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Charismatic leadership, environmental dynamism, and performance

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Most studies relating charismatic leadership to performance have limitations concerning selection of criterion measures and investigation of moderators. Therefore, this study examines relationships between charismatic leadership and multiple performance outcomes under different levels of environmental dynamism (i.e., level of environmental uncertainty, degree of technological change) and per type of Chief Executive Officer (firm owner versus managing director). Results revealed that charismatic leadership was positively related to common-source and multi-source perceptual performance outcomes (i.e., subordinates' positive work attitude) and to organization profitability, but unrelated to organization liquidity and solvency. The relationship between charismatic leadership and perceptual performance was stronger under conditions of environmental uncertainty than under conditions of environmental certainty. Furthermore, charismatic leadership was more strongly related to organization profitability for firm owners than for managing directors who do not own their firm. The results are discussed and several potentially fruitful avenues for future research on charismatic leadership and employee as well as organizational performance are presented.

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Researchers have long sought to identify what makes a leader effective. Over the past 20 years several new leadership theories have been proposed, using terms such as transformational, charismatic, or valued-based (e.g., Bass, 1985, 1997; House, 1977, 1996). This new genre of theories has made considerable progress in addressing effective leadership (Den Hartog & Koopman, 2001; Yukl, 1999). According to these theories, effective leaders articulate an attractive vision for the organization and behave in ways that reinforce the values inherent in that vision. They inspire followers to transcend their own self-interests for the sake of the collective. Followers become highly committed to the goal of the collective and perform beyond expectations (e.g., Bass, 1985; Burns, 1978; House, 1977). In the present study, we will refer to this genre of leadership theories as *charismatic*.

Many empirical studies and a number of meta-analyses have found positive relationships between charismatic leadership and a range of outcome measures. The criterion measures that have been studied most often are subordinates' satisfaction, commitment, and perceptions of leader effectiveness (e.g., Fuller, Patterson, Hester, & Stringer, 1996; Lowe, Kroeck, & Sivasubramaniam, 1996). Other outcome measures that have been linked to charismatic leadership include business-unit performance (e.g., Howell & Avolio, 1993) and organizational net profit margin (e.g., Koene, Vogelaar, & Soeters, 2002; Waldman, Ramirez, House, & Puranam, 2001), trust in management and colleagues (e.g., Den Hartog, Schippers, & Koopman, 2002), and organizational citizenship behaviour (e.g., Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Overall, results describe correlations in the range of .30 to .75 between charismatic leadership and various outcome measures. Research, on which these findings are based, however, often has limitations concerning selection of criterion measures and investigation of moderators. Therefore, this study examines relationships between charismatic leadership and multiple performance outcomes under different levels of environmental uncertainty, different degrees of technological change, and for different types of Chief Executive Officers (CEOs; firm owner versus managing director).

SELECTION OF CRITERION MEASURES

Most existing research on the effects of charismatic leadership has taken a limited perspective on performance, focusing on only a few perceptual outcome measures. As stated, criterion measures most often used to assess the effects of charismatic leadership are followers' self-reports of commitment to the organization's goals, satisfaction with the leader, and perceived leader effectiveness (e.g., Fuller et al., 1996; Lowe et al., 1996). As a consequence, questionnaires are used to tap both subordinates' perceptions of leader behaviour and of effectiveness. This can induce common-method

bias, such as central tendency, social desirability, and halo effects (e.g., Bass & Avolio, 1989). Moreover, knowledge of prior performance may bias ratings of leader behaviour and performance (Binning, Zaba, & Whattam, 1986).

Most studies using followers' self-report measures of effectiveness gather data from the same respondents that rate leader behaviour. Correlations based on this kind of same source research design (percept–percept) include responses to leader behaviours that are unique to each leader–subordinate dyad instead of reflecting only those responses to leader behaviour that is enacted similarly toward all subordinates (which would require a multi-source design). Raters may strive for consistency across dependent and independent variables (Lowe et al., 1996). Same-source research designs may thus artificially inflate estimates of relationships. Meta-analytic findings suggest that not all relationships in organizational research are biased by such self-report effects (Crompton & Wagner, 1994). However, some evidence of percept–percept inflation in leadership research exists. Meta-analytic studies examining the effect size of the relationships between charismatic leadership and performance outcomes show that studies using a percept–percept research design exhibit significantly larger relationships than those using multi-source designs (e.g., de Groot, Kiker, & Cross, 2000; Fuller et al., 1996; Lowe et al., 1996).

Several studies have focused on nonself-report based organizational outcomes as criterion measures to assess the effects of charismatic leadership, such as organizations' net profit margin (Koene et al., 2002; Waldman et al., 2001), business unit sales (e.g., Barling, Weber, & Kelloway, 1996), and percentage of goals met regarding business-unit performance (Howell & Avolio, 1993). While reducing common-source and common-method bias, organizational measures can be criticized as being overly narrow (Bommer, Johnson, Rich, Podsakoff, & MacKenzie, 1995), thus suffering from criterion deficiency. Given that performance is a multifaceted construct composed of distinct components (Campbell, McHenry, & Wise, 1990), organizational measures do not include all outcomes that would be needed to adequately describe leader performance. Moreover, organizational outcome measures often emphasize transactional leadership outcomes rather than charismatic leadership outcomes (Bass, 1988) as they are usually not designed to capture "performance beyond expectations". Further, the relationship between leader behaviour and organizational outcome measures is often quite indirect (Den Hartog, 1997). Organizational measures are heavily dependent upon environmental constraints and may mostly reflect forces outside control of the leader, thus suffering from criterion contamination (Heneman, 1986). Organizational outcome ratios may therefore underestimate the true relationship between leadership and performance (House, Delbecq, Taris, & Sully de Luque, 2001).

Considering the limitations of each type of criterion and the multi-dimensional nature of performance, the use of multiple performance indicators obtained through different methods seems desirable in leadership research. Comparison of the relationships found with different performance outcomes may reveal information about the magnitude of possible measurement biases and may provide a more accurate estimate of the "true" relationship between charismatic leadership and performance (Lowe et al., 1996).

Therefore, the present study examines the relationship between charismatic leadership and performance using multiple indicators of performance obtained through different methods. We use common-source as well as multi-source perceptual outcome measures, along with organizations' financial health ratios, to examine the impact of charismatic leadership (of CEOs of small and medium-sized enterprises) on performance.

Charismatic leaders are expected to infuse work with values by articulating an attractive vision and behave in ways that reinforce the values inherent in that vision, which will increase the meaningfulness of the work their subordinates do. This in turn will increase subordinates' willingness to and enthusiasm for their work (e.g., House, 1996; Shamir, House, & Arthur, 1993). Previous research has shown charismatic leadership to be related to organizational commitment, subordinate effort, and job satisfaction (e.g., Bycio, Hackett, & Allen, 1995; de Groot et al., 2000; Podsakoff et al., 1990). Therefore, we expect charismatic leader behaviour to be significantly and positively related to subordinates' positive work attitude (operationalized as their enthusiasm for and commitment to the organization and the work they do). Due to the inclination of raters to strive for consistency across dependent and independent variables, we expect the relationship between charismatic leader behaviour and subordinates' positive work attitude to be significantly stronger for common-source data than for multi-source data.

Further, if charismatic leadership motivates subordinates to put forth effort beyond expectations as mentioned above (Bass, 1985; Burns, 1978; House, 1977), this may be reflected in increased organizational performance and charismatic leader behaviour may be positively related to an organizations' financial health. In line with this, Koene et al. (2002) found charismatic leadership positively related to controllable costs and net results of supermarket stores. Further, Howell and Avolio (1993) found charismatic leadership to positively predict percentage of goals met regarding business-unit performance. Also, Keller (1992) showed that charismatic leadership was positively related to project quality and budget/schedule performance in R&D organizations. In addition, Flynn and Staw (2004) showed in both an archival study and a laboratory experiment that charisma was positively related to attracting shareholders and increasing people's willingness to

invest money in the organization. Taken together, we expect charismatic leader behaviour to be positively related to an organizations' financial health, operationalized here as liquidity, solvency, and profitability.

The liquidity ratio is an indicator of an organization's ability to pay its short-term obligations. It is a measure of total current assets divided by total current liabilities. The solvency ratio is an indicator of an organization's ability to meet its debt obligations. It is a measure of total assets divided by total debts. The profitability ratio is an indicator of how well an organization is using its assets to produce more income. This is a ratio of net income to total assets. Taken together, the liquidity, solvency, and profitability ratios provide a good picture of an organization's financial health. Charismatic leadership is expected to drive subordinates to put in effort beyond expectations, which may be reflected in organization's profitability (how well an organization is using its assets to produce more income) liquidity (to what extent an organization is able to pay its short-term obligations) and solvency ratios (to what extent an organization is able to pay its debt obligations). Due to criterion contamination and deficiency, we expect the relationship between charismatic leader behaviour and organizations' financial health ratios to be weaker than the relationship between charismatic leadership and subordinates' positive work attitude. In sum:

Hypothesis 1. Charismatic leader behaviour is significantly positively related to subordinates' positive work attitude and less strongly so to organizations' financial health ratios (liquidity, solvency, and profitability).

Hypothesis 2. The relationships between charismatic leader behaviour and subordinates' positive work attitude will be significantly stronger for common-source data than for multi-source data.

INVESTIGATION OF MODERATOR VARIABLES

Many studies relating charismatic leader behaviours to performance outcomes have neglected important moderator variables (Shamir & Howell, 1999). The positive results of charismatic leadership found in studies in various types of organizations, at various levels in organizations, and in several countries, have been taken as proof for the beneficial effects of charismatic leadership, regardless of the situation (Yukl, 1999). Nevertheless, as mentioned above, meta-analyses show that the strength of the associations found between charismatic leadership and performance outcomes varies from .30 to .75. This may be due to the impact of moderator variables (Lowe et al., 1996).

The most common speculation to date has been that indicators of environmental dynamism, such as a rapidly changing or dynamic organiza-

tional environment as well as conditions of crisis, uncertainty, or opportunity, are likely to increase the emergence of charismatic leadership or enhance its effect on followers (e.g., Pawar & Eastman, 1997; Shamir & Howell, 1999). In line with situational strength theory, Shamir and Howell (1999) argue that such environments are characterized by few situational cues, few constraints, and few reinforcers to guide behaviour. These dynamic and uncertain environments require new interpretations, novel responses, and different levels of effort and investment. They provide high latitude of decision discretion and ample opportunities to demonstrate leadership. Moreover, such environments are more likely to be receptive to proposals for change, behaviour suggested to be central to charismatic leadership (e.g., Conger & Kanungo, 1988).

Several studies have started to provide insight in the relationship between charismatic leadership and indicators of environmental dynamism. For example, House, Spangler, and Woycke (1991) found that the number of crises faced by US presidents was positively related to charisma. Pillai and Meindl (1991) reported that students who experienced a crisis during a group task experiment selected leaders more on the basis of their charismatic appeal than those who did not experience a crisis. Pillai (1996) showed that crises foster the emergence of charismatic leaders who are then rated as more effective than group leaders who emerge in noncrisis situations. Flynn and Staw (2004) showed in both an archival study and a laboratory experiment that the effects of charisma on attracting shareholders and increasing investments were heightened under more difficult economic conditions (cf. uncertainty). Howell and Higgins (1990) found a link between charismatic leadership and innovation. Furthermore, the results of a study done by Pillai and Meindl (1998) showed that an organic work unit structure was positively associated with the emergence of charismatic leadership in a large organization. Such organic structures tend to be flexible and innovative and tend to be seen in turbulent environments.

Waldman et al. (2001) investigated environmental uncertainty as a moderator of the relationship between charismatic leadership and organizational performance. They found that charismatic leadership positively affects organizational performance, but only under conditions of perceived environmental uncertainty. Thus, environments characterized by a high degree of environmental dynamism may moderate the relationship between charismatic leadership and performance. The present study extends prior research by Waldman et al. by examining the impact of environmental uncertainty on effects of charismatic leadership, using perceptual as well as organizational performance outcomes. Following the theory presented above and building on the results of Waldman et al., we hypothesize that:

Hypothesis 3. The relationships between charismatic leader behaviour and subordinates' positive work attitude and organizations' financial health ratios (liquidity, solvency, and profitability) will be significantly stronger for CEOs under conditions of environmental uncertainty than for CEOs under conditions of environmental certainty.

Further, we propose that technological change may also act as an indicator of environmental dynamism. When an organization is faced with a high degree of technological change, it has to be highly flexible to be able to effectively adapt to its changing environment. Individual leader behaviour is likely to be less prescribed, formalized, and defined in these organizations than in organizations confronted with a low degree of technological change. Thus, situations of high technological change provide more latitude of behaviour or decision discretion of charismatic leaders and are more receptive to change than situations of low technological change. Therefore, we expect the relationships between charismatic leadership and performance outcomes to be stronger in situations of high technological change than in situations of low technological change.

Hypothesis 4. The relationships between charismatic leader behaviour and subordinates' positive work attitude and organizations' financial health ratios (liquidity, solvency, and profitability) will be significantly stronger in situations of high technological change than in situations of low technological change.

Furthermore, we propose that firm ownership (does the leader in question own the firm or not) may also moderate the relationship between charismatic leadership and performance. Managing directors who were appointed and do not own the firm they run have to deal with a board of directors with the power to influence and monitor their behaviour. CEOs managing an organization that they themselves own face far fewer limitations when it comes to developing their own norms, rules, and incentives. Thus, the context of managing directors will tend to place more constraints on CEOs' behaviour and afford less latitude of decision discretion than the context of firm owners. In line with the theory mentioned above, we expect charismatic leadership to have a stronger impact on performance in situations that are less prescribed and offer leaders more discretion and room to manoeuvre. Therefore, we expect the relationships between charismatic leadership and performance outcomes to be stronger for firm owners than for managing directors.

Hypothesis 5. The relationships between charismatic leader behaviour and subordinates' positive work attitude and organizations' financial health ratios (liquidity, solvency, and profitability) will be significantly stronger for firm owners than for managing directors.

METHOD

Sample and procedure

As part of an international research project on culture and leadership (the GLOBE project) a set of 395 addresses of small and medium-sized organizations in the Netherlands was obtained from the database of Elsevier's Company Information. Firm size was restricted to a minimum of 50 and a maximum of 250 employees. Invitation letters were sent to all CEOs representing these firms and 1 week later they were approached by telephone. Wrong addresses, multiple registrations of the same firms using different names, inadequate information about firm size, newly appointed CEOs, and so forth, left about 300 CEOs in the sample who were asked to participate. As an incentive, these CEOs were offered the opportunity for feedback on their leadership styles at the close of the study.

In total, 54 CEOs and their firms participated in this study (18% response rate). This number of firms is similar to the 48 firms and their CEOs participating in the study by Waldman et al. (2001). Half of the CEOs in the sample were firm owners (28). Most CEOs had been in their current jobs for 2 years or more (91%). Only five of them were female. The CEOs represented a wide range of industries, including manufacturing (11), construction (7), transportation (5), retail trade (5), wholesale trade (1), information (8), professional, scientific, and technical services (4), administrative and support services (1), public administration (1), health care (3), recreation industry (2), repair and maintenance (4), and rental and leasing services (2). Average firm size in terms of the number of employees was 110.

The CEOs were asked to distribute three different kinds of questionnaires to nine key figures in the organization; they were asked to select direct reports with whom they work closely. The questionnaires were completed anonymously and returned directly to us. Code numbers were included on surveys so that respondents could be correctly matched with their CEOs for subsequent data analyses. We received 284 subordinate's surveys in total, a mean of more than five surveys per CEO (58% response rate). Per type of questionnaire we received a total number of 92 (mean of 1.92 per CEO, at least one survey for 89% of the CEOs), 103 (mean of 2.02 per CEO, at least one survey for 94% of the CEOs), and 89 surveys (mean of 1.82 per CEO, at least one survey for 91% of the CEOs), respectively. Given the sensitivity of the questionnaires and the high hierarchical level of the participating managers, the response rate can be considered reasonable (see, e.g., Finkelstein, 1992).

Measures

As indicated, survey data were collected using three different questionnaires. In the first questionnaire charismatic leadership was measured using eight

items from the Multi-Culture Leader Behavior Questionnaire (MCLQ; Hanges & Dickson, 2004; House et al., 2001). This questionnaire is designed to elicit respondents' reports of behaviour of leaders with whom they are familiar. It also taps respondents' own work attitude (see below). Besides charismatic leadership, the questionnaire also measures other leadership styles as described in several leadership theories (House & Aditya, 1997). For our study we used only two scales from the MCLQ, namely charismatic leadership and positive work attitude.

The 8-item measure for charismatic leadership used in this study combines two elements of transformational leadership (as defined by Bass & Avolio, 1993) that are central to charismatic leadership, namely inspirational motivation (i.e., providing meaning and a vision, and challenge followers), and idealized influence (i.e., behaving in ways that followers admire and acting as role models for followers). Although some studies treat such elements of charismatic or transformational leadership as interrelated but distinguishable (e.g., Antonakis, Avolio, & Sivasubramaniam, 2003), others hold they are so strongly related one might better see them as a single scale (e.g., Den Hartog, Van Muijen, & Koopman, 1997; Kark, Shamir, & Chen, 2002). The latter is also done here. Examples of items measuring charismatic leadership are, "Has a vision and imagination of the future", "Emphasizes the importance of being committed to our values and beliefs", and "Displays conviction in his/her ideals, beliefs, and values". The items have a 7-point response scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). The charisma measure had an alpha coefficient of .81 ($n = 92$).

In addition to charismatic leadership, the first questionnaire also measured subordinates' positive work attitude, operationalized as their enthusiasm for and commitment to the organization and the work they do, using nine items from the aforementioned MCLQ (Hanges & Dickson, 2004; House et al., 2001). As data for this measure are gathered from the same respondents that rated charismatic leader behaviour, it is based on common-source data. Examples of work attitude items are, "I am optimistic about my future with this organization", "I contribute to this organization 100% of my ability", and "I am willing to make serious personal sacrifices to contribute to the success of this organization". Responses were given using a 7-point response scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). As respondents who filled out questionnaire number 1 responded to both the leadership and attitude items, we refer to this group as the common-source rater group. The positive work attitude measure had an alpha coefficient of .83 in the common-source group ($n = 92$).

The second questionnaire included the same positive work attitude scale as the first questionnaire. However, the group who received this questionnaire did not fill out the leadership items, as these were not

included in questionnaire number two. Thus, we also obtained data for the positive work attitude measure from a different subordinate sample than was used to gather data on charismatic leadership. We will therefore refer to this group as the multi-source group. The multi-source positive work attitude measure had an alpha coefficient of .82 ($n = 103$).

The third questionnaire measured perceived environmental uncertainty, using five bipolar items from a scale that House and colleagues (2001) adapted from an instrument developed by Khandwalla (1976). For two items, respondents were asked to indicate on a 7-point scale the degree to which each bipolar item reflected the external environment of their organization. Response options for the first item ranged from "Very safe; little threat to survival and well-being of the organization (1)" to "Very risky; a mistake can mean very serious problems for the organization (7)." For the second item response options ranged from "Not at all stressful, exacting or hostile (1)" to "Very stressful, exacting, hostile (7)." Further, two bipolar items were used to characterize changes in government regulations and changes in the political environment. Response options for these two items ranged from "Very unpredictable, very hard to anticipate (1)" to "Very predictable, very easy to forecast (7)." The last item stated: "How frequently are there substantial changes in the external technological environment of your firm (e.g., the development of new technologies)?" Response options included "Very frequent changes (1)" to "Virtually no changes (7)". The latter three items were reverse coded to reflect environmental uncertainty. The environmental uncertainty measure had an alpha coefficient of .65 ($n = 89$).

In addition, the third questionnaire measured technological change within the organization using two items from a scale that House and colleagues (2001) also adapted from an instrument developed by Khandwalla (1976). These items are: "What was the extent of significant technological change(s) in this organization during the prior three years?" And: "How often did significant technological change(s) in this organization occur during the prior three years?" These items were rated on a 5-point response scale, ranging from 1 ("very drastic technological changes" or "very frequently") to 5 ("only trivial change" or "very infrequently"). The items were reverse coded to reflect technological change. The technological change scale had an alpha coefficient of .83 ($n = 89$).

Summarizing, three independent groups of respondents were used in the survey. The first group of respondents rated their CEO's charismatic leader behaviour *and* their own positive work attitude. The second group of respondents *only* rated their own positive work attitude, and the third group of respondents rated perceived environmental uncertainty and technological change. Figure 1 depicts the survey research design.

CEOs were identified as firm owner (coded as one) or managing director (coded as zero) in consultation with each CEO. Firm owners were defined as

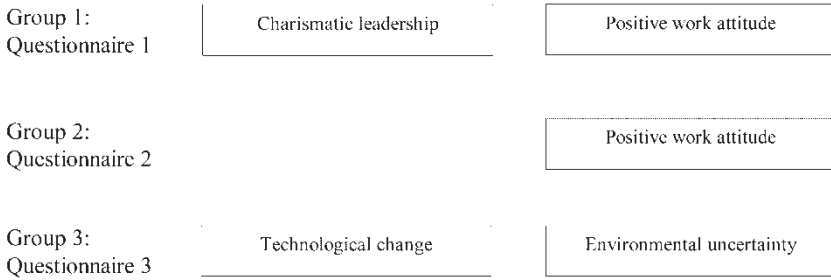


Figure 1. Survey research design.

CEOs of organizations who are in possession of the majority of the shares. We were able to check and confirm this self-assessment for 85% of the CEOs as respondents that filled out questionnaire number 3 also answered an item indicating whether the owner or an appointed managing director runs their company (three missing values).

In addition to perceptual data, we gathered information on liquidity, solvency, and profitability ratios as indicators of organizations' financial health. As stated, the liquidity ratio is an indicator of an organization's ability to pay its short-term obligations, calculated by dividing total current assets by total current liabilities. The solvency ratio is an indicator of an organization's ability to meet its debt obligations, calculated by dividing total assets by total debts. The profitability ratio is an indicator of how well an organization is using its assets to produce more income, which is a ratio of net income to total assets. Taken together, the liquidity, solvency, and profitability ratios provide a good picture of an organization's financial health. Whenever possible, data relevant to each firm were obtained from the Chamber of Commerce for the year of survey administration and the year before (1999 and 2000). Otherwise, the organizations were requested to provide us with their annual financial report of both years. Only organization's health ratios that were based on comparable accounting schemes (i.e., absorption costing instead of variable costing) were used for further analyses; others were left out. We were able to collect comparable liquidity and solvency ratios for 35 organizations (80% obtained from the Chamber of Commerce) and profitability ratios for 28 organizations (75% obtained from the Chamber of Commerce). We calculated average liquidity, solvency, and profitability ratios for each firm over both years. These averaged performance measures help to guard against random fluctuations and anomalies in the data (Youndt, Snell, Dean, & Lepak, 1996) and provide a somewhat more long-term measure of performance (e.g., Lord & Maher, 1991).

Analyses

The unit of analysis in this study consists of the aggregated responses of CEOs' subordinate samples. To examine the justification for aggregating individual responses to characterize CEOs and their organizations we calculated two kinds of intraclass correlation coefficients ICC(2) and ICC(1) (see Shrout & Fleiss, 1979). The ICC(2) coefficients are indexes of interrater agreement and reflect the reliability of the average rating. The ICC(2)'s for subordinates' ratings of charismatic leadership, for positive work attitude (common-source and multi-source group data taken together), for environmental uncertainty, and for technological change were: .44, .58, .50, and .61, respectively. These ICC(2) indexes are relatively high and therefore provide support for combining subordinates' responses to provide averaged, aggregated scores for charismatic leadership, positive work attitude, environmental uncertainty, and technological change. The ICC(1) coefficients are estimates of the degree to which subordinates of the same focal manager respond similarly. The ICC(1)'s for subordinates' ratings of charismatic leadership, for positive work attitude (common-source and multi-source data taken together), for environmental uncertainty, and for technological change were: .28, .27, .36, and .46, respectively. These values are well above the median value of ICC(1) reported in the organizational literature, which equals .12 (James, 1982). In addition, the average within group reliability statistics (r_{wg} ; James, Demaree, & Wolf, 1984) across organizations for charismatic leadership, positive work attitude, environmental uncertainty, and technological change were .86, .83, .80, .85, respectively. Furthermore, between 84% and 90% of the r_{wg} values for all survey scales within each organization fell above the .70 cutoff suggested by James et al. for aggregating ratings from an individual to a group level analysis. Thus, the dimensions seem sufficiently valid at the group level to be aggregated and reported at the group level.

To examine the relationship between charismatic leadership and performance, in terms of common-source and multi-source perceptual data as well as organizations' financial health ratios, we used correlation analysis and a *t*-test. We used moderated hierarchical regression analyses to investigate effects of moderator variables. Variables were centred around zero by subtracting their scale mean, in order to bring multicollinearity indexes within acceptable limits and aid interpretation (as suggested by Aiken & West, 1991).

RESULTS

Means, standard deviations, and correlations for each of the variables are presented in Table 1. As the table indicates, significant correlations

TABLE 1
Means, standard deviations, and correlations among variables

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
1. Charismatic leadership	5.23	.79								
2. Positive work attitude common-source	5.23	.84	.55**							
3. Positive work attitude multi-source	5.22	.94	.35*	.45**						
4. Environmental uncertainty	3.91	.75	.08	-.07	.01					
5. Technological change	2.84	.83	.16	.09	.11	.00				
6. Type of CEO	0.52	.50	.21	.43**	.36**	-.18	-.33*			
7. Liquidity	1.16	.60	-.15	.03	.17	-.15	-.05	-.02		
8. Solvency	1.42	.73	.02	-.11	.04	-.36*	.04	-.30	.63**	
9. Profitability	0.41	.66	.41*	.12	-.42*	.07	.16	-.12	-.20	-.09

n = 44–51 for survey measures; *n* = 26–35 for financial measures.

Type CEO: 1 = firm owner, 0 = managing director.

p* ≤ .05; *p* ≤ .01.

support our predictions regarding charismatic leadership and subordinates' positive work attitude. In line with hypothesis 1, we found charismatic leadership to be significantly positively related to positive work attitude, both for common-source data, $r = .55$, $p \leq .01$, and multi-source data, $r = .35$, $p \leq .05$. We also found a positive correlation between charismatic leadership and organization profitability, $r = .41$, $p \leq .05$. However, the correlations between charismatic leadership and organization liquidity and solvency were low and not significant. Taken together, this means that hypothesis 1 is supported for the perceptual data and for profitability, but not for the other two financial health measures.

Consistent with hypothesis 2, we found the correlation between charismatic leadership and positive work attitude based on common-source data to be somewhat higher than the correlation between charismatic leadership and positive work attitude based on multi-source data. To examine the significance of this difference between correlations, we performed a *t*-test (see Steiger, 1980). The test was only marginally significant, $t = 1.49$, $p = .07$, one-tailed: The relationship between charismatic leader behaviour and positive work attitude was slightly stronger for common-source data than for multi-source data.

Returning to Table 1, we also see some interesting relationships between other variables. Unexpectedly, we found significant positive correlations between type of CEO and both measures of positive work attitude, $r = .43$, $p \leq .01$; $r = .36$, $p \leq .05$. Thus, people working for a firm-owner CEO report a significantly more positive work attitude than people working for a managing director who does not own the firm. The two types of CEOs did, however, not differ significantly in measures of charismatic leadership, $t = 1.447$, $p > .05$. Further, we found a significantly negative correlation between mean profitability and positive work attitude based on multi-source data, $r = -.42$, $p \leq .05$. This means that people working for organizations with a high profitability ratio report a significantly *less* positive work attitude than people working for organizations with a low profitability ratio. This is only the case, however, for the group of respondents that provided multi-source data and was not found in the group of respondents that provided common-source data. Furthermore, we found a negative correlation between solvency and environmental uncertainty, $r = -.36$, $p \leq .05$. Thus, people working for organizations that are significantly *less* able to meet debt obligations, report that they experience a high degree of environmental uncertainty.

To examine the effect of moderator variables on the relationship between charismatic leadership and positive work attitude, we conducted three separate moderated multiple regression analyses. First, we regressed the positive work attitude variable on the two separate predictors. In the second step, the interaction predictor was added to the regression. Since only very small differences were found between the common and multi-source groups

(see above), and only a few subordinates per CEO provided ratings of their work attitude, we used the combined and aggregated common-source and multi-source attitude data for these analyses. Table 2 presents the results of these analyses. In the first analysis reported in Table 2, in addition to charismatic leadership explaining positive work attitude, the interaction of charismatic leadership and environmental uncertainty had a significant effect and added 7% of explained variance, $\beta = .39$, $p \leq .05$. The second analysis showed that, when charismatic leadership and technological change were entered into the regression equation, charismatic leadership had a significant effect on positive work attitude in the first and the second step, but no significant interaction effect was found, $\beta = -.18$, $p > .05$. The regression analyses testing the impact of type of CEO (firm owner versus managing director) showed that both charismatic leadership and type of CEO had a significant effect on positive work attitude. However, again no significant interaction effect was found, $\beta = -.23$, $p > .05$. Thus, with regard to the perceptual performance data, hypotheses 4 and 5 were not supported, but evidence was found in support of hypothesis 3.

TABLE 2
Results of moderated regression analysis for independent variables explaining positive work attitude

Variable	Positive work attitude		
	R^2	ΔR^2	β
Step 1	.24**		
Charismatic leadership			.46**
Environmental uncertainty			-.05
Step 2	.31**	.07*	
Charismatic leadership \times Environmental uncertainty			.39*
Step 1	.24**		
Charismatic leadership			.39*
Technological change			.05
Step 2	.28**	.04	
Charismatic leadership \times Technological change			-.18
Step 1	.37**		
Charismatic leadership			.35**
Type CEO			.38**
Step 2	.42**	.05	
Charismatic leadership \times Type CEO			-.23

$n = 44-48$. Standardized regression coefficients are shown based on the last step in regression procedure.

Type CEO: 1 = firm owner, -1 = managing director.

* $p \leq .05$; ** $p \leq .01$.

Similar regression procedures were used to test the impact of moderators on the relationship between charismatic leadership and organizations' financial health ratios. Table 3 presents the results of these analyses. We found that the interaction between charismatic leadership and type of CEO added 23% of significant variance in explaining profitability, $\beta = .51$, $p \leq .01$, above and beyond the main effects of charismatic leadership and type of CEO. However, none of the other proposed interaction effects were significant. Thus, with regard to the organizational performance data, hypotheses 3 and 4 were not supported, but evidence was found in support of hypothesis 5.

In sum, charismatic leadership explained perceptual performance better under conditions of environmental uncertainty than under conditions of environmental certainty. Further, charismatic leadership explained organization profitability better for firm owners than for managing directors. No evidence was found for the effect of technological change as a moderator.

TABLE 3
Results of moderated regression analysis for independent variables explaining financial health outcomes

Variable	Liquidity			Solvency			Profitability		
	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β
Step 1	.04			.13			.17		
Charismatic leadership			-.14			.08			.42
Environmental uncertainty			-.14			-.37*			.03
Step 2	.05	.00		.20	.06		.18	.01	
Charismatic leadership \times Environmental uncertainty			-.06			-.38			-.16
Step 1	.02			.00			.17		
Charismatic leadership			-.21			-.02			.36
Technological change			-.03			.03			.09
Step 2	.04	.02		.01	.01		.18	.01	
Charismatic leadership \times Technological change			-.13			-.07			-.07
Step 1	.03			.07			.18		
Charismatic leadership \times Type CEO			-.23			.02			.56**
			.06			-.26			-.17
Step 2	.10	.07		.11	.04		.41*	.23**	
Charismatic leadership \times Type CEO			-.28			-.20			.51**

$n = 24-32$. Standardized regression coefficients are shown based on the last step in regression procedure.

Type CEO: 1 = firm owner, -1 = managing director.

* $p \leq .05$; ** $p \leq .01$.

DISCUSSION

The purpose of this study was to investigate the relationship between charismatic leadership and performance and effects of several potential moderators of this relationship, using multiple indicators of performance obtained through different methods. We used common-source as well as multi-source perceptual performance measures, along with organizations' financial health ratios to examine the relationship between charismatic leadership and performance. We investigated the impact of the level of environmental uncertainty, degree of technological change, and type of CEO (firm owner versus nonowning managing director) on the relationship between charismatic leadership and performance.

We found positive correlations between charismatic leadership and subordinates' positive work attitudes, both for multi-source data as for common-source data. These correlations do not differ much from correlations found in previous studies (e.g., de Groot et al., 2000; Fuller et al., 1996; Lowe et al., 1996). One might suggest that the procedure used here could have resulted in a positive bias of subordinates toward their CEO, since the CEOs selected these subordinates. The CEOs were, however, instructed to distribute questionnaires to direct reports with whom they work closely. Most CEOs in this study led small and medium-sized organizations and had difficulty selecting nine subordinates who met this criterion. As a consequence, the possible positive bias is expected to be limited. Our results provide further evidence showing that charismatic leadership is positively related to subordinates' perceptual performance outcomes, such as their willingness to invest effort on behalf of the organization and their enthusiasm for and commitment to its goals (Bass, 1985; Burns, 1978; House, 1977).

We found the relationship between charismatic leadership and positive work attitude to be somewhat stronger for common-source data (.55) than for multi-source data (.35) (although this difference was not significant at the 5% level, it may perhaps be seen as marginally significant as $p = .07$). Previous research examining charismatic leadership and performance outcomes using common-source design exhibited significantly higher correlations than research using multi-source designs (e.g., de Groot et al., 2000; Fuller et al., 1996; Lowe et al., 1996). So, our results are not fully in line with prior research. This might be due to our relatively small sample size. However, the inflationary bias in this study may also be more limited than in some previous studies. The relationship between leader behaviour and subordinates' positive work attitude is less direct than that between leader behaviour and the criterion measures used in many previous studies, such as subordinates' satisfaction with the leader and perception of leader effectiveness (e.g., Fuller et al., 1996; Lowe et al., 1996). As the relationship

between charismatic leadership and perceptual outcome measures becomes more indirect, it seems likely that raters will be more able to discriminate between dimensions and common-source bias decreases. Inflationary effects of common-source research may therefore not be as generally problematic in leadership research as has been suggested previously and may depend on the criterion under investigation.

The differences in strength of correlations between common-source research and multi-source research found in earlier studies may in part be due to possible *downward bias* of multi-source research instead of *inflationary effects* of common-source research. Correlations based on multi-source data reflect responses to leader behaviour that is enacted similarly toward all subordinates and disregard the unobserved leader behaviours unique to each leader-subordinate dyad. This may lead to underestimation of the true relationship between leadership and performance (House et al., 2001), especially when only a few subordinates provide ratings of observed leader behaviour and performance. Therefore, future leadership research should use both types of perceptual performance outcomes and investigate possible inflationary and downward biases. The “right” outcome measure then also becomes a matter of choice. When one is interested in the effects of the unique relationship between a leader and follower the use of common-source data may be more relevant; when shared observations of how a leader behaves and how this impacts the group as a whole are the focus, one should at the very least compare this common-source data to multi-source outcomes.

Results revealed that charismatic leadership was positively related to profitability. No support, however, was found for relationships between charismatic leadership and the other two organizational performance measures (liquidity and solvency). Considering the fact that charismatic leadership is expected to drive subordinates to put in effort beyond expectations, the relationship between charismatic leadership and profitability (how well an organization is using its assets to produce more income) may be somewhat more direct than the relationship between charismatic leadership and liquidity (to what extent an organization is able to pay its short-term obligations) or solvency (to what extent an organization is able to pay its debt obligations). Moreover, liquidity represents a rather short-term indicator of performance. The above may explain why we found charismatic leadership to be positively related to organizational profitability, but unrelated to liquidity and solvency. Another explanation, however, relates to the multidimensional nature of performance (Campbell et al., 1990). Progression on one performance dimension can entail regression along another (Lumpkin & Dess, 1996). As such, CEOs may decide to increase their organizations’ debt obligations when offered the opportunity to use the money to produce substantially more income. Such grasping of opportunities is central to charismatic leadership behaviour (Conger &

Kanungo, 1988). This might also have enhanced chances to find charismatic leadership positively related to organizational profitability, but unrelated to liquidity and solvency. This area is clearly in need of further research.

Several limitations with regard to our organizational measures need to be discussed. We recognize that the industry within which a firm competes may have a critical impact on performance (e.g., Lumpkin & Dess, 1996). Unfortunately, we were unable to adjust the organizations' financial health ratios for mean industry levels, because of the cross-industry nature of our sample. Further, it is possible that knowledge of prior performance operated to bias ratings by subordinates of observed leader behaviour. CEOs who had successful years before the start of our study may have been attributed more socially desirable leader behaviour (Binning et al., 1986). Followers generally perceive leaders to be more charismatic when organizational performance is high (Awamleh & Gardner, 1999; Shamir, 1992; Yorges, Weis, & Strickland, 1999). Thus, CEOs of organizations with high profitability ratios may have been rated more charismatic by their subordinates compared to CEOs of organizations with low profitability ratios.

Furthermore, the relationship between charismatic leadership and organizations' financial health ratios used in this study is somewhat more indirect than the relationship between charismatic leadership and performance indicators used in previous studies, such as organizations' net profit margin (Waldman et al., 2001), business unit's sales (e.g., Barling et al., 1996), or percentage of goals met (e.g., Howell & Avolio, 1993). Clearly, the influence of CEOs on the capital structure that would facilitate organizational performance (e.g., organizations' financial health ratios) is more limited than CEOs' influence on net profit margin or sales. Additional financial outcome data on the CEOs and their firms, however, could not be obtained for this sample. Not all small firms are obliged to provide their annual reports to the chamber of commerce in the Netherlands and some firms refused to provide us directly with their annual reports because of privacy matters. Also, irrespective of the way the annual income statements were obtained (i.e., directly from the firms or chamber of commerce), not all the financial data presented in the statements were comparable, due to the utilization of different accounting schemes. As a result, the organizations' financial health indicators obtained, based on a 2 year period, were the only organizational performance measures we could use. Considering these limitations, it is striking that we found such a strong relationship between charismatic leadership and organizational profitability ($r = .41$). The relationship found between charismatic leadership and profitability is as strong as relationships found between charismatic leadership and the perceptual outcome measures. As expected, relationships between charismatic leadership and the other financial health ratios were all lower than the correlations between charismatic leadership and perceptual outcome

measures. Future research seems warranted to replicate and extend our study, using longitudinal data and expanding the focus of the organizational performance outcomes considered. Possible mediation effects of employee performance on the relationship between charismatic leadership and organizational performance may also be of interest. Charismatic leadership may lead to high employee performance and such higher performance may in turn increase organizational performance.

Surprisingly, subordinates of firm-owner CEOs report more positive work attitude compared to subordinates of managing directors. It is possible that firm-owner CEOs enact certain effective leader behaviours that are not included in our measure of charismatic leadership, which may have increased positive work attitude for their direct reports. Many more factors can, however, play a role. For instance, subordinates of firm-owner CEOs may perceive more career opportunities within the firm or more autonomy due to a less formal, less bureaucratic firm structure. Or perhaps employees tend to have greater loyalty towards individuals than institutions, and thus are more committed to firm-owner CEOs (because of their personal ownership) than to a CEO who reports to and is a representative of a more distant and abstract board. Further, in our multi-source data sample, we found people working for organizations high on profitability reporting a significantly less positive work attitude than people working for organizations lower on profitability. Interestingly, this means that subordinates' positive work attitude need not go hand in hand with organization profitability. A possible explanation may be found in the stress literature. Too much pressure to perform may lead to dissatisfaction or even burnout (e.g., Cordes & Dougherty, 1993; Toppinnen-Tanner, Kalimo, & Mutanen, 2002). Also, low profitability may be an indicator of "crisis" in the company and people may be extra willing to work hard to solve such problems. Such interplay between organizational success and employee attitudes seems a fruitful area for future research.

We found partial support for our expectations concerning indicators of environmental dynamism as a moderator of the relationship between charismatic leadership and performance. Charismatic leadership explained perceptual performance better under conditions of environmental uncertainty than under conditions of environmental certainty. This is in line with previous research by Waldman et al. (2001), who found that environmental uncertainty moderated the relationship between charismatic leadership and organizations' net profit margin. Thus, the results of our perceptual performance data, viewed together with prior research results, indicate the importance of environmental uncertainty as a moderator for charismatic leadership and performance.

No evidence was found for the effect of technological change as a moderator. Perhaps our measure of technological change that takes place in the organization does not form a valid indicator of dynamism. Technolo-

gical change may only be important as a moderator of the CEO charismatic leadership—firm performance link where it contributes to perceived environmental uncertainty of the *external* environment of the organization. Also, rather than measuring technological change as an “objective” characteristic of an organization, future research could focus on measurement of the impact of the speed of technological change on the perception of environmental uncertainty of subordinates. In addition, future research should collect data both from the CEOs under study as well as from subordinates. This will improve measurement of environmental dynamism as a possible moderator and show whether and when rapid technological change forms part of such perceived dynamism.

Furthermore, charismatic leadership was more strongly related to organizational profitability for firm-owner CEOs than for managing directors. Past research on entrepreneurial CEOs also provides indirect support for the proposition that ownership acts as a moderator of the relationship between charismatic leadership and performance outcomes (see Felfe & Goihl, 2002; House et al., 2001). Just like entrepreneurs, firm-owner CEOs can more easily execute strategies, monitor events, and control outcomes than nonowner CEOs (see also Baum, Locke, & Kirkpatrick, 1998). Thus, results of our financial data, viewed together with prior results on entrepreneurial CEOs, indicate the importance of firm ownership as a potential moderator of the relationship between charismatic leadership and performance.

In sum, our research findings on effects of environmental uncertainty and type of CEO stress the importance of considering elements of the context as moderators in research on charismatic leadership and performance. Charismatic leadership may be most important in situations where there are few situational cues, few constraints, and few reinforcers to guide behaviour. We recommend, therefore, that environmental dynamism and firm ownership as moderators are subjected to further empirical investigation. Such research could look at the operationalizations of environmental dynamism chosen in this study (level of environmental uncertainty, degree of technological change) as well as other possible ways to operationalize environmental dynamism. The operationalizations chosen here reflect we are looking at firm-level leadership (i.e., CEOs' leader behaviour is rated); for lower level leadership other indicators of environmental dynamism may be relevant as well.

A final comment should be made about the sample sizes in this study. Although our aggregated sample size ($N = 54$) is in line with studies assessing leader behaviour at the CEO level, such as that of Waldman et al. (2001) ($N = 48$), and larger than that of a previous study at the business-unit level ($N = 20$) by Barling et al. (1996), we recognize that the data available for our regression analyses is relatively limited. This is especially pressing for our data on organizations' financial health. Given the low statistical power

of moderated regression analysis (e.g., Aguinis, 1995; Villa, Howell, Dorfman, & Daniel, 2003), more interaction effects may have been significant had the sample size been larger. At the same time, it also means that the moderator effects we *did* find need to be replicated across a larger database of firms in future research to test their robustness. Nevertheless, a great advantage of our study in this regard is the multilevel nature of our sample in which CEOs represent complete groups of respondents (in total the responses of 284 people were the basis of the study). Another strength of our study is that where many leadership studies assess leadership *within* firms, here we focus on the leaders *of* firms.

To conclude, our study illustrates the importance of charismatic leadership as a predictor of subordinates' positive work attitude as well as organization profitability. It shows that the use of multiple performance indicators can enrich the investigation of the relationship between charismatic leadership and performance. In addition, it shows that environmental dynamism and firm ownership may be important moderators of the relationship between charismatic leadership and performance. Future research can further investigate effects of charismatic leadership on performance using multiple, longitudinal performance outcomes and investigate possible moderators.

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