

ARE THERE ANY LINKAGES BETWEEN COGNITIVE DIVERSITY WITHIN THE TOP MANAGEMENT TEAMS AND STRATEGIC DECISION SPEED?

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ABSTRACT

In the strategic management literature, top management teams (TMTs) and their strategic decisions have been considered very important components for the firms' overall success. There is a great deal of research on this subject, designed to determine how TMTs make their decisions including antecedents and consequences of those decisions. Top managers in organizations are responsible for making critical decisions to increase firm performance; and the upper echelons perspective (UEP) predicts that having a diverse structure in TMTs may affect those strategic decisions either in a positive or negative way. In this paper, I explore how some of the observable characteristics of TMTs make an impact on cognitive diversity and how this diversity affects the executives' strategic decision speed (SDS) depending on the dynamism of the environment. More specifically, I focus on the linkages between heterogeneity in team tenure and functional background and the two important components of cognitive diversity, which are value and goal preference diversity. Then, I explain how cognitive diversity relates to strategic decision speed and how this relationship may be affected by environmental dynamism.

Keywords: Top management teams, cognitive diversity, strategic decision speed, environmental dynamism.

INTRODUCTION

In organizational settings, keeping firm performance at a high level is considered one of the primary responsibilities of top managers. While making strategic decisions to increase firm performance, top managers use their diverse experiences, skills, knowledge, beliefs, and values. In the strategy literature, there has been a variety of researchers exploring the relationships between top management teams' (TMTs) characteristics and decision making processes. More specifically, management scholars have been interested in figuring out the antecedents and consequences of the strategic decision making (SDM) processes and how these may be related to firm performance. These relations have considered important in organizational settings since TMT members are the strategy-creators who are actively involved in the SDM processes to make the best possible decisions to meet both short- and long-terms organizational needs.

In their upper echelons perspective (UEP), Hambrick and Mason (1984:193) state that organizational outcomes are “reflections of the values and cognitive bases of powerful actors.” From this definition, we can conclude that TMT members’ cognitive features are some leading factors in organizational survival. Since TMTs have such a critical impact on firm’s performance, how to structure these top teams has been an important research question in the field of management. While some scholars have argued that having a heterogeneous structure would be much better than having a homogenous structure within the TMTs, some other scholars have advocated the exact opposite view. In other words, the first group of scholars has been in favor of having a diverse structure within the teams whereas the other group has supported the positive effect of similar structures for organizational success. Basically, under what conditions TMTs should have either a homogenous or heterogeneous structure has been and will continue to be discussed for decades.

According to Hambrick and Mason (1984), TMTs’ characteristics have two main dimensions: observable and cognitive characteristics. Some of the observable characteristics include age, tenure, education, and functional background whereas some of the cognitive characteristics include beliefs, values, norms, and goal preferences. In the UEP (Finkelstein et al., 2009), it is being argued that top executives use their experiences and beliefs while making critical decisions in their organizational settings. The management scholars have mostly used TMTs’ observable characteristics while measuring the relationships between these characteristics and organizational outcomes since TMT demographics are assumed to be the creator of a big part of the top managers’ influence in their organizations (Carpenter and Fredrickson, 2001). On the other side, cognitive factors haven’t been used too much since they are being considered a difficult measurement in strategy research.

As Harrison et al. (2007) mention, differences in organizations are seen as big challenges and it takes time to accept and manage them towards long-term success. In the literature, all these differences have led us to the concept of diversity. Harrison et al. (2007: 1200) define diversity as “the distribution of differences among the members of a unit with respect to a common attribute.” As a complex and multi-level construct, diversity can also be defined as “the differences between individuals on personal attributes, such as age, race, or value, or on job related attributes, such as tenure or functions. (Olson et al. 2007: 36)” In this paper, my main focus will be on cognitive diversity, which is also defined as “deep-level” diversity by Harrison et al. (2002:1031) referring to “differences among team members’ psychological characteristics, including personalities, values, and attitudes.” This concept basically includes all sorts of variations among the TMT members in terms of their cognitive abilities and preferences, which are some critical components within the UEP.

Miller et al. (1998:41) define cognitive diversity as the “variation in beliefs concerning cause-effect relationships and variation in preferences concerning various goals for

organizations.” From their definition, we can see that there are two main dimensions within this construct: one is related to the values and beliefs; the other one is related to the goal preferences. Therefore, in this paper I examine cognitive diversity by dividing up into two sub-categories: value diversity and goal preference diversity. Then I explain how they may be related to TMT tenure and functional background, which are examined as team-level constructs, and how these team demographic features may affect strategic decision speed (SDS) depending on the conditions within the environment.

According to Olson et al. (2007:196), “crafting and implementing effective strategic decisions is paramount in successful firms.” These important decisions are made by the top executives under different environmental conditions by considering the factor of decision speed since time has a big value in SDM processes and needs to be used perfectly correct by the top managers in order to make decisions and accomplish goals in a timely manner. Because of the importance of speed in SDM, which is also closely related to firm performance, I use strategic decision speed as my dependent variable to see how it may be related to some other important constructs in the TMT literature.

In management research, using TMTs’ demographics as proxies for psychological characteristics, researchers relate demographic variables to organizational outcomes (Edmondson et al., 2002). In strategy and organizational theory fields, the cognitive side of managers has been seen as a “black box” and not been researched too much. However, I do believe that the cognitive characteristics of the top managers are extremely important in understanding how executives make their decisions. Therefore, in this paper I offer a new conceptual framework explaining and exploring some linkages among TMTs’ demographic characteristics, cognitive diversity, and strategic decision speed.

THEORETICAL BACKGROUND

In a fast-paced organizational life, it is so difficult for managers to make all these critical decisions individually on time rather than as a team since those decisions have a big impact on firm’s survival (Finkelstein et al., 2009). Therefore examining TMTs’ structures including their decision-making processes has been a leading research topic in the field of strategy. The executives have to evaluate different situations from various perspectives to reach the best conclusions for success, which is definitely not an easy task. As Finkelstein et al. (2009: 122) mention, “studying TMTs, rather than CEOs alone, provides better predictions of organizational outcomes.” From their description, we can again see how crucial it is to examine the team-level concepts while studying firm performance since this provides us a better understanding of some critical antecedents of organizational performance outcomes.

According to Scott (1992), organizations as diverse and complex structures play a highly influential role in today's global world. Etzioni (1964) defines organizations as the social units deliberately constructed and reconstructed to seek specific goals. Within these social systems, the functions of top managers are extremely important in terms of reaching organizational goals in a timely manner and keeping firm performance as high as possible all the time. As Finkelstein et al. mention (2009), there are three central conceptual elements within a top management team: composition, structure, and process. I focus on the composition of TMTs in this paper. According to their definition, "*composition* refers to the collective characteristics of top team members, such as their values, cognitive bases, personalities, and experiences (Finkelstein et al., 2009: 123)." Basically, the composition of a TMT reflects the top managers' characteristics, which have been used as critical variables in management research. Having said that, there are some essential research questions in this specific area: Should the TMTs have either homogeneous or heterogeneous structure? Under what conditions should the TMTs have a diverse structure? Is the diversity within the TMTs beneficial all the time? All of these questions have led the scholars to one main question: Do we really need in diversity in TMTs? In this paper, I try to provide my explanation to this question by offering a new conceptual framework, which examines the concept of cognitive diversity including its possible antecedents and consequence.

Diversity in the Top Management Teams

Hambrick et al. define (1996:664) the top team as "the aggregate informational and decisional entity through which competitive moves are made." Within these entities, the homogeneity and heterogeneity of team composition have different benefits to the firm. According to Carpenter (2002), if the TMTs are heterogeneous, the management teams would have more distinct info and skills as well as having beneficial task conflict. If the TMTs are homogenous, the management teams would have more shared values, common communication routines, and speedy coordination. However, in the literature it is not completely clear whether these explanations of having either homogenous or heterogeneous TMT structures would hold true under any circumstances. This ambiguity makes the concept of diversity more complicated within TMTs since it may have some extraordinary impacts on strategic decision making processes (Mooney et al., 2007).

Hambrick and Mason (1984) define the demographic heterogeneity as the amount of dispersion within a TMT. Harrison et al. (2007:1222) identify diversity as a multi-level construct that "describes a unit in terms of collective composition of its members." While researching diversity factors within TMTs, scholars have relied on both observable and cognitive demographic features of top teams (Hambrick et al., 1996), which includes executives' functional backgrounds, educational experiences, levels of tenure, beliefs, values, and goal preferences (Hambrick, 1994). As Hambrick et al. (1996) clearly state, heterogeneous teams may experience dissensus in their strategic actions whereas the homogeneous teams may have an advantage in this regard. Their findings are very

important evidences of heterogeneous teams being not good all the time. Then, the question becomes how and when cognitively diverse teams would function better in the organizational settings.

Homogeneous teams may provide more advantages than heterogeneous teams for the situations in which similar commitment to the strategic decisions made by the TMT members is crucial (Naranjo-Gil et al., 2008). This would help the team get through SDM process much quicker and more effectively since they would not have too much conflict because of the similar mindsets that they have. Although heterogeneity within TMTs provides different types of skills, knowledge, and mindsets (Naranjo-Gil et al., 2008), it does not necessarily mean that diversity would be beneficial in any type of organizational processes. One of the other findings regarding diversity is that heterogeneity within the top teams should be negatively related to short-term firm performance, whereas it has positive relationships with long-term firm performance (Murray, 1989). This is another clear evidence of some different variety of results of having a heterogeneous composition within TMTs. Wiersema et al. (1992) also support this argument by mentioning the inability of a group to make strategic decisions and execute them when high levels of diversity exists within the top teams. In addition, process losses may occur in strategy execution under greater complexity for the heterogeneous TMTs as a result of conflicts within the teams (Carpenter et al., 2004), which refers to my main argument in this paper. Therefore, it is reasonable to argue that a diverse TMT structure would not be always beneficial for organizations. Figure 1 summarizes my main arguments in this paper:

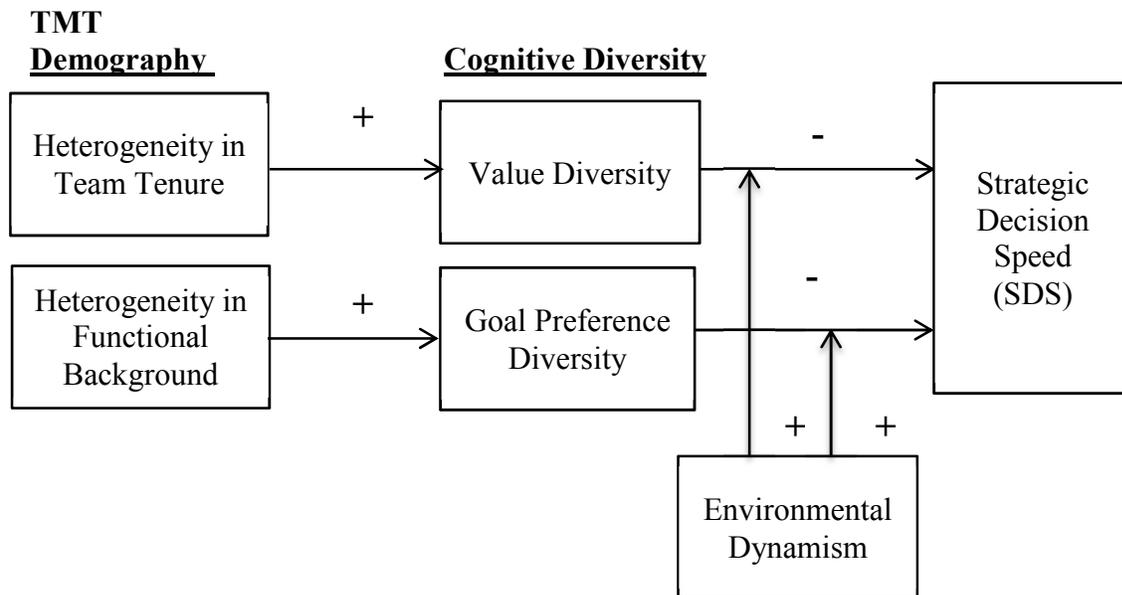


Figure 1 The relationships among TMTs’ demographic characteristics, cognitive diversity, environmental dynamism, and strategic decision speed.

Heterogeneity in TMT Tenure and Functional Background

When we look at the TMT literature, we see two main dimensions: observable characteristics and cognitive characteristics (Hambrick and Mason, 1984; Carpenter et al., 2004). Under observable category, top managers' age, education level, tenure, and functional background are considered some primary variables. Under cognitive category, executives' beliefs, values, norms, and goals preferences are considered some other main variables. As Kearney et al. (2009:581) mention, how TMTs need to be composed to improve the organizational performance has been an essential research topic. I strongly believe that the answer for this question relies on the concept of diversity.

One of the observable characteristics in my model is the level of team tenure. As Miller defines (1991), tenure has been viewed as a key indicator of a manager's ability to gather and process information. From this definition, it's possible to make the following assumption: the longer the managers are in the same organization, the better the understanding of that organization's structure, procedures, rules, and culture. In other words, it is reasonable to expect that when the level of tenure increases within a team, the possible outcomes would be more stability, less conflict, and better communication (Tihanyi et al., 2000). Goll et al. (2005) also argued that a long-term tenure might make a more rational decision-making process possible in organizational settings. In addition, managers with long tenures are expected to have similar schemata since they have gone through some similar organizational experiences (Michel et al., 1992) within the same professional environment. According to Barkema et al. (2007), TMT tenure diversity will most likely imply heterogeneity in executives' viewpoints concerning the managerial tasks. More specifically, executives develop some sets of habits over time by relying on more their past experiences in an organization (Herrmann et al., 2005). I argue that these sets of habits, which can be considered a unique top managerial-level cognitive framework (Kor, 2006), may also shape executives' cognitive preferences in terms of their values over time. Therefore, the more heterogeneous the top team's tenure is, the more diverse the executives' values are.

Proposition-1.a: The heterogeneity in team tenure is positively related to executives' value diversity.

Another demographic characteristic of TMTs that I focus in this paper is the team functional background, which is defined as a "knowledge-based individual difference (Boone et al., 2009:166)." Herrmann and Datta (2005:73) mention that "executives' functional background is widely viewed as an important indicator of the cognitive biases and type of knowledge they bring to their jobs." Having executives with different functional backgrounds provides many opportunities in terms of having different knowledge and viewpoints on different subjects, which would help TMT members analyze organizational problems strategically from different perspectives (Hough et al., 2004). Top managers are primarily responsible for bringing their jobs critical industry-

related knowledge, which is mostly shaped by their functional background (Herrmann and Datta, 2005). By using their unique knowledge, they are expected to create strategies that fit the best to their organizations' needs. According to Kor (2006), the heterogeneity in functional background represents various core functions of a business in TMTs. In other words, this is a "mix of functional experience within the TMT (Marcel, 2009: 651)." I argue that this knowledge-based mixture may also help executives shape their cognitive structure in terms of their goal preferences over time. Therefore, the more heterogeneous the top team's functional background is, the more diverse the executives' goal preferences are.

Proposition-1.b: The heterogeneity in team functional background is positively related to executives' goal preference diversity.

Cognitive Diversity and Strategic Decisions

Diversity, in general, leads to variance in ideas within the teams (Knight et al., 1999). TMT demographic diversity can be defined as the "diversity of preferences and beliefs, business and life experiences, skills, and informational networks. (Barkema et al., 2007: 666)" The concept of diversity provides the breadth of perspective available to the TMT members in SDM processes (Wiersema et al., 1992). Since the TMT members usually operate under highly ambiguous and complex situations (Carpenter et al., 2001), establishing an appropriate structure within these top teams can be considered a key component for firm's success. We see this research focus in the field of strategic management widely since one of the main concerns in the field has been to figure out the connections between managerial actions and organizational performance outcomes (Wally et al., 2001).

As TMT members engage in a SDM process, their actions and perceptions become the reflections of their cognitive bases (Wiersema et al., 1992). When we look at the definition of cognitive diversity, Miller et al. (1998: 41) define it as the "differences in beliefs and preferences held by upper echelon executives within a firm." Another definition of cognitive diversity is "variability concerning relatively unobservable attributes such as attitudes, values, and beliefs (Kilduff et al., 2000: 22)." Top managers make decisions consistent with their cognitions (Pegels et al., 2000) and cognitive diversity stems from differences in executives' judgments or perspectives (Amason and Sapienza, 1997). In addition to these definitions, according to Carpenter et al. (2004), the UEP focuses on executive cognitions, values, and perceptions and how these variables have effects on the strategic choices of top managers. That's why, it is reasonable to make an assumption that the managers' values and goal preferences may be associated with the effectiveness and outcomes of SDM processes.

According to Miller et al. (1998), cognitive diversity can be examined in two sub-dimensions: value diversity and goal preference diversity. Jehn et al. (1999:745) define value diversity as a type of diversity that occurs “when members of a workgroup differ in terms of what they think the group's real task, goal, target, or mission should be.” Value diversity may include two different sides: differences on values as well as differences on personality, character, and upbringing (Eastman et al., 2003). Simsek (2005:75) defines goal preference diversity as “a TMT’s general level of diversity with respect to preferred goals for its firm.” From a more general perspective, preference diversity occurs as a result of team members’ different insights, skills, and information brought to the table (Nijshad et al., 2008). Although diverse beliefs and values may create different strategic viewpoints and managerial approaches within a top team, they may also cause undesirable effects that would damage SDM process by creating tension and frustration among team members (Olson et al., 2007). Basically, these undesirable effects would “serve” as a disruptor for executives’ abilities to function as a team (Priem et al., 1999). Some of these disrupting effects may include slower decision making, communication breakdowns, and interpersonal conflict among the team members (Canella et al., 2008). Therefore I argue that diversity in values and goal preferences is negatively related to strategic decision speed. In other words, the more diverse the top teams are in terms of their values as well as goal preferences, the slower the strategic decision processes are.

Proposition-2.a: Diversity in TMT members’ values is negatively related to the speed of strategic decisions.

Proposition-2.b: Diversity in TMT members’ goal preferences is negatively related to the speed of strategic decisions.

Environmental Dynamism as a Moderator

A top management team provides a way to cope with instability and complexity in its environment (Edmondson et al., 2002) via their strategic decisions and managerial actions. The complexity in the environment occurs as a result of various ranges of organizational activities (Dess et al, 1984). When we take a look at this environmental context, we see that there are two main dimensions: stable and dynamic environments. Stable environments refer to the ones in which the conditions stay the same overtime, whereas dynamic environments refer to the ones in which the situations are in a continual state of change (Hough et al., 2004). In other words, in stable environments, we face certainty, and predictable and routine situations; whereas in dynamic environments, we experience uncertainty, fluctuations in the business settings, and variations in preferences (Jansen et al., 2009). These two opposite situations have been used by management scholars to understand how some firms perform better than the others depending on these two levels of environmental conditions.

During SDM processes, environmental dynamism should need to be taken into consideration since these conditions may have an impact on the relationship between cognitive diversity and decision speed. In other words, environmental conditions may make the linkage between diversity and decision speed either stronger or weaker. Here, what I argue is that under the conditions of dynamic environments, the negativeness on the relationship between cognitive diversity and strategic decision speed will be stronger. In the literature, there are several definitions for dynamism. According to Baum et al. (2003:1110), dynamism refers to the “level of environmental predictability.” By another definition, environmental dynamism is the rate of change and absence of pattern in the unpredictability of an environment (Dess and Beard, 1984). Dynamism is considered an important component in management research since it provides important clues on the relationships between firm-level variables and firm performance in a firm’s competitive environment (Gilley et al., 2002; Garg et al., 2003).

Environmental dynamism refers to the “product of several forces operating at one time (Simerly et al, 2000: 38).” There are some big challenges that dynamic environments bring into organizational life. Some of these big challenges can be considered greater environmental uncertainty and increased difficulty in SDM processes (Li et al., 1998). These two factors make the decision making environment much more difficult for the top managers since they may face multiple situations that are highly ambiguous (Li et al., 1998). Under these constantly-changing conditions, TMT members are expected to make the best decisions on time in order to keep the firm performance at a high level (McArthur et al., 1991), which is an extremely challenging task. As Priem et al. (1995) clearly mention, in dynamic settings the decision-making speed is a critical component to take into consideration since a slow SDM process would not be appropriate in most cases. In parallel to their argument, Forbes (2005) also states that in dynamic environments fast decision making would provide more benefits to the top teams in terms of exploiting new opportunities before they disappear because of the changing-pace of the environment. Therefore I argue that in dynamic settings, the negative relationship between TMT’s cognitive diversity and strategic decision speed will be stronger. In other words, environmental dynamism positively moderates the negative relationship between value and goal preference diversity of top managers and strategic decision speed.

Proposition-3: Under dynamic environmental conditions, the relationship between value diversity as well as goal preference diversity within TMTs and strategic decision speed will be much more negative.

DISCUSSION

In this paper, I mainly analyze the relationship between cognitive diversity and strategic decision speed by considering the impact of environmental dynamism within the top management teams. In the literature, top managers are seen as the powerful actors in the organizations because they are responsible for making various strategic decisions to boost

firm's overall performance. How TMT members make their decision and how these processes may affect performance of the firm have been two important research topics in the field of management. While exploring the answers of these two broad questions, management scholars have used executives' demographic features as some important determinants. As Pegels et al. (2000:912) mention, TMTs' demographic characteristics have critical impacts on organizational outcomes "because top executives are empowered to make strategic decisions of organizations." Although the cognitive bases and perceptions of executives are not seen as convenient as observable characteristics of top managers for measurement (Hambrick and Mason, 1984), I do believe that it is still very important to explore this cognitive side of TMT members. This would provide scholars new evidences on what cognitive factors might affect firm performance either in a positive or negative way.

The dynamic conditions within the environment would be an important determinant in understanding the linkages between cognitive diversity and decision speed. If there are lots of changes and instabilities (Gibson et al., 2007) within an environment, which refers to high environmental dynamism, having same or similar mindset in terms of values and goals within the TMTs would make the decision-making process easier and faster in an organization. On the contrary, if there is diversity in values and goal preferences within the TMTs in highly dynamic settings, this situation would make the decision-making process much more complex, difficult, and slower. Therefore, this "double" difficulty, which stems from having both "cognitively diverse TMTs" and "highly dynamic environment", would affect strategic decision speed much more negatively, which is not a desired situation during SDM processes.

For future research, it would be useful to explore possible linkages between cognitive diversity and some other SDM-related constructs such as decision quality and decision commitment. Also, it would be helpful to find out whether there were some connections between observable and cognitive characteristics of TMTs and how these connections might explain the effectiveness of SDM processes. Although cognitive side of top managers is too hard to observe and measure, doing more research in this specific area would enlighten some more "black boxes" in the field of management.

CONCLUSION

This paper focuses on examining how the top managers use their cognitive bases while making critical decisions for their organizations. A clear understanding of top-managerial cognitive structure and its effects on SDM processes will help management scholars explore more unknowns in the field. More specifically, examining the relationships among heterogeneously-structured TMTs, cognitive diversity, strategic decision speed, and environmental dynamism would enable researchers to deeply examine different sides of management. In this study, I propose that heterogeneity in team tenure is positively

related to value diversity of TMT members; heterogeneity in team functional background is positively related to goal preference diversity of TMT members; both value and goal preference diversity is negatively related to strategic decision speed; and environmental dynamism positively moderates the negative relationship between value and goal preference diversity and strategic decision speed.

Since the gathering of social-psychological variables about TMTs has proven to be very difficult (Wally and Bacerra, 2001), cognitive diversity has been left outside of the research field by most of strategy and organizational theory scholars. In this paper, I contribute to the field of management by trying to explore inside of this “black box” including some antecedents and consequence of the concept of cognitive diversity. From a practical viewpoint, executives may use my model to decide how to compose their top teams in order to make their strategic decisions in a timely manner. I truly hope that this paper would benefit both management scholars in academia and top managers in the business life.

REFERENCES

- Amason, A.C., & Sapienza, H.J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management*, 23, 495-516.
- Baum, J.R., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic Management Journal*, 24, 1107-1129.
- Barkema, H.G., & Shvyrkov, O. (2007). Does top management diversity promote or hamper foreign expansion? *Strategic Management Journal*, 28, 663-680.
- Boone, C., & Hendriks, W. (2009). Top management team diversity and firm performance: Moderators of functional background and locus-of-control diversity. *Management Science*, 55, 165-180.
- Canella, A.A., Park, H., & Lee, H. (2008). Top management team functional background diversity and firm performance: Examining the roles of team member colocation and environmental uncertainty. *Academy of Management Journal*, 51, 768-784.
- Carpenter, M.A., & Fredrickson, J.W. (2001). Top management teams, global strategic posture, and the moderating role of uncertainty. *Academy of Management Journal*, 44, 533-545.
- Carpenter, M.A. (2002). The implications of strategy and social context for the relationship between top management team heterogeneity and firm performance. *Strategic Management Journal*, 23, 275-284.

- Dess, G.G., & Beard, D.W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29, 52-73.
- Eastman, W., & Santoro, M. (2003). The importance of value diversity in corporate life. *Business Ethics Quarterly*, 13, 433-452.
- Edmondson, A.C., Roberto, M.A., & Watkins, M.D. (2002). A dynamic model of top management team effectiveness: Managing unstructured task streams. *The Leadership Quarterly*, 14, 297-325.
- Etzioni, A. (1964). *Modern Organizations*. Englewood Cliffs, New Jersey: Prentice-Hall Inc.
- Finkelstein, S., Hambrick, D.C., & Cannella, A.A. (2009). *Strategic Leadership: Theory and research on executives, top management teams, and boards*. New York, NY: Oxford University Press.
- Forbes, D.P. (2005). Managerial determinants of decision speed in new ventures. *Strategic Management Journal*, 26, 355-366.
- Garg, V.K., Walters, B.A., & Priem, L.M. (2003). Chief executive scanning emphases, environmental dynamism, and manufacturing firm performance. *Strategic Management Journal*, 24, 725-744.
- Gibson, C.B., Waller, M.J., Carpenter, M.A., & Conte, J.M. (2007). Antecedents, consequences, and moderators of time perspective heterogeneity for knowledge management in MNO teams. *Journal of Organizational Behavior*, 28, 1005-1034.
- Gilley, K.M., Walters, B.A., & Olson, B.J. (2002). Top management team risk taking propensities and firm performance: Direct and moderating effects. *Journal of Business Strategies*, 19, 95-114.
- Goll, I., & Rasheed, A.A. (2005). The relationships between top management demographic characteristics, rational decision making, environmental munificence, and firm performance. *Organization Studies*, 26, 999-1023.
- Hambrick, D.C., & Mason D.A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193-206.
- Hambrick, D.C. (1994). Top management groups: A conceptual integration and reconsideration of the "team" label. *Research in Organizational Behavior*, 16, 171-213.
- Hambrick, D.C., Cho, T.S., & Chen, M. (1996). The influence of top management team heterogeneity on firm's competitive moves. *Administrative Science Quarterly*, 41, 659-684.

Harrison, D.A., Price, K.H., Gavin, J.H. & Florey, A.T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal*, 45, 1029-1045.

Harrison, D.A., & Klein, K.J. (2007). What's the difference? Diversity constructs as separation, variety, and disparity in organizations. *Academy of Management Review*, 32, 1199-1228.

Herrmann, P., & Datta, D.K. (2005). Relationships between top management team characteristics and international diversification: An empirical investigation. *British Journal of Management*, 16, 69-78.

Hough, J.R., & White, M.A. (2004). Scanning actions and environmental dynamism: Gathering information for strategic decision making. *Management Decision*, 42, 781-793.

Jansen, J.J.P., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism. *The Leadership Quarterly*, 20, 5-18.

Jehn, K.A., Northcraft, G.B., & Neale, M.A. (1999). Why differences make a difference: A field study of diversity, conflict, and performance in work groups. *Administrative Science Quarterly*, 44, 741-763.

Kearney, E., Gebert, D., & Voelpel, S.C. (2009). When and how diversity benefits teams: The importance of team members' need for cognition. *Academy of Management Journal*, 52, 581-598.

Kilduff, M., Angelmar, R., & Mehra, A. (2000). Top management team diversity and firm performance: Examining role of cognitions. *Organization Science*, 11, 21-34.

Knight, D., et al. (1999). Top management team diversity, group process, and strategic consensus. *Strategic Management Journal*, 20, 445-464.

Kor, Y. (2006). Direct and indirect effects of top management team and board compositions on R&D investment strategy. *Strategic Management Journal*, 27, 1081-1099.

Li, M., & Simerly, M.L. (1998). The moderating effect of environmental dynamism on the ownership and performance relationship. *Strategic Management Journal*, 19, 169-179.

Marcel, J.J. (2009). Why top management characteristics matter when employing a chief operating officer: A strategic contingency perspective. *Strategic Management Journal*, 30, 647-658.

- McArthur, A.W., & Nystrom, P.C. (1991). Environmental dynamism, complexity, and munificence as moderators of strategy-performance relationships. *Journal of Business Research*, 23, 349-361.
- Michel, J.G., & Hambrick, D.C. (1992). Diversification posture and top management team characteristics. *Academy of Management Journal*, 35, 9-37.
- Miller, D. (1991). Stale in the saddle: CEO tenure and the match between organization and environment. *Management Science*, 37, 34-52.
- Miller, C.C., Burke, L.M., & Glick, W.H. (1998). Cognitive diversity among upper-echelon executives: Implications for strategic decision processes. *Strategic Management Journal*, 19, 39-58.
- Mooney, A.C., Holahan, P.J., & Amason, A.C. (2007). Don't take it personally: Exploring cognitive conflict as a mediator of affective conflict. *Journal of Management Studies*, 44, 773-758.
- Murray, A.I. (1989). Top management team group heterogeneity and firm performance. *Strategic Management Journal*, 10, 125-141.
- Naranjo-Gil, D., Hartmann, F., & Maas, V.S. (2008). Top management team heterogeneity, strategic change and operational performance. *British Journal of Management*, 19, 222-234.
- Olson, B.J., Parayitam, S., & Bao, Y. (2007). Strategic decision making: The effects of cognitive diversity, conflict, and trust on decision outcomes. *Journal of Management*, 33, 196-222.
- Olson, B.J., Bao, Y., & Parayitam, S. (2007). Strategic decision making within Chinese firms: The effects of cognitive diversity and trust on decision outcomes. *Journal of World Business*, 42, 35-46.
- Scott, W.R. (1992). *Organizations: Rational, natural, and open systems*. Englewood Cliffs, New Jersey: Prentice-Hall Inc.
- Simerly, R.L., & Li, M. (2000). Environmental dynamism, capital structure and performance: A theoretical integration and an empirical test. *Strategic Management Journal*, 21, 31-49.
- Pegels, C.C., Song, Y.I., & Yang, B. (2000). Management heterogeneity, competitive interaction groups, and firm performance. *Strategic Management Journal*, 21, 911-923.
- Priem, R.L., Harrison, D.A., & Muir, N.K. (1995). Structured conflict and consensus outcomes in group decision making. *Journal of Management*, 21, 691-710.

Priem, R.L., Lyon, D.W., & Dess, G.G. (1999). Inherent limitations of demographic proxies in top management team heterogeneity research. *Journal of Management*, 25, 935-953.

Simsek, Z. (2005). Modeling the multilevel determinants of top management team behavioral integration. *Academy of Management Journal*, 48, 69-84.

Tihanyi, L., Ellstrand, A.E., Daily, C.M., & Dalton, D.R. (2000). Composition of the top management team and firm international diversification. *Journal of Management*, 26, 1157-1177.

Wally, S., & Becerra, M. (2001). Top management team characteristics and strategic changes in international diversification. *Group and Organization Management*, 26, 165-188.

Wiersema, M.F., & Bantel, K.A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35, 91-121