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CEO LOCUS OF CONTROL AND SMALL FIRM PERFORMANCE: AN INTEGRATIVE FRAMEWORK AND EMPIRICAL TEST*

CHRISTOPHE BOONE

University of Limburg

BERT DE BRABANDER

University of Antwerp

ARJEN VAN WITTELOOSTUIJN

University of Limburg

ABSTRACT

Previous research on the impact of chief executive officer (CEO) locus of control is mainly based on simple and partial mappings of bivariate associations between CEO locus of control and organizational outcomes. In addition, distinct substreams have emerged in which intricately related phenomena are studied separately. To overcome this fragmentation and polarization, we provide and empirically test an integrative framework based on previously tested hypotheses on the impact of CEO locus of control. Our approach differs from prior research in two ways. First, it simultaneously takes account of strategic choice and firm performance in order to assess the extent to which strategy mediates the relationship between CEO locus of control and organizational performance. Second, we consider the CEO to be both a formulator and implementor of organizational strategies. Besides the observation that CEO locus of control seems to matter a lot in terms of explaining organizational performance in the present sample, our results demonstrate that an integrative approach increases our insight into the impact of CEO locus of control by revealing why some CEOs achieve higher organizational performance than others.

INTRODUCTION

Research into the effect of characteristics of top managers on organizational outcomes has recently attracted the attention of many scholars, especially after the publication of two seminal articles in the 'strategic leadership' domain by Hambrick and Mason (1984) and by Gupta (1984). The strategic leadership domain

Address for reprints: Christophe Boone, Faculty of Economics and Business Administration, Department of Management Science, University of Limburg, PO Box 616, 6200 MD Maastricht, The Netherlands.

> [f]ocuses on the people who have overall responsibility for an organization – the characteristics of those people, what they do, and how they do it. The people who are the subjects of strategic leadership research can be individual executives (e.g. chief executive officers or division general managers), more broadly defined 'top management teams', or other governance bodies (e.g. board of directors). (Hambrick, 1989, p. 6)

The ultimate aim of these studies is to explore whether and why chief executive officers (CEOs) and/or top management teams make a difference. In this paper we will focus on the CEO.

In our view, current research in the strategic leadership domain suffers from two limitations. The first consists of the almost exclusive attention to the effect of 'observable' characteristics of CEOs on strategy and performance – such as age (Norburn, 1986), functional career track (Chaganti and Sambharya, 1987; Gupta and Govindarajan, 1984; Michel and Hambrick, 1992; Reed and Reed, 1989; Song, 1982), tenure (Finkelstein and Hambrick, 1990; Miller, 1991; Norburn, 1986), and combinations of demographic characteristics (Bantel and Jackson, 1989; Thomas et al., 1991; Wiersema and Bantel, 1992) – while neglecting the possible impact of personality characteristics of top managers. Such an approach impedes gaining full insight into the reason why certain top managers are more successful than others. Hambrick and Mason (1984, p. 196) argue that '[d]emographic indicators may contain more noise than purer psychological measures. For example a person's educational background may serve as a muddied indicator of socioeconomic background, motivation, cognitive style, risk propensity, and other underlying traits'. In line with this reasoning we chose to study the influence of a fundamental personality characteristic – i.e. locus of control (e.g. Miller and Toulouse, 1986a, b; Miller et al., 1982).

Rotter (1966) and his colleagues developed the locus of control construct from the former's (1954) social learning theory. The construct refers to individual differences in a generalized belief in internal versus external control of reinforcements (Rotter, 1966). Those with an external locus of control see themselves as relatively passive agents and believe that the events in their lives are due to uncontrollable forces. Externals feel that the things they want to achieve are dependent on luck, chance and powerful persons or institutions. They believe that the probability of being able to control their lives by their own actions and efforts is low. Conversely, those with an internal locus of control see themselves as active agents, feel that they are masters of their fates and trust in their capacity to influence the environment. Internals assume that they can control the events in their lives by effort and skill.

The 'face validity' of this construct for studying the influence of CEOs follows directly from its definition, as leading a company is in essence a persistent attempt to control the environment. In view of the fact that psychologists believing in situational determinism doubt that personality traits do exist at all (for a discussion see Epstein, 1979, 1980; Mischel, 1984), it is important to mention that recent research indicates that locus of control is a *fundamental* personality trait. First, Miller and Rose (1982) and Pedersen et al. (1989) have shown that locus of control is to a certain extent inherited. Second, psychophysiological findings suggest that locus of control is associated with differences in

cerebral functioning (De Brabander et al., 1992). In effect, internals rely more on the functions of the left hemisphere for sensory-motor control while executing laboratory tasks than externals. This conclusion is deduced from indications of a relatively higher activation of the left hemisphere among internals.

The second limitation, also pertaining to the scarce pieces of CEO locus of control research, is the absence of a coherent framework to study 'executive leadership' (Hambrick, 1989; Thomas et al., 1991). The reason is that distinct substreams emerged in which intricately related phenomena are studied separately. First, several authors focus solely on the relationship between managerial characteristics and strategic choice (Bantel and Jackson, 1989; Chaganti and Sambharya, 1987; Miller et al., 1982; Song, 1982), whereas others explore the association between these characteristics and organizational performance (Begley and Boyd, 1987; Brockhaus, 1980; Norburn, 1986). In our view, an approach incorporating both strategy and performance simultaneously will increase our insight into the broader phenomenon of executive influence (Thomas et al., 1991).[1] A second polarization relates to the issue of the CEO as a strategy formulator or a strategy implementor (Gupta, 1988; Nahavandi and Malekzadeh, 1993; Thomas et al., 1991). The former approach investigates the main effects of CEO characteristics on strategy and, occasionally, performance. Thus, the CEO is viewed as the architect of the organization's strategic orientation (Hambrick and Mason, 1984). The latter approach focuses on the concept of match, arguing that managerial characteristics should be aligned to a given strategy in order to achieve high organizational performance (Gupta, 1984, 1988; Nahavandi and Malekzadeh, 1993). Hence, the leader moderates the relationship between strategy and performance. The implicit assumption is that strategies are given, and that the main task of CEOs therefore is to implement rather than formulate strategies (Gupta, 1988). We, however, agree with Nahavandi and Malekzadeh (1993, p. 411) that '[w]hen one is concerned with the upper echelon of the organization, one needs to focus on individuals who, in most instances, are the ones who have the charge of both the formulation and the implementation of the strategy of the organization. . . . the leader can be both a main effect and a moderator.'

In this paper, we basically aim at replicating previously tested hypotheses on the impact of CEO locus of control on organizational outcomes. To overcome the fragmentation and polarization described above, however, we start from an integrative framework that synthesizes existing CEO locus of control research. In this respect, our approach differs from previous studies in two ways. First, the framework simultaneously takes account of strategic choice *and* firm performance in order to assess the extent to which strategy mediates the relationship between CEO locus of control and organizational performance. Second, we assume that CEOs are both formulators *and* implementors of organizational strategies. For reasons explained in the methods section, we focus on CEOs of small firms in one homogeneous fragmented industry – the Flemish furniture industry. The analysis of the integrative model reveals that: (1) our data fit the scattered findings of previous studies remarkably well; (2) such an approach increases our insight into the impact of CEO locus of control by disentangling the reasons why internal CEOs achieve higher organizational performance than external CEOs; and (3) existing models of CEO locus of control are too simple to describe the complex phenomenon of 'executive leadership'.

A final remark relates to the article of Boone and Van Witteloostuijn (1996), in which we reported preliminary results on the relationship between CEO locus of control and firm performance in the Flemish furniture industry for illustrative purposes. The present paper moves far beyond Boone and Van Witteloostuijn (1996) because (i) we explicitly develop and test an integrative framework, (ii) we emphasize in depth the intermediary role of strategy choice and the CEO's role of formulator and implementor, and (iii) we incorporate alternative determinants of small firm performance, such as CEO tenure and organizational slack, as covariates.

The paper is organized as follows. The next section presents an integrative framework and elaborates several hypotheses. We then report on the methods used to analyse the integrative model, followed by the empirical results. The last section is a discussion.

PREVIOUS RESEARCH AND AN INTEGRATIVE RESEARCH MODEL

A Model

Previous research relating CEO locus of control to organizational performance is relatively scarce. However, the findings of these studies consistently show that firms led by internal CEOs perform better than firms headed by external CEOs. For one, Miller and Toulouse (1986a, b; in both articles the results are based on the same heterogeneous sample of small firms) collected five different performance indices. Their data suggest that the CEO's internal control expectancies are associated with successful firm performance, especially in firms operating in a dynamic environment. In dynamic environments, there is '[m]ore need for the CEO to interpret the environment; and thus more opportunity for him to enact conditions that reflect psychological as much as objective circumstances' (Miller and Toulouse, 1986a, p. 1393). This finding is compatible with the social learning theory of Rotter, which states that generalized expectancies are more important to explain behaviour in uncertain and ambiguous situations (Rotter, 1975). In a recent study, Powell (1992) also found, in a pooled sample of small firms from two industries, that firms led by internal CEOs are more profitable than firms headed by external CEOs. Begley and Boyd's (1987) study did not replicate these findings in a heterogeneous sample of small firms. This study, however, has a serious shortcoming by not controlling for industry effects as only absolute firm performance was measured. Excellent performance in one industry may, however, be average or poor performance in another setting (Miller and Toulouse, 1986b).

Additionally, two studies report results on the relationship between the locus of control of owner-managers and the successful startup of small firms (Brockhaus, 1980; Van de Ven et al., 1984). Brockhaus (1980) observed that owner-managers of firms that were still in existence three years after their startup, were more internal than managers of firms that failed during this period. In a similar vein, Van de Ven et al. (1984) report that internal control expectancies of the owner-manager are associated with the success of recently established ventures. The results of the latter study are difficult to generalize due to the very small sample size (i.e. 12).

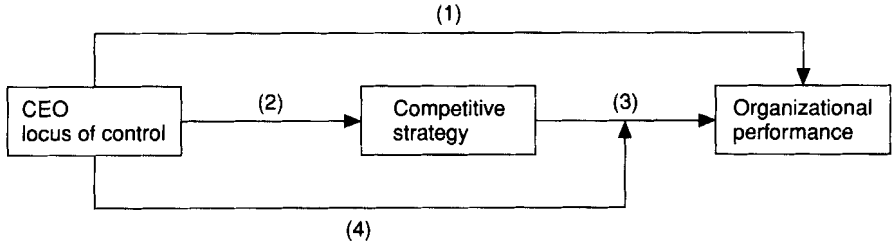


Figure 1. An integrative framework of the effect of CEO locus of control on organizational performance

With the notable exception of Miller and Toulouse (1986a, b), these studies lack a coherent framework of the impact of CEO locus of control on organizational performance.[2] As a result, the reason *why* internal CEOs perform better than their external counterparts remains ill-understood. Therefore, we present a comprehensive integrative framework in figure 1, based on recent suggestions of Nahavandi and Malekzadeh (1993).

We argue that the influence of CEO locus of control on organizational performance consists of two distinct effects: an indirect effect mediated by strategic choice (i.e. the CEO 'strategy formulator' effect: paths 2 and 3) and a direct effect (path 1). The latter effect may be the result of other mediating mechanisms not captured by strategic choice. In addition, CEO locus of control may moderate the relationship between strategy and organizational performance (i.e. the CEO 'strategy implementor' effect: path 4). In the following, we formulate specific hypotheses for each of the relevant paths, alongside a summary of the findings of previous locus of control research. Although research with a focus on path 2 in isolation does exist (Miller, 1983; Miller et al., 1982), to our knowledge Miller and Toulouse's (1986a, b) study is unique in explicitly elaborating on the mediating role of strategic choice (i.e. paths 2 and 3). Finally, apart from the study of Govindarajan (1989), we are unaware of any research on the impact of CEO locus of control on the successful implementation of competitive strategies (path 4).

The Direct Effect of CEO Locus of Control (Path 1)

Abundant research on the locus of control construct suggests a direct effect of CEO locus of control on organizational performance. The reason is that locus of control is associated with behaviour that logically relates to effective strategic leadership. For the sake of the argument, four relevant behavioural consequences are discussed below.

First, the very definition of the concept implies that internals and externals are likely to use different *learning strategies* regarding environmental contingencies of success and failure. An individual believing in personal control and acting consistently must actively search for laws ruling the way in which the environment reacts to her/his behaviour. The more extensively (s)he probes, the better the chances are of detecting the crucial contingencies. An internal individual,

confronted with an unfamiliar situation, is likely to engage in extensive trial-and-error behaviour. A believer in mere luck, whimsical fate or manipulation by uncontrollable forces cannot expect any significant pay-off from such behaviour. Experimental research (Boone et al., 1991; Lefcourt, 1982) as well as field studies (Miller et al., 1982; Welsch and Young, 1982) confirmed this proposition. Internals are more inclined to search for relevant information than externals, and seem to learn more from feedback and past experiences than externals (Phares, 1976). In this respect, Dollinger (1984) observed a positive relationship between the CEO's environmental boundary spanning efforts and small firm performance.

Second, internals generally perform better than externals in *achievement*-related domains such as career track and education (Andrisani and Nestel, 1976; Lefcourt, 1982; O'Brien, 1984). Achieving long-term goals requires the capacity of delaying immediate gratification (Lefcourt, 1982). It is unlikely that someone who believes that achieving long-term goals depends on luck or external forces, can persist in making such sacrifices. A related finding is that internals reveal, on average, higher intrinsic motivation than externals (Reeve et al., 1987).

Third, salient for the research on top managers is that internals have a different *leadership style* than externals. Internals use more persuasion to influence the behaviour of subordinates, while externals rely more on coercion (Goodstadt and Hjelle, 1973; Johnson et al., 1984; Mitchell et al., 1975). Furthermore, task groups with internal leaders perform better than groups led by externals (Anderson and Schneier, 1978; Johnson et al., 1984). An important explanation is that internal leaders are more task-oriented, whereas external leaders are more emotion-oriented (Anderson and Schneier, 1978). Recently, Howell and Avolio (1993) found, in a sample of business-unit managers of a large financial institution, that internal managers show more transformational leadership than external managers,[3] where the manager's transformational behaviour mediates, at least partially, the relationship between locus of control and unit performance.

Fourth, internal individuals are less likely to become ill after experiencing stressful life events than external persons. The locus of control trait moderates the relationship between *stress* and *illness* (Ganellen and Blaney, 1984; Kobasa, 1979; Kobasa et al., 1982), which results from differences in coping behaviour (Anderson, 1977; Parkes, 1984; Wiebe, 1991). Internals, on the one hand, react in a problem-solving way in the face of stressful events. Externals, on the other hand, respond emotionally or withdraw from the problem in question. Even in the absence of stressful life events, internals are less likely than externals to feel depressed or to become ill (Benassi et al., 1988).

All this clearly demonstrates that internal individuals are characterized by a persistent effort to control their environment. After summarizing the abundant literature, Lefcourt (1982, p. 184) concludes that '[a]s such, locus of control can be viewed as a mediator of involved commitment in life pursuits. If one feels helpless to affect important events, then resignation or at least benign indifference should become evident, with fewer signs of concern, involvement, and vitality'.

Hypothesis 1: CEO internality has a positive direct effect on organizational performance: firms with internal CEOs perform better than firms headed by external CEOs.

The Indirect Effect of CEO Locus of Control (Paths 2 and 3)

In order to enhance comparison with previous research (Miller and Toulouse, 1986a, b), we adopted the generic strategies typology of Porter (1980): product differentiation, cost leadership and focus. Product differentiation implies offering products or services that customers perceive as unique because of, for instance, innovativeness, design or quality. Miller and Toulouse (1986b) proposed an extension to the strategy typology of Porter (1980) by distinguishing marketing differentiation from innovative differentiation. The former aims at creating brand consciousness by aggressive, mass-marketing efforts such as intensive advertising and market segmentation; the latter entails image building by product innovation, research and development, high quality and novel design. In contrast to both types of product differentiation, firms pursuing cost leadership seek to lower their costs of operations, allowing them to sell at prices below their competitors' levels. Finally, when firms apply product differentiation or cost leadership to a circumscribed group of customers or a narrow geographic market, they pursue a focus or niche strategy.

Previous research suggests that internal CEOs are more inclined than their external counterparts to select complex and bold product-market innovation strategies – i.e. innovative differentiation (Miller, 1983; Miller and Toulouse, 1986a, b; Miller et al., 1982). Additionally, internal CEOs are more likely than their external colleagues to engage in pro-active strategies (i.e. being ahead of competitors instead of following them) and risk taking (Miller, 1983; Miller and Toulouse, 1986a, b; Miller et al., 1982).[4] These findings are in line with the frequently observed association between locus of control and entrepreneurial behaviour (Brockhaus, 1982; Durand and Shea, 1974; Shapero, 1975), following from the observation that innovation, pro-activity and risk taking entail uncertainty and ambiguity. External CEOs are less likely to undertake such actions because they have less confidence in their ability to control the new situation (Miller, 1983), and perform worse in ambiguous and stressful situations than internals (cf. Lefcourt, 1982).

Concerning the performance implications of innovative differentiation, Miller and Toulouse (1986b, p. 49) argue that small firms especially will benefit from an innovative strategy because '[t]hey can be in an excellent position to adapt quickly and stay in close contact with a select group of customers'. The other side of the coin is that cost leadership and marketing differentiation are less suited as small firms are at a disadvantage to achieve scale economies or to succeed in implementing mass-marketing efforts, respectively. These authors indeed report strong relationships between innovation and several performance indices in their sample of small firms.[5] As expected, the pay-off of innovation increases in dynamic environments, requiring the adaptability inherent in an innovation strategy. Similarly, although a CEO's internal locus of control has a generally positive impact on firm performance, internality is especially useful in a dynamic environment. So, Miller and Toulouse (1986b) argue that innovation mediates the relationship between CEO locus of control and small firm performance.[6]

All these findings pertain to heterogeneous samples with a tremendous diversity of industries including, for instance, electronics, financial services and mining (Miller and Toulouse, 1986b). As the present study focuses on a single

fragmented industry, the specific context of the Flemish furniture industry has to be taken into account before formulating hypotheses. Several scholars in different countries have characterized the furniture industry as stable and mature (for the Flemish furniture industry see Boone, 1992; for the US furniture industry see Powell, 1992; for the Dutch furniture industry see Nijssen, 1992). Powell (1992), for instance, analysed the competitive stability of many US industries, concluding that '[t]he furniture industry ranked as one of the most stable of all the manufacturing industries reviewed' (p. 124). This low environmental turbulence, associated with slow technological and market developments, characterizes most industries in the maturity stage of the life cycle (Hellriegel and Slocum, 1992). The furniture industry is highly fragmented with many small firms (Boone, 1992; Nijssen, 1992). In the Flemish furniture industry, for instance, above 80 per cent of the firms have fewer than 20 employees (Febelhout, 1987). These specifics of the furniture industry have implications for (i) the selection of relevant strategies (path 2) and (ii) their likely performance impact (path 3).

For one, the highly fragmented nature of the furniture industry implies that the majority of firms focuses on specific market niches. Consequently, in the present study we do not distinguish 'focus' as a separate generic strategy, but rather concentrate on competitive advantage by means of product uniqueness (product differentiation) and low cost (cost leadership). Moreover, Miller and Toulouse's (1986a, b) concept of innovative differentiation refers to bold product innovations (e.g. from mechanical to electrical calculators), backed up with a strong emphasis on research and development (R & D). The opportunities for such radical innovations in the furniture industry are extremely limited (Nijssen, 1992). In fact, none of the furniture firms in the present sample has an R & D department. Nevertheless, we expect that internal CEOs, because of their entrepreneurial nature, are inclined to pursue *relatively* innovative strategies even within a traditional industry. An industry expert of Febelhout, the professional association of the Belgian furniture industry, argued that product differentiation through superior product design and quality can be considered to be an innovative strategy compared to the traditional strategy of production cost minimization. So, our conceptualization of product differentiation, which does not incorporate bold product innovation and R & D, is a subset of Miller and Toulouse's (1986b) innovation differentiation.

> *Hypothesis 2:* Internal CEOs are more inclined to pursue a relatively innovative strategy than external CEOs: CEO internality is associated with a product differentiation strategy in the furniture industry.

The second implication of the furniture industry context relates to the performance implications of the generic strategies (path 3). Recall that Miller and Toulouse (1986b) observed a strong relationship between innovative differentiation and organizational performance in their heterogeneous sample of small firms. In our view, however, these authors did not control adequately for inter-industry differences. For instance, it is likely that Miller and Toulouse's industries differ considerably with respect to their life cycle stage. If the stage of the industry life cycle is associated with the occurrence of both innovation and profit potential, then the relationship between innovation and performance may be

spurious. In any case, their assertion as to the universal utility of small firm innovation is inconsistent with the fundamental paradigm of strategy, stating that:

> [i]n order to perform well, the firm must compete in settings in which the prerequisites for success – the 'key success factors' – match the firm's distinctive competencies or strengths. Viewed conversely, the firm must develop strengths that match the key success factors in its industry. (Sousa and Hambrick, 1989, p. 367)

Indeed, the bulk of strategic group research suggests that the performance implications of different strategies vary from industry to industry (Thomas and Venkatraman, 1988). In addition, theory and evidence support the notion of equifinality in many industries: that is, several strategies may generate success within the same industry (Porter, 1980; Snow and Hrebiniak, 1980). Given the complex relationship between strategy and performance, *a priori* hypotheses on the performance implications of product differentiation and cost leadership in the furniture industry are not warranted. Nevertheless, a CEO's internal locus of control may be dysfunctional if the 'key success factors' of an industry fail to match with the CEO's strategic preferences.

The Moderating Effect of CEO Locus of Control (Path 4)

Several inertial forces may limit the discretion of the CEO (i.e. latitude for action) to realize her/his strategic preferences (Hambrick and Finkelstein, 1987; Hannan and Freeman, 1984). For instance, Boeker (1989) observed that, although strategies change from time to time, the strategic preferences of a firm's founder have an ongoing and profound impact on the strategic direction of the firm. This implies that strategies can partly be given for CEOs at each moment in time (Gupta, 1988). Then, the primary task of a CEO does not so much consist of the (re)formulation of strategies but rather of the successful implementation of strategies. We argue that the effectiveness of a given strategy depends on, among other things, the locus of control of CEOs.

To our knowledge, Govindarajan (1989) is unique in investigating CEO locus of control as a moderating variable by analysing whether the characteristics of general managers should be matched with the competitive strategy of strategic business units (SBUs) in order to increase unit performance.[7] Govindarajan's hypothesis relating the SBU general manager's locus of control to SBU competitive strategy and performance follows from four arguments:

> (1) internals and externals have different capacities for effective information processing; (2) different competitive strategies have different information-processing requirements; (3) an SBU will be more effective when there is a match between its information-processing requirements and its information processing capacity; (4) thus, matching SBU general manager's locus of control with SBU competitive strategy is likely to be associated with superior performance. (Govindarajan, 1989, p. 254)

Govindarajan distinguishes two generic strategies: product differentiation and low cost. He argues that the information-processing requirements and uncertainty are

higher for SBUs with a product differentiation strategy than for SBUs following a low-cost strategy. The reason is that a low-cost strategy, in contrast with a product differentiation strategy, is associated with relatively simple and standardized products. Furthermore, the tasks associated with cost leadership are generally of a repetitive nature, and the number of options available to a differentiator is normally larger for a low-cost strategist, where all energy must be focused on achieving a single aim: reducing costs.

On top of all this, internals and externals have different information-processing capabilities. Spector (1982), who summarized the abundant literature on employee locus of control, concludes that:

> [a]nother difference between internals and externals is their ability to handle complex information. Internals seem better at collecting and processing information and would be better at performing complex tasks. This tendency is totally independent of intelligence (Phares, 1976), suggesting that perhaps it is motivation that accounts for the performance differential. Internals would seem better suited for tasks requiring complex information collection or processing. (Spector, 1982, p. 494)

Internal general managers are probably better able to implement a product differentiation strategy. Indeed, Govindarajan (1989) found that the contribution of a product differentiation strategy to SBU performance is higher with internal than external general managers. The opposite is the case for low-cost SBUs: external general managers are more effective in implementing a low-cost strategy than their internal counterparts. Although Govindarajan (1989) does not explicitly explain the latter finding, it is consistent with existing locus of control research: routine and clearly structured tasks increase and decrease motivation among externals and internals, respectively (Spector, 1982). In this respect, Runyon (1973) reports that internal employees are more satisfied with supervision than external employees under a participative leadership style, whereas externals are more satisfied than internals under a directive style.

Hypothesis 3: The contribution of a product differentiation strategy to organizational performance is higher in the case of internal CEOs than in the case of external CEOs.

Hypothesis 4: The contribution of a low-cost strategy to organizational performance is lower in the case of internal CEOs than in the case of external CEOs.

METHODS

Sample and Data Collection Procedure

We selected the furniture industry to analyse the integrative framework for three reasons. First, as already mentioned above, previous research is mainly based on heterogeneous samples. Of course, there is nothing wrong with such a sampling strategy as long as the analysis adequately controls for inter-industry differences

and other possibly confounding variables. In our view, this is not the case in the reviewed studies. To be sure, identifying and measuring all possible confounding effects remain a difficult and tedious task. In addition, the problem becomes even more complex if the effect of some variables of interest is contingent upon the level of (unmeasured) confounding variables. In this respect, we refer again to strategic group research suggesting that the effect of competitive strategies depends on the specifics of the industry context. We therefore chose a more modest approach by testing the hypotheses in a fairly homogeneous population of 'natural' competitors (cf. Powell, 1992). Although such a sampling strategy does not allow us to generalize to other settings or industries (low external validity), we can now adequately control for confounding effects (high internal validity). It is generally accepted that internal validity of research findings decreases rapidly when external validity is increased (Cook and Campbell, 1979). Given this trade-off, we agree with Cook and Campbell that high internal validity is to be preferred to high external validity. Generalizing findings that may not be internally valid, is not very useful.

Second, the furniture industry consists of many small firms in a fragmented market, so that a reasonable sample size can be generated. Third, most firms in this industry are small and family owned, which implies that power is centralized in the hands of the CEO, enlarging the potential influence of CEO locus of control on organizational variables (Miller and Toulouse, 1986a).

The present paper is part of a broader research project on CEO locus of control, which required participation of the other members of the top management team, defined as the group of managers one hierarchical level below the CEO (Boone, 1992). Therefore, the firms in our sample had to be large enough, consisting of at least three hierarchical levels. Consequently, instead of drawing a random sample from the population of furniture firms,[8] we considered only the 'largest' furniture companies with total assets above $1.2 million (a total of 153 firms). The first author interviewed every CEO who agreed to take part in the study (81 out of 153). After the interview, we administered and explained two questionnaires. The first questionnaire contained the locus of control measure, to be filled in by the CEO (CEO questionnaire); the second was designed to assess the competitive strategy of the firm (strategy questionnaire). We asked the CEO to pass the latter questionnaire to a lower-level top manager which (s)he deemed most knowledgeable on the firm's strategy. Participation of lower-level top managers was voluntary. A reminder followed three weeks after the initial visit. We made assurances that all provided information would remain strictly confidential. We used financial data from annual reports, centralized on CD-ROM by the National Bank of Belgium, to measure firm performance. So, three different sources were examined to obtain data on CEO locus of control, strategy and performance.

The latter procedure, which we designed to avoid common method variance (Podsakoff and Organ, 1986), appeared to have drawbacks. First, five CEOs refused to involve lower-level top managers in the present study. Second, the likelihood of incomplete information was increased. For instance, 64 CEO questionnaires and 60 strategy questionnaires were returned. However, notwithstanding this high response rate, matching these questionnaires provided 'full' information on only 55 companies. On top of this, several questionnaires were

only partially completed. This was especially the case for the strategy questionnaire, probably because small firm owner-managers generally are hesitant to share strategic information with outsiders (Robinson and Pearce, 1984).[9] Also, many respondents complained that they were very busy. As a result of missing data, the number of useful observations varies from variable to variable. We preferred to drop cases with missing values throughout, leaving a total of 40 observations. Despite the subsequent removals, the aggregate response rate is 26 per cent (40 out of 153 initially contacted firms), which is reasonable and similar to those reported in other studies requiring participation of CEOs and top management (Powell, 1992).

The performance (i.e. gross profit margin and return on assets) of the firms included in the present sample does not differ significantly from (1) the performance of the firms which refused to participate, and (2) the average performance of the entire furniture industry. This suggests that this paper's sample is representative. The sample firms are small with a mean number of employees of 80 (median = 53; SD = 81) and mean sales of $9.4 million (median = $5.8 million; SD = $7.6 million). All CEOs are male, with mean age of 46 (median = 46; SD = 10) and mean tenure of 14 (median = 12; SD = 10).

Measures[10]

Small business researchers emphasize profitability as the primary performance measure for low market share firms (Hammermesh et al., 1978; Robinson, 1983). Following the recommendations of Haleblian and Finkelstein (1993), we collected three profitability indicators to obtain a reliable measure of small firm performance: cash flow on assets, return on assets and gross profit margin. The first two ratios assess the firm's overall profitability. We included cash flow on assets to account for possible differences in depreciation accounting practices. The gross profit margin stresses the firm's operational efficiency. Each of these ratios is a standard indicator of profitability (Van Horne, 1983), and is widely used in both large (Capon et al., 1990) and small (Powell, 1992; Robinson and Pearce, 1988) business research. Small firm performance can vary substantially from year to year (Welsh and White, 1981). To account for such variation, we computed two-year averages of the performance indices. As a result, a CEO with a tenure of less than two years was dropped from subsequent analyses (leaving a sample

Table I. Results of factor analysis of performance indices: factor matrix and percentage of variance explained

	Factor 1
Performance indices:	
Cash flow on assets	0.96
Return on assets	0.88
Gross profit margin	0.87
Percentage of variance explained	82.2

Note:
$n = 39$

size of 39). To obtain an *overall performance* index, we computed factor scores with a principal components analysis of the three performance indicators (variable name PERF). Table I shows the results. Only one factor with an eigenvalue larger than one was extracted, accounting for 82 per cent of variance. All the performance indicators had factor loadings larger than 0.85.

To establish the convergent validity of this overall performance measure, we sent a short follow-up questionnaire to the CEOs in the present sample so as to obtain subjective performance evaluations. Ten CEOs returned information on the extent to which they are satisfied with the overall performance of their firm (on a five-point scale, ranging from not at all satisfied to highly satisfied). The correlation coefficient between this subjective performance measure and the 'objective' factor scores is very high ($r = 0.82$, with $p = 0.002$), which (i) provides strong evidence for the validity of our compounded performance measure, and (ii) suggests that profitability is indeed a major corporate objective in the mind of small business CEOs (Bhatty, 1981).

We measured *CEO locus of control* with the well-known Rotter I-E scale (Rotter, 1966), translated in Dutch by the first two authors (variable name LOC). The original scale contains 23 forced-choice locus of control items and six filler items. In the present study, a higher score reflects higher internality. We increased the number of filler items to 14 to obscure the purpose of the test. Several studies demonstrate the reliability and validity of this translated scale (Boone and De Brabander, 1993; Boone et al., 1990; Boone et al., 1991; De Brabander et al., 1992). In this sample, Cronbach's alpha (Cronbach, 1951) is 0.69, which concurs with the internal consistencies reported by Rotter (1966) and Robinson and Shaver (1973) and is well above the lower limits of acceptability (generally considered to be around 0.50 to 0.60; Nunnally, 1978).

As competitive strategy can be interpreted as a pattern in the stream of important decisions (Mintzberg, 1978), we selected six strategy variables so as to create composite measures of *cost leadership* and *product differentiation.* The six variables were selected because: (1) they can be controlled by CEOs (Finkelstein and Hambrick, 1990), and (2) they are deemed to be indicative of the strategic profiles of cost leadership and product differentiation (Wright et al., 1991). We collected three indicators of product differentiation: advertising intensity (advertising/sales), product design emphasis (number of full-time design personnel/total employment), and salaried salesperson intensity (number of salaried salespersons/total employment). These variables represent basic resource commitments that permit furniture firms to create and sell unique and differentiated products (McNamee and McHugh, 1989).

The following three dimensions are associated with a low-cost strategy: computer numerical control (CNC) investment intensity (investments in CNC processes/sales), average price compared to competitors, and distribution intensity. Following other researchers (Hambrick, 1983; Wright et al., 1991), we assume that firms invest in sophisticated CNC machines to improve manufacturing efficiency. We assessed the average price level of the firms' products by asking the respondents to compare their prices with those of competitors, indicating their judgement on a seven-point scale (ranging from 0, average price level (more than) 10 per cent below that of major competitors, to 6, average price level (more than) 10 per cent above that of major competitors; cf. Phillips,

1981). Of course, average to low prices would be consistent with a low-cost strategy (Wright et al., 1991).

The measurement and selection of the 'distribution intensity' variable require elaboration. Basically, furniture firms can choose among five distribution channels: direct sale to final consumer, small retailers, large retailers (such as IKEA), purchasing organizations[11] and other furniture manufacturers (i.e. subcontracting). The respondents were asked to estimate the percentage of sales realized through each of these distribution channels. We define distribution intensity as the extent to which sales are spread over different distribution channels. For this purpose, we computed the following index (Michel and Hambrick, 1992):

$$1 - \sum P_i^2$$

where P_i is the proportion of sales realized through channel i (i = 1 to 5). A single-channel firm has an index of 0, and the maximum value (i.e. 1−1/5) is reached if the proportions are equal among all channels. Diversifying sales over several channels is likely to increase operational efficiency by lowering the demand risk associated with specific channels. That is, intensive distribution provides the opportunity to stabilize the utilization of capacity and to maintain smooth production operations. Additionally, such a strategy may facilitate reaping economies of scale and scope.

In order to explore the validity of the strategy measures, we applied a principal components analysis with a varimax rotation to the six strategy variables. The factor analysis extracted two factors with eigenvalues larger than one, accounting for 57 per cent of variance. Table II reports the factor loadings. A clear factor structure emerged. The three product differentiation variables load positively on the first factor. In addition, these variables are related to charging high prices. Distribution and CNC investment intensities have high positive loadings on the second factor, and are – as expected – associated with charging a low average price. Moreover, advertising intensity loads negatively on the

Table II. Results of factor analysis of strategy indices: rotated factor matrix and percentage of variance explained

	Factor 1	*Factor 2*
Product differentiation:		
Advertising intensity	0.27	−0.42
Product design emphasis	0.85	−0.08
Salaried salesmen intensity	0.90	−0.07
Low cost:		
CNC investment intensity	−0.00	0.71
Average price charged	0.50	−0.56
Distribution intensity	−0.02	0.75
Percentage of variance explained	37.7	19.2

Note:
n = 39

second factor. Clearly, the factors can be labelled product differentiation and low cost, respectively. The highly interpretable factor structure allows us to work with the factor scores as composite measures of product differentiation and cost leadership (variable names DIF and COST, respectively).

In a number of studies, cost leadership and product differentiation are conceived as two opposites on a single continuum (as is the case in the study of Govindarajan, 1989). This implies the assumption that a firm with a product differentiation strategy does not focus on low cost by definition. In our view, such a conceptualization is not warranted for two reasons. First, research using factor analysis to validate the typology of Porter (1980) suggests that cost leadership and product differentiation frequently arise as orthogonal factors (Dess and Davis, 1984; Robinson and Pearce, 1988), which is consistent with the factor solution reported in table II. Second, and related, recent findings indicate that some firms are able to pursue both cost leadership *and* product differentiation successfully (Wright et al., 1991), notwithstanding the 'stuck in the middle' argument of Porter (1980).

Additionally, we incorporated three alternative determinants of firm performance as covariates. First, we included the number of employees to control for differences in *organizational size* (variable name SIZE), which takes into account a myriad of possible confounding effects, such as economies of scale, differences in organizational structure and market power. Second, we used financial data from annual reports to compute the acid-test ratio, which measures the amount of liquid resources not committed to liabilities in the near future (variable name LIQ). Bourgeois (1981) and Singh (1986) proposed this ratio as a measure of *'unabsorbed' slack.* Welsh and White (1981) have argued that small firms tend to suffer from what they call a chronic 'resource poverty' (cf. Robinson, 1983). This is the result of, among other things, fierce competition in fragmented markets. Consequently, relatively minor events, such as the loss of an important customer or a bad decision by the CEO, may threaten the very survival of small companies. Due to limited access to external financing, small businesses have to build 'unabsorbed' slack as a buffer against unexpected cash shortages. As Welsh and White (1981, p. 29) argue, '[l]iquidity is a matter of life and death for the small business'.

Finally, we included an additional CEO-level characteristic, *tenure,* which has been shown to be related to small firm performance (variable name TEN). Specifically, Miller (1991) argued that long-tenured CEOs tend to grow 'stale in the saddle', and therefore fail to match continuously the strategy and structure with the requirements of the external environment, which may eventually compromise organizational performance. Miller's (1991, p. 47) analysis indeed reveals that '[t]he (negative) relationship between tenure and performance seems to work through the (mis)match between strategy and environment' (parentheses added).

Data Analysis

In this section, we present two sets of hierarchical regression analyses. In the first set LOC, DIF and PERF are the focal variables of interest, allowing us to test hypotheses 1 to 3. The second set pertains to hypothesis 4, predicting that CEO locus of control moderates the relationship between COST and PERF. We opted for two separate analyses in order to keep the regression models as parsi-

monious as possible, which is necessary due to the relatively small sample size.

Concerning the first set of analyses, the integrative framework suggests that the total effect of LOC on PERF can be decomposed into (1) a direct effect and (2) an indirect effect through competitive strategy (i.e. DIF). The CEO 'strategy implementor' effect implies testing for a significant interaction between LOC and DIF. In order to analyse the integrative framework presented in figure 1, the following set of hierarchical regression analyses is performed:

$$(1) \quad \text{PERF} = A + B_1\text{SIZE} + B_2\text{LIQ} + B_3\text{TEN} + B_4\text{LOC}.$$
$$(2) \quad \text{PERF} = A + B_5\text{SIZE} + B_6\text{LIQ} + B_7\text{TEN} + B_8\text{LOC} + B_9\text{DIF}.$$
$$(3) \quad \text{PERF} = A + B_{10}\text{SIZE} + B_{11}\text{LIQ} + B_{12}\text{TEN} + B_{13}\text{LOC} + B_{14}\text{DIF} + B_{15}\text{LOC} * \text{DIF}.$$

The regression coefficient B_4 provides an estimate of the total effect of CEO locus of control after controlling for SIZE, LIQ and TEN (Cohen and Cohen, 1983). The direct effect of CEO locus of control is obtained by regressing PERF on both LOC and DIF (i.e. B_8 from equation (2); cf. hypothesis 1). The indirect effect of CEO locus of control is determined by analysing the change of the regression coefficient of LOC when DIF is added to the equation (Cohen and Cohen, 1983): B_4 minus B_8 represents an estimate of the indirect effect of LOC via DIF. Of course, a substantial change of the coefficient of LOC indicates that internal CEOs are inclined to pursue different strategies than external CEOs (hypothesis 2). Finally, we add a product-term (LOC * DIF) to equation (2) so as to analyse the moderating role of CEO locus of control (hypothesis 3). A significant and positive B_{15} implies that the contribution of a product differentiation strategy to organizational performance is higher for internal than for external CEOs.[12]

If a dependent variable Y is simultaneously regressed on a product-term (e.g. XZ) and its constituents (e.g. X and Z as in equation (3)), the regression coefficients of X and Z (in the present study, B_{13} and B_{14}) cannot be meaningfully interpreted for two reasons. The first reason pertains to the case where X and Z are based on interval scale data, as is true for LOC and DIF. As interval scales have an arbitrary origin, any linear transformation of such scales should not affect the results of estimating equation (3). However, the regression coefficients of X and Z (including their t values, partial and semipartial correlations) and the constant A are not invariant under linear transformations (Cohen, 1978). This is not true for the coefficient of the product-term (XZ) whose statistical significance remains constant over any linear transformation of X and Z.[13] Put differently, the values of the regression coefficients of X and Z depend on their scaling, and are therefore meaningless.

Second, Cohen warns that:

> [t]he simultaneous analysis of X, Z, and XZ results in general in the distortion of the partial coefficients for X and Z, since they are (usually substantially) correlated with XZ, and the partialing process results in the latter removing some (probably much) of the X and Z variance. Thus, even aside from lack of invariance over linear transformation, such a simultaneous analysis is, in general, inappropriate for analytical purposes when product variables are

involved. The partialed $XZ.X,Z$ (i.e. the XZ product from which its constituents X and Z have been linearly partialed) is the interaction, but X or Z from which XZ is partialed is, in general, arbitrary nonsense. The problem lies in the simultaneous model, in which all IVs (i.e. independent variables) are partialed from all others. (Cohen, 1978, p. 861; parentheses added)

Concerning the second set of analyses we re-run equations (1) to (3) after substituting DIF for COST. Hypothesis 4, which predicts that a low-cost strategy contributes more to organizational performance in the case of external CEOs than in the case of internal CEOs, is supported if the regression coefficient of LOC * COST is negative and significantly different from zero.

RESULTS

Table III reports descriptive statistics and zero-order correlations. We present the results of the two sets of hierarchical regression analyses in Table IV. For the sake of clarity, we report both unstandardized regression coefficients as well as the associated semipartial correlation coefficients (i.e. sr).[14]

Consistent with previous findings, firms headed by internal CEOs perform better than firms with external CEOs. Specifically, the sr based on equation (1) (i.e. the total effect of LOC) equals 0.36 ($p = 0.019$). Note that the semipartial correlation between LOC and PERF increases when DIF is added to equation (1). That is, the sr changes from 0.36 ($p = 0.019$; equation (1)) to 0.40 ($p = 0.009$; equation (2)). The latter coefficient remains exactly the same when COST is added to equation (1) (from 0.36 ($p = 0.019$) to 0.36 ($p = 0.009$)).[15] The findings pertaining to equation (2) therefore suggest, as expected, that there is (1) a substantial direct effect of LOC on PERF, and (2) a small negative indirect effect of LOC on PERF through DIF. Indeed, the zero-order correlation between LOC and DIF reveals that internal CEOs are more inclined to pursue a product differentiation strategy than their external counterparts ($r = 0.30$ with $p = 0.033$).[16] A product differentiation strategy, in turn, contributes negatively to organizational performance (sr = -0.19 with $p = 0.206$). This implies that DIF suppresses the 'true' effect of CEO locus of control on organizational performance (Cohen and Cohen, 1983). Thus, the inclination of internal CEOs to prefer (relatively) innovative strategies is dysfunctional in the furniture industry. However, the negative indirect effect is more than compensated by a substantial direct impact, so that the net (i.e. total) effect of CEO locus of control remains positive and significant. This pattern of findings confirms hypotheses 1 and 2.

The observation that DIF is negatively and COST positively (sr = 0.41 with $p = 0.003$) related to PERF can be understood in light of the specifics of the furniture industry mentioned above. First, theory and research suggest that a low-cost strategy is frequently positively or at least not negatively related to performance in mature and stable industries (Anderson and Zeithaml, 1984; Dess and Davis, 1984; Hambrick, 1983; Hambrick and Schecter, 1983; Prescott, 1986). Second, the long-range orientation normally associated with a product differentiation strategy may be less suited for small firms. Here, Cohn and Lindberg (1972, p. 2) argue that: 'The smaller quantities of goods purchased,

Table III. Descriptive statistics and Pearson correlations

Variables	*Mean*	*SD*	*Median*	*Minimum*	*Maximum*	*1*	*2*	*3*	*4*	*5*	*6*
1. PERF	0.00	1.00	−0.05	−1.85	2.46	–					
2. LOC	15.18	3.39	16.00	7.00	21.00	0.35*	–				
3. DIF	0.00	1.00	−0.31	−1.10	3.09	−0.09	0.30*	–			
4. COST	0.00	1.00	−0.12	−1.47	3.40	0.50**	0.02	0.00	–		
5. SIZE	80.46	81.25	53.00	16.00	417.00	−0.04	0.21†	−0.13	0.04	–	
6. LIQ	0.89	0.55	0.75	0.07	2.47	0.37*	−0.01	−0.13	0.25†	0.02	–
7. TEN	13.78	10.29	12.00	2.00	42.00	0.01	−0.09	−0.09	−0.06	0.20	0.30*

Notes:
$n = 39$
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$

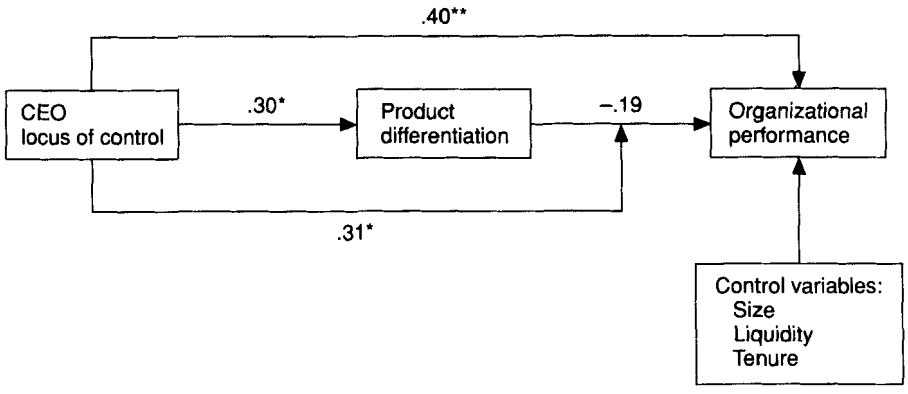
Table IV. OLS regression estimates of the effect of CEO locus of control on performance

	Equation (1)		*Equation (2)*		*Equation (3)*	
	B (*s.e.*)	*sr*	*B* (*s.e.*)	*sr*	*B* (*s.e.*)	*sr*
Set 1						
Intercept	−2.093** (0.736)	–	−2.321** (0.751)	–	NI	–
SIZE	−0.001 (0.002)	−0.11	−0.002 (0.002)	−0.15	−0.001 (0.002)	−0.09
LIQ	0.699* (0.277)	0.37*	0.651* (0.277)	0.34*	0.654* (0.261)	0.34*
TEN	−0.005 (0.015)	−0.05	−0.005 (0.015)	−0.04	−0.010 (0.015)	−0.10
LOC	0.109* (0.044)	0.36*	0.129** (0.047)	0.40**	NI	NI
DIF			−0.202 (0.156)	−0.19	NI	NI
DIF * LOC					0.120* (0.052)	0.31*
F-value	3.216*		2.955*		3.613**	
R^2	0.27		0.31		0.40	
Set 2						
Intercept	−2.093** (0.736)	–	−1.958** (0.655)	–	NI	–
SIZE	−0.001 (0.002)	−0.11	−0.002 (0.002)	−0.14	−0.002 (0.002)	−0.17
LIQ	0.699* (0.277)	0.37*	0.470† (0.256)	0.24†	0.560* (0.274)	0.27*
TEN	−0.005 (0.015)	−0.05	0.002 (0.014)	0.02	0.004 (0.014)	0.04
LOC	0.109* (0.044)	0.36*	0.109** (0.039)	0.36**	NI	NI
COST			0.432** (0.135)	0.41**	NI	NI
COST * LOC					0.055 (0.058)	0.12
F-value	3.216*		5.315**		4.565**	
R^2	0.27		0.45		0.46	

Notes:
$n = 39$
B = Unstandardized regression coefficient; and *sr* = semipartial correlation
NI = not interpretable (see text)
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$

fewer salesmen, lower inventory levels, smaller outlays for advertising and promotion, and similar characteristics of small businesses seldom justify the risk or costs imposed by long-range plans.'

Hypothesis 3 is confirmed, too, as the regression coefficient of LOC * DIF is positive and significantly different from zero. The associated semipartial correlation is 0.31 ($p = 0.031$). Thus, consistent with the findings of Govindarajan



Notes:
$n = 39$
We report the semipartial correlations associated with the first set of hierarchical regression analyses (see table IV).
$^{*}p < 0.05$; $^{**}p < 0.01$

Figure 2. Results of the integrative framework relating CEO locus of control to organizational performance

(1989), internal CEOs are more effective in implementing a product differentiation strategy than external CEOs. Apparently, internal CEOs are able to compensate the main negative impact of DIF on PERF.

Hypothesis 4, however, is not confirmed. The sr of LOC * COST equals 0.12, which is not significant ($p = 0.350$). This does not corroborate the findings of Govindarajan (1989). Recall that Govindarajan's study pertains to general managers of SBUs whose main task is to implement a given strategy. In contrast, the majority of CEOs in the furniture industry own a substantial part of company shares. Additionally, they are clearly responsible for the formulation of the firm's business policy. It is therefore likely that the CEOs in the present study feel more personally committed to their company and its strategy than SBU general managers. Perhaps this high commitment may buffer the negative consequences of an incongruence between locus of control and the task characteristics associated with a low-cost strategy.

Concerning the control variables, LIQ is positively related to PERF, as expected (sr = 0.37 with $p = 0.017$; equation (1)). The regression coefficients of SIZE and TEN are not significant. The former suggests that scale economies are absent in the furniture industry; the latter may be the result of the stable and mature nature of this market. Probably, the tendency of long-tenured CEOs to adhere to the status quo is less likely to compromise organizational performance in such stable settings (Hambrick and Fukutomi, 1991; Miller, 1991). That is, successful co-alignments between organizational strategy, structure and environment may only deteriorate slowly when there is little change in the environment.

The findings of the present study are summarized in terms of the paths outlined in figure 1 by reporting the semipartial correlations associated with the first set of hierarchical regression analyses in figure 2.

DISCUSSION

An Integrative Perspective

The current state of the art in the CEO locus of control literature is biased toward partial mappings of bivariate associations between CEO locus of control and organizational outcomes. Although such studies are a worthwhile contribution to the literature, they only produce fragmented understanding. This is why the current paper proposes an integrative model. The key ingredient of this integration is the introduction of the intermediary role of strategy formulation and implementation (cf. figure 1). In effect, the established bivariate hypotheses are nested in the integrative model. Here, empirical testing reveals that the robust finding of the positive influence of CEO locus of control on organizational performance is confirmed. However, this paper's results move beyond replicating this well-established finding.

The key contribution of this paper is a quest for an explanation of *why* CEO locus of control may matter so much. It is here where the strategy issue enters. Basically, the revealed explanation is composed of three elements. First, CEO locus of control relates significantly to strategy *choice*. That is, internality is associated with a product differentiation strategy. This is the CEO's role of strategy formulator. Second, this product differentiation strategy per se *impedes* organizational performance. Put differently, the environmental contingencies of the Flemish furniture industry align with cost leadership rather than product differentiation. Third, and this is the key finding, the positive impact of CEO internality *overcompensates* this downside of an unfitting strategy choice of internal CEOs. Apparently, internal CEOs achieve higher organizational performance irrespective of strategy content. This points to the importance of the CEO's role of implementor. So, testing the integrative framework deepens our understanding of what drives the success of internal CEOs. Specifically, it suggests that what differentiates internal from external CEOs, is the former's ability to *implement* successfully whatever strategy. As a result, future models of 'executive leadership' should not only focus on strategy choice but also on the processes associated with the effective implementation of these choices. This important issue of the dual role of CEOs as strategy formulator *and* implementor deserves detailed attention. Here, we want to focus on two questions: (1) What is the relative importance of strategy formulation versus implementation?; and (2) What may explain the positive association between CEO internality and implementation success?

The Internal CEO as Implementor

As far as the first question is concerned, scattered evidence throughout the literature suggests that both management scholars and practitioners favour the issue of strategy formulation, in terms of both the content of and process leading to strategy choice. Much literature is devoted to the study of the content and/or *ex*

ante process of strategy formulation; much less literature focuses on the ins and outs of the *ex post* implementation of the selected strategies. On this, Lewin and Stephens (1994, p. 185) observe that '[t]op management's role in shaping strategy has been discussed in the literature . . . , but the CEO's motivation and ability to shape organization design as a means to *implement* strategy and to match the organization design with his or her management philosophy and style has been largely overlooked' (emphasis added). Similarly, Preble (1992) observes that (top) managers tend to disregard strategic control. From the observation that several strategies may be viable in the same environment as long as managers are able to shape coherent configurations in which strategic choices, structures, systems and processes are carefully matched (Miles and Snow, 1984; Porter, 1980; Snow and Hrebiniak, 1980), we hypothesize that a superior implementation of a second-best strategy produces higher organizational performance than an inferior implementation of the first-best strategy. This is why the internal CEO outperforms the external CEO even if the former is inclined to formulate a second-best strategy. What then explains the internal CEO's ability to be a successful implementor? This is the second question.

Probably, CEO internality is related to co-alignment abilities and leadership style. From a contingency perspective, a CEO's challenge is to co-align environmental contingencies with firm strategies and internal organization features, and to adapt this co-alignment over time in response to changing circumstances. This is a complex task, requiring long-term vision and directive behaviour. All this is unlikely when a CEO has no confidence in her/his ability to influence what happens to the firm. As Lewin and Stephens argue:

> CEOs with internal loci of control feel efficacious in controlling outcomes. Therefore, they are likely to believe in the concept of strategy, engage in strategic planning, implement the structures and processes for monitoring the environment that strategic planning entails, and restructure their organizations to fit the contingencies of their chosen strategies. (Lewin and Stephens, 1994, p. 195)

Apart from designing a co-alignment, a CEO has to take the lead in implementing the necessary changes. This requires leadership so as to mobilize subordinates. Particularly, internal CEOs exhibit the transformational leadership style needed here. This transformational leadership '[i]nspires followers to accomplish more difficult objectives, to approach and solve problems from new and different angles, and to develop themselves to higher levels of capabilities' (Howell and Avolio, 1993, p. 893). Therefore, even if an external CEO formulates a fitting strategy, such as cost leadership in the Flemish furniture industry, (s)he is unlikely to design and implement the overall co-alignment that is needed to make a success of this first-best choice.

Management Practice

From the robust finding that CEO internality facilitates organizational performance, we can underscore two issues relevant for management practice: what is the implication of this result for CEO selection and CEO adaptation? With regard to CEO selection, current evidence suggests that selection committees –

such as boards of advisers – could take account of the locus of control trait of candidates. From this paper's finding that the implementation capabilities of internal CEOs may well overcompensate possibly second-best strategy choices, we speculate that the selection of an internal CEO will hardly ever be dysfunctional. Since both validated interview and questionnaire instruments are readily available, assessing a candidate's locus of control score can be done easily. As far as the CEO adaptation issue is concerned, the argument is much more complicated as psychological research has revealed that locus of control seems to be a rather fundamental and relatively stable personality trait (Pedersen et al., 1989).

Given the observation that the locus of control trait is *relatively* – and not absolutely – stable, so-called Outward Bound programmes may facilitate a CEO's locus of control shift toward internality. Outward Bound programmes have the specific purpose of changing the self-concept, including locus of control, of individuals. Such programmes provide an environment for '[t]he person to recognize and understand his own weaknesses, strengths, and resources and thus find within himself the wherewithal to master the difficult and unfamiliar' (Richards, 1977, p. 69). Marsh et al. (1986) report that the participants of an Outward Bound programme became more internal after a 26-day course, evaluated by means of Rotter scores collected at the first and last day of the programme. It remains to be seen, of course, whether these short-term changes are a manifestation of 'postgroup euphoria' or whether this shift will materialize in the long run.

Future Research

From the above, we conclude that this paper points to, at least, two avenues for future research. First, the external validity of this study's findings needs to be investigated through replication in different industry settings. In all likelihood, the intermediating role of strategy – and particularly the relative importance of the CEO's role as formulator and implementor – differs from industry to industry. Here, the well-established distinction of static and dynamic environments may be helpful. Since an innovative strategy is specifically likely to contribute to organizational performance in dynamic settings, the net effect of CEO internality is probably larger in industries ruled by dynamism and uncertainty (cf. Miller and Toulouse, 1986b). Second, a deepening of our understanding of the CEO implementor role as a key – perhaps even dominant – explanation of CEO effectiveness requires in-depth studies into the actual contribution of CEOs to strategy implementation. To what extent is the implementation behaviour of internal CEOs different from that of their external colleagues? For this and other reasons, there remains much to be done in the area of CEO locus of control research.

APPENDIX

Measurement Instruments

Performance. We used financial data from annual reports, centralized on CD-ROM by the

National Bank of Belgium, to measure three performance ratios. They are defined as follows (Van Horne, 1983):

1. Cash flow on assets: cash flow/total assets.
2. Return on assets: net income/total assets.
3. Gross profit margin: sales less cost of goods sold/sales.

In a follow-up questionnaire we asked the CEOs to provide a subjective evaluation of the *overall* performance of their firm on a scale ranging from 1 (not at all satisfied) to 5 (highly satisfied). The question is:

Indicate to what extent you are satisfied with the *overall* performance of your company.

CEO locus of control. We used Rotter's (1966) I-E scale to measure locus of control. We enlarged the original scale with 14 filler items. Those items are indicated with (F). Rotter items are marked with (R). (I) represents the internal alternative of every Rotter item. We counted the number of internal alternatives chosen by the respondents to obtain a locus of control score (minimum 0 and maximum 23).

1(F)	a	Children get into trouble because their parents punish them too much.
	b	The problem with most children nowadays is that their parents are too easy with them.
2(R)	a	Many of the unhappy things in people's lives are partly due to bad luck.
	b	People's misfortunes result from the mistakes they make. (I)
3(F)	a	Heredity plays a major role in determining one's personality.
	b	It is one's experiences in life which determine what they're like.
4(F)	a	One should always be willing to admit mistakes.
	b	It is usually best to cover up one's mistakes.
5(F)	a	There are certain people who are just no good.
	b	There is some good in everybody.
6(R)	a	One of the major reasons why we have wars is because people don't take enough interest in politics. (I)
	b	There will always be wars, no matter how hard people try to prevent them.
7(R)	a	In the long run people get the respect they deserve in this world. (I)
	b	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
8(R)	a	The idea that teachers are unfair to students is nonsense. (I)
	b	Most students don't realize the extent to which their grades are influenced by accidental happenings.
9(R)	a	Without the right breaks one cannot be an effective leader.
	b	Capable people who fail to become leaders have not taken advantage of their opportunities. (I)
10(R)	a	No matter how hard you try some people just don't like you.
	b	People who can't get others to like them don't understand how to get along with others. (I)
11(F)	a	People pay too much attention to body culture.
	b	Sports are an excellent way to build character.
12(R)	a	I have often found that what is going to happen will happen.
	b	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. (I)
13(F)	a	Women don't get to the top as easily as men because they have always been discriminated.

	b	Women are not as able as men to hold leadership positions.
14(R)	a	In the case of a well prepared student there is rarely if ever such a thing as an unfair test. (I)
	b	Many times exam questions tend to be so unrelated to course work that studying is really useless.
15(F)	a	Children get too much homework, there isn't enough time to play and relax.
	b	Most children only want to play so that it is unlikely that they will have a successful career.
16(F)	a	Sports is no good, you only get injured.
	b	Sports is good for health.
17(R)	a	Becoming a success is a matter of hard work, luck has little or nothing to do with it. (I)
	b	Getting a good job depends mainly on being in the right place at the right time.
18(R)	a	The average citizen can have influence in government decisions. (I)
	b	This world is run by the few people in power, and there is not much the little guy can do about it.
19(F)	a	Old people can't look out for themselves. They should be placed in a home.
	b	Aged persons should have the possibility to live on their own as long as possible.
20(R)	a	When I make plans, I am almost certain that I can make them work. (I)
	b	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
21(F)	a	Violence on TV gives rise to aggressive behaviour of children.
	b	Violence on TV gives children the opportunity to work out their aggressive feelings.
22(R)	a	In my case getting what I want has little or nothing to do with luck. (I)
	b	Many times we might as well decide what to do by flipping a coin.
23(R)	a	Who gets to be the boss often depends on who was lucky enough to be in the right place first.
	b	Getting people to do the right thing depends upon ability, luck has little or nothing to do with it. (I)
24(R)	a	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
	b	By taking an active part in political and social affairs the people can control world events. (I)
25(R)	a	Most people don't realize the extent to which their lives are controlled by accidental happenings.
	b	There really is no such thing as 'luck'. (I)
26(R)	a	It is hard to know whether or not a person really likes you.
	b	How many friends you have depends upon how nice a person you are. (I)
27(F)	a	One should not boast when having abilities that others do not have.
	b	If an individual has certain abilities, he has the right to mention it so that he gets the respect he deserves.
28(R)	a	In the long run the bad things that happen to us are balanced by the good ones.
	b	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three. (I)
29(R)	a	With enough effort we can wipe out political corruption. (I)
	b	It is difficult for people to have much control over things politicians do in office.
30(R)	a	Sometimes I can't understand how teachers arrive at the grades they give.

b There is a direct connection between how hard I study and the grades I get. (I)

31(F) a Nowadays, most people pay too much attention to material things at the expense of their mental well-being.

b Striving for material welfare makes life more pleasant.

32(F) a Environmental pollution is the price society has to pay for achieving welfare.

b Nature cannot be protected enough, even if it costs a lot of money.

33(F) a The conditions of life in certain prisons are degrading.

b Many prisoners do not deserve a human treatment.

34(R) a Many times I feel that I have little influence over the things that happen to me.

b It is impossible for me to believe that chance or luck plays an important role in my life. (I)

35(R) a People are lonely because they don't try to be friendly. (I)

b There's not much use in trying too hard to please people, if they like you, they like you.

36(R) a What happens to me is my own doing. (I)

b Sometimes I feel that I don't have enough control over the direction my life is taking.

37(R) a Most of the time I can't understand why politicians behave the way they do.

b In the long run the people are responsible for bad government on a national as well as on a local level. (I)

Product differentiation. We measured three indicators of product differentiation. Respondents were asked to provide information on the following items:

1. The amount of advertising expenditures as a percentage of sales in 1989.
2. The number of full-time design personnel currently employed.
3. The number of salaried salespersons currently employed.

We divided items 2 and 3 by the total number of employees in 1989.

Cost leadership. We measured three indicators of cost leadership. Respondents were asked to provide information on the following items:

1. The amount (in Bfr.) invested in CNC (computer numerical control) in 1989.
2. The average price charged compared with the prices of major competitors. We provided the following seven options to the statement 'On average, our prices are:'
   - (More than) 10% above the average price level of our major competitors (coded as 6).
   - 5% to 10% above the average price level of our major competitors (coded as 5).
   - 2% to 5% above the average price level of our major competitors (coded as 4).
   - Between 2% above and 2% below the average price level of our major competitors (coded as 3).
   - 2% to 5% below the average price level of our major competitors (coded as 2).
   - 5% to 10% below the average price level of our major competitors (coded as 1).
   - (More than) 10% below the average price level of our major competitors (coded as 0).
3. The percentage of sales realized through each of the following distribution channels:
   - Direct sale to final consumer.
   - Small retailers.
   - Large retailers (such as IKEA).

- Purchasing organizations.
- Other furniture manufacturers.

We divided the first item by the amount of sales (in Bfr.) realized in 1989. Item 3 provided information to compute the firm's distribution intensity (see text).

Control variables. We used the number of employees mentioned in the annual reports as a measure of organizational *size.* We computed the acid-test, or quick, ratio from financial data provided in the annual reports. This ratio, defined as current assets less inventories divided by current liabilities, is considered to be an accurate measure of *liquidity* (Van Horne, 1983). Finally, *tenure* was assessed by asking the CEOs to indicate the number of years in their current position.

NOTES

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[1] A notable exception is the study of Powell (1992), who analyses both the effect of CEO locus of control *and* generic strategy on organizational performance. Powell does not, however, discuss the relationship between locus of control and strategic choice.

[2] In our view, the study of Miller and Toulouse (1986a, b) is unique in presenting a coherent framework of the impact of CEO locus of control on firm performance by explicitly proposing a mediating mechanism in the form of different strategic preferences between internals and externals. The other studies either focus solely on performance while neglecting strategic choice variables (Begley and Boyd, 1987; Brockhaus, 1980) or only incorporate locus of control in their research design as a secondary concept (Powell, 1992; Van de Ven et al., 1984).

[3] 'Leaders described as transformational concentrate their efforts on longer term goals; place value and emphasis on developing a vision and inspiring followers to pursue the vision; change or align systems to accommodate their vision rather than work within existing systems; and coach followers to take on greater responsibility for their own development, as well as the development of others.' (Howell and Avolio, 1993, p. 891)

[4] Common method variance may have inflated the reported differences between internal and external CEOs in past studies as these findings are, without exception, based on single-source self-report measures of CEO locus of control and 'entrepreneurship' (Boone and De Brabander, 1995).

[5] Cost leadership and marketing differentiation are not substantially related to performance (Miller and Toulouse, 1986b).

[6] Unfortunately, Miller and Toulouse (1986b) did not directly test whether innovation is indeed a mediating variable. That is, they base their analyses on zero-order correlations. However, a formal test would imply analysing the relationship between CEO locus of control and firm performance after controlling for innovative differentiation.

[7] Govindarajan (1989) assumes that the competitive strategy of SBUs is mainly determined at the corporate level.

[8] Recall that 80 per cent of the firms in the furniture industry have fewer than 20 employees (Febelhout, 1987).

[9] One CEO even thought that we requested information because we wanted to start our own furniture firm.

[10] We provide a detailed account of all measures in the Appendix.

[11] Purchasing organizations are independent furniture stores which group together to purchase furniture collectively from manufacturers.

[12] The conditional relationship or interaction modelled in equation (3) is symmetric. That is, if the effect of DIF on PERF depends on LOC, then the impact of LOC on PERF is also dependent on DIF (Cohen, 1978).

[13] Southwood (1978) demonstrates that changes in the points of origin of the two main variables X and Z affect all the standardized regression coefficients, including XZ's. The *unstandardized* coefficient of XZ, however, does not change following such a transformation. We will therefore report unstandardized regression coefficients in the results section (cf. Govindarajan, 1989).

[14] The sr equals the correlation between that portion of the independent variable (X) that is uncorrelated with the remaining independent variables (IVs) and the dependent variable (Y). Thus, sr^2 represents the unique contribution of X to R^2 (Cohen and Cohen, 1983). Although the partial correlation (i.e. pr) contains basically the same information as the sr, there is a subtle difference. Specifically, '[i]t can be seen that pr^2 will virtually always be larger than and can never be smaller than sr^2, because sr^2 is the unique contribution of X expressed as a proportion of the *total* Y variance whereas pr^2 expresses the same unique contribution of X as a proportion of that *part* of the Y variance not accounted for by the other IVs' (Cohen and Cohen, 1983, p. 102). The latter makes the pr unsuited to assess whether a variable, say Z, mediates the relationship between X and Y. Suppose, for instance, that Z is not related to X, but contributes significantly to the explanation of the dependent variable Y. In that case, Z cannot be a moderator (nor a suppressor) of the relationship between X and Y. However, adding Z to an equation in which Y is regressed on X (as in equation (2)), will generate an increase in the pr associated with X precisely because pr^2 is expressed as a proportion of the part of the Y variance not accounted for by the other IV (that is, the denominator of pr^2 decreases). In the present example, both the regression coefficient of X and the associated sr remain unchanged. However, note that if one of the coefficients is significant (i.e. partial regression coefficient, sr and pr) they are all significantly different from zero with exactly the same t value (Cohen and Cohen, 1983).

[15] The value of p decreases due to a reduction of the standard error of the regression coefficient of LOC from 0.044 to 0.039 (table IV).

[16] There is no significant zero-order correlation between LOC and COST ($r = 0.02$ with $p = 0.442$; table III).

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