CEO EMOTIONAL STABILITY AND TOP MANAGEMENT
TEAM DYNAMICS: AN EMPIRICAL EXAMINATION

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ABSTRACT

We examine the link between CEO personality and top management team (TMT) dynamics. Our work compliments both Judge and Bono (2000), who initiated research into the Five Factor Model of personality and linked them to specific CEO leadership traits, and the work of Peterson, Martorana, Smith and Owens (2003) who hypothesize a linkage between CEO placement on the Five Factor model of personality and TMT dynamics. We clarify and empirically confirm the relationship between CEO Emotional Stability and TMT dynamics using improved methods and a more robust data set. We compliment and extend previous research by using measures of TMT dynamics previously demonstrated to link to firm performance: task conflict, relationship conflict, social integration, and shared cognition. We find that CEO Emotional Stability is positively correlated with TMT task conflict and social integration, but is not correlated with TMT relationship conflict or shared cognition.
INTRODUCTION

Over the past twenty years, research has tended to support the intuitions of both academics and practicing top management teams (TMTs): senior management has a significant impact on firm strategic direction, culture, and overall performance (D'Aveni, 1990; Haleblian & Finkelstein, 1993a; Murray, 1989). In addition, recent research indicates that the TMT also plays a key role in reversing the fortunes of failing firms in addition to setting and executing the strategies of existing high-performing firms (Lohrke, Bedeian, & Palmer, 2004). However the mechanisms and processes that explain how these activities occur remain more than a little mysterious.

One approach, suggested by Hambrick and Mason (1984) among others is to describe the TMT using demographic characteristics (for example functional background, educational experience, and age) and treating these characteristics as observable proxies for underlying team constructs. It is then argued that significant organizational outcomes will be associated with these observable characteristics (Murray, 1989). Many researchers employ the tools and techniques of demography theory (Pfeffer, 1983) to analyze the attributes of top management team members, their strategic choices, and firm performance outcomes (Li-Qun Wei, Lau, Young, & Wang, 2005).

However a growing number of researchers (Priem, Lyon, & Dess, 1999; Reger, 1997; Smith, Smith, Sims Jr, O'Bannon, & Scully, 1994) raise serious criticisms of demographic-based research and highlight its limitations. Demographic approaches to understanding TMTs have not yet successfully addressed the mechanisms and processes by which TMT characteristics shape firm outcomes. It would seem that demography-based research at best helps us to partially explain the mechanisms through which the TMT impacts firm performance. There are some that argue that it has no explanatory power at all (Smith et al., 1994).

Additionally, most of the empirical research examining potential linkages between team composition and performance investigate variables associated with team effectiveness without intervening or experimenting on those variables. As the amount of research linking TMTs and firm performance grows, so too does the call for research into these intervening variables and the process variables that support them (Lawrence, 1997). A growing understanding of the effects of teams on organizational performance suggests that besides team demographic variables, a fine-grained understanding of individuals and teams need to be taken into account (Vyakarnam & Handelberg, 2005).

REVISITING CEO IMPACT ON THE TMT

While it can be argued that studying the team as an entity has delivered significant insights and still holds promise, the limitations of demography theory or the need to research intervening variables are not the only difficulties facing upper echelons research. Research into top management teams has often been criticized for not addressing or understanding the impact of the leader on the TMT. As Zaccaro (2001) notes, “Few studies have focused specifically on the relationship between the executive leaders and his or her team...” Additionally, Hambrick (1994) notes that the strong team focus of top management team research often neglects the role of the CEO. Many researchers still view the CEO as just another member of the team (Jackson, 1992).

More recent research strongly suggests that the CEO does indeed have a disproportionate impact on team dynamics and exerts an often-dominating influence on a top management team. (Finkelstein & Hambrick, 1996; Haleblian & Finkelstein, 1993b), and this it seems to us that research on TMTs would be more powerful if this important aspect of the TMT were taken into account.

There are those that argue that any special handling of the CEO in relation to the top management team is inappropriate, and the exclusion intentional. Meindl and Ehrlich (1985) suggest that leadership researchers have an overly romanticized conception of leaders and their impact, and they suggest that attempts to address the CEO’s influence within TMT research is simply a vestigial remnant of the “Great Man” theory of leadership. While we are sensitive to this concern, the fact remains that TMT research has not addressed the issue in a way that either confirms or denies our notions of leadership, overly romantic or otherwise.

CEO PERSONALITY AND TMT DYNAMICS

Judge (Judge et al., 2000; Judge, Bono, Ilies, & Gerhardt, 2002) argues that researchers can employ findings from other disciplines – personality psychology in particular – to understand the impact of the CEO on top management team performance analogous to the way that upper echelons researchers have imported and employed demography theory to understand the impact of the TMT on
firm performance. The work of Peterson, Martorana, Smith and Owens (2003) is a significant contribution in this regard. In their review of upper echelons research Carpenter, et al (2004) call this work “one of the most important pieces on top management team processes” despite the fact that it “comes from outside the field of management”.

Peterson, et al (2003) develop a theoretical framework that ties together CEO personality and its impact on a top management team and how those dynamics, in turn, are reflected in the performance differences between firms. Previous studies combining teams and psychological attributes focused on team members rather than team leaders (Barrick, Neubert, & Mount, 1998; Mount, Barrick, & Stewart, 1998; van Vianen & De Dreu, 2001) and studies discussing the five-factor model and CEO personality focused on whether or not those factors link to pre-existing leadership constructs (Bass, 1990; Hill & Ritchie, 1977; Hogan, Curphy, & Hogan, 1994; Judge et al., 2000; Lord, De Vader, & Alliger, 1986). Peterson, et al (2003) argue that one can use the Five Factor Model of personality to categorize and quantify individual differences between CEOs, and that individual differences between CEOs will significantly impact top management team dynamics which, in turn, impacts firm performance.

The Five Factor Model of personality describes a set of five broad personality constructs that purport to represent the primitives of personality. Although it cannot be said that universal agreement exists about the details of the classification and the exact number of traits still remain a point of contention, most theorists today “believe that it is more fruitful to adopt the working hypothesis that the Five Factor Model of personality is essentially correct” (McCrae & John, 1992). The five-factor structure has been widely accepted and commonly used because of its robustness across cultures (McCrae & Costa, 1997), its ability to be recovered across other measures, and the strong evidence of the heritability of the traits (Costa & McCrae, 1992; Digman, 1989). Although there remains some disagreement as to the “correct” names of the factor titles, many writers have adopted the naming convention suggested by Norman (1963) which are: Extroversion, Agreeableness, Conscientiousness, Emotional Stability, and Culture.

While the theoretical framework of Peterson, et al (2003) is intriguing, the data set and methods permit only the most tentative of conclusions. Peterson, et al used the group dynamics q-sort method - designed to permit rigorous, quantitative comparisons of data derived from qualitative sources -- as their basic method, and executive biographies or books about a particular firm containing information about the top management team as the data set. CEO personality data were gathered from published biographies and interviews, and coders used the California Adult Q-Set by proxy to describe the personality of each leader. Archival sources were also used to measure TMT group dynamics, using a version of the California Adult Q-Set modified by Peterson and validated elsewhere (Peterson, Owens, & Martorana, 1999). While qualitative data of this kind can be useful, it is clear that indirect measures (reading biographical accounts of senior executives) are not as powerful as direct measures and prone to bias (in both the writing of the narrative and the interpretation of the narrative).

Compounding the problem is the fact that the group dynamics constructs used, despite having been “developed from extensive feedback from more than 20 group dynamics scholars” (Peterson et al., 2003) have not yet been demonstrated to correlate to measures of firm performance. As a result, even if we accept that a review and coding of executive personality traits and team dynamics combined with a q-sort methodology to transform this qualitative data into quantitative information is robust enough, one would still not have demonstrated that the team dynamics constructs impact firm financial performance. In addition, we wonder whether firm type or size plays a role in determining what, if any, impact CEO personality might have on firm performance. The biography-based approach limits any study of CEO personality to “biography-worthy” people and companies, which is interesting if you are mainly interested in “rock star” CEOs or historical accounts of a slice in time of a Fortune 500 firm. Might the relationships hold at the level of a new venture, or even hold in different ways?

This paper attempts to both empirically validate the core hypothesis of Peterson, et al (2003) by using first-order survey data on actual top management teams and CEOs. A robust sample of 342 in-situ top management teams enables us to examine and confirm the hypothesis that CEO personality impacts top management team dynamics. We extend their work by using measures of team dynamics with proven links to firm performance: task conflict, relationship conflict, social interaction, team potency, and shared cognition. Finally, we use a sample containing new ventures to compare the tentative findings focusing on established companies with results derived from a sample of new venture top management teams.
CEO EMOTIONAL STABILITY AND THE TMT

Our study examines one factor in the Five Factor Model of Personality – Emotional Stability – to determine the extent to which the Emotional Stability of the CEO impacts the dynamics of the top management team. The constructs we use for TMT dynamics are task conflict, relationship conflict, social interaction, team potency, and shared cognition.

CEO Emotional Stability

Emotional stability reflects the tendency to be anxious, compulsive, defensive, and thin-skinned (McCrae & Costa, 1987). Emotional stability is also related to a poor self-image characterized by low self-esteem and low self-efficacy (Judge, Erez, Thoresen, & Bono, 2002). Low Emotional Stability is best described as a tendency to see the world through a negative lens – taking the “glass half empty” approach to life to an entirely new level. Negative affects – such as fear, sadness, guilt, and anger – are manifestations of this worldview (McCrae et al., 1987).

Individuals with low levels of Emotional Stability often experience high levels of emotional distress; those who have high levels of Emotional Stability are more even-tempered. Bass (1990) posits that the most successful leaders are emotionally stable. As Hogan (1994) and House (1988) note emotionally unstable people are less likely to be perceived as leaders; and, when they are leading, are more likely to be perceived as weak leaders. In any case, emotionally unstable CEOs should be less likely to seek leadership, and when leading less likely to be perceived by the top management team as an effective leader.

Task and Relationship Conflict

Mason & Mitroff (1981) suggest that there are two principal antecedents to the decision-making quality of a top management team: the cognitive capabilities of the team and the interaction process through which the top management team produces its decisions. Amason (1996) notes that relationships are required for this decision quality; but therein lies a paradox as it is extremely difficult for a team to engage in robust dialogue about ideas (task conflict) while at the same time minimizing the relationship conflict (relationship conflict) that results. Indeed, Eisenhardt & Zbaraki (1992) question whether these aspects of decision-making can be attained simultaneously, as do Schweiger, Sandberg & Rechner (1989). This is the paradox of conflict: “on the one hand, conflict improves decision-making quality, while on the other hand it may weaken the ability of the group to work together.”

It has been suggested that team psychological safety (Edmondson, 1999) provides an increased atmosphere for interpersonal risk-taking and might support the ability to capture high degrees of task conflict and low degrees of relationship conflict. Amason (1996) notes that in order to achieve the benefits of high task conflict and low relationship conflict, team members must maintain relationship relationships that allow them to work together effectively. Having strong negative sentiments in the top management team causes team members to be less likely to be fully engaged. A CEO with low levels of Emotional Stability is not inclined to understand or support an atmosphere of psychological safety or understand the distinction between cognitive and relationship conflict. Therefore we hypothesize that:

H1: CEO Emotional Stability is positively correlated with top management team task conflict.

H2: CEO Emotional Stability is positively correlated with top management team relationship conflict.

TMT Social Integration

Top management team social integration is comprised of two factors: a team’s sense of belonging and commitment to goals and individual needs and the overall level of team morale. Social integration has been consistently linked to positive top management team behavior and firm-level financial performance. An erratic, negative CEO is unlikely to be able to generate a sense of belonging and commitment within a top management team, nor build confidence in the team’s capacity to achieve its goals. Therefore we hypothesize that:

H3: CEO Emotional Stability is positively correlated with top management team social integration.
TMT Shared Cognition

Shared cognition in top management teams as the extent to which team members share mental models of strategy (Ensley & Pearce, 2001). Shared strategic cognition is both a process and an outcome. It is a process, because developing this shared understanding requires discussion of strategic decisions and managing the resulting cognitive and relationship conflict that inevitably results (Amason, 1996).

It follows from this perspective that shared strategy occurs in conversations about strategy; the act of the TMT holding conversations about strategy creates the context in which shared strategy is generated, understood, and agreed to. As a result both cognitive and relationship conflict are intimately tied to the act of strategy making and the capacity of a TMT to generate a strategy and achieve alignment (Amason, 1996; Ensley, Pearson, & Amason, 2002; Miller, Burke, & Glick, 1998). Since we have already hypothesized that a CEO with low levels of Emotional Stability will not be effective at managing or distinguishing between cognitive and relationship conflict and high levels of shared cognition in a top management team require the capacity of the team to engage in robust dialogue and debate about firm strategy, we hypothesize that:

H4: CEO Emotional Stability is positively correlated with top management team shared cognition.

METHOD

Sample and Procedures

Our participants in this study included members of top management teams from four key entrepreneurship centers in the United States: Boston, Massachusetts; Research Triangle Park in North Carolina; Silicon Valley in California; and San Diego, CA. We identified firms through their membership in entrepreneurial organizations located in these areas. We conducted an exhaustive search to identify all members of the new venture technology firm community in the areas we identified. In some cases we identified as many as eleven distinct membership organizations in a single community. Since new ventures are our area of interest, we searched for firms that had been founded in the last five years, and identified a total of 1586 firms. We invited each member of the executive team to participate in a web-based survey by using a hand-addressed invitation letter and by direct contact with the CEO. 402 CEOs agreed to participate in the survey. Our final sample was 342 firms due to missing or incomplete data or a failure to complete a portion of the survey. To attempt to understand the impact of non-response bias we compared the team heterogeneity, team size, industry, and firm age using Chi-square difference tests. These tests - conducted on 50 of the non-respondents – indicate that there is no systematic non-response bias.

Of the 1082 executives retained, approximately 92% were male and the average age was 38.4 years. Seventy-nine percent were Founder/CEOs, and 71% held at least 10% equity in their firm. Nearly 90% considered themselves entrepreneurs and 38% had been involved in new ventures previously. Just over 61% reported their highest degree as a bachelor’s degree. 24% of all executives in our sample held Masters degrees; 5% held doctorates. Majors included engineering, accounting, business, biology, chemistry, history, political science, and others (less than 5%).

During the 5 years prior to the data collection, the average rate of growth for the 342 firms was 31% per year and ranged from a low of 13% to a high of 261%. A total of 46 industries were represented and the average firm age was 4.1 years. Median revenue was $5.9 million.

Measures

Emotional Stability. We collected Emotional Stability data from the CEO only, as the dimension is traditionally collected on the felt and perceived emotional states, not what is perceived by others. The team level variables were measured across the team. We measure Emotional Stability (along with the other traits in the five-factor model) using 12 items from the NEO Five Factor Inventory (NEO-FFI). The NEO-FFI is the most widely used and extensively validated measure of the five-factor model. Judge and Bono (2000) use the NEO-FFI for their work investigating the linkages between the five factors and leadership behaviors. These items were originally labeled Neuroticism in the NEO-FFI, but were reverse scored and labeled Emotional Stability. Participants respond on a five-point scale to these items ranging from SA (strongly agree) to SD (strongly disagree). The scale produced a Cronbach’s coefficient alpha of .84.

Conflict. We measured conflict using six items adapted from Jehn’s (1994) interpersonal conflict scale used with work groups (Jehn, 1995). The adapted scale has been tested for reliability and validity (Pearson, Ensley, & Amason, 2002) and is used to measure both cognitive and relationship
conflict in top management teams (Amason, 1996; Amason & Mooney, 1999; Amason & Sapienza, 1997; Ensley et al., 2001). Each respondent was asked to think about the most recent major strategic decision his or her firm had made and then answer questions designed to measure the level of conflict the team experienced during the decision-making process. Using a single recent incident reduces recollection bias (Podsakoff & Organ, 1986) and enables us to combine individual-level responses into team-level variables. The $r_{WG(J)}$ measure of within team-agreement was .84 and the variance between teams was found to be significant ($F = 5.29, p < .01$). These findings indicate that there is substantial support for aggregating the responses across the teams. The scale produced a Cronbach’s coefficient alpha of .83.

Social integration. We measured social integration using a scale developed by Bollen and Hoyle (1990). For Bollen and Hoyle, social integration is “an individual’s sense of belonging to a particular group and…feelings of morale associated with membership in the group” (1990:482). Social integration in a top management team, therefore, reflects the individual assessment of each team member of their relation to the group. This measure captures their personal sense of belonging to the group as well as their feelings of morale associated with group membership. The $r_{WG(J)}$ measure of within team-agreement was .89 and the variance between teams was found to be significant ($F = 3.73, p < .01$). These findings indicate that there is substantial support for aggregating the responses across the teams. Finally, the scale produced a Cronbach’s coefficient alpha of .88.

Shared Cognition. Shared cognition was measured as the coefficient of variation of the Strategic Orientation of Business Enterprises (the STROBE scale). This scale, developed by Venkatraman (1989) is a 33 item, seven dimension scale that measures business level strategy. These dimensions include innovativeness, proactiveness, riskiness, aggressiveness, futurity, defensiveness, and analysis. Together these dimensions form an overall understanding of what strategy is conceptually to the organization. Following the method utilized by Ensley and Pearce (2001) we created an index of overlap in the understanding of executives by creating a coefficient of variation. This allows us to understand generally the extent to which the members of the executive teams share a cognitive understanding of the strategy. The $r_{WG(J)}$ measure of within team-agreement was .74 and the variance between teams was found to be significant ($F = 4.81, p < .01$). These findings indicate that there is substantial support for aggregating the responses across the teams. The scale produced a Cronbach’s coefficient alpha of the sub-dimensions ranged from 0.71 to 0.83.

Primary Statistical Approach

Path Analysis was conducted using LISREL 8.7. A covariance matrix was entered into the system and maximum likelihood was used as the basic technique. Figure 1 contains a path model of the significant paths in the model. The insignificant paths are left off of Figure 1 to improve readability of the results.

![Figure 1: Path Analysis Results](image-url)
RESULTS

The results of the path model demonstrate significant linkages between CEO Emotional Stability and the functioning of the top management team. Thus, our results support the theory and findings of Peterson (2003). The overall findings of the model demonstrate good fit between the model and the data (GFI = 0.91, AGFI = 0.88, RSMEA = 0.065, and Chi Square p< 0.01). While these findings do not demonstrate complete fit, they do demonstrate that fit is at acceptable levels (Bollen et al., 1990). However, we find mixed empirical support for our hypotheses.

Our first hypothesis proposed that we would find a link between Emotional Stability and task conflict. The path associated with this hypothesis is positive, and significantly impacted by CEO Emotional Stability. Our findings suggest that teams with a more emotionally stable CEO tend to develop more open and intellectually honest decision-making environments where questions and ideas are welcome, difficult topics are surfaced and discussed, and alternative solutions are welcomed. Therefore Hypothesis One is supported.

Our second hypothesis proposed that there would be an inverse relationship between CEO Emotional Stability and relationship conflict. The path associated with this hypothesis the link between CEO Emotional Stability and relationship conflict was both positive and significant. Therefore we do not find support for Hypothesis Two.

Our third hypothesis proposed a linkage between CEO Emotional Stability and social integration. The path associated with this hypothesis is both significant and positive. This indicates support for Hypothesis Three.

The fourth hypothesis proposed that there would be a linkage between CEO Emotional Stability and shared strategic cognition. The path associated with this hypothesis indicates that there was no significant linkage. Therefore, we find no support for Hypothesis Four.

DISCUSSION

What might our results suggest about the relationship between CEO personality and top management team dynamics? Our research extends the work of Peterson, et al (2003) by examining the relationship between one aspect of CEO personality – Emotional Stability – on the top management team performance. We use a data set of new ventures, which allows us to make general comparisons with their tentative findings using survey data rather than qualitative, coded q-sort data. We contribute to the conversation by linking our new venture survey data to TMT constructs previously linked to firm performance. Thus, we can make stronger inferences concerning the relationship between the CEO personality, TMT performance, and firm performance.

Our results lead us to conclude that the general approach of Peterson, et al (2003) is correct: at least one aspect of CEO personality – Emotional Stability – impacts TMT dynamics (in this case, TMT task conflict and social integration). However, CEO Emotional Stability has no impact on other TMT dynamics, specifically relationship conflict and shared cognition. What are we to make of this?

The quality of TMT decision-making rests to a great extent on the interaction process through which the TMT produces its decisions; and as Amason (1996) indicates, relationships are required to make this interaction process work. It is understood that the best TMT decisions are generated from an environment with high task conflict and low affective conflict, and Edmondson (Edmondson, 1999) has speculated that psychological safety could be the mechanism through which a team could increase task conflict while simultaneously reducing relationship conflict. Other rich, diverse research streams including leadership and psychology suggest that the CEO will have a significant impact on both task conflict and relationship conflict. However, our findings suggest that the impact of the CEO on the paradox of conflict in teams is mixed: the Emotional Stability of the CEO impacts the amount of task conflict present in a TMT, but does not inversely impact relationship conflict. It would seem that the CEO has a significant impact on TMT discourse and its capacity to engage in robust debate over ideas and strategies, but little impact on the relationships between TMT members. At the team level, the CEO influences the level of social integration in the TMT. Perhaps relationship conflict, even at the team level, has more to do with the individual relationships between team members and less to do with the influence of the CEO.

Why might CEO Emotional Stability have no impact on shared strategic cognition? First, consider how we operationalize the construct: an index of overlap in the understanding of executives by creating a coefficient of variation. Our goal is to determine the extent to which the members of an executive team share the same “mental map” of the strategy. Since we believe that shared strategic cognition is a process and an outcome, and occurs in conversations about strategy, it seemed sensible to suggest that teams engaged in a robust dialogue and debate about strategy might be capable of
generating alignment around strategy more effectively. And, as we have seen, a CEO with high Neuroticism scores does, indeed, negatively impact the capacity for a team to engage in robust and productive debate (we call this task conflict). Upon reflection, however, it is easy to imagine a team with almost complete overlap in shared strategic cognition (for example the entire TMT is in complete agreement that the strategy is to track down and kill the white whale) and little capacity to engage in robust and meaningful discussions about the strategy (your CEO is Captain Ahab). Shared strategic cognition has everything to do with measuring alignment, and says nothing about how that alignment occurs. With the benefit of hindsight it is easy to see why this aspect of CEO personality has no impact on the shared strategic cognition of a TMT. What matters here is lack of ambiguity, not clarity of thinking.

Our initial findings enrich our understanding of conflict in the TMT dynamic, improving our theoretical understanding of conflict in the TMT. Additionally, our findings suggest that much work remains for TMT scholars as we unpack exactly how a CEO influences a TMT. Our first tentative steps in this direction informed by theories derived from leadership, team dynamics and personality psychology have produced mixed empirical results, creating new puzzles and paradoxes for TMT scholars.
REFERENCES


