

EXPLORER CEOS: THE EFFECT OF CEO CAREER VARIETY ON LARGE FIRMS' RELATIVE EXPLORATION ORIENTATION

ABSTRACT

Prior studies demonstrate that firms need to make smart trade-off decisions between exploration and exploitation activities in order to increase performance. Chief executive officers (CEOs) are principal decision makers of a firm's strategic posture. In this study, we theorize and empirically examine how relative exploration orientation of large publicly listed firms varies based on the career variety of their CEOs – that is, how diverse the professional experiences of executives were prior to them becoming CEOs. We further argue that the heterogeneity and structure of the top management team moderates the impact of CEO career variety on firms' relative exploration orientation. Based on multisource secondary data for 318 S&P 500 firms from 2005 to 2015, we find that CEO career variety is positively associated with relative exploration orientation. Interestingly, CEOs with high career varieties appear to be less effective in pursuing exploration, when they work with highly heterogeneous and structurally interdependent top management teams.

Keywords:

Relative exploration orientation, CEO career variety, upper echelons theory, TMT composition, TMT structure

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INTRODUCTION

The ability to foster exploration and exploitation activities simultaneously is considered an important prerequisite for firms to survive and to succeed. Strategy and organization scholars have stressed that improving this ability – known as organizational ambidexterity (March, 1991; Tushman & O'Reilly, 1996) – leads to higher innovation output (Jansen, Van den Bosch, & Volberda, 2009; Tushman, Smith, Wood, Westerman, & O'Reilly, 2010), better firm performance (Cao, Gedajlovic, & Zhang, 2009; He & Wong, 2004), and the firm's continued success in changing environments (Hill & Birkinshaw, 2014; O'Reilly & Tushman, 2008). However, fostering exploration and exploitation require different resources and mindsets (March, 1991), making them conflicting poles of a spectrum (Gupta, Smith, Shalley, & Smith, 2006; Uotila, Mauka, Keil, & Zahra, 2009). Since all firms need to operate within the boundaries of available resources, their top management teams are forced to choose between exploration orientation or exploitation orientation on the corporate level (Uotila et al., 2009). In this context, the chief executive officer (CEO), as the primary decision maker of the firm (Finkelstein & Boyd, 1998; Quigley & Hambrick, 2015), has a significant impact on the firm's strategic posture (Covin & Slevin, 1991). Past studies investigating the link between CEO characteristics and organizational outcomes have found for example that a company's rate of new product introduction is associated with a CEO's temporal focus (Nadkarni & Chen, 2014), that the CEO-TMT interface improves the ability of firms to foster organizational ambidexterity (Cao, Simsek, & Zhang, 2010), and that CEO risk-taking is positively associated with new product portfolio innovativeness (Kraiczy, Hack, & Kellermanns, 2015). An important, but yet understudied area within this line of inquiry is the CEO's career path and professional experience (Crossland, Hiller, Burriss, Carton, & Courter, 2014). Modern day CEOs exhibit distinct career paths leading to the top positions within their

organizations. While a growing number of CEOs demonstrated high mobility across functions, firms, and industries (Cappelli & Hamori, 2005; Hamori & Kakarika, 2009), others continued to climb the ladder to the top in the company that they now lead (Koch, Forgues, & Monties, 2015). This trend provokes the question whether appointing CEOs with high career mobility pays off for the employer or not. To operationalize heterogeneity within CEO careers, Crossland, et al. (2014) introduced the concept of CEO's career variety – "*defined as the array of distinct professional and institutional experiences an executive has had prior to becoming CEO*" (Crossland et al., 2014: 652) – and demonstrated that CEOs with a broad set of career experience foster strategic change within their organizations. While these findings provide evidence that CEO career variety is a potent predictor of firm outcomes, the question of how CEOs with high career variety shape the firm's strategic posture and ultimately influence a firm's performance remains unanswered. From the broader upper echelons perspective, a firm's strategy is shaped by the top management team (TMT), comprising of the CEO and his top executives (Carpenter, Geletkancz, & Sanders, 2004; Hambrick & Mason, 1984). In today's highly complex environment, trade-off decisions between exploration and exploitation is likely not only driven by the CEO, but also by other functional and divisional top executives. CEOs with an array of experience in different firms, industries, and functions will interact differently with their teams, compared to CEOs rooted in their organizations. Albeit the importance of the structure and composition of the TMT, the relationship between CEOs, their TMTs, and the manifestation of exploration orientation remains largely unexplored (Miller, 2011).

Addressing above mentioned research gaps, our study aims to examine how CEOs' career variety predict their inclinations towards either exploration or exploitation orientation when they define their organization's strategic posture. We further investigate how (1) TMT heterogeneity

(i.e. age; gender; industry background) and (2) the share of functional TMT members compared to divisional TMT members (Hambrick, Humphrey, & Gupta, 2015) influence this relationship. Our analysis is based on a multi-source cross-industry U.S. sample consisting of 318 S&P 500 companies observed from 2005 to 2015. We contribute to management and organization research by clarifying how a CEO's career path shapes his or her inclination towards exploration or exploitation orientation. Building on the work of Uotila et al. (2009), who found an inversed U-shape relationship between relative exploration orientation (REO) and firm performance, we shed light on an underlying mechanism that links CEO and TMT characteristics with organizational outcomes (Carpenter et al., 2004; Lawrence, 1997). Furthermore, we advance TMT literature by revealing the impact of different CEO and TMT constellations on a firm's REO. This provides a comprehensive picture on how the CEO and his TMT interact in defining a firm's strategic posture, and underlines the importance of considering both the CEO's and the TMT's effects when applying the upper echelons perspective to study firm level outcomes (Buyl, Boone, Hendriks, & Matthyssens, 2011; Cao et al., 2010). Finally, we apply computer-aided text analysis (CATA) to measure a firm's REO (Uotila et al., 2009), and use firms' letters-to-shareholders (LTS) to gather longitudinal information on the strategic orientation of large firms (Grühn, Strese, Flatten, Jaeger, & Brettel, 2017). Thereby, we validate this unobtrusive method as a promising measurement approach and extend the so far limited research using CATA (Boling, Pieper, & Covin, 2015; Engelen, Neumann, & Schwens, 2015; Grühn et al., 2017; A. F. McKenny, Aguinis, Short, & Anglin, 2016; Mousa, Wales, & Harper, 2015).

THEORETICAL BACKGROUND

Relative Exploration Orientation

The concepts of exploitation and exploration, referring to the abilities of organizations to create advantages from existing capabilities, or through the search for new possibilities respectively (March, 1991), have emerged as important topics in management and organizational research (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013). Recent studies have predominantly focused on modeling exploration and exploitation as orthogonal activities (Uotila et al., 2009), and investigated how firms can become ambidextrous organizations by pursuing and achieving both exploration and exploitation at the same time (e.g.: Andriopoulos & Lewis, 2009; Carmeli & Halevi, 2009; Hill & Birkinshaw, 2014). However, fostering exploration and exploitation are often conflicting goals and dictate trade-off decisions in favor of one of the two dimensions (March, 1991). This tension stems from the bipolar nature of exploitation vs. exploration. While exploitation represents organizational behaviors focused on fostering refinement, efficiency, and certainty; exploration represents search, experimentation, and risk taking (Cheng & Van de Ven, 1996; Levinthal & March, 1993; March, 1991). Thus, exploitation and exploration activities require different routines, mindsets, and capabilities within organizations (Andriopoulos & Lewis, 2009; O'Reilly & Tushman, 2008). To foster exploitation, firms need to utilize internal information and knowledge (M. I. Benner & Tushman, 2003), while the pursuit of exploration requires incorporation of external knowledge and adaptation to changing environments (McGrath, 2001). The returns associated with exploitation and exploration stand in contrast as well. Exploitative firms produce incremental innovations and generate stable, immediate outcomes, while explorative firms aim for radial innovations with risky and distant outcomes and higher variation in expected performance (Andriopoulos & Lewis, 2009; He & Wong, 2004). In order to account for the

fundamentally different logics of exploration and exploitation, as well as the ability of organizations to manage paradox requirements in the pursuit of both extremes, Cao et al. (2009) proposed to divide the organizational ambidexterity concept into the two constructs combined dimension of ambidexterity and balance dimension of ambidexterity. The combined dimension of ambidexterity on the one hand, corresponds to the combined amount of exploitation and exploration that a firm can muster. This acknowledges the ability of firms to increase both exploitation and exploration within the boundaries of their limited resources. The balance dimension of ambidexterity on the other hand measures the relative balance between exploitative and exploratory activities. This dimension follows March's (1991) original characterization; the inherent logic is that exploration and exploitation compete for the firm's scarce resources, forcing the firm to make trade-offs between the two. In line with the logic of the balance dimension of ambidexterity (Cao et al., 2009), Uotila et al. (2009) introduced the concept of relative exploration versus exploitation orientation, which they see as the two ends of one spectrum. They find an inverted U-shaped relationship between relative exploration orientation (REO) of the firm and its financial performance, showing that firms need to find the right balance for their exploitative and exploratory activities. However, past research on the CEO's and TMT's role to foster organizational ambidexterity has mostly focused on the combined dimension of ambidexterity (Heavey & Simsek, 2014; Lubatkin, Simsek, Ling, & Veiga, 2006), while little attention has been devoted to how the CEO and as an extension the TMT affects a firm's strategic posture towards REO. This is striking, since CEOs, based on their past experience, will most likely show tendencies toward either exploitation or exploration in their decision making. We address this research gap by investigating how CEO characteristics, more specifically the CEO's career variety (Crossland et al., 2014), impact a firm's REO. Thus, we shed light on the under researched antecedents of the balance dimension of ambidexterity. In summary, our theoretical fundament rests on the view that

trade-offs between exploration and exploitation are unavoidable based on the bi-polar nature of these two dimensions. We argue that an important managerial task of the CEO and his or her TMT is to find the optimal balance between exploitation and exploration by making the right trade off decisions (e.g. investment into incremental product improvement vs. funding of basic research for radically new products). Following Cao et al. (2009), our perspective should be viewed as a complimentary piece of the puzzle rather than a competing narrative to better understand the full picture of organizational ambidexterity.

CEO Career Variety

The CEO, as the most powerful individual within an organization, has long attracted interest of researchers and practitioners. Past studies have demonstrated that the CEO's individual characteristics, such as demographics (Barker & Mueller, 2002), risk propensity (Kraiczy et al., 2015; Prasad & Junni, 2017), temporal focus (Nadkarni & Chen, 2014), tenure (Zona, 2016), and career horizon (Cho & Kim, 2017) significantly predict a firm's ability to innovate and ultimately influence a firm's performance. These studies are built on the upper echelons perspective (Hambrick, 2007; Hambrick & Mason, 1984), which states that TMTs, comprising of CEOs and their top executives, are main drivers of corporate activities, and that their decisions are based on own experiences, values, and personalities. A recent line of inquiry has started to look at the CEO's career in order to understand how individuals obtained the most influential position within an organization and how different career paths influence a CEO's decision making and ultimately impact organizational outcomes (Crossland et al., 2014; Koyuncu, Hamori, & Baruch, 2016). Understanding the impact of different CEO careers is important because of two reasons. First, the career paths of modern day CEOs are shifting compared to their counterparts 20 to 30 years ago. Cappelli & Hamori (2005) find that while CEOs until the 1980s were mostly promoted along the

corporate ladder of the company that hired them, recent CEOs increasingly have more diverse paths to the top, often including stops at multiple companies along the way. However, this does not mean that the new type of CEOs with a high variety in their careers have replaced the traditional type. In their recent study, Koch et al. (2015) point out that many CEOs of Fortune 100 companies still showed little mobility in their paths to get to the top. And Hamori & Kakarika (2009) suggest that CEOs of large European and US companies who have transitioned from employer to employer more often, also needed more time to obtain the highest corporate position. Thus, today's CEOs at large companies show a diverse spectrum of career experiences (Crossland et al., 2014). Second, Quigley and Hambrick (2015) revealed that the impact of CEOs on the performance of their organizations has increased over the past 60 years. Thus, understanding and possibly predicting the effect of different CEOs on organizational outcomes becomes vital for each firm. Arguing from the upper echelons perspective (Hambrick, 2007; Hambrick & Mason, 1984), career patterns are observable characteristics which can reveal unobservable underlying traits of an individual and predict a person's behavior on the job (Crossland et al., 2014). CEOs, who have achieved their top position by the merits of their career choices, will likely have reinforced patterns of behavior that connect to these choices and led to their success (Miller, 1994). Thus, understanding the implications of heterogeneity within a CEO's career path can contribute to making the right executive selection decision (Hollenbeck, 2009). To measure the heterogeneity in CEO's career paths, Crossland et al., (2014) introduced the concept of CEO career variety, "*defined as the array of distinct professional and institutional experiences an executive has had prior to becoming CEO*" (Crossland et al., 2014: 652). They further demonstrate that CEOs with high career variety lead to higher strategic dynamism, measured as the period-on-period change of resource allocation, and also to higher strategic distinctiveness, measured as the difference from central industry tendencies in terms of resource allocation. This means that hiring a high variety CEO will lead to rapid changes

in a firm's resource allocation. However, a “*host of questions regarding the prescriptive implications of CEO career variety*” are still unanswered (Crossland et al., 2014: 668). The main question from our point of view is whether high variety CEOs foster erratic change and “*seek novelty for its own sake*” by “*shaking up their companies strategies*” (Crossland et al., 2014: 668), or if they have inherent tendencies towards certain strategic orientations. We argue that high variety CEOs, based on their track record of choosing change over stability, prefer allocating resources towards exploratory activities instead of exploitative ones. This line of inquiry into REO is distinct from the findings of Crossland et al. (2014) regarding strategic change and strategic distinctiveness, since the latter constructs do not measure the strategic direction toward which high variety CEOs tend to steer their organizations. Put in another way, change and distinctiveness do not equal exploration orientation. For example, if high variety CEOs cut R&D expenditure in favor of advertising spending to increase brand strength, or increase plant efficiency and output by increasing total debt, they trigger major strategic changes and might create deviation from the industry average of resource allocation, but the strategic direction of these decisions points towards exploitation rather than exploration orientation. Thus, we enrich research on CEO careers by examining how a CEO's career variety influence REO within an organization. By adding the perspective of strategic orientation, we complement findings regarding strategic change and distinctiveness. The resulting comprehensive picture contributes to deeper insights into firm-level outcomes of CEO career variety, and can help boards make the right CEO selection decisions based on the strategic needs of the organization.

TMT Heterogeneity

Reflecting the increasing complexity of steering a company in today's highly dynamic and volatile environment, the number of top executives directly reporting to the CEO has doubled since

the mid-1980s (Guadalupe, Li, & Wulf, 2014). Past research has shown that decision making at the top is influenced by the CEO's empowerment of the TMT (Ling, Wei, Klimoski, & Wu, 2015), as well as CEO–TMT exchange quality and TMT personality composition (Lin & Rababah, 2014). Furthermore, Cao et al. (2010) demonstrate that communication richness, functional complementarity, and power decentralization between the CEO and the TMT are important enablers of organizational ambidexterity. Thus, how CEOs impact the REO of an organization will be influenced by the structure and composition of their TMTs. In this regard, the interaction of CEO career variety and TMT heterogeneity, a central construct within the upper echelons research stream (Hambrick, Seung Cho, & Chen, 1996), is particularly interesting. While the former represents the diverse range of experiences of the CEO, the latter determines the range of different perspectives within the TMT. Organizational conflict literature helps to explain how different perspectives and characteristics brought together can be seen as a double-edged sword. On the one hand, TMT heterogeneity and resulting conflicts can impede collaboration and communication, on the other hand it can also foster interaction and creativity to create novel solutions (Amason, 1996; Amason & Schweiger, 1994; Jehn, 1997, 1995; Nielsen, 2010). Yet, we do not know if high variety CEOs can combine different perspectives within heterogeneous TMTs to foster REO, or if they are more likely to be overwhelmed by the abundance of opinions and resulting conflicts. To answer this research question, we investigate how TMT heterogeneity moderates the impact of CEO career variety on REO.

TMT Functional Share

An important aspect that needs to be considered when analyzing organizational outcomes from an upper echelons perspective is the fact that TMTs are structured in different ways (Hambrick et al., 2015). From an organizational research perspective, organizational structures are

designed to assign tasks to specialized units, facilitate information exchange, and distribute resources when required to effectively solve the problems and tasks that an organization is facing (Burns & Wholey, 1993; Daft & Lengel, 1986; Tushman & Nadler, 1978). Therefore, the design of organizational structure is a way to facilitate exploitation or exploration activities. In what is known as the concept of structural ambidexterity, Tushman and O'Reilly (1996) propose that organizations should establish structurally separate units that focus on exploration and exploitation. Separating the task to explore and to exploit, each unit can have different people, processes and cultures, and therefore different competencies (O'Reilly & Tushman, 2008). However, while subunits can be internally coherent, tensions might arise on the firm level. Thus, single units need to be aligned on a corporate level by their shared strategic direction, values and mechanisms to leverage resources and assets (O'Reilly & Tushman, 2004, 2013). This task of aligning and managing exploitative and exploratory subunits is at its heart a leadership responsibility of the CEO and his or her TMT (Raisch, Birkinshaw, Probst, & Tushman, 2009; Smith & Tushman, 2005; Tushman et al., 2010). In this context, top executives that report to the CEO and influence his or her decisions can be divided into divisional heads and leaders of functional areas (Guadalupe et al., 2014). The contrasts between these two groups of top managers is of particular interest when considering the impact of CEO career variety on REO. Divisional managers have the overall responsibility of a business unit and act as general managers with the goal of improving subunit performance (Bunderson & Van der Vegt, 2017; Hill & Hoskisson, 1987). Whereas functional managers are responsible for an element of the organization's value creation process, and aim to improve the organizations overall performance from their function's perspective (Hambrick et al., 2015; Menz, 2012). In setting the overarching strategic tone, the CEO will face a conflict between top managers competing for the allocation of scarce resources (Cao et al., 2009; Vieregger, Larson, & Anderson, 2017). The dynamic of the alignment process between CEO and TMT will be

influenced by the within-team interdependence of the TMT (Barrick, Bradley, Kristof-Brown, & Colbert, 2007). Subunits in a divisional structure can be viewed mostly separately, and the CEO's main task is to set priorities and enable the effective use of shared assets (O'Reilly & Tushman, 2004). In a TMT with a majority of functional executives, the interdependency of tasks and responsibility is higher (Hambrick et al., 2015), resulting in an increased information processing and coordination burden for the CEO. Although it is important to distinguish the structural set-up in which the CEO operates, how high variety CEOs cope with the varying requirements posed by fundamentally different TMT structures is still an unanswered question. Therefore, we investigate how the share of functional executives within the TMT moderates the impact of CEO career variety on REO.

HYPOTHESES

Our research model analyzes the relationship between CEO career variety and REO. It also investigates the moderating effect of TMT heterogeneity and TMT functional share. Figure 1 provides an overview of the core elements of our model and summarizes the overall relationships that we propose.

Insert Figure 1 about here

CEO Career Variety and REO

Crossland et al. (2014) demonstrated that the concept of CEO career variety is a powerful predictor of organizational outcomes. The underlying rationale is that a CEO's career paths, ranging from staying within one firm and one function to switching firm, function and industry several times, reflects his or her motivations and cognitions. These motivations and cognitions in

turn influence the decision making and strategic dispositions of the CEO. Within career and human resource literature, the rise of high variety career paths among top executives is attributed to the boundaryless career theory (Arthur, Khapova, & Wilderom, 2005; Arthur & Rousseau, 1996). The boundaryless career, in contrast to traditional careers within one organization, is characterized by frequent career moves across organizations and is driven by an individual's career decisions rather than the boundary conditions of organizations. The main enabler of the emergence of boundaryless careers is the increasing importance of overarching human capital that is relevant across different organizations compared to firm specific managerial capital that is built through internal knowledge and networks (Hamori & Kakarika, 2009; Murphy & Zabochnik, 2004). However, recent studies show that boundaries preventing career mobility, in the form of industry and function specific competencies and professional networks, still exist (Bagdadli, Solari, Usai, & Grandori, 2003) and that career patterns are still restrained (Vinkenburg & Weber, 2012). Additionally, top managers moving frequently across organizations are often not viewed in a favorable light by professional headhunters (Hamori & Kakarika, 2009) and need longer on average to reach the top compared to peers who rise within one organization (Koch et al., 2015). Thus, CEOs with high variety careers likely faced and overcame boundary conditions and decided to change organizations despite the odds stacked against them.

Two perspectives can be applied to explain why high variety CEOs chose mobility over stability. The first argument from an industrial and organizational psychology perspective is that since becoming adults, top executives have underlying characteristics that drive their behavior over the course of their careers (Hollenbeck, 2009). The underlying assumption is that people, at their cores, do not change much and that individual behavior is predictable. Thus, knowing which steps CEOs chose over the course of their careers reflects who they are and how they will most likely decide in the future. Second, from an organizational behavior perspective, past success will lead to

an attachment of organizations and its members to past practices (Miller, 1994). Individuals, who had a successful past, will attribute this success to their past pattern of behavior and retain these patterns (Crossland et al., 2014). Thus, individuals who consider a first career move as a success will more likely move a second time, and continue this behavior until they eventually end up at the top of the ladder. Although these perspectives are based on fundamentally different assumptions, both lead to the conclusion that past career choices serve as important clues to understand a person's motivation, cognition, and behavioral pattern.

In their introduction of the CEO career variety construct, Crossland et al. (2014) reviewed and summarized the main traits associated with it. In line with the theoretical drivers of a high variety career, Crossland et al. (2014) differentiate between the dispositional preference deeply rooted in the person, and the later acquired experiences and gains of a diverse career path. Part of the deeply rooted inclinations are openness to experience, risk propensity and neuroticism (Crossland et al., 2014). Openness to experience indicates one's aspiration for novel and diverse experiences (Boudreau, Boswell, Judge, & Bretz, 2001; Zimmerman, 2008). Job hopping signifies an inclination towards actively pursuing new situations and challenges which links to March's (1991) aspects of search and discovery within the exploration dimension. Thus, high variety CEOs are more likely to search for and try out novel concepts implying a rise in exploration activities of the organization. Risk propensity of a person is deeply rooted in personality and is associated to objective measures of risk taking in a career related context (Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005; Pissarides, 1974). Exploration activities represent an inherent risk, because their outcomes are difficult to estimate and may only pay-off in the long run (Raisch & Birkinshaw, 2008). Thus, high variety CEOs with a certain degree of risk propensity will foster REO more likely compared to their risk averse counterparts. Finally, Crossland et al. (2014) also found that CEO career variety might be linked to a higher degree of neuroticism, which indicates a person's

inclination towards anxiety and a lack of contentment (Judge & Bono, 2001). This potential trait of high variety CEOs may not be linked to REO, since the drive to change things stems from a general dissatisfaction with the status quo, which can be either more focused on exploration or exploitation. In conclusion, although neuroticism does not necessarily signal an orientation towards either exploitation or exploration activities, openness to experience and risk propensity are both traits positively linked to REO.

In addition to their underlying personality traits, CEOs will also be shaped over the course of a high variety career, which in turn can predict their inclination towards REO. CEOs, per definition, were all rewarded for their career choices, therefore high variety CEOs are likely strengthened in their belief that giving up the known for the unknown and taking risks pay off at the end (Crossland et al., 2014; Miller, 1994). Thus, high variety CEOs are likely more inclined towards leading their organizations to compete in new technologies and markets, thus promoting REO. Crossland et al. (2014) also point out that high variety CEOs have a wider cognitive frame. Being exposed to a wide range of different situations, tasks, peoples, and cultures across new functions, organizations and industries contribute to the accumulation of diverse work experience of CEOs (Tesluk & Jacobs, 1998). This increases the CEO's strategic thinking competency in terms of considering multiple perspectives and finding new solutions (Dragoni, Oh, Vankatwyk, & Tesluk, 2011), and reduces the commitment to the status-quo of the organization (Hambrick, Geletkanycz, & Fredrickson, 1993). Therefore, the diverse experiences and high cognitive breadths of CEOs with high variety careers will foster experimentation, novel perspectives, and flexibility required by REO. Finally, a high variety CEO typically has a more diverse and external facing network compared to their low variety counterparts (Campion, Cheraskin, & Stevens, 1994; Crossland et al., 2014). This gives high variety CEOs the ability to utilize their networks outside the boundaries of the organization for the integration of external knowledge (Awazu, 2004).

Fostering exploration activities requires information and knowledge from external sources to understand changes in the environment and to identify new growth opportunities (McGrath, 2001). Thus, through their diverse informal networks, high variety CEOs are well positioned to foster REO.

In summary, we identified the various traits signified by CEO career variety and found that the vast majority of these traits foster various aspects of REO, including search, experimentation, flexibility, risk taking, long-term focus, and external orientation (Lavie, Stettner, & Tushman, 2010; O'Reilly & Tushman, 2013; Raisch et al., 2009). Thus, we hypothesize:

Hypothesis 1. CEO career variety is positively associated with the level of REO.

CEO Career Variety, TMT Heterogeneity and REO

TMTs are the group of people that work closely with the CEO, therefore their characteristics are often considered to complement CEOs in influencing organizational outcomes (Cao, Simsek, & Zhang, 2010; Heyden, Reimer, & Van Doorn, 2015; Koyuncu et al., 2016). We argue that TMT heterogeneity, a compositional characteristic that signifies differences of its members along various dimensions (Simons, Pelled, & Smith, 1999), is of particular interest when assessing the CEO's impact on REO. Heterogeneity significantly affects the TMT's cognitive and information processing capacity, and was shown to have both positive and negative effects on firm outcome depending on its shape and degree, as well as the circumstances under investigation (Alexiev, Jansen, Van den Bosch, & Volberda, 2010; Barkema & Shvyrkov, 2007; Simons, Pelled, & Smith, 1999).

Arguing from an optimistic perspective, heterogeneity can steer up constructive task-related cognitive conflicts and increases a team's problem solving and decision making capabilities by bringing unique information, knowledge, and perspectives to the table (Milliken & Martins, 1996;

Tony Simons et al., 1999). Based on their broad cognitive frames (Crossland et al, 2014), high variety CEOs can incorporate the range of perspectives and the pool of different ideas within their TMTs through internal advice seeking, and enhance exploratory innovation within their organizations (Alexiev et al., 2010; Rodan & Galunic, 2004). Additionally, TMT members might see their views reflected in the CEO's diverse background and experience, making them more willing to share information and embrace radical exploratory strategies (Cao et al., 2010; McPherson, Smith-Lovin, & Cook, 2001; Tsai & Ghoshal, 1998).

Arguing from a more pessimistic perspective, heterogeneity at extreme levels can cause a cognitive divide among group members. Groups may lack a common ground provoking biases and distrust (Brehmer, 1976; Falk, 1982; Jehn, Northcraft, & Neale, 1999; Terborg, Castore, & DeNinno, 1975). At extreme levels, faultlines between competing factions within the TMT might arise that hamper communications and joint decision making from TMT members (Barkema & Shvyrkov, 2007; Lau & Murnighan, 1998; Li & Hambrick, 2005). Exploratory actions, that demand the organization to move away from current capabilities and compete in new technologies and markets (O'Reilly & Tushman, 2013), represent major strategic initiatives that require the consensus and commitment from all TMT members (Barkema & Shvyrkov, 2007; Hambrick et al., 1996). Thus, the CEO must act as a mediator between different views and create buy-in for radical ideas in order to foster REO. In this regard, high variety CEOs might be at a disadvantage compared to their "traditional" counterparts that rose through the ranks of their own organization. Through a diverse career, high variety CEOs tend to build general human capital that is transferable between functions, organizations and environments (Hamori & Kakarika, 2009; Koch et al., 2015), whereas tacit knowledge of internal affairs in combination with an well-established internal network might be required to effectively manage conflicts within the TMT (Hamori & Kakarika, 2009).

Furthermore, high variety CEOs typically have an external focus (Crossland et al., 2014), that might keep them from directing appropriate attention to manage internal conflicts within a heterogeneous TMT. In such a scenario, high variety CEOs might not be able to leverage the diverse cognitive frames within their diverse TMTs, and TMT heterogeneity might even have detrimental effects.

Based on the two diverging arguments, we propose the following competing hypotheses for the effect of TMT heterogeneity:

Hypothesis 2 a. The greater a TMT's heterogeneity, the stronger the positive association between CEO career variety and REO.

Hypothesis 2 b. The greater a TMT's heterogeneity, the weaker the positive association between CEO career variety and REO.

CEO Career Variety, TMT Functional Share and REO

As mentioned before, exploratory actions, which require the development of novel skills and capabilities (Benner & Tushman, 2003; Jansen, Van Den Bosch, & Volberda, 2006), call for consensus and commitment among TMT members. However, consensus can be impaired by executives that see each other as rivals competing for organizational resources and status (Menon, Thompson, & Choi, 2006). Within a TMT structure that features a majority of functional executives, tasks and responsibilities are strongly interconnected (Hambrick et al., 2015). Functional executives might view company-wide problems with an functional bias, and can be divided into output functions such as marketing or research & development that focus on growth opportunities, and throughput functions such as operations or finance that focus on improving efficiency of established business (Hambrick, 1981; Hambrick & Mason, 1984). Functional

managers will want a say in all major decisions, since company-wide strategic initiatives will also have an impact on their functional area and personal status. Therefore, CEOs need to manage delicate interdependencies of perspectives, motivations, and rivalries of functional executives, when implementing exploratory actions. This task might be even more difficult for high variety CEOs, since they typically have less firm-specific knowledge and a smaller internal network (Hamori & Kakarika, 2009). Contrary, in a divisional structure with a majority of independent divisional executives, interdependencies between subunits are lower (Hambrick et al., 2015). A shift towards exploration orientation can be implemented within selected business units, while other units can still focus on exploitation activities (O'Reilly & Tushman, 2008; Tushman & O'Reilly, 1996). High variety CEOs can leverage their broad set of experience to determine which business is most suited to drive exploratory innovation and work with the respective divisional leader to implement appropriate changes. Thus, we hypothesize:

Hypothesis 3. The higher a TMT's functional share, the weaker the positive association between CEO career variety and REO.

METHODOLOGY

Data and Sample

In order to test our hypotheses, we collected longitudinal data from multiple sources for firms operating in a wide range of industries. We focus on the largest U.S. companies that have been continuously listed in the Standard & Poor's 500 index over a period from 2005 to 2015. In total, our sample consists of 318 firms with 656 CEOs, and 6915 top executives, theoretically yielding 3,498 firm-year observations over 11 years.

We obtained data on the CEOs and their TMTs from the annual Form 10Ks or proxy statements of their firms. This approach follows recent studies investigating TMT structure (Hambrick & Cannella, 2004; Menz & Scheef, 2014). S&P Capital IQ's ExecuComp database was used to enhance information on the CEOs and TMT members, and company websites as well as professional profiles were used to manually cross-check and complete all information. We applied the CATA approach to analyze firms' LTS (Grühn et al., 2017) in order to generate our dependent variable REO (Uotila & Maula, 2009). LTS are written by CEOs to inform shareholders, therefore, they are valuable testimonies of the executive team's state of mind and reflect the firm's strategic posture. With studies confirming the link between the use of words in LTS and organizational actions and outcomes (D'Aveni & MacMillan, 1990; Short, Broberg, & Brigham, 2010), LTS as a units of analysis have gained prominence among various researchers (Boling, Pieper, & Covin, 2015; Engelen, Neumann, & Schwens, 2015; Grühn et al., 2017; Noble et al., 2002). The Whorf-Sapir hypothesis and the attention-based view of the firm provide the theoretical foundation for the use of LTS to measure strategic orientation. The Whorf-Sapir hypothesis specifies that a bias in attention manifests through the use of words, and that the level of attention is indicated by how often a word is used (Abrahamson & Hambrick, 1997; Sapir, 1944; Whorf, 1956). The attention based view in turn states that the direction and allocation of top management team attention defines a firm's behavior and actions (Ocasio, 1997). Thus, by analyzing the use of exploratory or exploitative words within LTS, we can understand whether a firm pays more attention to exploration or exploitation (McKenny et al., 2012; McKenny et al., 2016; Pollach, 2012). In total, 3,163 LTS for the 318 firms in our sample were manually collected. Finally, the dataset was complemented with firm level information from the COMPUSTAT database. After merging all datasets and excluding observations due to missing or incomplete data, the final sample consists of 1,607 firm year observations.

Measures

Dependent variable. We follow the study by Uotila et al. (2009) and operationalize REO as the number of exploratory words divided by the sum of exploratory and exploitative words. However, instead of published news articles and newswires, we chose to use LTS as the unit of analysis, because they represent direct testimonies from CEOs and their TMTs (D'Aveni & MacMillan, 1990) without going through the reporting and re-phrasing of a third party. For the coding of REO, we use the CATA method following recent research that employed text analysis (Boling et al., 2015; Engelen et al., 2015; Grünh et al., 2017; Uotila et al., 2009). Compared to manual coding, CATA can process larger text volumes, generate comparable results, and improve coding stability (Morris, 1994; Neuendorf, 2002). We use exploration vs. exploitation dictionaries from McKenny, Aguinis, Short, and Anglin (2016), which are updated versions of the dictionaries originally published by Uotila et al. (2009). Text processing was run through the CATScanner software (McKenny et al., 2012).

Independent variables. CEO career variety is defined as the “*sum of distinct industry sectors, distinct firms, and distinct functional areas the individual had worked in prior to becoming CEO of the focal firm, divided by the number of years the person had worked prior to becoming CEO*” (Crossland et al., 2014: 661). We closely follow the approach described by Crossland et al. (2014) to construct the variable CEO career variety for the 656 CEOs in our sample. The sample was drawn from multiple sources including firms' Form 10K reports, short biographies from S&P Capital IQ's ExecuComp database, company web sites and press search, as well as the professional profiles of the executives themselves on social media sites. Three independent researchers were tasked of manually coding the career variety variable based on the approach outlined by Crossland et al. (2014). Since the instructions for the coders were quite straight forward and left little room

for subjective interpretations, double-checks on the coding of a random sub-sample of 20 CEOs yielded the same results in more than 90% of the cases. The mean value of CEO career variety in our sample is 0.25 with a standard deviation of 0.11, which is in line with the findings of Crossland et al. (2014).

Moderating variable. We measure TMT heterogeneity as a composite variable, comprising of the executives' age, their gender, and their industrial background. Industrial backgrounds differentiated on a one-digit Standard Industrial Classification (SIC) code level were assigned to each executive based on data obtained from S&P Capital IQ. We then computed Blau's (Blau, 1977) index of heterogeneity ($1 - \sum p_i^2$) for all three heterogeneity measures, where p is the proportion of TMT members in a category and i the number of categories represented in the TMT. Our final TMT heterogeneity score was then calculated as the sum of the three heterogeneity measures.

To calculate TMT functional share, we first identified executives with titles indicating that they were functional TMT members based on the categorization of Menz (2012). Drawing from the measurement of horizontal structural interdependency by Hambrick et al. (2015), TMT functional share was then calculated by dividing the number of functional managers by the total number of executives in the TMT. Thus, TMT functional share represents whether the TMT was primarily composed of functional executives.

Control variables. A range of control variables on the industry, firm and TMT levels were included to reduce variance that is not directly linked to our main hypothesis. On the industry level, we included competitive intensity and industry R&D intensity as controls. These controls account for additional task demands and information-processing requirements placed on the CEO and the TMT by environmental conditions. High competitive intensity leads to higher complexity and

uncertainty (Auh & Menguc, 2005; Dess & Beard, 1984), and high R&D expenditures signals high levels of technological dynamism and the constant threat of technological disruption (Zahra, 1991). Competitive intensity is measured based on the Herfindahl–Hirschmann index (HHI), calculated with the firms' squared revenue market shares at the two-digit SIC level, which is then subtracted from 1 (Engelen et al., 2015; Gupta & Gupta, 2015). Industry R&D intensity is also calculated on the two-digit SIC level as the median value of R&D spending divided by sales revenue (Medcof & Lee, 2017).

On the firm level, we control for firm size, past performance, and financial slack to account for the firm's overall access to resources and strategic decisions made because of good or bad performance. Firm size is measured as the natural logarithm of sales, and past performance is measured in terms of return on asset of the previous year (Hambrick et al., 2015). And financial slack represents the firm's ratio of current assets divided by current liabilities (Zahra, 1991).

On the TMT level, we controlled for CEO and TMT characteristics that could also explain a shift in REO, including TMT size, CEO turnover, CEO age, CEO education level, CEO MBA, and CEO duality. We included TMT size, which is measured as the number of executives listed in Form 10Ks, since larger TMTs boast more managerial resources and cognitive capacities (Wiersema & Bantel, 1992). Because new CEOs are associated with strategic change (Wiersema & Bantel, 1993), we added CEO turnover as a control variable, which indicates a turnover event at the top of the firm. We control for CEO age, because older CEOs tend to be more risk averse in terms of promoting explorative activities in their organizations (Cho & Kim, 2017; Prasad & Junni, 2017). CEO educational level, measured on a 7-point scale based on the highest degree that the individual holds (Crossland et al., 2014; Finkelstein, 1992), and CEO MBA, a binary variable indicating whether a CEO has a MBA degree or not (Crossland et al., 2014), are both indicators of

a broad cognitive frame of the CEO. CEO duality, a dummy variable indicating whether the CEO was simultaneously the board chair, indicates a more powerful and task-burdened CEO (Finkelstein & D'Aveni, 1994). Finally, to control for the effects of overall industry and time-series trends, we introduced industry dummies (on one-digit SIC code level) and year dummies into all model specifications.

Model

To test our hypotheses, we follow Crossland et al. (2014) and use generalized estimating equations (GEEs) (Liang & Zeger, 1986). In the dataset of this study, one CEO can have multiple, non-independent observations. The GEE approach accounts for serial correlation in the pooled sample, and provides a robust variance estimator for cluster data that can correct for the non-independence (Zhang, 2006). We specified a Gaussian distribution with an identity link function and an autoregressive (one year) within-group correlation structure (Engelen et al., 2015; Grün et al., 2017; Miller & Le Breton-Miller, 2011), based on recommendations from Ballinger (2004) to fit GEE models.

From an endogeneity perspective, it is possible that boards select CEOs with high career variety in order to increase exploration activities of the firm. Thus, we follow Nadkarni & Chen (2014) and conduct a three steps approach to correct for endogeneity in our results. First, we tested an array of potential antecedents (all lagged by one year) that might predict the selection of high variety CEOs. Of these tested values, the natural logarithm of employee number, past sales growth, and median age of the TMT were not significantly correlated with REO. Second, we predicted CEO career variety using the lagged values of the natural logarithm of employee number and median age of the TMT, since these two measures were the only instrumental variables that significantly predicted CEO career variety. Third, we included these predicted values as

endogeneity controls into our models (full analyses are available on request). Both residuals were not significant ($p > 0.1$) and the results were consistent with our main results, suggesting that the effects of endogeneity did not bias our findings in a significant way.

RESULTS

Tables 1 present descriptive statistics and correlation coefficients, and Table 2 shows the results of our estimations. All correlations between variables were below 0.5. Furthermore, we calculated the variance inflation factors and the condition index for all variables. The highest variance inflation factor was 1.36, and none of the condition indices associated with the eigenvalues of the variable matrix were above 10. These values show that multicollinearity is not a significant issue in our models (Mansfield & Helms, 1982). All variables in our models 1 to 5 of Table 3 (except for dummy variables) are standardized to improve interpretability and reduce multicollinearity (Aiken & West, 1991). We applied Wald test to assess whether our variables meaningfully enhance the explanatory power of the models from a statistical perspective, and confirmed that the explanatory power of all models improves with the addition our independent and moderating variables (i.e. for model 5: likelihood ratio $\chi^2 = 24.29$; $p < 0.001$).

Our results suggest that CEO career variety has an effect on REO and that this effect is indeed moderated by the composition and structure of the TMT. Hypothesis 1 predicts that high CEO career variety is positively associated with REO. The data supports this hypothesis (Model 2: $\beta = 0.063$; $p < 0.05$). Hypotheses 2a and 2b propose two competing effects of TMT heterogeneity, while hypothesis 2a predicts that TMT heterogeneity strengthens the association between CEO career variety and REO, hypothesis 2b predicts a weakening instead of strengthening effect. We find support for hypothesis 2b, since high variety CEOs in combination with a highly heterogeneous TMT are indeed negatively associated with REO (Model 3: $\beta = -0.046$; $p < 0.1$,

Model 5: $\beta = -0.05; p < 0.05$). Thus, we need to reject hypothesis 2a. Finally, hypothesis 3 proposes that a high share of functional TMT members weakens the positive association between CEO career variety and REO. Our results indicate that high variety CEOs in combination with a predominantly functional TMT structure have a negative effect on REO (Model 3: $\beta = -0.051; p < 0.05$, Model 5: $\beta = -0.051; p < 0.05$), thus confirming hypothesis 3.

Insert Table 1 and Table 2 about here

DISCUSSION

This study intends to shed light on the effect of CEO careers on their organizations strategic orientation. Drawing on a longitudinal sample of S&P 500 companies, we find evidence that CEOs with high career variety are more inclined towards fostering REO. We highlight the importance of the TMT as a moderator in this relationship, since both a high level of heterogeneity and a high share of functional members within the TMT can negate the positive effect of high variety CEOs on REO. These findings offer meaningful implications for both academics and practitioners.

Theoretical Contribution

This study contributes to the literature on CEO careers, the antecedents of exploration vs. exploitation orientation, and the upper echelons perspective. First, this article draws on and complements findings from Crossland et al. (2014), who introduced the composite measure of CEO career variety. This composite measure holds the potential to connect strategic and organizational researchers, who are mostly interested in firm level outcomes of executive characteristics (Finkelstein & Boyd, 1998; Heyden et al., 2015), with human resource and career scholars, who focus on the antecedents and consequences of individual success (Hamori & Kakarika, 2009; Koch

et al., 2015; Koyuncu et al., 2016). From a firm level outcome perspective, we enrich research on CEO careers by demonstrating that high variety CEOs do not drive erratic change within organizations, but show a tendency towards REO. Together with the findings of Crossland et al. (2014), we now know that high variety CEOs lead to significant strategic change with a focus on exploratory activities that result in strategic distinctiveness of their organizations. This represents a more complete understanding of the impact of CEO career variety. From an individual success perspective, we add to the idea that firm specific social capital is an important antecedent to drive one's own agenda within an organization (Gupta, 1984; Hamori & Kakarika, 2009). We demonstrate that high variety CEOs are less effective in driving REO within TMTs that exhibit high levels of diverse perspectives and task interdependencies, and thus require more tacit knowledge and an established internal network to navigate in. This provides a possible explanation for recent findings that pursuing an high variety career often does not pay off (Hamori & Kakarika, 2009; Koch et al., 2015), since boards might prefer to have individuals with a track record of managing conflicts and interdependencies within the TMT at the helm of their organizations.

Second, our results add to research on organizational ambidexterity. Prior research has mainly focused on the ability of firms to simultaneously achieve exploration and exploitation, and the role that CEOs and TMTs play to foster this ability (Cao et al., 2010; Carmeli & Halevi, 2009; Heavey & Simsek, 2014). A recent line of inquiry has revisited the original notion of March (1991) that exploration and exploitation compete for a finite set of resources leading to trade-off decisions that often favor one of the two dimensions (Cao et al., 2009; Uotila et al., 2009). However, there is only little research on the antecedents of REO, and “what remains less clear is the role of senior team and leadership behaviors in attending to the contradictory demands of exploration and exploitation” (O'Reilly & Tushman, 2013: 332). We show for the first time that the career path of

CEOs predicts their inclination towards REO. Based on their inherent characteristics and experiences gained along their careers, CEOs with high career variety are likely to be foster a firm's REO. In consequence, we provide an important piece to the puzzle to understand the drivers of the balance dimension of ambidexterity (Cao et al., 2009).

Third, we demonstrate the relevance to consider TMT composition and structure as separated and independent constructs from the CEO in order to gain a deeper understanding of organizational outcomes from an upper echelons perspective. While a host of research treat the TMT including the CEO as a single coherent group (Barkema & Shvyrkov, 2007; Carmeli & Halevi, 2009), we show that high variety CEOs might struggle to implement their exploration oriented agenda when they work with a heterogeneous TMT or within a functional TMT structure. We clarify that the double-edged sword of TMT heterogeneity (Hambrick et al., 1996) should best be wielded by a CEO with high firm-specific human capital, instead of a CEO who acquired general human capital through a diverse career path (Hamori & Kakarika, 2009). Thus, we add to the line of inquiry that considers the interaction between CEO and TMT as a driver of organizational outcome (Arendt, Priem, & Achidi Ndofofor, 2005; Cao et al., 2010) by distinguishing between team set-ups in which different types of CEOs can better advance their agenda instead of blending the characteristics of a firm's upper echelon.

Practical Implications

Our study also provides important findings for practitioners. A major question that boards and shareholders of large firms need to answer is how to select the right CEO to lead the organization (Hollenbeck, 2009). To make the right decision the board should actively examine the career variety of potential candidates, and match it with the context that the organization operates in. Uotila et al. (2009) empirically demonstrated that firms with the right level of REO

outperformed their peers, and that on average firms engaged in less exploratory activities than optimally required. If a board believes that the organization is slow to react to changes and stuck in a competency trap by focusing too much on exploitation (Raisch & Birkinshaw, 2008), hiring a CEO with high career variety to foster REO should benefit the firm. However, this does not mean that in these cases boards and shareholders should always chose an individual who embraced the boundaryless career over someone who rose through the ranks in a traditional manner. While the former has a broader cognitive frame and is willing to drive exploratory change, the later offers firm-specific skills often required to steer an organization efficiently (Hamori & Kakarika, 2009). Before the selection decision, the current state of the TMT must also be examined carefully. In TMTs with a high degree of heterogeneity and a high number of functional executives, CEOs with a high career variety can even have a negative effect on REO. Under these circumstances a more traditional CEO might be required, since firm-specific skills become integral to align diverging perspectives, and to coordinate interdependent tasks and goals. In the same manner, CEO candidates need to consider their options and carefully evaluate the TMT that they will work with. Even after a successful career and track record of taking risks in new work environments, failure to implement an own agenda could mean a steep fall from grace for new CEOs.

Limitations and Directions for Future Research

The findings and limitations of this article provide several opportunities for further research. First, it should be noted that CEO career variety, as an archivally based composite construct, does not directly measure the underlying psychological traits of the individual (Crossland et al., 2014). To gain a deeper understanding of what career variety implies about a CEO's intrinsic characteristics and trained behavioral patterns, future research based on primary data is required. Second, CEO career variety was coded to captures all instances of job mobility to

provide a unified representation of the heterogeneity within executive career paths, regardless of whether they occurred across functions, organizations, or industries. We closely followed Crossland et al. (2014) to create comparable results, and to deepen the shared understanding of CEO careers within the literature. However, this approach might neglect the diverse nature of career moves, and differences in implications of for example moving across functions within an organization or changing the organization altogether. In their recent publication, Koch et al. (2015:5) proposed to categorize job mobility along three dimensions, “*status (upward, lateral, or downward movements), employer (external and internal movements), and function*”. Unpacking the construct of CEO career variety in future research has the potential to generate more granular and differentiated insights into the implications of career choices for both the individual and the organization. Finally, our sample consists of large U.S. companies. The influence of high variety CEOs and different TMT constellations on CEO might vary significantly between smaller and larger firms (Lubatkin et al., 2006), because smaller firms tend to have a flatter hierarchy and need to come by with fewer organizational resources. Additionally, the context of our research is set in the U.S.. In a recent article, Biemann and Wolf (2009) illustrate that typical career patterns across different countries vary significantly. Examining the implications of CEO career variety in these diverging labor markets for organizational outcomes is a promising avenue for future research. We hope that our article can stimulate future research to better understand executive career paths and their implications for organizational outcomes.

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FIGURES AND TABLES

Figure 1 Hypothesized model

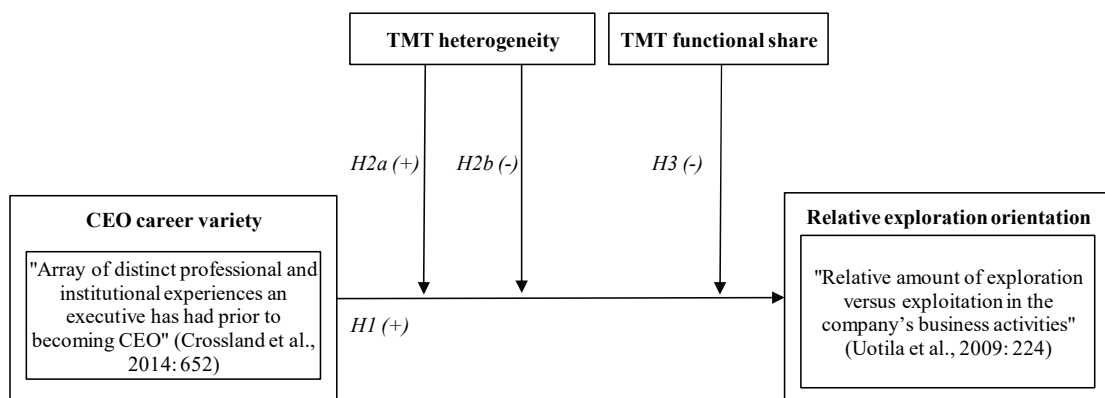


Table 1 Descriptive Statistics and Correlations

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Relative Exploration Share	0.44	0.25	1.00														
2. CEO Career Variety	0.25	0.11	.01	1.00													
3. TMT Heterogeneity	0.68	0.57	.04	.01	1.00												
4. TMT Functional Share	0.71	0.20	.04 †	.07 **	.00	1.00											
5. Firm Size	9.34	1.12	-.04 †	-.02	-.01	-.03	1.00										
6. TMT Size	9.31	3.81	.06 *	-.02	.21 ***	-.31 ***	.17 ***	1.00									
7. Financial Slack	1.81	1.19	.19 ***	.03	.00	.06 *	-.25 ***	-.09 ***	1.00								
8. Past Firm Performance (roa)	0.13	0.08	.14 ***	-.08 **	.04 †	.08 **	-.07 **	.05 *	.29 ***	1.00							
9. Competitive Intensity	0.93	0.08	.12 ***	-.03	.06 *	-.06 *	-.14 ***	-.04 †	.12 ***	-.05 †	1.00						
10. Industry R&D Intensity	0.02	0.03	.28 ***	.01	.05 †	-.05 †	-.21 ***	.10 ***	.31 ***	.13 ***	.34 ***	1.00					
11. CEO Turnover	0.01	0.09	-.02	.02	.00	.00	-.02	-.04	-.02	-.04	.03	-.01	1.00				
12. CEO Age	55.53	6.05	-.05 †	-.28 ***	-.01	-.01	.15 ***	-.04	-.11 ***	-.03	.01	-.10 ***	.06 *	1.00			
13. CEO Education Level	4.30	1.54	.06 *	.25 ***	.01	-.01	.00	.02	.07 **	-.01	.08 **	.03	-.02	-.10 ***	1.00		
14. CEO Duality	0.31	0.46	-.06 *	.08 **	.17 ***	.08 **	.04 †	.04	.00	.06 *	-.04	-.05 *	.01	.01	-.01	1.00	
15. CEO MBA	0.43	0.50	.03	.06 *	-.01	.05 *	-.03	-.02	.02	-.05 *	-.02	.03	.01	-.06 *	.47 ***	.00	1.00

Notes. Table exhibits descriptives and correlations for pooled data. Firm Size measured in log of sales

*** p < .001; ** p < .01; * p < .05; † p < .10

Table 2 Results of regression analyses (dependent variable: Relative exploration orientation)

Independent variables	(1) <i>Base</i>		(2) <i>H1</i>		(3) <i>H2 a/b</i>		(4) <i>H3</i>		(5) <i>Full</i>	
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>
Controls										
Firm Size	.057	.035	.053	.035	.070 *	.035	.050	.035	.067	.035
TMT Size	-.006	.031	-.007	.030	-.034	.031	-.010	.032	-.040	.032
Financial Slack	.002	.029	.000	.029	.000	.028	.004	.029	.004	.028
Past Firm Performance (roa)	.102 **	.029	.105 ***	.029	.100 ***	.029	.107 ***	.029	.102 ***	.029
Competitive Intensity	-.089	.037	-.081 *	.037	-.096 **	.037	-.091 *	.037	-.108 **	.037
Industry R&D Intensity	.205 ***	.038	.201 ***	.038	.212 ***	.037	.206 ***	.037	.217 ***	.037
CEO Turnover	.018	.019	.015	.019	.015	.019	.015	.019	.015	.019
CEO Age	-.038	.029	-.024	.030	-.024	.029	-.023	.029	-.023	.029
CEO Education Level	.053	.035	.030	.037	.032	.036	.030	.037	.031	.036
CEO Duality	-.143	.065	-.148 *	.065	-.171 **	.065	-.154 *	.065	-.173 **	.064
CEO MBA	-.039 *	.067	-.030	.067	-.020	.066	-.031	.066	-.020	.065
Independent variables										
CEO Career Variety			.063 *	.031	.059 †	.031	.067 *	.031	.064 *	.031
Moderators										
TMT Heterogeneity					.134 ***	.035			.134 ***	.035
TMT Heterogeneity x CEO Career Variety					-.046 †	.024			-.050 *	.024
TMT Functional Share							-.006	.030	-.016	.029
TMT Functional Share x CEO Career Variety							-.051 *	.024	-.051 *	.024
Constant	.202		.257		.248		.247		.228	
N	1607		1607		1607		1607		1607	
chi-square	274.75 ***		282.25 ***		309.40 ***		290.70 ***		319.12 ***	

Notes. Industry and year controls are included but not reported

*** p < .001; ** p < .01; * p < .05; † p < .10