

CEO values, organizational culture and firm outcomes

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Summary

Few empirical works have examined the process through which CEO dispositions relate to organizational outcomes. In this study we examined the relationships between CEO values and organizational culture, and between organizational culture and firm performance. Data were collected from different sources (26 CEOs, 71 Senior Vice Presidents and 185 other organizational members), and include organizational financial performance data collected at two points in time. In support of our hypotheses, CEO self-directive values were associated with innovation-oriented cultures, security values were associated with bureaucratic cultures and benevolence values were related to supportive cultures. In turn, cultural dimensions showed differential associations with subsequent company sales growth, an index of organizational efficiency and assessments of employee satisfaction. Copyright © 2007 John Wiley & Sons, Ltd.

Extant research identifies the critical role of CEO input to organizational performance (see Finkelstein & Hambrick, 1996 for a review). Previous theoretical work (Hambrick & Mason, 1984) has linked CEO characteristics, such as personal values, with process outcomes (e.g. organizational structure) and with financial performance. This perspective argues that psychological constructs explain how CEOs and other executives interpret and act on external and internal stimulation. Specifically, executives' choices of strategic alternatives are based on their cognitive bases and in particular on their value systems (Carpenter, Geletkanycz, & Sanders, 2004). Yet, Upper Echelon research has generally employed proxies for values, such as CEO demographics, instead of assessing values directly. Consequently, of the few studies that have been conducted on CEO characteristics as predictors of firm outcomes, most have relied on descriptive demographics rather than on psychographic, more explanatory, constructs (Boal & Hooijberg, 2000; Carpenter et al., 2004; Priem, Lyon, & Dess, 1999).

The purpose of the present study was to examine the relationship between CEO values and organizational outcomes. Consistent with the seminal work of Hambrick and Mason (1984), we propose a model in which CEO values influence organizational culture, which in turn is related to both subjective and objective organizational outcomes (see Figure 1).

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Figure 1. CEO values, organizational culture, and firm outcomes

Linking CEO Values to Organizational Characteristics

Several works suggest links between CEO and organizational characteristics (e.g. Hambrick & Mason, 1984; Hoffman & Hegarty, 1993; Schneider, 1987). One route that has been suggested involves Schneider's (1987; Schneider, Goldstein, & Smith, 1995) Attraction-Selection-Attrition model. According to the model, organization members are attracted to, selected by, and sometimes departed from organizations on the basis of their fit (or lack thereof) with the organization's characteristics and orientations. Accordingly, over time, organizational members, including leaders, come to resemble their organizations with respect to characteristics such as personal orientations and values.

The relationship between leader and organization characteristics can also be explained via another route. In particular when discussing organizational executives, numerous works suggest that through their personal characteristics leaders help determine what their organizations will ultimately look like (e.g. Hambrick & Mason, 1984; Lewin & Stephens, 1994; Miller & Droge, 1986; Miller, Droge, & Toulouse, 1988). Among these characteristics are personal values, which have been argued to be among the most influential leader characteristics. Top managers aim to pass on their values to employees as a means of shaping behaviour and directing the firm (Enz, 1988; Schein, 1992). Agle, Mitchell, and Sonnenfeld (1999) argued that CEOs imprint their firms with their own values through their strategic decisions. They found overall support for relationships between CEO values and the priority given to each of a variety of stakeholders, such as employees, government and community. Thus, CEO values are indicated as having important implications for organizational processes and outcomes.

Values are conceptualized as explicit or implicit formulations of the 'desirable' that influence individuals' means and ends of action (Kluckhohn, 1951). They are said to consist of 'enduring beliefs that a specific mode of conduct is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence' (Rokeach, 1973, p. 5). Furthermore, they embody personal, trans-situational, sets of priorities that differ across individuals and act as guiding principles in people's lives (Hitlin & Piliavin, 2004; Schwartz, 1992). For example, whereas some people may emphasize achieving security in their lives (i.e. security values) others may give more weight to obtaining personal autonomy and creative freedom (i.e. self-direction values).

The impact of values is pervasive in that they influence the most basic ways in which people perceive their environments (Meglino & Ravlin, 1998). Values influence how events are interpreted; individuals are motivated to perceive events in a manner that is consistent with their personal value system (Hitlin & Piliavin, 2004). Of the numerous ways in which any objective situation can be interpreted, individuals tend to adopt the interpretation that maintains their value perspective. For example, information concerning a firm's moderate rate of turnover may be interpreted as a reason for concern by a leader who values stability, whereas it may be interpreted in positive terms by a leader who values novelty and renewal. Thus, values act as lenses, or filters, that determine the amount and type of information that leaders process.

Accordingly, by influencing perceptions values are also tied to individuals' behaviours (Meglino & Ravlin, 1998). Individuals are motivated to behave in accordance with their values in order to avoid the unpleasant sensation that accompanies value-behaviour incongruence (Sosik, 2005). Therefore, CEOs' values should have a substantial influence on their perceptions and behaviours, which in turn have a role in moulding the organization's characteristics and performance.

In line with this notion, a number of studies by Miller and colleagues (Miller et al., 1988; Miller, Kets de Vries, & Toulouse, 1982; Miller & Toulouse, 1986) have shown how leader characteristics may be tied to organizational characteristics, such as organizational structure. Similarly, a number of studies found evidence for links between leader values and organizational strategic choices (e.g. Hage & Dewar, 1973; Shirley, 1975). Although not previously examined, another key organizational characteristic that is likely related to executives' values is the organizational culture. We establish our hypotheses concerning this link below.

Organizational Culture

Organizational culture represents an active, living, phenomenon by which key members of the organization, such as executives, create shared meaning (Morgan, 1997). Members continuously interpret aspects of their work environment and these interpretations, as well as the ways in which they are enacted, form the culture of the organization (Martin, 1992). Among the manifestations of culture are rituals, group norms, habits of thinking and espoused values (Deal & Kennedy, 1982; Schein, 1992; Trice & Beyer, 1993).

When discussing values, it is important to distinguish between individuals' personal values and the espoused values that are characteristic of organizational cultures. Whereas personal values involve stable and deeply embedded structures that exist within individuals and are not necessarily conscious (also known as latent values, Enz, 1988), espoused values are 'articulated, publicly announced principles and values that the group claims to be trying to achieve, such as product quality' (Schein, 1992, p. 9). These cultural elements represent the shared perceptions and orientations in the specific domain of work, which are relatively dynamic and sensitive to external influences, and should be distinguished from the mere aggregation of members' trans-situational personal values.

Three recurring cultural dimensions have been identified across several organizational culture typologies (e.g. Hofstede, Neuijen, Ohayv, & Sanders, 1990; Kotter & Heskett, 1992; O'Reilly, Chatman, & Caldwell, 1991; Tsui, Zhang, Wang, Xin, & Wu, 2006; Wallach, 1983). These three dimensions highlight distinct organizational forms, each of which constitutes a key domain for our understanding of an organization's functioning. One dimension that is included in most extant typologies emphasizes an entrepreneurial orientation, creativity and a risk-taking work environment. This dimension, sometimes titled *innovation*, involves an enterprising and opportunity-seeking environment (Ireland, Hitt, & Sirmon, 2003). People who seek challenge and risk thrive in such organizations (Wallach, 1983).

A second common theme involves an emphasis on rules, regulations and efficiency. Organizations high on this *bureaucratic* dimension lack flexibility and emphasize formalization and centralization along with an emphasis on efficient performance. In such organizations performance is enhanced through rules, procedures and clearly defined structures that highlight consistency and predictability (Wallach, 1983).

A third dimension that is addressed in most culture typologies involves a *supportive* orientation towards organization members. Organizations that are high on support provide a warm place of work, where people are friendly, fair and helpful (O'Reilly et al., 1991). Such cultures embody work environments that are characterized by trust, safety and an encouraging and collaborative atmosphere. Managers who work in such cultures facilitate equitable and open relationships among employees.

We focus in the present study on these three culture dimensions because they constitute a varied set of distinct and well-researched organizational types and because they are the ones to appear most consistently across extant culture taxonomies. As we discuss below, we suggest that organizations' emphases on each of these three cultural dimensions will be associated with CEOs personal values.

CEO Values and Organizational Culture

Leaders have a central role in shaping and controlling organizational culture (e.g. Schein, 1992). Although founders have the initial role in establishing an organization's culture, cultures have been known to change in the hands of subsequent CEOs (e.g. Davis, 1984; Kerr & Slocum, 2005). Once the culture is initially formed, key leaders, and in particular CEOs, are responsible for managing the evolution of the organization's basic assumptions and for modifying the culture in order to keep up with the changing demands of the environment (Agle et al., 1999; Schein, 1992; Wally & Baum, 1994).

Because ordinarily there is more than one way in which an organization's culture can accommodate environmental demands, the particular direction and manner in which the culture is modified is likely to reflect the leader's personal value system (e.g. Davis, 1984; Dess, Ireland, Zahra, & Floyd, 2003; Guth & Ginsberg, 1990; Ireland et al., 2003). For example, Kerr and Slocum (2005) argue that by managing the reward system in the organization, culture change can be achieved. Because CEOs differ in what they value, they are likely to differ in the things they choose to reward. In turn, variations in the reward systems contribute to the creation of different organizational cultures. Anecdotal evidence for such culture change comes from CEOs, such as Louis Gerstner of IBM and Heinrich von Pierer of Siemens, which have been known for transforming the culture of their organizations (Stewart & O'Brien, 2005).

In the present study we set out to test the links of CEO personal values with innovation, bureaucratic and supportive organizational cultures. We employed what is among the most rigorously studied taxonomies of personal values—Schwartz's (1992) system of basic human values. Through an extensive research programme, of participants from more than 60 countries, Schwartz has identified a 10-category value system that has been shown to replicate in structure and content across cultures (e.g. Schwartz, 1994, 2005). These values are organized on a motivational continuum and form a circumplex that represents the dynamic relationships among them. Actions in pursuit of any such value have psychological, practical and social consequences that may conflict or be congruent with the pursuit of other values (Schwartz, 1992). In line with our focus on innovation, bureaucracy and supportive cultures, we sought the particular personal values with which these culture dimensions most closely correspond, namely, self-direction, security and benevolence.

Self-direction involves an emphasis on making one's own choices, on free thought, and on learning, creating and exploring. People who identify with this value tend to appreciate creativity, freedom and independence. Self-direction values have been shown to guide individuals' attention and action towards intrinsically rewarding intellectual opportunities (Van Dijk and Kluger, 2004). Accordingly, CEOs who value self-direction are likely to model creative and innovative behaviour, to pay greater attention to, and to herald, entrepreneurial opportunities and to reward behaviours that follow suit. In such a manner CEOs can create and maintain an innovation culture, characterized by the emphasis on creativity, entrepreneurship and a general openness to new ideas. Accordingly, it is expected that cultures of organizations with leaders who value self-direction will tend to emphasize innovation.

Security values derive from basic individual and group requirements and involve an emphasis on stability, order and predictability. Leaders who possess strong security values focus on the creation and

preservation of clear and explicit practices. To maintain stability and order these leaders are likely to employ set routines and to determine clear and strict rules and procedures, as are typically seen in bureaucratic organizational forms (Burns & Stalker, 1961). Accordingly, organizations with leaders that value security are likely to be characterized by bureaucratic cultures.

Lastly, *benevolence* is about preserving and enhancing the welfare of those with whom one is in frequent personal contact. 'Benevolence values derive from the basic requirement for smooth group functioning . . . and from the organismic need for affiliation' (Schwartz, 2005). Those who emphasize benevolence tend to emphasize a true concern for others' welfare. Benevolent leaders are therefore likely to pay close attention to their employees' needs, to encourage cooperative and supporting behaviours, and to nurture relationships with and among organization members. Through the language that they use, the types of extra-job activities that they initiate and their treatment of others in the organization they can thus maintain a supportive organizational culture.

Based on the formulations presented above, we hypothesize that CEO personal values will be associated with organizational culture dimensions, such that:

Hypothesis 1: CEO self-direction will be positively associated with the extent to which the organizational culture is innovation-oriented.

Hypothesis 2: CEO security values will be positively associated with the extent to which the organizational culture is bureaucratic.

Hypothesis 3: CEO benevolence will be positively associated with the extent to which the organizational culture is supportive.

Organizational Culture as a Predictor of Organizational Outcomes

While not always successful, CEOs generally aim to build and support organizational cultures that nurture performance (Peters & Waterman, 1982). Cultures help build a strong sense of ownership among employees by emphasizing such practices as empowerment, employee involvement, teamwork, consistency, adaptability and a strong sense of mission (Fey & Denison, 2003). Organizational cultures enhance organizational outcomes by appealing to employees' ideals associated with commitment and effort (e.g. Pettigrew, 1979). CEOs utilize culture to boost effectiveness by focusing organizational members' attention and by highlighting priorities that guide and coordinate members' behaviour towards achieving performance goals (O'Reilly & Chatman, 1996).

Performance outcomes that are associated with organizational culture range from increased member participation (Pettigrew, 1979), through employee commitment (Silverthorne, 2004), to financial performance goals (Denison & Mishra, 1995; Kotter & Heskett, 1992; Kravetz, 1988). In an extensive study of 764 organizations, Denison and Mishra (1995) found significant relationships between organizational culture and performance. Their findings demonstrate how different culture dimensions (e.g. involvement and mission-orientation) can enhance different aspects of performance (e.g. profitability and sales growth).

As far as linking specific culture dimensions to specific types of organizational outcomes, a number of works provide a basis for the formulation of hypotheses. Mintzberg (1973) suggested that one of the key executive roles is the entrepreneurial role, which involves searching the organization and its environment for new opportunities and facilitating change and innovation in the organization. Cultures that are associated with innovation and entrepreneurial goals 'facilitate firms' efforts to manage

resources strategically' (Ireland et al., 2003, p. 970). They encourage creativity and the generation of new ideas and highlight opportunity-seeking and advantage-seeking behaviours. Furthermore, leaders in such organizations tolerate failure, promote learning and facilitate innovation and risk-taking (Wallach, 1983). Among the most typical and representative outcomes of entrepreneurial and innovation cultures is growth in sales, which represent the organization's emphasis on risk-taking and on venturing to new markets (Dess et al., 2003). Organizations that emphasize risk-taking and advantage-seeking behaviours encourage exploitation of growth opportunities, even at the risk of instability and temporary setbacks. Given that an entrepreneurial and innovation-focused culture is growth oriented (Ireland et al., 2003), we expect innovation culture to be positively associated with a firm's subsequent sales growth.

In addition to sales growth, organizations often emphasize efficiency in performance. Early on, a link has been made between bureaucratic organizational forms and efficient performance (Weber, 1947). Bureaucratic organizations tend to be centralized and are characterized by high levels of formalization, specialization, hierarchy and a lack of flexibility (Adler & Borys, 1996). Several works have indicated the benefits of such characteristics for organizational efficiency. For example, formalization, a central dimension of bureaucracies, serves to support constitutional order, thereby assisting employees in mastering their tasks more efficiently (Lawrence & Lorsch, 1967). According to both Weberian and neo-Weberian views, 'the source of bureaucracy's dominance over [other forms of] governance lies in its capacity for rationally calculating the most precise and efficient means for the resolution of problems' (Heugens, 2005, p. 551). Indeed, even in today's dynamic business environment, bureaucratic forms are still shown to yield high organizational efficiency (e.g. Adler, Goldoftas, & Levine, 1999). Accordingly, we expect that bureaucratic cultures will be associated with organizational efficiency.

However, the literature on bureaucratic organizations indicates both positive and negative implications (e.g. Adler & Borys, 1996). The rigidity of bureaucratic forms often yields negative employee reactions. Accordingly, a number of studies suggest that there would be a negative relationship between bureaucratic culture and employee satisfaction (e.g. Bhargava & Kelkar, 2000; Clark, 2001). In a study of voluntary organizations, centralization, hierarchy, standardization and formalization exhibited negative correlations with intrinsic motivation (Sherman & Smith, 1984). Similarly, in another study, the extent to which an organization was perceived as centralized was negatively associated with employees' job satisfaction (Bhargava & Kelkar, 2000). Contrarily, perceived work flexibility—which is characteristic of non-bureaucracies—was found to be positively associated with employee satisfaction (Clark, 2001). While their focus was on clients and customers rather than employees, another set of studies found negative relationships between bureaucratic culture and client satisfaction (King & Garey, 1997; Meterko, Mohr, & Young, 2004); the more bureaucratic the organization's culture, the lower was client satisfaction. The rationale provided for these relationships was that the rigidity involved in the emphasis given to rules and regulations enhances employees' experience of stress which then translates into lower levels of customer satisfaction. We therefore expect a negative association between bureaucratic culture and employee satisfaction.

Whereas bureaucratic cultures are expected to be negatively associated with employee satisfaction, supportive cultures, which promote a friendly and trustworthy environment, are expected to be positively related to satisfaction. Indeed, while their focus was not on organizational culture, several studies indicate relationships between perceived organizational support (POS) and employee satisfaction (e.g. Armstrong Stassen, 2004; Hochwarter, Kacmar, Perrewe, & Johnson, 2003; O'Driscoll et al., 1998; Randall, Cropanzano, Bormann, & Birjulin, 1999). In a cross-national study of managers and professionals, perceptions that the organization promoted employee-supportive values were associated with higher job satisfaction (O'Driscoll et al., 1998). In another field study of three organizations, organizational support was associated with organizational commitment and

job satisfaction (Randall et al., 1999). Similarly, a number of studies that focused on the construct of POS found positive relationships between POS and employees' job satisfaction (e.g. Armstrong Stassen, 2004; Hochwarter et al., 2003). Accordingly, in the present study we expect to find a positive relationship between the extent to which an organization's culture is characterized as supportive and employee satisfaction.

We therefore hypothesize that organizational culture dimensions will be associated with organizational outcomes, such that:

Hypothesis 4: Innovation organizational cultures will be positively associated with subsequent sales growth.

Hypothesis 5: Bureaucratic organizational cultures will be positively associated with organizational efficiency and negatively associated with indices of employee satisfaction.

Hypothesis 6: Supportive organizational cultures will be positively associated with indices of employee satisfaction.

Organizational Context

Organizational Factors

The sample is based on 26 Israeli companies that represent multiple industries, including high technology firms, appliances producers and organizations from the paper and food industries. We chose a sample of representative public firms based on Dun & Bradstreet's list of Israeli public firms. Consequently, companies varied in terms of size, age and financial health.

Control Variables

Beyond the effects of our independent variables, we wanted to control for CEO demographics (e.g. age) and organizational characteristics (e.g. organizational size) which may also influence organizational processes and performance. Specifically, we controlled for the effects of CEO age, CEO tenure in their jobs, CEO tenure in the organization, industry type, organization size and organization age (see descriptive statistics for these variables below).

External Environment

The Israeli economy experienced a crisis associated with the 2000–2001 economic downturn in Western markets. In addition, substantial political unrest throughout the period in which data were collected (between 2001 and 2002) resided in the country and contributed to the general instability in the Israeli economy. As such, the role of leaders in organizations was greatly emphasized in line with literature that suggests increased leadership emergence in times of crisis (e.g. Conger & Kanungo, 1998).

The Israeli national culture is typically low-medium on individualism with small power distance. These characteristics are somewhat different than those of the United States in which most of the research on leadership has been conducted. Nevertheless, the business orientation in Israel is very much influenced by the general trends in the US and business culture tends to be much more individualistic than that of society as a whole.

Method

Sample and procedure

We contacted 139 Israeli publicly traded companies that represented both high- and low-tech organizations based on their level of investment in R&D. We used Lawless and Gomez-Mejia's (1990) criterion of 3 per cent (of total revenue) invested in R&D to distinguish between high- and low-technology firms. Most data were collected in 2001. While 94 companies agreed to participate, only 27 returned the minimum amount of surveys required for our analyses (see details below). One company was de-listed from the Israeli Stock Exchange and we therefore ended up using 26 companies. To avoid common-source biases in our analyses we collected data from a variety of sources within each organization. Out of the 282 individuals who participated in this study, 26 were CEOs, 71 were senior vice presidents (2–4 per company) and 185 were direct reports of the senior vice presidents (5–9 per company).

All CEOs, 82 per cent of the senior VPs and 69 per cent of the direct reports of the senior VPs were men. The mean CEO age was 52 ($SD = 7.08$) and the mean age of the entire sample was 44 ($SD = 9.5$). The mean tenure of CEOs in their jobs was 7.9 years ($SD = 7.5$) and their mean tenure in the organization was 12.5 years ($SD = 11.24$). Mean job-tenure and organizational tenure for the entire sample were 4.5 ($SD = 5.4$) and 8.4 years ($SD = 7.9$), respectively. The average number of employees in the organizations was 390 ($SD = 450$). Sixteen organizations were from low-tech and 10 from high-tech industries. The average organizational age was 32.2 years ($SD = 20.65$).

All participants provided a self-report of their personal values as well as other individual-, team- and organization-level indices, yet a different source was used for each set of variables to avoid common-source biases. We used CEOs personal ratings of their values, the subordinates of the senior VPs' organizational culture ratings and the senior VPs estimates of their employees' satisfaction. In addition we obtained financial data for each company. Survey data were collected by the authors with the help of Dun & Bradstreet through 2001 and financial data were obtained for 2002.

Measures

Personal values

CEO values were measured with Schwartz's (1992) value inventory. CEOs reported the importance they attribute to each of the value items as guiding principles in their life. In the value inventory, responses range from 7 (of supreme importance) to 3 (important) to 0 (not important) to -1 (opposed to my values). Sample items that compose the self-direction value include 'freedom', 'creativity' and 'independence'. Items that compose the security value include: 'order', 'national safety' and 'reciprocity'. Items that compose the benevolence value include: 'loyal', 'honest' and 'helpful'. The reliability (Alpha) coefficients for self-direction, security and benevolence were slightly lower than the standard acceptable level (see Table 1), yet were within the expected range for values (see, Schmitt, Schwartz, Steyer, & Schmitt, 1993).

Because, by definition, values represent desirable goals, all values tend to receive relatively high ratings across individuals. For this reason value scores need to be ipsatized (centred for each individual around the individual's mean response) before interpreting their relationships with other variables (Schwartz, 1992). This is because what is important in the value measure is the *relative standing* of each value *within* the individual, rather than its raw score across individuals. We therefore followed Schwartz' guidelines and ipsatized value scores before using them in our analyses.

Table 1. Descriptive statistics, correlations and reliability coefficients for the study variables ($N = 26$)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self-direction	0.78	0.53	(.68)														
Security	0.66	0.75	-.09	(.63)													
Benevolence	0.80	0.53	-.11	.39*	(.67)												
Innovation culture	3.44	0.35	.13	-.17	-.02	(.79)											
Bureaucratic culture	3.22	0.31	.00	.21	.06	.27	(.72)										
Supportive culture	3.49	0.34	.01	.06	.14	.53**	.44*	(.85)									
Sales growth ^a (in thousands US\$)	-3.69	11.33	-.17	-.05	.18	.00	-.16	-.44*	(N/A)								
Efficiency	691	388	-.02	.14	-.08	.13	.30	.12	-.29	(N/A)							
Assessment of satisfaction	4.77	1.26	.01	-.29	-.34	.36	.02	.57**	-.27	.13	(N/A)						
CEO age	45	5.6	-.08	-.11	-.12	.09	.16	-.01	-.18	-.17	.14	(N/A)					
CEO tenure on the job	4.03	3.3	-.32	.03	.27	-.14	.09	.13	-.08	.07	.02	-.24	(N/A)				
CEO tenure in the organization	8.03	3.6	-.44	.00	.24	-.05	.37	.22	-.09	.01	.02	-.40*	.56**	(N/A)			
Industry ^b	1.61	0.49	-.22	.31	-.01	.10	.71**	.13	.13	.24	-.09	-.22	.25	.35	(N/A)		
Organizational size	390	450	-.11	.03	.00	.24	.35	.19	.15	-.31	.12	-.57**	.05	.46*	.33	(N/A)	
Organizational age	32.2	20.6	-.01	.44*	.34	-.09	.34	-.11	.21	-.21	-.40*	-.07	.15	.05	.44*	.24	(N/A)

Note: * $p < .05$; ** $p < .01$.

^a(2002–2001 difference in millions of US dollars).

^b1 = high-tech; 2 = low-tech. Alpha Cronbach reliability coefficients in parentheses.

Organizational culture

Ratings of organizational culture orientation were obtained using Wallach's (1983) measure that consists of three scales (innovation, supportive and bureaucratic cultures), with a total of 24 items. Respondents are asked to report the extent to which each of the items is characteristic of their organization. Sample items for innovation culture are: 'risk-taking', 'creative' and 'results-oriented', for bureaucratic culture: 'procedural' and 'regulatory', and for supportive culture: 'encouraging' and 'relationships-oriented'. Response options ranged from 1 ('poorly describes my organization') to 5 ('strongly describes my organization'). The scale's three-factor model was supported by confirmatory factor and reliability analyses. All but one of the items of the entrepreneurial dimension loaded significantly ($p < .001$) on their corresponding factor, and the measurement model presented adequate fit (the comparative fit index [CFI] was .90 and the root-mean-square error of approximation [RMSEA] was .06). The Alpha coefficients for the culture scales are provided in Table 1.

Organizational outcomes

As noted above, *sales growth* has been indicated the single most appropriate measure of organizational innovation (Dess et al., 2003). Investing in product innovation can allow firms to successfully enter new product-market domains and will subsequently enhance company sales growth (Lumpkin & Dess, 1996). We used the 2002 (a year following our survey data collection) sales growth index.

For evaluating *efficiency* we used the ratio between sales and number of employees. The sales-per-employee ratio estimates how expensive a company is to run and can be especially insightful for measuring efficiency (e.g. Koka & Prescott, 2002; Megginson, Nash, & Van Randenborgh, 1994; Muscarella & Vetsuypens, 1990). A higher sales-per-employee ratio indicates that the company can operate on low overhead costs and can therefore do more with less employees. Accordingly, companies with higher sales-per-employee ratios are generally considered more efficient than those with lower ratios (McClure, 2004).

Satisfaction was assessed using an item from the Hart and Quinn (1991) scale of perceived organizational performance. Because we wanted to measure each variable from a different source, and because subordinate reports were used for assessing organizational culture, we used Senior Vice Presidents' evaluations of their employees' satisfaction. Senior VPs were asked to evaluate the satisfaction of their employees as compared with employees in other organizations in the same market and in the same stage of the organizational life cycle. To assess the extent to which such SVP evaluations represented their employees' actual experiences, we calculated the correlation between SVP's ratings and employees' self-ratings and found a correlation of .73, suggesting that SVPs were indeed very much in tune with employees' experiences. Although single-item measures are often prone to yield low validities, meta-analytic work on single-item measures of satisfaction suggest that because of the construct's relative simplicity, single-item measures are valid for measuring overall satisfaction (Wanous, Reichers, & Hudy, 1997). In support of this claim Wanous et al. found high correlations between single-item and scale measures of satisfaction.

Results

Agreement among raters

Agreement was assessed for the organizational culture scales using both intra-class correlations and rwg within-group tests (James, Demaree, & Wolf, 1984). Consistent with the James et al.'s (1984)

recommendation, values of rwg were above .70; they were between .73 and 1 for innovative cultures (mean 0.93), between .78 and 1 for bureaucratic cultures (mean 0.94) and between .73 and 1 for supportive cultures (mean 0.93). The ANOVA measures (ICC) had significant between-groups effects for all three culture scales and for the SVP evaluations of employee satisfaction. For innovative culture ICC1 was .23 and ICC2 was .68, for bureaucratic culture ICC1 was .22 and ICC2 was .66, and for supportive culture ICC1 was .17 and ICC2 was .59. For the evaluations of employee satisfaction the ICC(1) was .52 and the ICC(2) was .71.

Data analyses

Means, standard deviations, inter-correlations and Alpha Cronbach reliability coefficients of the study variables, at the CEO (i.e. organizational) level, are presented in Table 1.

We tested the hypotheses using the Partial Least Squares structural equation modelling technique (PLS) (see Sambamurthy & Chin, 1994 for details on PLS) because it does not require the large sample size required by ordinary structural equations modelling (Bollen, 1989). This allowed us to test our hypotheses for CEOs, where obtaining data is extremely difficult (Jung, Chow, & Wu, 2003). In addition, PLS does not make assumptions about (a) data distributions to estimate model parameters, (b) observation independence or (c) variable metrics. Unlike other SEM procedures, PLS does not test for model fit. Rather, it is concerned with prediction in the traditional regression sense by minimizing residual variance (Fornell & Bookstein, 1982).

PLS generates estimates of standardized regression coefficients (i.e. path coefficients) for the model paths, which can then be used to measure the relationships between latent variables. A jackknifing procedure called *blindfolding* with an omission distance of 10 was used to evaluate the statistical significance of the path coefficients (Sambamurthy & Chin, 1994). The blindfolding procedure omits a part of the data matrix for a particular variable and then estimates model parameters (e.g. path coefficients) associated with that variable. In essence, what PLS does is re-run the tested model, each time with a sub-set of the data, thus testing the stability of the model (Sambamurthy & Chin, 1994). This approach is particularly appropriate when dealing with small-sample data (Hollenbeck, DeRue, & Mannor, 2006).

Hypothesis testing

Results of the PLS analysis are shown in Figure 2. As Figure 2 shows, Hypotheses 1 through 6 were supported. Hypotheses 1 through 3 linked between CEO values and the organizational culture dimensions. As expected, CEOs self-direction values were positively associated with innovation cultures (Hypothesis 1), CEOs' emphasis on security was positively associated with the organizations' bureaucratic cultures (Hypothesis 2) and CEOs' benevolence was positively associated with organizations' supportive cultures (Hypothesis 3).

Hypotheses 4 through 6 linked organizational culture and organizational outcomes. As expected, innovation culture had a positive effect on companies' subsequent sales growth (Hypothesis 4), bureaucratic culture was positively associated with an index of organizational efficiency and negatively associated with estimates of employee satisfaction (Hypothesis 5) and supportive culture was positively associated with estimates of employee satisfaction (Hypothesis 6). Including each of the control variables (i.e. CEO and organization characteristics) in our model did not alter any of the relationships found.

Beyond the expected relationships, our analyses also revealed three additional significant effects. CEO benevolence was related to innovation culture, supportive culture was negatively related to sales

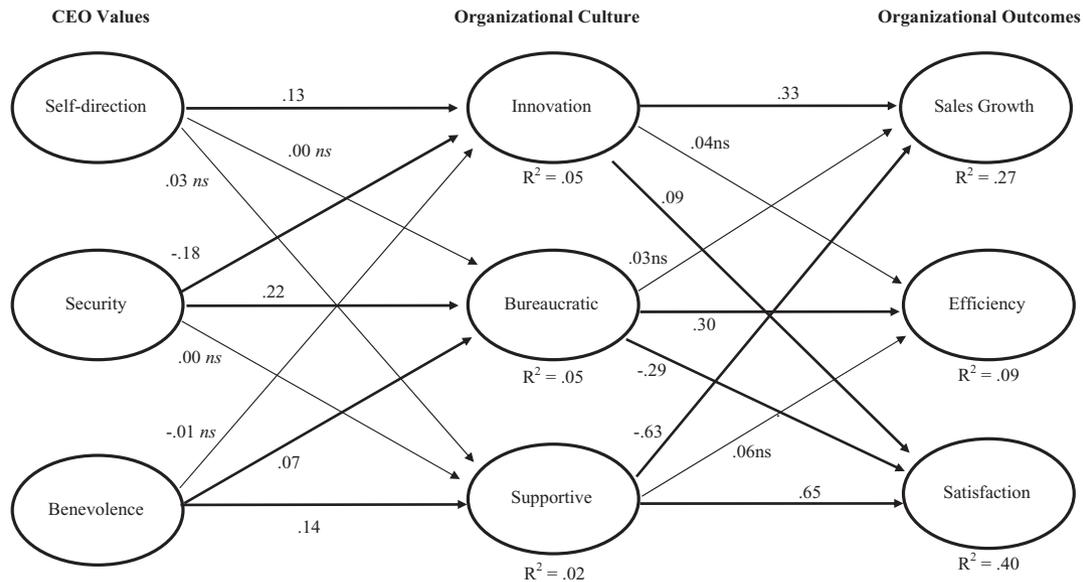


Figure 2. PLS structural equations model. ns, not significant; statistically significant paths ($p < .001$) are denoted in thick lines

growth and innovation culture was weakly, yet significantly, related to employee satisfaction evaluations. We address these findings in the Discussion section.

Discussion

Our findings supported our hypotheses and empirically demonstrate the relationship between CEO values and organizational culture, followed by the relationship between culture and organizational outcomes. That chief executives have a fundamental role in shaping and guiding their organizations is among the most well accepted organizational notions (e.g. Carpenter et al., 2004). Theoretical models that propose links between CEO characteristics and organizational outcomes are widely endorsed. For example, Hambrick and Mason's (1984) conceptual piece on upper echelons has been cited, to date, over 650 times. Nevertheless, because of the great difficulty involved in obtaining psychographic data from CEOs such notions have seldom been empirically established (e.g. Carpenter et al., 2004; Priem et al., 1999). The present study constitutes one of the few works to empirically demonstrate the link between CEO psychological characteristics and organizational culture. It further augments extant knowledge by demonstrating how cultural characteristics are differentially linked with organizational outcomes.

As expected, we found that cultures of leaders who value freedom and creativity tend to hold a higher emphasis on innovation as a key cultural characteristic. In turn, such cultures are likely to contribute to performance outcomes such as company sales growth. CEOs who value stability, order and predictability are more likely to use strict and formalized rules and procedures, as are embodied in bureaucratic cultures. In turn, such cultures have a positive association with firm efficiency and a negative association with employee satisfaction. Finally, organizations of CEOs who value

benevolence tend to exhibit an emphasis on support and cooperation among employees. Such supportive cultures are, in turn, associated with greater employee satisfaction.

The focus on CEOs extends our knowledge of leadership's role by going beyond the investigation of lower level leaders (House & Aditya, 1997). Consistent with arguments of strategic leadership researchers (e.g. Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984), CEO values were found to be indirectly associated with firms' financial performance. In line with Priem et al. (1999), our findings suggest that core individual characteristics may translate into organizational practices, such as organizational culture, and are ultimately associated with subjective and objective aspects of performance.

That CEOs and their organization's culture tend to covary, and that culture dimensions are differentially associated with organizational outcomes, implies that the effectiveness of a certain CEO may vary as a function of the environmental context (e.g. Fiedler, 1967). For example, whereas a CEO who values security may be most effective in times of stability, one who values self-direction may be most effective under turbulent conditions. This is in line with previous works that found CEO tenure to be differentially related to company performance in high- versus low-tech industries (Henderson, Miller, & Hambrick, 2006).

In addition to the hypothesized relationships, our analyses also indicate three links for which hypotheses were not formulated. Given that we did not expect these relationships we can only speculate as to why they transpired in our study. First, security values showed a significant negative relationship with innovation cultures. In retrospect such a relationship is somewhat consistent with Hypotheses 1 and 2 concerning the relationships between self-direction and innovation cultures and between security and bureaucratic cultures. In many respects the motivational goals of security contrast with key characteristics of innovation cultures. The general emphasis on stability and predictability that characterizes CEOs who are high on security would be expected to inhibit the formation of innovation cultures, which highlight flexibility and risk-taking. Contrarily, CEOs that emphasize risk-taking and innovation-seeking would, almost by definition, set a lower priority on stability and security. Thus, innovative and bureaucratic cultures may in fact be somewhat antagonistic to one another.

With respect to relationships between culture and organizational outcomes, we found a strong negative relationship between supportive culture and sales growth. It may be that there is a tradeoff between focusing on employee welfare and focusing on organizational goals, as has been indicated, for example, in the early Michigan and Ohio State studies of leadership (e.g. Fleishman, 1953; Kahn & Katz, 1960). These studies distinguished between task orientation (also called *initiating structure*) and a people orientation (also called *consideration*). Organizations that are oriented towards the nurturance of their employees may place a weaker emphasis on other types of outcomes, such as the rate of their organization's growth. Indeed, earlier studies of consideration found that while considerate leadership was associated with increased employee satisfaction, it was negatively associated with supervisor ratings of job performance (Sheridan & Vredenburgh, 1978, 1979). As these, and several other studies indicate (e.g. Iaffaldano & Muchinsky, 1985), job satisfaction and job performance are not consistently related, and the factors that may enhance one of them should not necessarily enhance the other.

We also found that innovation culture had a weak yet significant association with satisfaction. One possible interpretation could have been that the relationship is a spurious result of the influence that industry type has on both innovation culture and satisfaction. High-tech companies tend to be more innovation-oriented than low-tech companies, and high-tech employees tend to report a higher level of satisfaction with their jobs. However, as noted above, all of the relationships in our model were maintained after controlling for industry type. Some recent works suggest that employees gain satisfaction from being associated with innovative and up-to-date organizations (e.g. McKinnon, Harrison, Chow, & Wu, 2003; Zhou, Gao, Yang, & Zhou, 2005). Therefore, it may be that the general innovative atmosphere in the organization contributes to employees' general sense of well-being and

satisfaction with their jobs. In particular, when identification with the organization is high, employees may take much pride and experience great fulfilment from their organization's success in becoming an innovative and entrepreneurial workplace. Of course, given our modest sample size and the fact that these relationships were not expected, these speculations should be regarded as purely tentative and in need of further empirical examination.

From a practical perspective, our findings suggest that executives can benefit from increasing their awareness to their own value systems. Awareness to the aspects in which one's values match a particular cultural form can help CEOs compensate for their personal tendencies where a personally incongruent cultural form is deemed desirable for the organization. For example, when an emphasis on innovation is desired, a CEO who is aware of his or her inclination towards stability, may deliberately choose to consult with, or even hire executives with tendencies different from his or her own.

Beyond the mere links between culture and outcomes, our findings highlight the differential, and sometimes double-edged, effects that culture can have. Different culture dimensions yield different types of outcomes, and in some cases a single culture type may have both positive and negative implications.

Limitations

A main limitation of this study is its small sample size. A recent paper has been dedicated to the dangers of conducting hypothesis tests with small samples (Hollenbeck et al., 2006). This paper questions the value of using studies with low power for testing hypotheses. The authors' main argument concerns the instability in parameter estimates and therefore the invalid inferences that can be made when relying on data from small samples. As a test of such instability of estimates they turn to re-test the theoretical model, each time with a different sub-sample of the data. This is precisely the approach employed by the PLS analysis that we use in our study. As noted in the Results section, PLS is optimal for the analysis of small-sample data, in part because it does not make assumptions about data distributions for estimating parameters in the tested model and does not make assumptions about observation independence or about variable metrics. In line with Hollenbeck et al.'s approach for assessing estimate stability, PLS produces a set of pseudoreplicate data sets, each of which contains all but one of the original data elements (Barclay, Higgins, & Thompson, 1995).

More importantly, as Peterson, Smith and Martorana (2006) argue, the contribution of empirical, yet theoretically grounded studies, in fields *where data are scarce* outweighs their low power. In the study of organizations, CEO data are perhaps the most difficult to obtain. Even more so when such data include first-hand self-reports, and consists of data from four different sources, as in the present study. Accordingly, we share Peterson et al.'s view and suggest that if the choice is between conducting tentative investigations of CEO psychographics, versus not conducting any at all, researchers should prefer the former with the aim of establishing more firmly grounded claims as data gradually accumulate.

Alternative interpretations of our findings can be made with respect to the directionality of our process model. Although our findings support the conceptual relationships that are proposed in the literature between CEO values and culture, and between culture and outcomes, we cannot preclude other possible directions of relationships. For example, as noted in our introduction, one could argue that rather than CEO values influencing culture, the organizational culture is the driving factor that influences CEO values. Although values are conceptualized as enduring and relatively stable across situations and over time (see Lubinski, Schmidt, & Benbow, 1996 study on the intraindividual stability of values), this does not mean that some shifts in the emphasis given to a certain value might still occur, in particular when organizational tenure becomes substantial.

Furthermore, another way in which the culture can influence CEO values is through the CEO selection process. It is possible that organizational culture influences board decision-making, such that CEOs are selected to fit with the organizational culture. This argument is consistent with the anthropological view of organizational culture which suggests that culture is a pattern of shared meanings that are constantly recreated (Geertz, 1973). According to this view, CEOs do not form or even transform the culture of their organizations. They contribute to its structure no more and no less than other organizational members. To test such an alternative explanation, one would have to collect longitudinal data in which values and culture would be measured in different time frames. In fact, it is most likely that the relationship between CEO values and organizational culture is bi-directional, whereby culture influences CEO selection and at the same time CEOs contribute to the shaping of organizational culture.

Finally, while our theoretical model is not restricted to any one particular national culture, our findings are based on data from one country. Indeed, there are differences in the mean-level of personal values among individuals from different countries (Schwartz, 1994). Similarly, the organizational cultures considered most typical are likely to vary from country to country. However, this should not alter one's expectations concerning the relationships between personal values and organizational culture, or those between organizational culture and firm outcomes. Differences in the means of variables do not necessarily imply differences in relationships among them. Nevertheless, the field will certainly benefit from the replication and extension of our findings to additional organizations in other countries.

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