of the TMT can also influence performance. Homogeneity is expected to influence cohesiveness, integration, and communication (Wagner et al. 1984). A recent study by Knight et al. (1999) found a negative relationship between TMT diversity and consensus. Smith et al. (1994) found a positive relationship between homogeneity of experience of the TMT and communication.

Group heterogeneity, on the other hand, is related to greater creativity and innovation (Bantel/Jackson 1989, Murray 1989). Heterogeneity is expected to bring a diversity of viewpoints to the decision-making process as individual group members have different interpretations and perspectives (Wiersema/Bantel 1992). In their study of the US airline industry, Hambrick et al. (1996) found that TMTs that were diverse had an overall positive effect on airline performance. Since researchers suggest that group decision-making is enhanced by considering various alternatives and solutions, we expect that groups that are heterogeneous will contribute to firm performance. We hypothesize that:

Hypothesis 4: The heterogeneity of age, tenure, education level, and functional background in top management will have a positive relationship to firm performance.

Corporate Ideology – Firm Performance

The literature suggests that corporate ideology is characterized by three underlying dimensions: progressive decision-making, corporate social responsibility, and organicity (Goll 1991, Goll/Sambharya 1990, Goll/Sambharya 1995, Goll/Zeitz 1991). We will develop the links between each dimension and performance below.

Progressive Decision-Making

The first dimension, progressive decision-making, resembles the normative rational model of decision-making emphasized in the strategic management literature. Researchers have referred to this model as 'synoptic' (eg. Fredrickson 1984) and 'rational normative' (Hitt/Tyler 1991). There is empirical support for the rational normative model which involves a series of sequential, rational, and analytical processes whereby managers make use of objective criteria to evaluate strategic alternatives (Hitt/Tyler 1991).

Progressive decision-making is defined as the degree to which an organization emphasizes the rational model of decision-making described above. We believe that an emphasis on the rational decision-making model will show a positive relationship to firm performance. With its emphasis on the systematic search for alternatives and analysis of costs versus benefits, the rational decision-making model provides managers with a framework that we believe will benefit firm performance by getting them to consider different alternatives and solutions. We will test the following hypothesis.

Hypothesis 5: Companies that emphasize progressive decision-making will have better firm performance.

Social Responsibility

The second dimension of ideology, corporate social responsibility, has been widely identified in the literature (eg. Aupperle/Carroll/Hatfield 1985). Corporate social responsibility is expected to contribute to firm performance by improving employee and customer goodwill. Socially aware managers are expected to possess skills that contribute to firm performance and are expected to outperform companies that are non-responsive. Several empirical studies have shown a positive relationship between corporate social responsibility and firm performance (eg. McGuire/Sundgren/Schneeweis 1988)

Hypothesis 6: Companies that emphasize social responsibility will have better firm performance.

Organicity

The third dimension of ideology, organicity, has also been identified as an important component of management ideology. Burns and Stalker (1961) suggest that organizations can be placed on a continuum from mechanistic to organic. Firms differ in the extent to which they structure their activities. Whereas some managers prefer flexibility and informality, others prefer to structure managerial activities, roles, and relationships. Organic firms are more likely to be adaptive, flexible, and responsive. Since the literature suggests that the organic form of organization is an adaptive evolution of the earlier mechanistic form, we believe that an emphasis on organicity contributes to firm performance.

Hypothesis 7: Companies that emphasize organicity will have better firm performance.

Top Management Demographics – Ideology

Demographics and Progressive Decision-Making

We expect to see a positive relationship between the heterogeneity of age, tenure, education, and functional background of top management and progressive decision-making. Managers with different backgrounds are expected to bring a diversity of viewpoints and a comprehensiveness to the decision-making process (Wiersema/Bantel 1992) that is consistent with progressive decision-making.

Hypothesis 8: The heterogeneity of age, tenure, education, and functional background in top management will have a positive relationship to progressive decision-making.

We hypothesize that managers who are younger, have less organizational tenure, and are better educated will place more emphasis on progressive decision-making as they are more likely to bring new ideas to the organization, they may be more likely to consider a wider range of alternatives consistent with progressive decision-making. We also hypothesize a positive relationship between the proportion of managers with a business degree and progressive decision making as these managers are exposed to the rational model in US business schools.

Hypothesis 9: The mean age of top management will have a negative relationship to progressive decision-making.

Hypothesis 10: The mean tenure of top management will have a negative relationship to progressive decision-making.

Hypothesis 11: The education level and proportion of business degrees of top management will have a positive relationship to progressive decision-making.

Demographics and Social Responsibility

We expect heterogeneity to influence the company's emphasis on social responsibility. Jackson (1992) suggests that more diverse groups may draw on a larger social and knowledge network when generating ideas. The processing of information by heterogeneous groups as a result of their external contacts may bring to the decision-making process a broader range of information and solutions. Thus, we expect a more heterogeneous group to be more aware of the company's environment and have a greater sense of responsibility to society.

Hypothesis 12: The heterogeneity of age, tenure, education level, and functional background in top management will have a positive relationship to social responsibility.

We hypothesize that social responsibility will have a negative relationship to age and tenure, but a positive relationship to education level. As there seems to be a growing societal emphasis on corporate social responsibility, it is possible that younger managers and those with less tenure would place greater emphasis on it. Managers with more formal education and those with a business education may place greater emphasis on responding to the external environment. As such, we would expect managers with more education and whose education lies in business to place greater emphasis on social responsibility.

Hypothesis 13: The mean age of top management will have a negative relationship to social responsibility.

Hypothesis 14: The mean tenure of top management will have a negative relationship to social responsibility.

Hypothesis 15: The education level and proportion of business degrees of top management will have a positive relationship to social responsibility.

Demographics and Organicity

The work of Dutton and Duncan (1987) suggests a link between organicity and heterogeneity. They argue that a more organic design is characterized by a greater differentiation or variety of beliefs which results in a more frequent recognition of new strategic issues and a greater perception of the feasibility of change. We hypothesize that the emphasis on organicity or flexibility and decentralization reflects the diverse beliefs/values held by members of a heterogeneous top management group.

Hypothesis 16: The heterogeneity of age, tenure, education level, and functional background in top management will have a positive relationship to organicity.

Finally, we hypothesize that managers who are younger, have less organizational tenure, and more formal education place more emphasis on organicity. As flexibility may decrease and resistance to change may increase with age (Wiersema/Bantel 1992) we may expect younger managers to place greater emphasis on flexibility which is salient in the organicity dimension. We hypothesize that managers with less organizational tenure will place less emphasis on status quo and more emphasis on decentralization and informality which are consistent with our organicity dimension. We will also argue that better educated managers are more likely to be flexible and receptive to change. We also expect managers with a business education to place greater emphasis on adaptability as their education may predispose them to emphasize decentralization and responding to changing circumstances.

Hypothesis 17: The mean age of top management will have a negative relationship to organicity.

Hypothesis 18: The mean tenure of top management will have a negative relationship to organicity.

Hypothesis 19: The education level and proportion of business degrees of top management will have a positive relationship to organicity.

Methodology

Sample

A cross-sectional survey of the largest manufacturing corporations in the US was undertaken to measure top management ideology. The sample includes the manufacturing firms identified in *Business Week* (1985). Questionnaires were mailed to the Vice President of Human Resources or to the CEO in 645 companies. Standard and Poor's *Register of Corporations, Directors, and Executives* (1985) and Dun and Bradstreet's *Million Dollar Directory* (1985) were used to identify the respondents. Following a second mailing four weeks later, a total of 159 companies responded, representing a response rate of 25%. Data collection was completed in 1986.

To measure sample representativeness, respondents and nonrespondents were compared on industry, profitability, (return on equity), and size (assets) for 1986. There was no difference in industry between respondents and nonrespondents using a chi-square goodness of fit test (chi-square = 34.94, df = 24, $p > 0.05$). There were no significant differences in profitability ($t = 1.63$, df = 497, $p > 0.05$) or size ($t = 1.79$, df = 524, $p > 0.05$). Thus, the results are generalizable to large US manufacturing firms.

Top Management Ideology

The questionnaire included measures of the three ideology dimensions identified in the literature: progressive decision-making, social responsibility, and organicity.[2] Respondents were asked to rate statements on the degree to which each one reflects or agrees with the explicit and publicly expressed philosophy of the company along a scale of 1 (company strongly agrees) to 5 (company strongly disagrees).

The progressive decision-making scale includes seven items and is reliable with an alpha of 0.85. The three items of the social responsibility scale are reliable with an alpha score of 0.74. The organicity scale includes five items and forms a reliable scale (alpha = 0.71). A company that has high scores on all dimensions places great emphasis on progressive decision-making, social responsibility, and organicity whereas a company with low scores places little emphasis on these dimensions.

Top Management Demographics

We defined top management as the managers who are also on the board of directors for the firm. Information for each manager was collected from Dun and Bradstreet's *Reference Book of Corporate Managements – America's Corporate Leaders* (1987) for 1986. The mean number of inside board members was 3.44 (sd = 2.08; min = 1; max = 13). Age , tenure, level of education (0 = High School; 1 = Some College; 2 = Bachelor's Degree; 3 = Master's Degree; 4 = JD; 5 = Ph.D.), whether the manager had an MBA, and functional background (marketing and sales, finance and accounting, production and R & D, administrative, and general) were recorded.

Means and the coefficient of variation were calculated for the top management team's age, tenure, and level of education following Allison (1978). The proportion of managers with an MBA was calculated. The proportion of managers in the TMT with backgrounds in marketing or sales, finance and accounting, production and R & D, administration, and general were calculated. We then computed the diversity of functional background according to Blau's (1977) formula.

Financial Measures of Performance

Figures for firm performance were collected for each company for 1986 and 1987 for the following financial ratios: return on assets (ROA), return on equity (ROE), return on sales (ROS), and earnings per share (EPS). The data were collected from *Business Week* (1987, 1988) and Standard and Poor's *Stock Reports* (1987, 1988). We controlled for industry effects. The industry figures for the corresponding

years were obtained from *Worldscope Industrial Company Profile* (1989) which categorizes firms on the basis of their primary business classification. The firm's performance measure was divided by the industry average for each year. A two-year average was then computed.

Control Variables

Size of TMT and size of firm, measured as total assets averaged over 1986 and 1987, were included as controls since they can affect firm profitability. The negative of the inverse of the natural log of assets was calculated to normalize the distribution of this variable.

Results

The importance of top management demographics and ideology in predicting financial performance was tested with a covariance structure model also called an analysis of moment structures.[3] The analysis was conducted using AMOS (Arbuckle 1993) which implements the widely used LISREL model of Joreskog (1970). We used the generalized least squares method of estimation. The overall fit of the model to the data is tested with a chi-square goodness-of-fit statistic which tests the null hypothesis that the observed covariance matrix is equal to the covariance matrix estimated by our model (Bentler 1980).

A diagram of our theoretical model appears in Figure 1. Our theoretical model includes four equations, one corresponding to each endogenous variable in the model.[4] These equations were tested simultaneously. [5] The results are shown in Table 1. In addition, the following were modeled as latent variables: progressive decision-making (Items 1 – 7), social responsibility (Items 8 – 10), organicity (Items 11 – 15), and firm performance (ROA, ROE, ROS, and EPS). Table 1 shows that the all of the indicators load significantly on the latent variables.[6] Bollen (1989) suggests that the simultaneous use of several measures of a construct allows for more accurate measurement. The results of the chi-square test indicate that the theoretical model shows a highly significant statistical fit to the data (chi-square = 278.36, df = 296, p = 0.76). We selected four additional measures of fit as shown in Table 2. All four indices provide additional evidence of the validity of our model.

There was a significant positive relationship between age and firm performance contrary to our hypothesis. Thus, *Hypothesis 1* is rejected. There was a significant negative relationship between tenure and performance as hypothesized. Therefore, we accept *Hypothesis 2*. *Hypothesis 3* receives some support as there is a significant positive relationship between education and performance. *Hypo-*

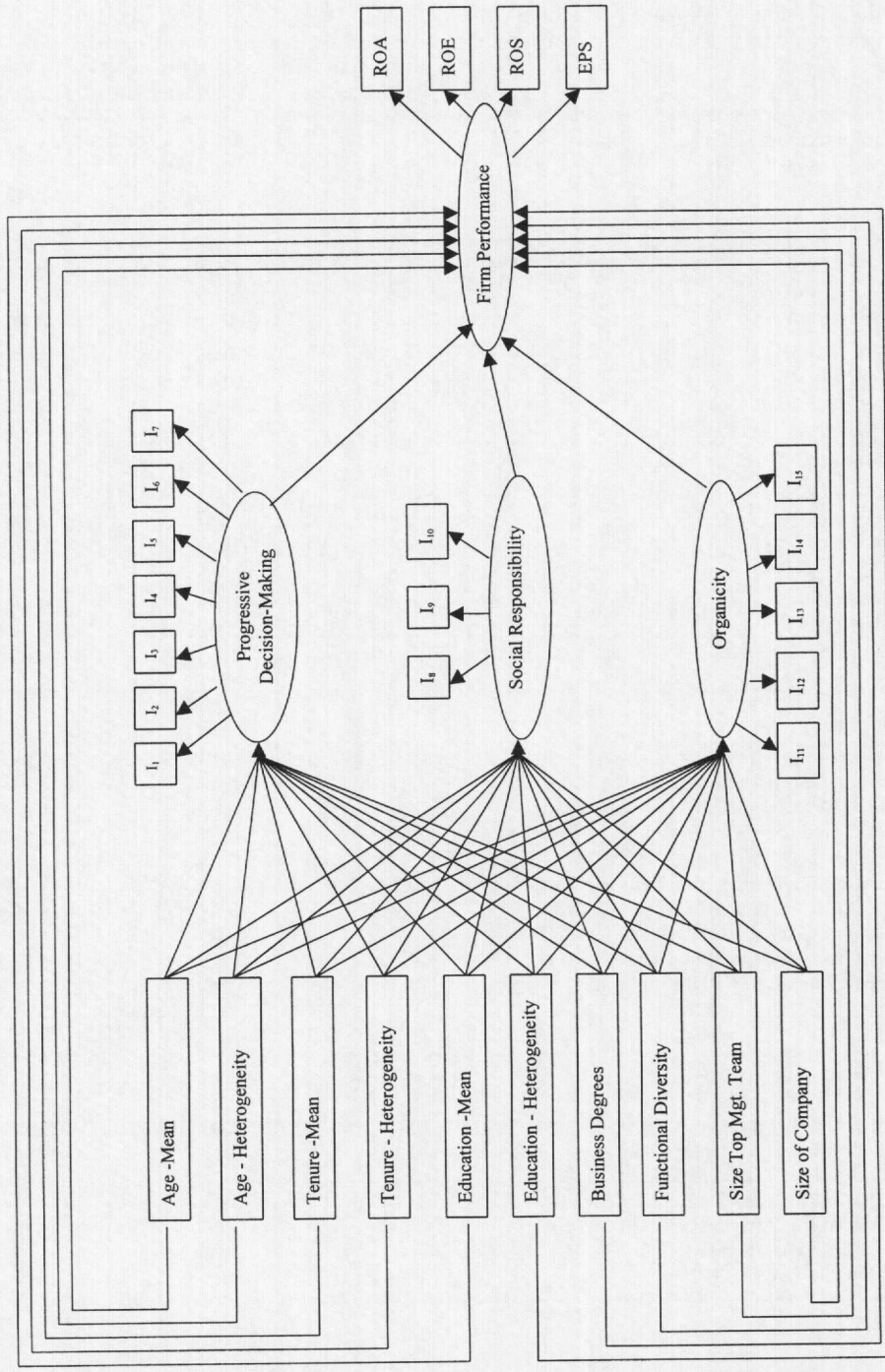

Figure 1. Hypothesized Structural Model

Table 1. Results of Estimating Structural Equation Model

	Unstandardized Parameter Est.	Standardized Parameter Est.	Critical Ratio
Latent variables			
PDM → Item 1	1.00	0.69	–
PDM → Item 2	1.01	0.64	4.46**
PDM → Item 3	1.34	0.75	5.32**
PDM → Item 4	0.51	0.43	2.72**
PDM → Item 5	0.78	0.49	3.84**
PDM → Item 6	1.42	0.77	4.55**
PDM → Item 7	1.28	0.76	4.94**
SR → Item 8	1.00	0.47	–
SR → Item 9	2.24	0.88	3.26**
SR → Item 10	1.63	0.64	3.21**
O → Item 11	1.00	0.35	–
O → Item 12	3.11	0.86	2.36*
O → Item 13	1.96	0.55	2.23*
O → Item 14	2.10	0.57	2.34*
O → Item 15	2.59	0.65	2.47**
FP → ROA	1.00	1.00	–
FP → ROE	0.69	0.98	9.28**
FP → ROS	1.50	1.00	9.30**
FP → EPS	2.60	0.68	3.07**
Demographics → Ideology			
Equation 1			
Age (Mean) → PDM	−0.02	−0.13	−0.88
Age (Heterogeneity) → PDM	3.17	0.44	2.97**
Tenure (Mean) → PDM	0.01	0.22	1.66*
Tenure (Heterogeneity) → PDM	−0.42	−0.24	−1.86*
Education Level (Mean) → PDM	−0.20	−0.25	−1.45
Education Level (Heterogeneity) → PDM	−0.74	−0.49	−3.04**
Proportion Business Degrees → PDM	0.52	0.27	1.88*
Functional Background Diversity → PDM	0.76	0.44	2.29*
Size of Top Management Team → PDM	−0.09	−0.35	−1.85
Size of Company → PDM	−0.66	−0.04	−0.27
Equation 2			
Age (Mean) → SR	−0.01	−0.08	−0.44
Age (Heterogeneity) → SR	0.71	0.14	0.82
Tenure (Mean) → SR	0.01	0.25	1.44
Tenure (Heterogeneity) → SR	0.00	0.00	0.02
Education Level (Mean) → SR	−0.10	−0.17	−0.84
Education Level (Heterogeneity) → SR	−0.27	−0.27	−1.31
Proportion Business Degrees → SR	0.14	0.11	0.62
Functional Background Diversity → SR	0.06	0.05	0.22
Size of Top Management Team → SR	−0.01	−0.04	−0.17
Size of Company → SR	−1.01	−0.08	−0.49

Table 1. Results of Estimating Structural Equation Model (Continued)

	Unstandardized Parameter Est.	Standardized Parameter Est.	Critical Ratio
Equation 3			
Age (Mean) → O	0.01	0.09	0.56
Age (Heterogeneity) → O	0.52	0.15	0.94
Tenure (Mean) → O	0.01	0.23	1.39
Tenure (Heterogeneity) → O	−0.12	−0.13	−0.95
Education Level (Mean) → O	−0.06	−0.16	−0.86
Education Level (Heterogeneity) → O	−0.04	−0.06	−0.38
Proportion Business Degrees → O	0.18	0.19	1.13
Functional Background Diversity → O	0.24	0.29	1.34
Size of Top Management Team → O	−0.03	−0.21	−1.00
Size of Company → O	1.62	0.18	1.12
Demographics and Ideology → Firm Performance			
Equation 4			
PDM → FP	0.94	0.98	2.17*
SR → FP	0.70	0.50	2.25*
O → FP	−1.17	−0.60	−1.48
Age (Mean) → FP	0.07	0.61	2.50**
Age (Heterogeneity) → FP	−3.52	−0.51	−2.02*
Tenure (Mean) → FP	−0.02	−0.30	−1.77*
Tenure (Heterogeneity) → FP	−0.01	0.00	−0.02
Education Level (Mean) → FP	0.40	0.51	2.01*
Education Level (Heterogeneity) → FP	1.29	0.90	2.52**
Proportion Business Degrees → FP	−0.32	−0.17	−0.94
Functional Background Diversity → FP	−0.69	−0.41	−1.55
Size of Top Management Team → FP	0.12	0.50	1.91
Size of Company → FP	8.92	0.51	2.42*

One-tailed test used for directional hypotheses. Two-tailed test used for nondirectional hypotheses. The ideology items are shown in Footnote 1.
* $p \leq 0.05$; ** $p \leq 0.01$
FP = Firm Performance; PDM = Progressive Decision-Making; SR = Social Responsibility; O = Organicity

thesis 4 receives some support as there is a significant positive relationship between education heterogeneity and performance. Contrary to our hypothesis, the heterogeneity of age shows a significant negative relationship to performance. We accept *Hypothesis 5* and *Hypothesis 6* as progressive decision making and social responsibility show a significant positive relationship to firm performance.

Consistent with our hypothesis, age heterogeneity and functional background diversity show a significant positive relationship to progressive decision making. Contrary to our hypothesis, tenure heterogeneity and education level heterogeneity show significant negative relationships to progressive decision making. Thus, *Hypothesis 8* receives some support. Contrary to our hypothesis, tenure shows a significant positive relationship to progressive decision making. Thus, we reject

Table 2. Goodness of Fit Measures

Model	Number of Parameters	df	Generalized Least Squares	p
Our Model	139	296	278.36	0.762
Saturated Model	435	0	0.00	
Independence Model	29	406	547.595	0.000
Zero Model	0	435	1305.00	0.000

Model	Goodness of of Fit Index	Adjusted Goodness of Fit Index
Our Model	0.787	0.687
Saturated Model	1.000	
Independence Model	0.580	0.550
Zero Model	0.000	0.000

Model	Delta-2 Bollen-1989	Rho-2 Tucker-Lewis
Our Model	1.070	1.17
Saturated Model	1.000	
Independence Model		0.00

Hypothesis 10. Consistent with our hypothesis, the proportion of business degrees shows a significant positive relationship to progressive decision making thus lending some support to *Hypothesis 11.* All other hypotheses are rejected.

The lack of support for several of our hypotheses may be due to the existence of curvilinear relationships between some of the variables. We acknowledge this as a limitation of our analyses.

Discussion and Conclusions

Our study makes a significant contribution to the literature. It supports the notion of strategic choice in which top managers exert a powerful influence on organizational outcomes. This study identifies corporate ideology as an important variable by which top management demographics influence firm performance. Our research supports the theoretical model of ideology as a partial mediator in the relationship between top management demographics and firm performance. Our study also found direct and indirect effects of demographics on performance and suggests the existence of additional intervening mechanisms. The indirect influences through intervening variables are important in that they may enhance or attenuate the direct influence of demographics on firm performance.

The present study found a link between two dimensions of ideology, an important component of culture, and firm performance. As hypothesized, companies that emphasize the rational model of decision-making or progressive decision-making showed better financial performance. The emphasis on a systematic search for opportunities and threats and the analysis of costs versus benefits that characterize this model may contribute to firm performance by helping managers simplify and order a complex environment. The positive relationship between a company's emphasis on social responsibility and firm performance is consistent with earlier research. An emphasis on social responsibility may contribute to performance by improving the company's relationship with its stakeholders.

The present study found some support for a link between top management demographic characteristics and one dimension of corporate ideology, i.e. progressive decision making. As expected, the greater the proportion of managers with a business degree, the more the company emphasizes progressive decision making. Managers with business degrees have been exposed to this normative rational model of decision making as it is emphasized in U.S. business schools. Contrary to our expectations, we found that managers with greater tenure place more emphasis on the systematic search for alternatives. These managers may hold a longer-term perspective of the company in which they are willing to systematically consider a wider range of alternatives.

As hypothesized, groups that are heterogeneous in terms of age and functional background bring a diversity of viewpoints to the decision-making process that is consistent with the systematic search for alternatives. Contrary to our hypothesis, the greater the similarity of top management with respect to tenure and education level, the more the emphasis on progressive decision-making. Groups that are similar in terms of tenure and education may be better socially integrated and may be able to agree on the systematic search for alternatives of the rational model. Future research is needed in this area.

By examining the relationship between TMT demographic characteristics and performance, our study lends further support to the upper echelon perspective (Hambrick/Mason 1984). Contrary to our hypothesis, age showed a significant positive relationship to firm performance whereas tenure showed a significant negative relationship as anticipated. Older managers may contribute greater experience to the decision making process which may result in better quality decisions. Managers with less organizational tenure, on the other hand, may have less commitment to the status quo. Taken together, our study suggests that outsiders (those who are older but hold less organizational tenure) contribute to firm performance. As expected, teams with greater education contribute to better performance, consistent with previous research (eg. Norburn/Birley 1988). Faced with growing global competition, firms must cope with fast changing technology, shorter product life cycles, the competitive and quick reactions of rivals, and operating in culturally unfamiliar surroundings.

Our findings relating the heterogeneity of the TMT to firm performance are noteworthy but more challenging to explain. Although we found some support for our hypothesis that heterogeneous teams contribute to firm performance, our findings were mixed. Groups that are heterogeneous in terms of education contribute to better performance. On the other hand, the more similar the group in terms of age, the better the performance. The similarity of age may contribute to social integration, communication, and a team spirit which are beneficial to performance whereas the heterogeneity of education level may contribute to performance through its influence on innovation and creativity. Several other studies have reported mixed findings relating measures of heterogeneity and organizational outcomes (Murray 1989, Smith et al. 1994, Wiersema/Bantel 1992). We conclude that more research is needed in this area.

This study found that top management demographics exert a direct and indirect effect on performance. It also suggests the existence of additional intervening variables in the demographics-performance link. We noted, for example, that mean tenure has a positive relationship to progressive decision making which, in turn, has a positive relationship to firm performance. On the other hand, the direct relationship between tenure and performance is negative. We believe that tenure has both positive and negative effects on performance. On the one hand, it contributes to more systematic decision making that benefits performance. On the other hand, managers with greater tenure may be more committed to the status quo and less likely to change strategic direction which could have a negative effect on performance. Future research could identify other important intervening variables and may help clarify these mechanisms.

The present study has several limitations. Since the study is cross-sectional, it cannot address concerns regarding causality and alternative causal sequences cannot be dismissed. Longitudinal studies are needed to help to clarify the direction of the causal relationships. Another limitation of the study is that the sample did not include firms in the service sector and was limited to firms in the U.S. thereby raising questions regarding generalizability. Given the sample size, we were limited as to the number of independent variables that could be included. As a result, our study did not include important contextual variables such as environment or strategy which may explain some of our nonfindings. Future research could shed light on the 'black box' between top management demographics and firm performance.

Endnotes

1 The authors would like to thank Marc Dollinger, James Lang, Briance Mascarenhas, and Keith Provan for their comments on earlier versions of this paper.

2 For a detailed description of the ideology measures see Goll and Zeitz (1991). The item numbers shown in Figure 1 and Table 1 and the items for each scale are summarized below.

Progressive Decision Making: Item 1 = Systematic search and consideration of costs/benefits; 2 = Participative decision making for management; 3 = Explanation of proposed changes; 4 = Individual fulfillment through community and participation; 5 = Application of operations research; 6 = Participative consensus-seeking decision-making; 7 = Open channels of communication.
Social Reponsibility: Item 8 = Monitoring opportunities to solve social problems; 9 = Performing in philanthropic manner; 10 = Viewing philantropic behavior as measure of performance.
Organicity: Item 11 = Using formally laid down procedures; 12 = Overcoming resistance to change through orders; 13 = Holding fast to true and tried management principles; 14 = Emphasizing hard work and obedience to authority; 15 = Reliance on top executives to make decisions.
Please note that some items were reverse-scored for consistency in wording.

3 The means, standard deviations, and correlations are available from the authors.

4 The proportion of managers with a general functional background was omitted from all four equations since the sum of all the functional background proportions is one. This was done to eliminate the possibility of multicollinearity (see Weisberg 1985).

5 The direction of linkage between demographics, ideology, and firm performance is suggested by theory. Given our cross-sectional methodology and the simultaneous testing of the equations in our theoretical model, we cannot rule out reciprocal relationships.

6 The data were analyzed using the generalized least squares estimation method which assumes that the error terms are independent. In order to improve the fit of the model, we allowed four pairs of error terms to covary. Three pairs of items covaried in the latent variables. (The ideology item numbers appear in Footnote 1.)

Item 1 + Error Item 1 ↔ Item 6 + Error Item 6 ($r = -0.62$, $p < 0.05$)
Item 3 + Error Item 3 ↔ Item 7 + Error Item 7 ($r = 0.15$, $p > 0.05$)
Item 10 + Error Item 10 ↔ Item 15 + Error Item 15 ($r = 0.26$, > 0.05)

In addition, the error term for Equation 1 covaried with the error term for Equation 2. (See Table 1.)

Equation 1 + Error Equation 1 ↔ Equation 2 + Error Equation 2 ($r = 0.70$, $p < 0.05$)

The generalized least squares estimation method that was used takes into account these correlated error terms (see Kline 1998).

References

Allison, P. D., Measures of Inequality, *American Sociological Review*, 43, 1978, pp. 865-880.

Arbuckle, J., *AMOS: Analysis of Moment Structures*, Phila.: Temple University 1993.

Aupperle, K. W./Carroll, A. B./Hatfield, J. D., An Empirical Examination of the Relationship Between Corporate Social Responsibility and Profitability, *Academy of Management Journal*, 28, 1985, pp. 446–463.

Bantel, K. A./Jackson, S. E., Top Management and Innovations in Banking: Does the Composition of the Top Management Team Make a Difference?, *Strategic Management Journal*, 10, 1989, pp.107–124.

Bentler, P. M., Multivariate Analysis With Latent Variables: Causal Modeling, in Rosenzweig, M. R./Porter, L. W. (eds.), *Annual Review of Psychology*, 31, 1980, pp. 419–456.

Beyer, J. M., Ideologies, Values, and Decision-Making in Organizations, in Nystrom, P. C./Starbuck, W. H. (eds.), *Handbook of Organizational Design*, vol. 2, New York: Oxford University Press 1981, pp. 166–202.

Blau, P. M., *Inequality and Heterogeneity*, New York: Free Press 1977.

Bollen, K. A., *Structural Equations With Latent Variables*, New York: John Wiley and Sons 1989.

Borokhovich, K. A./Parrino, R./Trapani, T. , Outside Directors and CEO Selection, *Journal of Financial and Quantitative Analysis*, 31, 1996, pp. 337–355.

Burns, T./Stalker, G. M., *The Management of Innovation*, London: Tavistock 1961.

Business Week, Corporate Scoreboard, 1985, March 22.

Business Week, The Top 1000 U. S. Companies, 1987, 1988.

Chaganti, R./Sambharya, R., Strategic Orientation and Characteristics of Upper Management, *Strategic Management Journal*, 8, 1987, pp. 393–401.

Child, J., Managerial and Organizational Factors Associated With Company Performance – Part I, *Journal of Management Studies*, 11, 1974, pp. 13–27.

Clark, B. R., The Organizational Saga in Higher Education, *Administrative Science Quarterly*, 17, 1972, pp.178–184.

Datta, D. K./Guthrie, J. P., Executive Succession: Organizational Antecedents of CEO Characteristics, *Strategic Management Journal*, 15, 1994, pp. 569–577.

Datta, D. K./Rajagopalan, N., Industry Structure and CEO Characteristics: An Empirical Study of Succession Events, *Strategic Management Journal*, 19, 1998, pp. 833–852.

Dun and Bradstreet, *Million Dollar Directory*. Parsippany, NJ: Dun and Bradstreet Corporation 1985.

Dun and Bradstreet, *Reference Book of Corporate Managements: America's Corporate Leaders*. Parsippany, NJ: Dun and Bradstreet Corporation 1987.

Dunbar, R. L. M./Dutton, J. M./Torbert, W. R., Crossing Mother: Ideological Constraints on Organizational Improvements, *Journal of Management Studies*, 19, 1982, pp. 91–108.

Dutton, J. E./Duncan, R. B., The Creation of Momentum for Change Through the Process of Strategic Issue Diagnosis, *Strategic Management Journal*, 8, 1987, pp. 279–295.

Eisenhardt, K./Schoonhoven, C., Organizational Growth: Linking Founding Team, Strategy, and Growth Among US Semiconductors Ventures, 1978-1988, *Administrative Science Quarterly*, 35, 1990, pp. 504–529.

Finkelstein, S./Hambrick, D. C., Top Management Team Tenure and Organizational Outcomes: The Moderating Role of Managerial Discretion, *Administrative Science Quarterly*, 35, 1990, pp. 484–503.

Fredrickson, J. W., The Comprehensiveness of Strategic Decision Processes: Extension, Observations, Future Directions, *Academy of Management Journal*, 27, 1984, pp. 445–466.

Goll, I., Environment, Corporate Ideology, and Employee Involvement Programs, *Industrial Relations*, 30, 1991, pp. 138–149.

Goll, I./Sambharya, R., The Effect of Organizational Culture and Leadership on Firm Performance, in Shrivastava, P./Lamb, R. (eds.), *Advances in Strategic Management*, vol. 6, Greenwich, CT: JAI Press 1990, pp. 183–200.

Goll, I./Sambharya, R., Corporate Ideology, Diversification and Firm Performance, *Organization Studies*, 16, 5, 1995, pp. 823–846.

Goll, I./Zeitz, G., Conceptualizing and Measuring Corporate Ideology, *Organization Studies*, 12, 1991, pp. 191–207.

Hambrick, D. C./Cho, T. S./Chen, M. J., The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves, *Administrative Science Quarterly*, 41, 1996, pp. 659–684.

Hambrick, D. C./Geletkanycz, M. A./Fredrickson, J. W., Top Executive Commitment to the Status Quo: Some Tests of its Determinants, *Strategic Management Journal*, 14, 1993, pp. 401–418.

Hambrick, D. C./Mason, P. A., Upper Echelons: The Organization as a Reflection of its Top Managers, *Academy of Management Review*, 9, 1984, pp. 193–206.

Hitt, M. A./Tyler, B. B., Strategic Decision Models: Integrating Different Perspectives, *Strategic Management Journal*, 12, 1991, pp. 327–351.

Jackson, S. E., Consequences of Group Composition for the Interpersonal Dynamics of Strategic Issue Processing, in Shrivastava, P./Huff , A./Dutton, J. (eds.), *Advances in Strategic Management*, vol. 8, Greenwich, CT: JAI Press 1992, pp. 345–382.

Jackson, S. E./Brett, J. F./Sessa, V. I./Cooper, D. M./Julin, J. A./Peyronnin, K., Some Differences Make a Difference: Individual Dissimilarity and Group Heterogeneity as Correlates of Recruitment, Promotions, and Turnover, *Journal of Applied Psychology*, 76, 1991, pp. 675–689.

Joreskog, K. G., A General Method for Analysis of Covariance Structures, *Biometrika*, 57, 1970, pp. 239–251.

Keck, S. L., Top Management Team Structure: Differential Effects by Environmental Context, *Organization Science*, 8, 1997, pp. 143–156.

Kline, Rex B., *Principles and Practice of Structural Equation Modeling*, New York: Guilford Press 1998.

Knight, D./Pearce, C. L./Smith, K. G./Olian, J. D./Sims, H. P./Smith, K. A./Flood, P., Top Management Team Diversity, Group Process, and Strategic Consensus, *Strategic Management Journal*, 20, 1999, pp. 445–465.

Krishnan, H. A./Miller, A./Judge, W. Q., Diversification and Top Management Team Complementarity: Is Performance Improved by Merging Similar or Dissimilar Teams?, *Strategic Management Journal*, 18, 1997, pp. 361–374.

Lawrence, B. S., The Black Box of Organizational Demography, *Organization Science*, 8, 1997, pp. 1–22.

Markoczy, L., Measuring Beliefs: Accept no Substitutes, *Academy of Management Journal*, 40, 1997, pp. 1228–1242.

McGuire, J. B./Sundgren, A./Schneeweis, T., Corporate Social Responsibility and Firm Financial Performance, *Academy of Management Journal*, 31, 1988, pp. 854–872.

Michel, J. G./Hambrick, D. C., Diversification Posture and Top Management Team Characteristics, *Academy of Management Journal*, 35, 1992, pp. 9–37.

Murray, A. I., Top Management Group Heterogeneity and Firm Performance, *Strategic Management Journal*, 10, 1989, pp. 125–141.

Norburn, D./Birley, S., The Top Management Team and Corporate Performance, *Strategic Management Journal*, 9, 1988, pp. 225–237.

Pettigrew, A. M., On Studying Managerial Elites, *Strategic Management Journal*, 13, 1992, pp. 163–182.

Pettigrew, A. M., On Studying Organizational Cultures, *Administrative Science Quarterly*, 24, 1979, pp. 570–581.

Pfeffer, J, Organizational Demography, in Cummings, L. L./Staw, B. M. (eds.), *Research in Organizational Behavior*, vol. 5, Greenwich, CT: JAI Press 1983, pp. 299–357.

Priem, R. L., Top Management Team Group Factors, Consensus, and Firm Performance, *Strategic Management Journal*, 11, 1990, pp. 469–478.

Sambharya, R. B., Foreign Experience of Top Management Teams and International Diversification Strategies of US Multinational Corporations, *Strategic Management Journal*, 17, 1996, pp. 739–746.

Smith, K. G./Smith, K. A./Olian, J. D./Sims, H. P./O'Bannon, D. P./Scully, J. A., Top Management Team Demography and Process: The Role of Social Integration and Communication, *Administrative Science Quarterly*, 39, 1994, pp. 412–438.

Sproull, L. S., Beliefs in Organizations, in Nystrom, P./Starbuck, W. (eds.), *Handbook of Organizational Design*, New York: Oxford University Press 1981, pp. 203/ 224.

Standard and Poors, *Register of Corporations, Directors, and Executives*, New York: Standard and Poors 1985.

Standard and Poors, *Stock Reports*, New York: Standard and Poors 1987, 1988.

Starbuck, W. H., Congealing Oil: Inventing Ideologies to Justify Acting Ideologies Out, *Journal of Management Studies*, 19, 1, 1982, pp. 3–27.

Thomas, A. S./Litschert, R. J./Ramaswamy, K., The Performance Impact of Strategy-Manager Coalignment: An Empirical Examination, *Strategic Management Journal*, 12, 1991, pp. 509–522.

Wagner, W. G./Pfeffer, J./O'Reilly, C. A., Organizational Demography and Turnover in Top Management Groups, *Administrative Science Quarterly*, 29, 1984, pp. 74–92.

Wiersema, M. F./Bantel, K. A., Top Management Team Demography and Corporate Strategic Change, *Academy of Management Journal*, 35, 1992, pp. 91–121.

Wiersema, M. F./Bantel, K. A., Top Management Team Turnover as an Adaptation Mechanism: The Role of the Environment, *Strategic Management Journal*, 14, 1993, pp. 485–504.

Wiersema, M. F./Bird, A., Organizational Demography in Japanese Firms: Group Heterogeneity, Individual Dissimilarity, and Top Management Team Turnover, *Academy of Management Journal*, 36, 1993, pp. 996–1025.

Weisberg, S., *Applied Linear Regression*. New York: John Wiley and Sons 1985.

Worldscope Industrial Company Profiles, Bridgeport CT: Wright Investors' Service 1989.