Essays on Top Management Teams and Chief Strategy Officers: Behavioral Perspectives

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submitted by

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St. Gallen, October 22, 2014

The President:

Prof. Dr. Thomas Bieger
To my brother, Florian Scheef
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Singapore, December 2014

Christine Scheef
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Summary

From an upper echelons perspective, it is central to study top management teams (TMTs) and their senior executives’ behavior to understand how and why organizations vary in their strategic choices and performance. While the body of knowledge about TMTs is already substantial, this dissertation shifts the focus of TMT research towards behavioral perspectives and identifies three shortcomings in the current TMT research, which warrant more research attention. Each article of this dissertation aims at advancing the limited knowledge about one or more of the following shortcomings: (1) the TMT’s cognitive and social processes, (2) the TMT’s structure and particularly, senior executives’ varying power in strategic decision-making, and (3) the Chief Strategy Officer’s (CSO’s) behavior.

Article one focuses on understanding the TMT’s structure and particularly, power variation among TMT members across strategic decision domains. Using survey data from 70 TMTs of European firms, the article examines the effects of TMT power variation on strategic decision-making and explores the role of the TMT’s actual information processing behavior in explaining these relationships.

Article two focuses on understanding the CSO’s behavior. Using survey data from 116 CSOs of European firms, the article explores what affects CSOs’ perception of their discretion to influence the firm’s strategic decisions and its implications for the firm’s strategy. Moreover, the article takes into account the TMT’s structure and examines interactions between the Chief Executive Officer (CEO) and the CSO as two leading strategists in the firm.

Article three examines CSOs’ cognition in anticipating future developments and conducting long-term planning, particularly when the future does not mirror the past. This deductive theory-building paper explores the causes and consequences of differences in CSOs’ mental representations of future developments and the resulting search behavior for alternative courses of action.

Overall, this dissertation advances research of TMTs and CSOs from a behavioral perspective. While conducting research in these areas is challenging due to the difficult access to firsthand data, I encourage further efforts to study TMTs’ and CSOs’ behaviors. This does not only help to bring more realistic assumptions about humans’ cognition and social interactions to the TMT literature but also considerably increases the explanatory power of TMTs’ and senior executives’ characteristics. Finally, this dissertation provides novel means to assist CEOs and boards of directors in steering TMT processes and designing the role of the CSO within the TMT more thoughtfully.
Zusammenfassung

Aus einer „Upper Echelons“-Perspektive ist es von zentraler Bedeutung, das Verhalten des Top Management Teams (TMT; z.B. Vorstand) und dessen Top Manager zu untersuchen, um zu verstehen, warum Unternehmen in einer bestimmten Weise agieren und unterschiedliche Gewinne erzielen. Während das Wissen über TMTs bereits erheblich ist, zeigt diese Dissertation drei Bereiche auf, die noch weitere Forschung benötigen. Jeder Artikel dieser Dissertation hat das Ziel, die Kenntnisse in einem oder mehreren der drei folgenden Forschungszweige weiterzuentwickeln: (1) die sozialen und kognitiven Prozesse innerhalb des TMTs, (2) die Struktur des TMTs und die Machtverhältnisse zwischen Top Managern sowie (3) das Verhalten des Chefstrategen (Chief Strategy Officer; CSO).

Der erste Artikel konzentriert sich darauf, die Struktur des TMTs und vor allem die Machtverhältnisse zwischen Top Managern besser zu verstehen. Anhand einer Studie mit 70 TMTs von Unternehmen aus Europa werden die Auswirkungen stark schwankender Machtverhältnisse zwischen den Top Managern auf die strategische Entscheidungsfindung untersucht. Dabei wird vor allem das Verhalten der Top Manager in ihrer Zusammenarbeit und beim Informationsaustausch als mögliche Erklärung der Effekte betrachtet.

Der zweite Artikel konzentriert sich darauf, das Verhalten des CSOs besser zu verstehen. Anhand einer Studie mit 116 CSOs aus europäischen Unternehmen wird untersucht, was die Wahrnehmung des CSOs über seinen Handlungsfreiraum bei strategischen Entscheidungen beeinflusst und wie sich diese auf die Unternehmensstrategie auswirkt. Im Hinblick auf die Struktur des TMTs untersucht die Studie die Interaktion zwischen dem Vorstandsvorsitzenden (Chief Executive Officer; CEO) und dem CSO.

Der dritte Artikel befasst sich mit der Kognition des CSOs zukünftige Entwicklungen zu antizipieren. Besonders wenn die Zukunft nicht die Vergangenheit widerspiegelt, muss die Kognition des CSOs die längerfristige strategische Planung leiten. Der Artikel leitet deduktiv ein kognitives Prozessmodell her, das Unterschiede in der Kognition des CSOs aufzeigt, um zukünftige Entwicklungen wahrzunehmen und alternative Lösungen zu finden.

Insbesondere stärkt diese Dissertation das Verständnis über das Verhalten innerhalb des TMTs und des CSOs. Aufgrund des erschwerten Datenzugangs stellt die TMT-Forschung in diesem Bereich eine besondere Herausforderung dar. Sie kann jedoch signifikant dazu beitragen realistischere Annahmen über die Kognition von Top Managern und deren sozialem Verhalten zu entwickeln und die Aussagekraft von TMT Charakteristika und seiner Top Manager zu erhöhen. Schlussendlich stellte diese Dissertation neue Hebel für den CEO bereit, um TMT-Prozesse zu steuern und die Rolle des CSOs innerhalb des TMTs zu entwickeln.
Introduction

Theoretical Relevance

From an upper echelons perspective, it is critical to study top management teams (TMTs) and their senior executives’ behavior to understand how and why organizations vary in their strategic choices and performance (Hambrick, 2007). Building on the behavioral theory’s assumption of bounded rationality (Cyert & March, 1963; March & Simon, 1958), top management team research advances the idea that senior executives lack perfect knowledge and can only selectively attend to information from the environment. As a consequence, the main idea of the upper echelons theory (Hambrick & Mason, 1984) is that “executives’ experiences, values, and personalities greatly influence their interpretations of the situations they face and, in turn, affect their choices” (Hambrick, 2007, p. 334).

Over the last two decades, TMT research has accumulated a substantial body of knowledge, particularly in two major streams of research (Hambrick, 2007). The first major stream of research has focused on the effects of TMTs’ demographic composition on firms’ strategic choices and performance (for reviews, Finkelstein et al., 2009; Hambrick, 2007; Nielsen, 2010). Scholars have argued that the demographic diversity in TMTs can affect group processes and organizational outcomes mainly through two conduits (Williams & O’Reilly, 1998). On the one hand, the similarity-attraction paradigm suggests that group members similar in age, tenure, and functional background, are more likely to trust, like, and interact with each other (Byrne, 1971) affecting organizational processes and outcomes. On the other hand, the information processing perspective argues that the diversity in demographic characteristics reflects the diversity in mental representations and points of view within the TMT. As a consequence, a more diverse set of information and problem solving approaches become available to the team (Williams & O’Reilly, 1998). While both perspectives have been extensively applied in the TMT research, they have equally received criticism for treating the actual cognitive and social processes as a black box (Lawrence, 1997; Priem et al., 1999). Only few studies have pioneered in directly studying these mediating behavioral processes (e.g., Cho & Hambrick, 2006; Simons et al., 1999).

The second major stream of research advances the notion that focusing on the characteristics of the TMT as a whole yields stronger explanations of the firm’s strategic choices and performance than studying a single decision maker, such as the Chief Executive Officer (CEO; Hambrick, 2007). The firm’s strategic leadership is “a shared activity, and the collective cognitions, capabilities, and interactions of the

I want particularly thank Xena Welch-Guerra for her valuable feedback on earlier versions of the introduction as well as Daniel Albert and Erwin Hettich for their insightful comments.
entire TMT enter into strategic behavior” (Hambrick, 2007, p. 334). Following this notion, prior research has often implicitly assumed that all TMT members are equally weighted in the firm’s strategic decision-making processes (Hambrick, 1994; Hambrick et al., 2014; Priem et al., 1999). However, TMT research has increasingly cast doubt on the assumption that TMTs are real ‘teams’ (Hambrick, 1994, 2007). Instead, research suggests that TMTs may be rather “constellations of solo operators who interact and coordinate very little” (Siegel & Hambrick, 2005, p. 261) and sub-teams where TMT members are selectively involved depending on the decision domain (Hambrick, 2007). Thus, more research attention is needed to study the TMT’s structure or as Hambrick (1994) puts it: “interestingly, and unfortunately, the structure of the top groups has gone almost totally without attention in research to date on TMGs [top management groups], and yet it would seem to be of great significance to any complete theory of top groups” (p. 179).

Moreover, building on the notion that strategic leadership is a shared activity that extends beyond the CEO (Cyert & March, 1963; Hambrick, 1994), very little is know about the behavior of other functional senior executives (Menz, 2012) and their interactions with the CEO in affecting the firm’s strategic choices and performance. An emerging literature on functional TMT members supports the contention that other senior executives may matter (Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz & Scheef, 2014). With regards to the firm’s strategy, a notable addition to the TMT has been the Chief Strategy Officer (CSO; Angwin et al., 2009; Breene et al., 2007; Menz & Scheef, 2014). The CSO typically heads the firm’s strategy and corporate development function and is specifically responsible for the firm’s corporate strategy, for coordinating the firm’s strategy processes, and for long-range planning and the identification of future business opportunities in the firm’s external environment (Menz & Scheef, 2014). Despite being among the leading strategist in the firm together with the CEO, research has neither studied the CSO’s behavior nor the CSO’s social interaction with the CEO and other senior executives necessary to fulfill the role’s responsibilities.

To sum up, the body of knowledge about TMTs is already substantial, however, this dissertation identifies three shortcomings in the current TMT research, which warrant more attention. The brief literature review above has outlined that prior research on TMTs (1) has shifted the attention away from the cognitive and social processes within the TMT in explaining organizational outcomes (Finkelstein et al., 2009; Hambrick, 2007), (2) has usually built on the assumption that the TMT is a collective entity (Hambrick, 1994; Hambrick et al., 2014), and (3) has almost exclusively focused on the behavior of the CEO with little attention paid to the behavior of other functional senior executives (Menz, 2012) and their interplay with the CEO.
Addressing these shortcomings in the TMT literature, this dissertation advances research on TMTs and CSOs from a behavioral perspective. In this regard, ‘behavioral’ refers to the study of social and cognitive processes in the strategic management research (Powell et al., 2011). More specifically, this dissertation aims at contributing to our knowledge about (1) the TMT’s cognitive and social processes, (2) the TMT’s structure and senior executives’ varying involvement in strategic decision-making, and (3) the CSO’s behavior. To achieve these goals, this dissertation applies multiple research methods including theory testing and deductive theory building. Data was collected using two independently conducted surveys with senior executives, which were complemented with archival data. Further, the dissertation applies multiple analytical methods such as structural equation modeling and multiple regression analysis.

**Shortcoming 1: Lack of Attention to the Behavioral Processes within the TMT**

Over the last two decades, the impact of TMTs’ demographic compositions on the content and processes of firm strategies has been the pivotal focus of TMT research (Finkelstein et al., 2009; Hambrick, 2007; Nielsen, 2010). The TMT’s heterogeneity in age, tenure, and functional background has been suggested to have implications for TMTs’ group processes and firms’ strategic choice and performance (Finkelstein et al., 2009; Hambrick, 2007); however, these effects on TMT processes have only been discussed on a theoretical basis while using the TMT’s demographic characteristics as proxies for empirical testing (Priem et al., 1999). For example, many studies on TMTs build on the information processing perspective to develop the theoretical argument how TMTs’ characteristics affect organizational outcomes without actually testing these underlying processes. The extensive use of TMT demographics as proxies has obscured the importance to study the real cognitive and social processes, such as the TMT’s actual information processing behavior (Hambrick, 2007). Only few studies have explored these mediating processes underlying the TMT (e.g., Cho & Hambrick, 2006; Simons et al., 1999). This can at least partially be explained by the considerable difficulties to get access to TMTs. For instance, to study behavioral processes within the TMT firsthand data from TMT members is necessary (Hambrick, 2007).

Advancing research on the behavior of TMTs is particularly relevant for two reasons. First, these mediating TMT processes “bring realistic assumptions about human cognition, emotions, and social behavior to the strategic management of organizations” (Powell et al., 2011, p. 1371). Further, research in this stream can provide powerful explanations and deepen the understanding of TMTs by connecting micro-level processes to organizational outcomes. Second, including the behavioral processes into studies on TMTs can considerably increase the explanatory power of TMT characteristics. For instance, some effects of TMT characteristics may be entirely realized through mediating team processes and when not including these
processes, research may draw erroneous conclusions or overestimate the impact of TMT characteristics for the firm’s strategic choices and performance. Thus, studying underlying TMT processes likely yields stronger explanations for organizational outcomes than TMT characteristics on their own.

**Shortcoming 2: Dominant Perception of the TMT as a Collective Entity**

The focus on the demographic composition of the TMT has shifted the attention away from studying the structure of the TMT. As a consequence, TMT research has strongly built on the assumption that all TMT members collectively shape the firm’s strategic decision (Hambrick, 1994; Hambrick et al., 2014; Priem et al., 1999). This is in contrast to Ocasio’s (1994) observation that it is a natural phenomenon that senior executives vary in their influence on decision-making processes. Similarly, Hambrick (2007) contends that “some executives have much more say than others” (p. 336). This thought is also central to the behavioral theory. Accordingly, behavioral scholars argue that power relationships at the top of the organization are critical to better understand firm behavior (Cyert & March, 1963; Finkelstein, 1992). However, data collection and analytical challenges have yet inhibited the study of these variations in the TMT’s decision-making (Hambrick, 2007).

Hambrick (2007) suggests executives’ varying involvement in different decision domains as promising research frontier but only few studies have addressed different sub-teams (e.g., Li & Hambrick, 2005) and the TMT structure (e.g., Hambrick et al., 2014). It is a particular challenge to get firsthand data from TMTs to derive deeper insights on the TMT’s structure. Yet, this research endeavor seems promising since different constellations of senior executives and sub-teams likely have significant implications not only for organizational outcomes but also for the TMT’s behavioral processes that have been outlined above.

**Shortcoming 3: Lack of Attention to the Behavior of CSOs**

While the TMT research puts an emphasis on the TMT as a collective entity, the upper echelons theory also entails a considerable amount of contributions, which are primarily directed towards studying the behavior of the CEO (Hambrick, 2007). This research has overwhelmingly focused on the characteristics, cognition, and emotions of the CEO (e.g., Blettner et al., 2012; Delgado-García & De La Fuente-Sabaté, 2010; Hiller & Hambrick, 2005; Li & Tang, 2010; Simsek et al., 2010) and much less attention has been paid to other functional senior executives (Menz, 2012) and their interplay with the CEO in affecting the firm’s strategic choices and performance. This contrasts with the view that the firm’s strategic leadership is typically a shared activity that extends beyond the CEO (Cyert & March, 1963; Hambrick, 1994).

One notable addition to the TMT is the CSO who is specifically responsible for the firm’s corporate strategy and plays a critical role in coordinating the firm’s strategy
processes (Menz & Scheef, 2014). For instance, the role of the CSO in firms becomes more important when the firm is diversified, has a large acquisition program, and when the TMT is more functionally structured (Menz & Scheef, 2014). Yet, it is well known that executives can only influence organizational outcomes in proportion to their discretion (Hambrick & Finkelstein, 1987), but little is known about managerial discretion across individual senior executives (Finkelstein et al., 2009). Further, the CEO and the CSO are two of the leading strategists in the firm and the CEO is likely to be a constraint to the CSO’s strategic latitude. In this regard, it is important to understand the CEO’s and CSO’s interactions when examining how, if at all, the CSO can affect the firm’s strategic choices and performance. Hence, more research should examine CSOs’ behavior and their interactions with the CEO.

Further, the CSO is particularly responsible for the identification of threats and business opportunities in the firm’s environment and for long-term planning (Menz & Scheef, 2014). By looking ahead, CSOs can take into account future developments such as macroeconomic or technological developments. Particularly when the future developments do not mirror the past, strategic adjustments based on past experiences are less promising to help firms to survive. In these cases, CSOs’ cognition needs to guide their long-term planning (Simon, 1947). In this regard, mental representations can particularly be a powerful tool to study how executives anticipate the future (Gavetti et al., 2012) and thus, the CSO’s cognition seems to play an important role in shaping the firm’s strategy. Yet, research on strategists has often rested on the “outmoded conception of the strategist as the cognitive miser” (Hodgkinson & Healey, 2011, p. 1501). Thus, it is a promising research frontier to examine the role of cognition when studying aspects of forward-looking strategy-making (Gavetti et al., 2012).

Contributions the Related Literatures

From a theoretical angle, this dissertation primarily builds on and contributes to the TMT literature, which has been outlined above. In addition, this dissertation makes important contributions to related fields, such as to the behavioral theory, on which the TMT research builds upon. Similar to the TMT literature, research on the behavioral theory has paid less attention to the psychological underpinnings of individual behavior (Gavetti et al., 2012). Particularly, the role of mental representations is underdeveloped and echoing Gavetti et al.’s (2012) call, it is time to more comprehensively understand the notion of mental representations, what causes them, and how they affect firm behavior.

Further, as discussed above, the CSO’s cognitive processes to anticipate future developments and to develop long-term strategic perspectives is less well understood. Relatedly, research on the behavioral theory of the firm has focused on backward-looking strategy-making, suggesting that firms adapt their behavior based
on the past performance and learning processes; however, to provide a more comprehensive view of the behavioral theory, scholars also need to embrace forward-looking aspects of strategy-making (Gavetti et al., 2012; Gavetti & Levinthal, 2000). Thus, this dissertation also advances research on the behavioral theory by addressing these shortcomings. To conclude, each article of this dissertation separately focuses on one or more core research problems of the TMT literature and/or behavioral theory of the firm literature, which have been identified above.

**Practical Relevance**

Studying TMTs from behavioral perspectives is also relevant for senior executives, recruiters, and practitioners in general. First, exploring cognitive and social processes within the TMT helps CEOs and boards of directors to better understand why and how the TMT affects the firm’s strategy and enables them to more directly steer decision outcomes. For instance, when comprehensive and fast decision-making is necessary, such as in highly uncertain environments, the CEO should consider setting up the TMT members with rather equal power over the strategic decision at hand.

Second, while it is important for CEOs and boards to know more about how to compose the TMT, it is equally important to consider the structure of the TMT. For example, the TMT’s information processing behavior and decision-making can considerably vary depending on whether the TMT is structurally set up to be a collective or to be a constellation of solo operators. Knowing more about the effects of, for example, power variation among senior executives within the TMT, can help CEOs and boards to more thoughtfully empower individual senior executives and to pay attention to the power structure when setting up the TMT.

Third, an emerging role within the TMT that is particularly interesting in context of strategic leadership is the role of the CSO. CSOs are already prevailing in many multinational companies across industries and around the world (Breene et al., 2007; Menz & Scheef, 2014); however, it is not yet a clearly defined role compared to other professions such as marketing or finance (Whittington et al., 2011). By studying the behavior of CSOs in organizations and their relationships to the CEO, research can assist CEOs and boards in designing the CSO’s role and inform hiring decisions of CSOs. For instance, firms that strive to empower the CSO should consider hiring a CSO from outside the firm, setting the CSO up with a direct report to the CEO and directly addressing the potential role conflict with the Chief Operating Officer (COO).

Fourth, senior executives and their cognition are increasingly recognized to be important for organizational success. Google, for example, regards strong cognitive abilities as important success factor and specifically assesses job candidates’ cognitive abilities in the recruitment process. Relatedly, senior executives’ cognition, such as their abilities to anticipate future developments, can become an important
source of the firm’s competitive advantage (Gavetti et al., 2012; Gavetti et al., 2005). For example, when Polaroid was facing the technological change to digital cameras, the former CEO stated in 1984 that “[w]e believe that there is considerable potential in developing new hybrid imaging systems that combine instant photography and electronics” (Tripsas & Gavetti, 2000, p. 1152). This reflected the way Polaroid’s CEO construed the future and influenced Polaroid’s subsequent strategic choices, which made Polaroid reluctant to fully adapt to digital cameras early on (Tripsas & Gavetti, 2000). Within the TMT, the CSO is in charge of long-term planning and future opportunity recognition. Thus, by better understanding CSOs’ cognition such as their cognitive images of the future, research can develop more specific recommendations for CEOs and boards about how the organization can purposefully stimulate the CSO’s cognitive processes through role design and candidate selection.

**Research Questions and Research Progress of Each Academic Article**

**Article I: Power Variation in Top Management Teams: Effects on Information Processing Behavior and Decision Making**

*Research objective.* The article focuses on understanding TMT behavior and studies a mediating process between TMT characteristics and strategic decision outcomes. Specifically, the article asks the research questions (1) how does the power over strategic decision domains vary across TMT members and (2) does TMT actual information processing mediate the relationship between TMT power variation and decision outcomes.

*Research progress.* The conceptual version of the article has been accepted for presentation at the Strategic Management Society (SMS) Special Conference 2013 on Strategy Making in Complex Settings in Glasgow, UK, where the article received an Honorable Mention and the Second Place of the Best Conference Award. The full version of the article has also been accepted for presentation at the SMS Annual Conference 2014 in Madrid, Spain. The article is in preparation for submission to the Strategic Management Journal.

**Article II: Do Strategists (Think They) Matter? A Study of Sources And Consequences of Chief Strategy Officers’ Perceived Discretion**

*Research objective.* This article focuses on understanding the CSO’s behavior. Specifically, the article asks the research questions (1) what affects the CSO’s perception of discretion and what are implications for the firm’s strategy and (2) which role does the CEO’s and COO’s power play in these relationships.
Research progress. The article has been accepted for presentation at the SMS Special Conference 2014 on Micro-Foundations of Strategy in Copenhagen, Denmark, and at the Academy of Management (AOM) Annual Conference 2014 in Philadelphia, USA, in the Business Policy and Strategy (BPS) division. The article is in preparation for submission to the Strategic Management Journal.


Research objective. This article focuses on better understanding the role of mental representations in strategists’ anticipation of the future. Specifically, the article asks the research questions (1) how forward-looking mental representations are formed and adapted over time and (2) how forward-looking mental representations explain individual differences in strategists’ search behavior for alternative courses of action.

Research progress. The article has been accepted for presentation at the AOM Annual Conferences 2012 in Boston, US, in the Strategy as Practice (SAP) division and at the AOM Annual Conference 2013 in Orlando, US, in the Managerial and Organizational Cognition (MOC) division. In 2012, the article was also among the finalist for the PhD Best Paper Award in the SAP division. The article is in preparation for submission to the Academy of Management Review.

Summary

In sum, each article constitutes an independent research project and the articles are presented in no particular order. Figure 1 summarizes the guiding research questions, research objectives of each article, as well as the overall theoretical contributions and overall practical implications of this dissertation.
### Figure 1: Summary of the Dissertation

<table>
<thead>
<tr>
<th>Guiding Research Questions</th>
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<tr>
<td>Are TMTs a collective decision-making entity? How do behavioral processes within the TMT affect strategic decision-making?</td>
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<td>What is the role of senior executives other than the CEO, particularly of CSOs, within the TMT? What determines CSOs' behavior and how does it affect the firm's strategy?</td>
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<th>Research Objectives</th>
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<tr>
<td><strong>Article 1: Power Variation in Top Management Teams: Effects on Information Processing Behavior and Decision Making</strong></td>
</tr>
<tr>
<td>Focusing on understanding power variation among TMT members in specified decision domains and its implications.</td>
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<tr>
<td>Exploring the effects of TMT power variation on strategic decision-making.</td>
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<tr>
<td>Studying an underlying mediating process to gain a deeper understanding of the actual TMT behavior and to add explanatory power to the effect of TMT power variation on strategic decision-making.</td>
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<td><strong>Article 2: Do Strategists (Think They) Matter? A Study of Sources and Consequences of Chief Strategy Officers' Perceived Discretion</strong></td>
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<tr>
<td>Focusing on better understanding the CSO's behavior and the CSO's interactions with peers.</td>
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<tr>
<td>Exploring what affects the CSO's perception of discretion and its implications for the firm's strategy.</td>
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<tr>
<td>Exploring which roles the CEO's and the COO's power play in these relationships.</td>
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<tr>
<td><strong>Article 3: Why Do Some Strategists Foresee More Than Others? Strategists' Forward-Looking Mental Representations and Search Behavior</strong></td>
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<tr>
<td>Focusing on better understanding the role of mental representations in strategists' anticipation of the future.</td>
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<td>Exploring how mental representations of the future are formed and adapted over time.</td>
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<td>Explaining individual differences in strategists' search behavior for alternative courses of action.</td>
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<th>Overall Theoretical Contributions</th>
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<td><strong>Top Management Team Research:</strong></td>
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<tr>
<td>Advance research on the mediating social and cognitive processes underlying the TMT (Finkelstein et al., 2009; Hambrick, 2007)</td>
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<td>My research provides support that the impact of the TMT's power variation is largely realized through underlying information processing behavior in the TMT and that including this mediation considerably increases the explanatory power of the study.</td>
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<td>My research directly studies the TMT's information processing behavior as mediator and thus, provides more theoretical and empirical support for the information processing perspective in TMT research.</td>
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<tr>
<td>Advance research on TMT structure by challenging the assumption that TMTs are collective entities (Hambrick, 1994, 2007)</td>
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<td>My research is one of the first to address TMT power variation from a micro perspective and with firsthand data, which allows deeper insights on the TMT's structure.</td>
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<td>My research shows that the influence of individual TMT members across different decision domains varies considerably and challenges prior studies, which weight all senior executives equally.</td>
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<tr>
<td>Advance research on CSOs and their interactions with other senior executives (Menz &amp; Scheef, 2014; Menz, 2012)</td>
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<tr>
<td>My research is one of the first to directly study individual executives' perception of discretion and its implications for firm strategy.</td>
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<tr>
<td>My research contributes to the sparse research on functional executives, and particularly the role of the CSO and emphasizes the importance to integrate the roles of the CEO and COO when studying TMTs.</td>
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<th>Overall Practical Implications</th>
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<td>Exploring behavioral processes within the TMT helps CEOs and boards to understand why and how the TMT affects the firm's strategy and enables them to more directly influence these TMT processes.</td>
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<tr>
<td>By providing the CEO or boards means to more directly steer the TMT's information processing behavior, they can influence decision-making processes, e.g. by more equally balancing the influence of TMT members when a more comprehensive and fast assessment in a decision domain is needed.</td>
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<td>The role of the CSO is increasingly prevailing in many organizations, but the role is not yet well understood. By studying the CSO's behavior, this dissertation assists CEOs designing the CSO's role and guiding candidate selection.</td>
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<td>Executives can only have influence over the firm's strategy to the proportion of their discretion. By providing CEOs and boards knowledge about how to properly design the role, they can restrict or expand the CSO's discretion, e.g. by setting the role up with a direct report to the CEO or by taking into account the characteristics of the CEO and the COO.</td>
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<td>CSOs are responsible for long-range planning. CEOs or boards can influence the CSO's type of cognitive image of future developments and as a consequence, at least partly the firm's strategic choices, e.g. by hiring CSOs who have a disposition to construe future developments in rich facets or by designing the role to head topic-focused strategic initiatives.</td>
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Commonalities and Joint Implications of the Articles

This dissertation comprises three articles, where each article constitutes an independent research project. Yet, the articles have commonalities and joint implications for research and practice. Through these three articles, this dissertation derives novel findings and implications not only for TMTs and CSOs but also for strategic issue management, managerial cognition, and strategy processes. In the following, I will briefly summarize the articles’ commonalities and overall implications. The order of the articles is according to the importance of the implications for the particular research area.

First, the articles provide novel insights into the behavioral processes within the TMT from a team- as well as individual-level perspective and thus, address the first shortcoming that this dissertation has identified above. Each article of this dissertation develops and/or applies behavioral mechanisms to develop and/or empirically test conceptual models. Article 1 argues that the effects of the TMT’s power structure on decision comprehensiveness and decision speed are realized through the TMT’s information processing behavior. It argues that TMT power variation affects the TMT members’ incentives to collaborate and openly exchange ideas (Duncan, 1974; Emerson, 1962; Thomas & McDaniel, 1990) and empirically tests this behavioral process as mediator. The findings demonstrate that the effect size of TMT power variation increases substantially when including the mediating behavioral process and thus, contributes to our scarce understanding of the behavioral mediating processes underlying the TMT (e.g., Cho & Hambrick, 2006; Simons et al., 1999).

Article 2 and 3 focus on the individual-level of analysis and help to bring more realistic assumptions about top managers’ behavior to the TMT literature (Powell et al., 2011). Specifically, Article 2 adds to our understanding of the CSO’s behavior and focuses on the CSO’s perception of discretion in strategic decision-making. The article uses attention processes to link CSO power to the perception of discretion and finds empirical support. Specifically, varying levels of power shift CSOs’ attentional focus to alternative courses of action and vary CSOs’ awareness of the zone of accepted strategic latitude granted by key stakeholders (Hambrick & Finkelstein, 1987; Ocasio, 1997). Article 3 demonstrates the importance to consider strategists’ mental representations of future developments to explain strategists’ search behavior for alternative courses of action. Specifically, strategists “cannot envision the full set of alternatives available to [them], nor can [they] completely specify the causal linkages between possible alternative actions and possible outcomes” (Gavetti & Levinthal, 2000, p. 117). Article 3 proposes that it is the strategist’s mental representation that induces variation into search breadth and search depth by priming different cognitive processing styles.
Second, the articles increase our understanding of the TMT as a ‘team’ and thus, address the second shortcoming identified in this dissertation. The articles highlight novel aspects of TMT constellations such as its power constellation and functional role constellation. Overall, this dissertation shows that different constellations within the TMT exist and also matter. Article 1 reveals that the influence of senior executives vary considerable across decision domains and that, on average, only a sub-team of about two thirds of the TMT has an influence over a decision domain. The article also reveals that power constellations influence behavioral processes and decision outcomes and thus, matter for organizations. Further, Article 1 provides indirect support for functional role constellations. The article demonstrates that there are generally one or two functional senior executives who possess considerably more power over a decision domain compared to others such as the chief financial officer (CFO) and COO over resource allocation decisions or the CSO and the CFO over M&A decisions.

Article 2 provides direct support of this reasoning and the importance that functional role constellations matter for strategic decision-making and the firm’s strategy. The findings show that the relationships between CSOs’ structural and expert power and their perception of discretion are significantly affected by the CEO’s and COO’s power. Further, Article 3 provides indirect support for functional role constellations. The article focuses on individual difference in strategists’ search behavior. Together with the CEO, the CSO is responsible for the firm’s corporate strategy (Menz & Scheef, 2014). Considering constellations of CEOs and CSOs from a cognitive perspective, this dissertation suggests that the CEO-CSO duo should be set up with different cognitive pre-dispositions to construe a future event in high-level or low-level mental representations. Paying attention to these cognitive pre-dispositions would enable complementing search behavior.

Third, the articles demonstrate the importance to study the role and behavior of individual functional senior executives, using the example of the CSO. Related to the third shortcoming identified in this dissertation, each of the three articles explicitly or implicitly advances our understanding of the CSO’s role and behavior. Article 3 addresses a specific part of the CSO’s role, namely the identification of threats and business opportunities in the firm’s future environment and long-term strategic planning (Menz & Scheef, 2014). The article elaborates on individual differences among CSOs in their mental representations of future events and resulting differences in search behavior.

Article 2 aims at better understanding the CSO’s behavior and specifically, his or her perception of discretion in strategic decision-making. The article reveals the structural and expert power as source of individual differences between CSOs. Further, the findings consistently show across firms, countries, and industries that CSOs perceive more discretion over decisions on M&A and market expansion
Introduction

whereas they perceive less discretion over decisions on resource allocation and budgeting. This suggests a lower involvement of the CSO in operation-related decisions and underlines the focus of the CSO’s role on corporate development decisions, adding to further understand the CSO’s role design. Article 1 provides further empirical support for this task division. Using a different sample, the same patterns of CSOs’ involvement emerge. In this study, however, most respondents were functional senior executives other than the CSO. Thus, other functional senior executives have similar perceptions of the CSO’s domains of strategic latitude as CSOs have themselves.

Fourth, each article of this dissertation informs research on strategic issue management (e.g., Dutton & Duncan, 1987; Dutton et al., 1983; Dutton & Jackson, 1987; Julian & Ofori-Dankwa, 2008; Plambeck & Weber, 2009). The first article takes a particular strategic issue, namely e-commerce, as research context. Complementing prior strategic issue studies on e-commerce (Anderson & Nichols, 2007; Gilbert, 2005; Kickul & Gundry, 2001), Article 1 investigates how the TMT power structure affects the processing of the strategic issue and its implications for strategic decision-making. Findings demonstrate that when comprehensive and fast decision-making on e-commerce is necessary, the TMT should be set up with fairly equal power across members. Further, when power is fairly equally distributed TMT members collaborate and interact more when responding to e-commerce.

Article 2 abstracts one more level and focuses on several strategic decision domains and demonstrates that one can cluster individual strategic decision domains into broader categories depending on the degree to which the CSO perceives discretion over the decision domains. CSOs perceive higher discretion over strategic decisions that are closely related to their core role of strategy execution and less discretion over decisions that are more operation-related such as budgeting or resource allocation. This finding can be transferred to the strategic issue management literature. First, strategic issues can likely be clustered into broader categories as prior literature suggests (Dutton & Duncan, 1987; Dutton & Jackson, 1987; Julian & Ofori-Dankwa, 2008); however, the categories may differ depending on the perception of a senior executive who evaluates the strategic issues. Second, CSOs likely perceive different degrees of discretion over strategic issues and particularly, perceive more discretion over strategic issues, which are closely related to their core role. Thus, this finding informs strategic issue literature on championing arguing that the fit between the senior executive’s role and topic of the strategic issue should be considered carefully when assigning a senior executive to champion a strategic initiative.

Article 3 abstracts further and elaborates a mechanism on how strategists’ anticipation of the future affects their search behavior for alternative courses of action on a conceptual level. The article informs the strategic issue management literature
proposing that the strategist’s psychological distance to the strategic issue affects the search behavior through the type of forward-looking mental representation, which the strategist forms of the strategic issue. Yet the article also takes into account the strategist’s individual perception of the strategic issue arguing that each strategist perceives the psychological distance to a strategic issue differently. Thus, overall the three articles demonstrate the importance to consider strategic issues from multiple levels. Studying a single strategic issue provides fine-tuned insights on specific strategy processes, whereas theorizing about and empirical testing of mechanisms provides more generalizable findings. Specifically, Article 2 suggests that clustering of strategic issues into broader categories should be considered.

Fifth, this dissertation informs research on managerial cognition (e.g., Nadkarni & Barr, 2008; Tripsas & Gavetti, 2000; Walsh, 1995). Each article develops a cognitive mechanism to link antecedents to strategic decision-making or organizational outcomes. Article 3 advances our understanding of mental representations, what causes them, and how they affect firm behavior. It proposes that the degree of strategists’ psychological distance to a future development as cause of different types of mental representations that the strategists forms. Strategists who experience a future development as more psychological distant form high-level mental representations that are decontextualized and abstract whereas strategists who experience a future development as psychological close form low-level mental representations that are contextualized and detailed (Trope & Liberman, 2003, 2010). These different types of mental representations have yet implications for search behavior. Specifically, Article 3 argues that low-level mental representations cue strategists towards feasibility considerations and the detection of more complex cause-effect interdependencies that benefit search depth and stimulate motivation to search intensively. High-level mental representations cue strategists to the notion that general patterns and global trends matter that benefits search breadth.

Article 1 and 2 do not develop novel cognitive mechanisms but apply cognitive theories. Article 2 builds on the attention-based view (Ocasio, 1997) and argues that strategists’ perceptions of the discretionary set of options available to them varies through attentional processes. Bounded rationality limits executives’ capacities to process information (Cyert & March, 1963). As a consequence, strategists necessarily have to be selective regarding the aspects of the environment that they focus their attention on, which results in a context-specific perception of the situation (Ocasio, 1997). Thus, an executive may consider discretionary options that others would not be aware of and thus, perceive a different zone of strategic latitude granted by stakeholders (Hambrick & Finkelstein, 1987). Further, Article 1’s findings demonstrate that TMT power variation affects the incentives for TMT members to collaborate and openly exchange alternatives (Duncan, 1974; Emerson, 1962; Thomas & McDaniel, 1990), which in turn affects strategic decision-making. Thus, the
study provides empirical support for the theoretical argument linking TMT power variation to decision outcomes via information processing.

Overall, this dissertation primarily advances research of TMTs and CSOs from a behavioral perspective. As discussed above, further themes are common across the articles such as strategic issue management and managerial cognition. Lastly, the articles of this dissertation provide a more nuanced understanding of strategy process phenomena such as strategic decision-making and the role of organizational actors.
References


Article I

Power Variation in Top Management Teams:

Effects on Information Processing Behavior and Decision Making

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Abstract

Taking an information processing perspective, we develop and test a conceptual model on the effects of top management team (TMT) power variation on decision comprehensiveness and decision speed. We argue that these effects are realized through the TMT’s information processing behavior. It is the effect of TMT power variation on the incentives for TMT members to collaborate and openly exchange alternatives that influences decision outcomes. Our results from unique survey and archival data from 70 TMTs in Europe provide support for this perspective. The findings demonstrate that TMT power variation is a significant antecedent to decision outcomes. Further, our results suggest that these effects are primarily realized through the mediating role of TMT information processing, which substantially increases the explanatory power of TMT power variation. The study’s findings contribute to research on the social and cognitive processes within the TMT and to research on the TMT’s power and structure.
Introduction

Research on top management teams (TMTs; Hambrick & Mason, 1984) is dedicated to studying the effects of TMT characteristics on firms’ strategic choices and performance (for reviews, see Finkelstein et al., 2009; Hambrick, 2007; Nielsen, 2010). Most of these studies make the implicit assumption that all TMT members are equally weighted in the decision-making processes. This is in contrast to Ocasio’s (1994) observation that having TMT members with more power to influence decision-making processes than others is a natural and expected phenomenon within an organization. Only few studies have used archival data proxies such as the pay structure of TMTs (Ensley et al., 2007; Patel & Cooper, 2014; Siegel & Hambrick, 2005), TMT title hierarchy (Nath & Mahajan, 2011), and position tenure distribution (Greve & Mitsuhashi, 2007) to study power variation in the TMT. The nature of these studies, however, does not provide insights into the forms and degrees of influence that different executives have in specified decision domains (Hambrick, 2007).

To study power variation in specified decision domains, power needs to be recognized as context-specific (Pfeffer, 1981) and thus, firsthand data is necessary (Hambrick, 2007). Variation in TMT members’ power over a specified decision can alter, for example, the number of individuals that interact to come up with a set of alternatives as well as the information gathered about those alternatives by those individuals involved (Pfeffer, 1981). Thus, the effect of power variation on decision outcomes may be realized through the TMT’s cognitive and social processes; however, only few studies have explored these mediating processes between TMT characteristics and organizational outcomes (e.g., Cho & Hambrick, 2006). In sum, we know little (1) about the varying power of different TMT members in specified decision domains and (2) about the underlying TMT processes through which power variation affects decision outcomes (Hambrick, 2007).

The purpose of this study is to better understand power variation in TMTs in a specified decision domain and its implications for TMT information processing and decision outcomes, specifically, decision comprehensiveness and decision speed. Taking an information processing perspective, we argue that in order for TMT power variation to have a meaningful impact on decision outcomes, it must affect the TMT’s information processing behavior. It is the effect of TMT power variation on the incentives of TMT members to participate in the decision processes as well as the openness of TMT members to exchange their ideas and suggestion about alternative courses of action that influence decision outcomes. In our study, we define power variation as the distribution of power among TMT members over a strategic decision domain. Power variation is high when few TMT members possess most of the power over a decision domain while other TMT members have low or even no power. In
contrast, power variation is low when each TMT member possesses comparable levels of power over a decision domain.

To test our hypotheses, we use unique survey and archival data from 70 TMTs in Europe in 2013. Using structural equation modeling, we demonstrate that TMT power variation alone does not have a strong effect on decision outcomes. Adding TMT information processing behavior as a mediator, however, significantly increases the magnitude of the effect. Further, we find that TMTs with more balanced power take more comprehensive and faster decisions.

Knowing more about the effects of TMT power variation and its effects on the TMT’s cognitive and social processes increases chief executive officers’ (CEOs) and board of directors’ understanding of why and how the TMT affects the firm’s strategy (Hambrick, 2007) and enables them to more directly influence these TMT processes. By providing the CEO or the board a means to more directly steer the TMT’s information processing behavior, they can influence decision-making processes, e.g. by more equally balancing the influence of TMT members when a more comprehensive and fast assessment in a decision domain is needed, such as in highly uncertain environments (Siegel & Hambrick, 2005).

Our study advances research on the social and cognitive processes in the TMT and research on the TMT’s power and structure. First, we advance research on the mediating processes underlying the TMT (Finkelstein et al., 2009; Hambrick, 2007; Lawrence, 1997). Our study provides support to the idea that the impact of TMT characteristics is largely realized through a social process underlying the TMT. Including this mediation considerably increases the effect size and explanatory power of TMT power variation. Further, while most prior research applies an information processing perspective to link power to organizational outcomes (Greve & Mitsuhashi, 2007; Siegel & Hambrick, 2005), these studies do not test the mediating role. Our study adds to this research by directly assessing the TMT’s information processing behavior as mediator and thus, provides more theoretical and empirical support for the information processing perspective in TMT research.

Second, we advance research by challenging the assumption that the TMT is a collective entity (Hambrick, 1994, 2007) and that power is distributed equally within the TMT (Priem et al., 1999). Hambrick (2007) suggests executives’ varying involvement in different decision domains as a promising research frontier; however, our study is one of the first to address power variation in TMTs from a micro perspective and with firsthand data, which allows deeper insights on power across different decision domains. Our findings show that the power of individual TMT members varies considerably across different decision domains and that, on average, only a sub-team of about two thirds of the TMT members has an influence over a specified decision domain.
In addition, our study advances research on strategic decision-making by adding TMT power variation as an important antecedent to decision comprehensiveness and speed. Our findings suggest that TMTs with more equally balanced power take more comprehensive and faster decisions. Decision comprehensiveness is often used as a proxy for the rationality of the decision-making process (Fredrickson, 1984). In this regard, our results suggest that when power is more equally distributed, the decision-making process can be characterized as more rational. Further, we find that TMT power variation decreases decision speed and therefore substantiates research which suggests that decision comprehensiveness and speed are not mutually exclusive (Eisenhardt, 1989; Eisenhardt & Bourgeois, 1988).

**Power Variation in Top Management Teams**

The behavioral theory emphasizes that power is central to strategic decision processes (Cyert & March, 1963; Simon, 1947) and it is equally important in TMT research (Finkelstein, 1992). Most studies have taken a collective perspective on TMTs that has obscured the possibility that the impact on group processes and organizational outcomes may vary across TMT members. This assumption that “meaning survives as a result of voting” (Weick, 1995, p. 6) may be less likely to hold for several reasons. For example, many TMTs have a chief human resource officer (CHRO) and a chief operating officer (COO); however, the CHRO’s influence over strategic decisions such as market expansions or R&D investments is likely to be lower compared to the COO’s influence on these decisions (Hambrick, 2007). Research in support of this has found that the functional background affects the individual TMT member’s power over strategic decisions (Buyl et al., 2013; Finkelstein, 1992).

Moreover, TMT research has increasingly doubted that TMTs are actual ‘teams’ since TMT members do not regularly meet with the whole team (Hambrick, 1994). Thus, TMTs may be rather be “constellations of solo operators who interact and coordinate very little” (Siegel & Hambrick, 2005, p. 261) and sub-teams where TMT members are selectively involved depending on the decision domain (Hambrick, 2007). To support this view, Ocasio (1994) finds that it is a natural phenomenon that there are TMT members with more power than others. Hence, there is some evidence that TMT members may significantly vary in their extent of power over strategic decisions; however, up to now data collection and analytical challenges have inhibited the study of executives’ varying power in different decision domains (Hambrick, 2007).

Studies that have assessed TMT power variation build on the macro perspective, which does not allow for insights into TMT members varying power across specified decision domains and the underlying TMT processes (Hambrick, 2007). These
studies typically used archival data proxies such as the pay structure of TMTs (Patel & Cooper, 2014; Siegel & Hambrick, 2005), TMT title hierarchy (Nath & Mahajan, 2011) and TMT tenure distribution (Greve & Mitsuhashi, 2007) to assess the effects of TMT power variation on firm performance. All studies have at least three communalities. First, they all find that power generally varies across TMT members and hence provide the motivation for our study to get a deeper understanding of the effects of TMT power variation across specified decision domains. Given the secondary data approach, these studies are unable to reveal differences in TMT members’ power across decision domains.

Second, these prior studies rely on the macro perspective of power that focuses on the potential power of TMT members and thus, on the capacity of TMT members to exert their power (Brass & Burkhardt, 1993; Finkelstein, 1992; Hambrick, 1981; Pfeffer, 1981). We refer to power from a micro perspective (Brass & Burkhardt, 1993) and assess the actual power of TMT members. This approach recognizes that power is context-specific and we define power variation as the distribution of power among TMT members over a specified decision domain. Power variation is high when few TMT members possess most of the power over a decision domain while other TMT members have low or no power. In contrast, power variation is low when each TMT member possesses comparable levels of power over a strategic decision domain.

Table 1 provides examples of TMT power variation across strategic decision domains and across TMTs drawn from our research. The examples show that the relevant TMT decision body for a specified decision domain is often smaller than the overall TMT size. For instance, the most frequently assigned TMT members for market expansion are besides the CEO, the vice presidents (VPs) of sales, marketing, strategy, and operation (if present in the TMT). In contrast, VPs of human resources and information technology, and legal counsels are frequently excluded and have no influence on this decision domain. Moreover, the examples show that each TMT is unique in its power variation. Notably, our study builds on the assumption that the CEO does not polarize power over strategic decisions but that studying the power of the whole TMT is necessary. This assumption reflects Cyert and March (1963) who explicitly acknowledge that decisions in organizations are made by dominant coalitions.

Third, the focus of prior studies was on the effects of TMT power variation on organizational outcomes such as strategic change and performance (Greve & Mitsuhashi, 2007; Patel & Cooper, 2014; Siegel & Hambrick, 2005). All these studies apply information processing arguments to link power to performance; however, they never tested actual mediation. Mediating social and cognitive processes are still not well understood in the TMT literature (Cho & Hambrick, 2006; Lawrence, 1997). Only conflict has been studied as mediating variable in the context of power variation in TMTs (Ensley et al., 2007; Greer & van Kleef, 2010).
Article I

Table 1: Examples of TMT Power Variation Across Decision Domains

<table>
<thead>
<tr>
<th>TMT</th>
<th>Decision Domain</th>
<th>Individual Power Scores</th>
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<tr>
<td></td>
<td></td>
<td>TMT member 1</td>
</tr>
<tr>
<td>A</td>
<td>Market expansion</td>
<td>40</td>
</tr>
<tr>
<td>A</td>
<td>Resource allocation</td>
<td>30</td>
</tr>
<tr>
<td>A</td>
<td>M&amp;A</td>
<td>40</td>
</tr>
<tr>
<td>B</td>
<td>Market expansion</td>
<td>50</td>
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<tr>
<td>B</td>
<td>Resource allocation</td>
<td>70</td>
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<tr>
<td>B</td>
<td>M&amp;A</td>
<td>80</td>
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<tr>
<td>C</td>
<td>Market expansion</td>
<td>20</td>
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<td>C</td>
<td>M&amp;A</td>
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In sum, research on power in TMTs has yet fallen short in studying the effects of TMT power variation across decision domains (Hambrick, 2007) and has focused on its effects on organizational outcomes neglecting mediating processes in explaining the effects of TMT power variation. Taking an information processing perspective, we address both shortcomings and develop hypotheses on (1) how TMT power variation affects decision comprehensiveness and speed and (2) how these processes are mediated by TMT information processing. Figure 1 summarizes our proposed conceptual model that is discussed in greater detail below.

**Figure 1: Conceptual Model**
Hypotheses

Direct Effects of TMT Power Variation on Decision Outcomes

Decision comprehensiveness refers to the exhaustiveness and inclusiveness of the TMT’s decision-making process (Fredrickson, 1984) incorporating as much relevant information as possible and combining the information in adequate ways (Raes et al., 2011). Indicators of the degree of comprehensiveness include the amount of alternatives and decision criteria considered (Miller et al., 1998). For example, in the context of TMTs, prior research has linked decision comprehensiveness to the TMT’s composition and debate within the TMT (Simons et al., 1999). There are several reasons why TMT power variation may reduce decision comprehensiveness.

First, when TMT power variation is high, the few powerful TMT members are more likely to ignore the less powerful TMT members. Power dependence theory suggests that the advantaged individuals have a primary sense of responsibility to themselves and their own ideas imposing decisions without much discussion (Emerson, 1962; Walsh & Fahey, 1986). In this vein, Pfeffer (1981) suggests that in contexts of high power variation, “political conflicts in goals and in definitions of technology are resolved by the imposition of a set of preferences and a view of technology which reflects the position of the dominant coalition controlling the organization” (p. 87). Further, Pfeffer and Moore (1980) find that power influences strategic activities by showing that the relative power base strongly affects the proportion of budget allocated to the respective business unit. In addition, Hambrick (2007) contends that the powerful TMT members may not even consider or ask about the opinion of or for alternative suggestions from less powerful TMT members. Hence, the advantaged TMT members limit their flexibility in interpreting external environments towards their own ends and set decision premises (Greve & Mitsuhashi, 2007). Further, strong power variation seems to lock individuals into their own myopic perspectives, placing a blind spot on considering the unique viewpoints of others (Galinsky et al., 2011). Thus, the multitude of decision criteria and alternatives considered is more likely to be limited for TMT with high power variation.

Second, when TMT power variation is high, the disadvantaged TMT members likely have few incentives to play a part in the decision domain. Those low in power may only bring up their suggestions for alternative courses of action when they have a good feeling that those high in power will listen to them instead of blindly raising their voice (Dewett, 2004). Moreover, the less powerful tend to develop a view on the decision domain that is aligned with those in power (Bower, 1970; Mintzberg et al., 1976). Thus, when power is distributed unevenly, we expect those low in power to make fewer contributions to develop alternative solutions or to not even be present when the decision is discussed. In sum, when TMT power variation is high, the
number of alternatives and decision criteria is likely to be limited. In contrast, low power variation may ultimately assure that individual perceptions are considered (Emerson, 1962). Together, these arguments suggest that TMT power variation is negatively associated with decision comprehensiveness. Stated formally:

H1a: TMT power variation is negatively associated with decision comprehensiveness.

Decision speed refers to “how quickly organizations execute all aspects of the decision-making process, spanning from the initial consideration of alternative courses of action to the time at which a commitment to act is made” (Forbes, 2005, p. 355). Indicators for decision speed are, for example, the response time of an organization to a strategic issue (Wally & Baum, 1994) or how fast organizations move compared to their competitors (Hambrick et al., 1996). In the context of TMTs, up to now decision speed has yet been associated with decision makers’ characteristics (Forbes, 2005) and TMT heterogeneity (Hambrick et al., 1996). TMT power variation may increase decision speed for several reasons.

First, building on power dependency theory (Emerson, 1962), the few powerful TMT members feel less responsibility to justify or discuss their decisions with less powerful TMT members and thus, are able to speed up decision-making. For example, prior research on dominant CEOs found that these CEOs cut off discussions among decision makers quickly and imposed their decision (Haleblian & Finkelstein, 1993). In addition, by imposing their view on the decision domain, the few powerful TMT members reduce conflict about the decision (Pfeffer, 1981). Faster conflict resolution has been suggested to increase decision speed (Eisenhardt, 1989). Since conflict potential is likely to be lower for TMTs with high power variation, they can move more quickly through the decision process.

Second, when TMT power variation is high, those low in power do not have strong incentives to get involved in the decision domain. As discussed above, less powerful TMT members are less proactive in the decision-making process (Dewett, 2004) or may even be ignored when bringing in their suggestions (Hambrick, 2007). As a result, decision-making processes tend to be faster since less TMT members are involved. Further, even when participating in the decision process, less powerful TMT members tend to express their personally favorable alternative rather than a multitude of alternatives, which in turn, speeds up decision-making. In sum, decision speed is likely to be higher when TMT power variation is high. In contrast, when all TMT members can equally add items to the discussion on the decision domain, the decision process slows down (Haleblian & Finkelstein, 1993). In sum, these arguments suggest a positive association between TMT power variation and decision speed. Stated formally:
**H1b: TMT power variation is positively associated with decision speed.**

**Indirect Effects of Power Variation Through Information Processing**

In principal, upper-echelons is a theory of information processing (Hambrick et al., 2014). TMT information processing during strategic decisions can be characterized by its degree of participation, interaction, and formalization (Duncan, 1974; Thomas & McDaniel, 1990). High TMT information processing is characterized by strong interactions and participation of TMT members and by less formalized processes. TMT information processing is related to the concept of TMT behavioral integration (Hambrick, 1994; Li & Hambrick, 2005; Lubatkin et al., 2006). It reflects the dimensions of collaboration and information exchange of TMT behavioral integration; however, we separate these dimensions from the third dimension that reflects joint decision-making. Having the power to participate in the strategic decision may indeed have considerable implications for the other two dimensions as discussed below.

First, when TMT power variation is high, the open and free exchange of ideas and collaboration among TMT members is likely to be limited. Following Pfeffer (1981), the few powerful TMT members may use their power to control the information exchange. Power dependency theory argues that power variation restricts the ability to exchange expertise and knowledge (Emerson, 1962) by reducing the frequency of exchange among actors (Lawler & Yoon, 1996). Even when less powerful TMT members have important information available, they may not get the chance to contribute their perspectives since more powerful TMT members would not pay attention to this perspective as closely as to other powerful TMT members. In contrast, when power variation in the TMT is low, more TMT members have a say in the decision process and hence, more TMT members are held to express their understanding and to actively participate in a dialogue to find a course of action, which leads to a stronger information exchange (March & Olsen, 1976). In support of this argument, prior research suggests that under low power variation, team members are more committed to the task and more open to working together with others (Greer & van Kleef, 2010; Nahapiet & Ghoshal, 1998).

Second, the political activities associated with high power variation in the TMT further support the above argument. High power variation creates strong political activities within the TMT, which restricts interaction and collaboration in the decision domain (Eisenhardt & Bourgeois, 1988). Further, the few powerful TMT members may fear to acknowledge any dependence on the insights from less powerful TMT members, which would undermine their power base (Lee, 1997; Van der Vegt et al., 2010). Together, these arguments suggest that TMT power variation is negatively related to TMT information processing. Stated formally:
H2a: TMT power variation is negatively associated with TMT information processing.

TMT information processing is likely to affect decision comprehensiveness and decision speed. As argued above, high levels of TMT information processing are characterized by interactive discussions and collaborative behavior among TMT members over the decision domain including regular committee meetings, and an open exchange of thoughts among TMT members (Thomas & McDaniel, 1990). This information processing behavior of the TMT is likely to translate into more comprehensive decisions. First, diverse perspectives and multiple explanations are likely to be brought up within the TMT, which reflects strong information processing behavior. For instance, Nonaka (1994) provides support for this argument, postulating that interactions are important for idea generation and new organizational knowledge. Moreover, collaboration and information exchange strengthen social processes in the team and increase trust (Uzzi, 1997), which increases TMT members’ willingness to share unique information and tacit knowledge. Thus, TMT information processing characterized by a large extent of collaboration and interaction is likely to increase decision comprehensiveness. Stated formally:

H2b: TMT information processing is positively associated with decision comprehensiveness.

Second, TMT information processing behavior is also likely to translate into higher decision speed. For instance, more collaboration and interaction among TMT members likely increases the level of real time information on the decision domain, which has been argued to increase decision speed (Eisenhardt, 1990). Moreover, TMT information processing speeds up decision-making since more alternatives and knowledge are considered in the decision-making that enhances TMT members’ feeling that a superior alternative has not been missed (Eisenhardt, 1990). In addition, TMT information processing likely increases the team’s cognitive capacity, which also enhance information processing skills (Hitt & Tyler, 1991). Wally and Baum (1994) have, for example, argued that “the ability to process numerous alternatives cognitively and simultaneously […] appears to expedite the pace of strategic decision making” (p. 935). Further, through increased trust (Uzzi, 1997), conflicts that may arise in the debate are likely to be handled more constructively and based on facts rather than affect (Amason, 1996) and resolution is likely to be faster. Thus, TMT information processing characterized by a large level of collaboration and interaction is likely to increase decision speed. Stated formally:

H2c: TMT information processing is positively associated with decision speed.
It follows from the above hypotheses that TMT information processing mediates the relationship between TMT power variation and decision comprehensiveness as well as decision speed. We argue that TMT information processing is the conduit by which TMT power variation is converted into decision outcomes. TMT power variation affects information processing such as collaboration and information exchange, but it is the TMT's information processing behavior that affects the decision outcomes. Stated formally:

**H3:** TMT information processing mediates the relationship between TMT power variation and (a) decision comprehensiveness and (b) decision speed.

**Data and Method**

The study’s data was collected in 2013 in the manufacturing and consumer good industry in Europe. Digitalization has advanced and business is increasingly conducted over the Internet (in the following e-commerce). Not only are new ventures entirely built on e-commerce business models entering various industries but established firms are also building up their own e-commerce businesses. E-commerce is fundamentally transforming the rules of the game for established firms (Amit & Zott, 2001). While e-commerce initially saw increasing growth in the business-to-consumer sector, growth in business-to-business is accelerating (Amit & Zott, 2001). Yet, e-commerce is extensively discussed in the media and among academics and practitioners. This suggests that e-commerce is now recognized as particularly relevant by almost all TMTs in the manufacturing and consumer goods industry in Europe. Previously published research on e-commerce supports this notion (Amit & Zott, 2001; Anderson & Nichols, 2007; Gilbert, 2005; Kickul & Gundry, 2001). To further ensure that e-commerce is relevant for the participating TMTs, we included some control questions in the questionnaire.

Given its characteristics such as its significant growth, its penetration across industries, and its potential threat to established firms’ current business models, e-commerce is a specified decision domain where TMTs likely had to initiate a decision process which either resulted in a strategic e-commerce initiative or in the topic being dropped or deferred. In any case, the topic is relevant to the TMT and the study’s focus is on decision processes and not on performance implications of e-commerce initiatives. Pfeffer (1981) suggests that power is context specific and that asking respondents about a concrete decision domain increases the reliability of the

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1 Data was collected from firms in the following countries – Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, and United Kingdom – with the following primary 2-digit SIC codes: 22-28, 30, 31, 34-39, 52-57.
responses. Thus, e-commerce is well suited to explore how TMT power variation affects TMT information processing and decision outcomes.

**Data Collection and Sample Characteristics**

We obtained the contact information of the CEOs and three to six further TMT members by manually searching the respective executives in the media and using firm information. In total, email addresses from 3,365 CEOs or TMT members from 1,166 TMTs were obtained. A pre-test with three academics and two practitioners was conducted to enhance the electronic questionnaire. The survey was conducted in English. Extensive follow-ups via e-mail led to 80 complete questionnaires. The response rate was 6.8 percent per TMT. We received more than one response from five TMTs and choose to include the responses of the CEO in our final sample. Further, we excluded five TMTs from the analysis since the respondent indicated that e-commerce was not a topic within the TMT, resulting in a final sample size of 70 TMTs, which is comparable to similar studies on TMTs using surveys (Buyl et al., 2011; Delgado-García & De La Fuente-Sabaté, 2010; Jansen et al., 2008; Li & Hambrick, 2005; Simons et al., 1999).

As a check for sample biases, we performed t-tests to account for potential non-respondent biases. A comparison of the firm’s sales and employees, the headquarters’ host country, and the 2-digit SIC industry affiliation revealed no significant differences between those firms who have responded to the survey and those who did not participate. Thus, sampling biases are unlikely to affect our results despite the low response rate. We complemented the survey data by archival data on the TMT’s characteristics and the firm’s financial information using sources such as Thomson Financial database, the company’s website, annual reports, Linked-in, and press releases.

Of the 70 TMTs included in our analysis, 37 percent were in the consumer goods industry and 63 percent were in the manufacturing industry. The average size of the TMT was six with an average age of 49 years and average position tenure of four years. On average, the firms had 5,529 employees and 2,313 million Euro in sales, with an average of 10 percent of the total sales done online. Further, firms started with e-commerce activities between 1995 and 2013 with the median year of e-commerce start being 2009. Finally, 36 percent of the respondents were CEOs and 64 percent other TMT members, most often VPs of marketing/sales, operations, strategy, and finance.

**Measures**

*Decision comprehensiveness.* Decision comprehensiveness was obtained from the TMT survey and was measured with five items based on Miller et al. (1998). The items were slightly adapted to fit the TMT and e-commerce context and we used a 7-
point Likert scale ranging from ‘very little’ to ‘to a great extent’. Table 2 gives all items. Cronbach’s alpha for the five items was satisfactory (0.93), indicating that they could be averaged to form a reliable measure.

*Decision speed*. Decision speed was obtained from the TMT survey and was measured with three items based on Wally and Baum (1994). The items were slightly adapted to fit the e-commerce context and we used a 7-point Likert scale ranging from ‘very little’ to ‘to a great extent’. Table 2 gives all items. Cronbach’s alpha was satisfactory (0.91), indicating that they could be averaged to form a reliable measure.

*TMT information processing*. TMT information processing was also obtained from the TMT survey. Nine items were used to assess the information processing of the TMT with higher scores indicating higher capacities of information processing (Thomas & McDaniel, 1990). The measurement assesses the information exchange and collaboration within the TMT. Items were slightly adapted to fit the e-commerce context and we used a 7-point Likert scale ranging from ‘very little’ to ‘to a great extent’. Table 2 gives the items. Cronbach’s alpha was satisfactory (0.84), indicating that they could be averaged to form a reliable measure.

*TMT power variation*. Power variation in the TMT was obtained from the TMT survey and included three steps. In a first step, the respondents were asked to select the role/ function that most closely matched each TMT member. For respondents, we defined the TMT in the survey as the CEO and the next highest level of executives in the company. The respondents could select from pre-defined categories such as divisional or regional head, functional categories such as finance, operations, marketing, strategy, etc. as well as an open category. In a second step, the respondents were presented an influence matrix following the design from Homburg et al. (1999), which listed all roles/ functions of the previously selected TMT members. In this step, the respondents were then asked to assess the influence of each TMT member by using a 100-point constant-sum scale for each of five strategic decision domains: (1) decisions on e-commerce initiatives, (2) decisions on budgeting, (3) decisions on market expansions, (4) decisions on mergers and acquisitions, (5) decisions on resource allocation. We intentionally used more decision domains than needed for our study to get deeper insights into power variation across various decision domains and to distract the respondent from our single relevant decision domain. In the last step, we calculated the power variation from the allocated points. We used a measure of inequality or dispersion to gauge power variation within the TMT. Specifically, we applied the coefficient of variation (Siegel & Hambrick, 2005). It is calculated by dividing the standard deviation of the power of each TMT member by the mean power of the TMT members. This measure bears the advantage that it takes into account the size of the TMT as well as TMT members with no power compared to other commonly used measures of inequality such as the Herfindahl index or the mere standard deviation.
**TMT control variables.** We applied several control variables that have been suggested by prior research to affect TMT processes and decision outcomes. **TMT size.** We included team size measured as the total number of TMT members as covariate since it is known to influence TMT dynamics (Li & Hambrick, 2005; Simons et al., 1999). We verified the TMT size using archival data sources described above. **TMT position heterogeneity.** TMT position heterogeneity has been shown to influence decision outcomes (Simons et al., 1999) and is one of the most widely applied heterogeneity measures in the TMT research (Hambrick et al., 2014). Data was obtained from the archival data sources mentioned above. We calculated the variable as the standard deviation of TMT members’ position tenure divided by the respective mean value (Wiersema & Bantel, 1992). Equally, the structure of the TMT likely affects information processing and decision outcomes and particularly, more functionally structured TMT are more interdependent and experience a higher need for information processing (Hambrick et al., 2014). **TMT horizontal interdependence** assesses the extent to which the tasks and responsibilities of TMT members build on each other and is measured by standardizing and averaging the following two indicators obtained from archival data sources: (a) dummy variable is coded 1 if the TMT is based entirely on functional positions and 0 otherwise; (b) the proportion of TMT members with titles indicating primarily a functional role.

**Firm control variables.** **Firm size.** Firm size is measured as the natural logarithm of the number of employees obtained from Thomson Financials database. Prior research suggests that firm size affects decision outcomes and information processing structures (e.g., Baum & Wally, 2003; Forbes, 2005; Simons et al., 1999; Thomas & McDaniel, 1990; Wally & Baum, 1994). **E-commerce start.** Firm age has often be suggested to affect decision processes (e.g., Simons et al., 1999; Thomas & McDaniel, 1990) and thus, the time period since the firm started its first e-commerce initiative is likely to have an effect on the decision processes. We asked respondents to indicate the year when the company started its e-commerce activities and cross-validated the data with archival sources. The measure was calculated as the difference between 2013 and the year the company started its e-commerce activities.

### Exploratory and Confirmatory Factor Analysis

To establish discriminant validity of the three latent constructs – TMT information processing, decision speed, and decision comprehensiveness – we conducted an exploratory factor analysis (EFA; e.g., Chadwick et al., 2014; Li & Hambrick, 2005) using STATA’s `factor` command. The EFA revealed some changes, which we could make, to the TMT information processing scale to increase discriminant validity. By dropping three items due to very weak factor loadings and one item due to a strong cross loading with the decision comprehensiveness scale, the discriminant validity was increased considerably as well as the reliability of the TMT information
processing scale (Cronbach’s alpha 0.90). Table 2 shows the results of the rotated factor structure that aligned with our conceptualization and we can note that there is no dominant single factor, which would explain the majority of variance in the three latent constructs.

To evaluate the appropriateness of our measurement model, we conducted a confirmatory factor analysis (CFA) using STATA’s sem command. We estimated a CFA that included the three latent constructs. The CFA provided an adequate fit to the data (Chi2(62, n=70) = 101.57, p < 0.001, CFI = 0.94, TLI = 0.92, RMSEA = 0.09, BIC = 2,872.83), indicating adequate convergent validity. All the factor loadings for the measurement model are above 0.70 and significant, confirming the factor structure (Shook et al., 2004). As further tests of discriminant validity for our latent constructs, we specified two alternative models. First, we specified a two-factor model in which decision comprehensiveness and decision speed loaded on one factor. The results showed that this alternative model did not fit the data better than our three factor model (Chi2(64, n=70) = 181.77, p < 0.001, CFI = 0.81, TLI = 0.77, RMSEA = 0.16, BIC = 2,944.57). Further, we specified a one-factor model with all items from TMT information processing, decision comprehensiveness, and decision speed loading on one latent construct. The model fit to the data was worse than our hypothesized three-factor model (Chi2(65, n=70) = 263.60, p < 0.001, CFI = 0.68, TLI = 0.62, RMSEA = 0.21, BIC = 3,022.16). Thus, these results support our three factor model, showing that the three measures are empirically and theoretically distinct.

Analytical Method

We applied structural equation modeling (SEM) to test our hypotheses. SEM compared to multiple regressions bears several advantages, particularly when testing a mediation model. First, SEM compares alternative models to assess the relative model fit and hence, tests the overall model rather than coefficients individually (Shook et al., 2004). Second, SEM is able to directly test mediation models whereas multiple regressions is restricted to an additive model, which estimates the dependent variable as a function of the sum of effects. Moreover, SEM can simultaneously examine multiple dependent variables and interdependent relationships (Shook et al., 2004). Third, SEM can estimate the model with missing data and thus, preserve degrees of freedom particularly for small sample studies. While we have responses of 70 TMTs for the TMT power variation measure, for 20 TMTs a single dependent variable, the mediating variable, or a control variable is missing. Following prior studies (Chadwick et al., 2014), we impute missing data using the SEM with a full information maximum likelihood estimator (Schafer & Graham, 2002). To ensure the validity of our results, we replicated the SEM excluding all observations with missing data and results remained consistent; however, statistical power was significantly lower.
Table 2: Exploratory Factor Analysis and Cronbach's Alpha

<table>
<thead>
<tr>
<th>Item #</th>
<th>Questions</th>
<th>Factor 1 TMT information processing</th>
<th>Factor 2 Decision speed</th>
<th>Factor 3 Decision comprehensiveness</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFO1</td>
<td>Can TMT decision-making processes on e-commerce be characterized as participative?</td>
<td>0.71</td>
<td>0.22</td>
<td>0.20</td>
<td>0.90*</td>
</tr>
<tr>
<td>INFO2</td>
<td>Do the TMT members interact with each other on an informal basis when discussing e-commerce?</td>
<td>0.80</td>
<td>0.19</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>INFO3</td>
<td>Do all TMT members participate in decision making on e-commerce on a regular basis?</td>
<td>0.57</td>
<td>0.36</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>INFO4</td>
<td>Can TMT decision-making processes on e-commerce be characterized as interactive?</td>
<td>0.79</td>
<td>0.37</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>INFO5</td>
<td>Is there a free and open exchange of ideas among TMT members with regard to e-commerce?</td>
<td>0.70</td>
<td>0.17</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>INFO6</td>
<td>Are written rules and procedures followed when addressing e-commerce? (R)</td>
<td>0.24</td>
<td>0.14</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>INFO7</td>
<td>Can TMT decision-making on e-commerce be characterized as rule-oriented? (R)</td>
<td>0.11</td>
<td>0.17</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>INFO8</td>
<td>Are committees, such as ad-hoc task groups, regularly formed to discuss e-commerce?</td>
<td>0.43</td>
<td>0.39</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>INFO9</td>
<td>Do few of the members of the TMT (1-2) dominate the handling of e-commerce? (R)</td>
<td>0.02</td>
<td>0.05</td>
<td>0.13</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item #</th>
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<th>Factor 3 Decision comprehensiveness</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED1</td>
<td>When our company saw the e-commerce opportunity, we moved faster than our competitors.</td>
<td>0.29</td>
<td>0.86</td>
<td>0.16</td>
<td>0.91</td>
</tr>
<tr>
<td>SPEED2</td>
<td>Our key competitors considered us fast in responding to their e-commerce actions.</td>
<td>0.46</td>
<td>0.55</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>SPEED3</td>
<td>From start to finish we responded faster to e-commerce than our key competitors.</td>
<td>0.18</td>
<td>0.84</td>
<td>0.24</td>
<td>0.93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item #</th>
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<th>Factor 3 Decision comprehensiveness</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP1</td>
<td>Develop many alternative responses to e-commerce?</td>
<td>0.17</td>
<td>0.03</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>COMP2</td>
<td>Consider many diverse criteria for eliminating possible courses of action?</td>
<td>0.14</td>
<td>0.13</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>COMP3</td>
<td>Thoroughly examine multiple explanations for the emergence of e-commerce?</td>
<td>0.23</td>
<td>0.20</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>COMP4</td>
<td>Search extensively for possible responses to e-commerce?</td>
<td>0.35</td>
<td>0.29</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>COMP5</td>
<td>Conduct multiple examinations of any suggested course of action?</td>
<td>0.25</td>
<td>0.33</td>
<td>0.82</td>
<td></td>
</tr>
</tbody>
</table>

a. Bold type indicates the highest factor loading when above 0.45.
b. The question on decision comprehensiveness started as following "confronted, with e-commerce, to what extent did your top management team..."c. INFO6, INFO7, INFO9 were dropped from the analysis due to very low factor loadings and INFO8 was dropped due to a significant cross loading on decision comprehensiveness

* Cronbach's alpha for the optimized 5-item solution.
We tested the hypotheses in three steps. First, we estimated the SEM for the direct effect of TMT power variation on decision outcomes, excluding the mediating variable using STATA’s sem command. Second, we examined the mediation model using the full SEM including the hypothesized mediating variable. Third, we calculate indirect effects with a Sobel test approach and with a bootstrap approach to obtain confidence intervals. We applied STATA’s teffects and bootm2 commands that facilitate the estimation of the indirect effects.

Results

Table 3 shows the descriptive statistics and correlations. None of the correlations is above the recommended level of 0.65 for structural equation models (Chadwick et al., 2014; Tabachnick & Fidell, 1996). Further, we examined the variance inflation factors in our replication study using regression analysis and all factors are below two, further providing support that our results are not biased by multicollinearity.

Moreover, power in the TMT varies significantly across decision domains and across TMTs. On average, two thirds of the TMT members have power over a specified decision domain, while one third of the TMT members on average do not have any power. This finding lends support to Hambrick’s (2007) proposition that the relevant decision body for a specified decision domain is much smaller than the actual size of the TMT. TMT power variation over the e-commerce decision domain ranged from 0.00 to 3.46 with a median (average) power variation score of 1.10 (1.22). Further, the decision body for e-commerce shows a selective involvement of TMT members. The median power of the CEO is 30% for this specified decision domain. The most powerful VPs (if present in the TMT) are the chief marketing officer with 25%, the VP of sales with 20%, the chief strategy officer with 10%, and the chief operating officer with 10% median power over e-commerce decisions. In contrast, senior executives such as the chief human resource officer, the chief legal officer, as well as the VP of R&D (if present in the TMT) had no power over e-commerce decisions. Thus, we can observe that different TMT members have varying influence in this specified decision domain. Figure 2 shows the distribution of power across TMT members (if present in the TMT) across all the five decision domains.

Table 3: Descriptive Statistics and Correlation Table

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TMT power variation</td>
<td>1.22</td>
<td>0.65</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Decision comprehensiveness</td>
<td>3.77</td>
<td>1.79</td>
<td>-0.08</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Decision speed</td>
<td>3.88</td>
<td>1.70</td>
<td>-0.13</td>
<td>0.58***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 TMT information processing</td>
<td>4.28</td>
<td>1.66</td>
<td>-0.16*</td>
<td>0.57***</td>
<td>0.67***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 TMT size</td>
<td>5.88</td>
<td>3.05</td>
<td>0.51***</td>
<td>0.09</td>
<td>-0.12</td>
<td>0.11</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 TMT horizontal interdependence</td>
<td>-0.02</td>
<td>0.99</td>
<td>-0.02</td>
<td>0.41**</td>
<td>0.53***</td>
<td>0.27 +</td>
<td>-0.30*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 TMT tenure heterogeneity</td>
<td>0.89</td>
<td>0.36</td>
<td>0.01</td>
<td>-0.23</td>
<td>-0.24</td>
<td>-0.15</td>
<td>0.07</td>
<td>0.04</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>10 Firm size (employees)</td>
<td>5.529</td>
<td>10.682</td>
<td>0.04</td>
<td>0.20</td>
<td>-0.20</td>
<td>-0.13</td>
<td>-0.06</td>
<td>0.05</td>
<td>0.05</td>
<td>1.00</td>
</tr>
<tr>
<td>11 Firm’s e-commerce start</td>
<td>5.92</td>
<td>5.34</td>
<td>-0.06</td>
<td>0.35*</td>
<td>0.13</td>
<td>0.13</td>
<td>0.08</td>
<td>0.27</td>
<td>-0.12</td>
<td>0.30*</td>
</tr>
</tbody>
</table>

*p < 0.10, **p < 0.05, ***p < 0.01, ****p < 0.001
Structural Equation Modeling Results

In a first step, we estimated the SEM for the direct effects of TMT power variation on the decision outcomes, excluding the mediating variable. The fit statistics for the model are only marginally acceptable (Chi²(68, n = 70) = 216.9, p < 0.001, CFI = 0.89, TLI = 0.85, RMSEA = 0.11). Typically, an adequate fit of the model is indicated when CFI and TLI have values of 0.9 or above and RMSEA a value of 0.08 or below.
(Bollen, 1989; Lubatkin et al., 2006; Simsek et al., 2005) that is slightly above our model fit statistics.

TMT power variation is negatively related to decision comprehensiveness ($\beta = \text{-}0.24$, $p < 0.05$) supporting Hypothesis 1a; however, TMT power variation is also negatively related to decision speed ($\beta = \text{-}0.27$, $p < 0.05$) contradicting Hypothesis 1b. Control variables were also included in the estimated SEM. Specifically, TMT size is positively related to decision comprehensiveness ($\beta = 0.41$, $p < 0.001$) but not to decision speed. TMT position heterogeneity is negatively related to decision comprehensiveness ($\beta = \text{-}0.22$, $p < 0.05$) and also marginally negatively related to decision speed ($\beta = \text{-}0.19$, $p < 0.1$). TMT horizontal interdependence is positively related to decision comprehensiveness ($\beta = 0.49$, $p < 0.001$) as well as to decision speed ($\beta = 0.54$, $p < 0.001$). Firm size was not significantly related to the decision outcomes. E-commerce start was positively related to decision comprehensiveness ($\beta = 0.25$, $p < 0.05$) but not to decision speed.

**Mediation Assessment**

In a second step, we estimated the full SEM including the hypothesized mediating variable. The data fitted the model well (Chi2(123, $n = 70$) = 183.59, $p < 0.001$, CFI = 0.91, TLI = 0.89, RMSEA = 0.08). This more fully specified model has a better fit to the data compared to the alternative model above without the mediating variable. The results for the mediation model are shown in Figure 3. For ease of illustration, the control variables are excluded in Figure 3.

As Figure 3 reports, TMT power variation is negatively related to TMT information processing ($\beta = \text{-}0.37$, $p < 0.01$) supporting Hypothesis 2a. Additionally, TMT information processing is positively related to decision comprehensiveness ($\beta = 0.50$, $p < 0.001$), supporting Hypothesis 2b, and to decision speed ($\beta = 0.52$, $p < 0.001$), supporting Hypothesis 2c. Further, the direct relationships between TMT power variation and decision comprehensiveness ($\beta = \text{-}0.05$, $p < 0.68$) and decision speed ($\beta = \text{-}0.08$, $p < 0.53$) are not significant in the mediated model. Thus, these results suggest that TMT information processing fully mediates the relationships between TMT power variation and decision comprehensiveness as well as decision speed, supporting Hypotheses 3a and 3b. Omitting TMT information processing from the model may therefore overestimate the effect of TMT power variation on the decision outcomes.

The magnitude of these estimated relationships are small but still meaningful given the small sample size. A one standard deviation increase in TMT power variation (equal to 0.65) is on average associated with a 0.24-point decrease in TMT information processing. Further, a one standard deviation decrease in TMT information processing (equal to 1.66-points) results on average in a 0.83-point decrease in decision comprehensiveness and a 0.86-point decrease in decision.
speed. As the three latent constructs are based on a 7-point Likert scale and TMT power variation is also restricted in its range between 0.00 and 3.46, these effect sizes can be considered to be a meaningful increase. For example, an increase of 0.83-point in the decision comprehensiveness scale reflects an increase of about 12%.

Control variables were also included in the estimated SEM. Specifically, TMT size is positively related to TMT information processing ($\beta = 0.42$, $p < 0.01$), but not to decision comprehensiveness (though close to conventional significance, $\beta = 0.20$, $p < 0.11$) and decision speed. TMT position heterogeneity is not significantly related to all three latent constructs whereas TMT horizontal interdependence is positively related to TMT information processing ($\beta = 0.37$, $p < 0.01$), to decision comprehensiveness ($\beta = 0.30$, $p < 0.01$), and to decision speed ($\beta = 0.36$, $p < 0.01$). Firm size is only marginally positively related to decision comprehensiveness ($\beta = 0.20$, $p < 0.1$). E-commerce start is also positively related to decision comprehensiveness ($\beta = 0.26$, $p < 0.01$) but not to decision speed and TMT information processing.

Figure 3: Results of the Structural Equation Model

Standardized beta coefficients. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. $N = 70$

Note: This is a simplified version of the actual model. It does only include significant relationships and does not show control variables, indicators, error terms, exogenous factor variance, and correlations between exogenous factors.
Estimation of Indirect Effects

To further depict the mediation effects, we estimated the direct and indirect effects of TMT power variation on decision comprehensiveness and decision speed using a Sobel test approach and a bootstrap approach to obtain bias-corrected confidence intervals (Preacher & Hayes, 2008). As shown in Table 4, the results of these analyses show an indirect negative effect of TMT power variation on decision comprehensiveness ($\beta = -0.46$, $p < 0.05$; 95% bias corrected confidence interval (CI) = -1.03 to -0.09) and on decision speed ($\beta = -0.62$, $p < 0.05$; 95% bias corrected CI = -1.34 to -0.10). Yet, both direct paths were not significant supporting our full mediation model. Additionally, the total effect of TMT power variation on decision comprehensiveness is negative and significant ($\beta = -0.57$, $p < 0.05$; 95% bias corrected CI = -1.20 to -0.01) meaning that a one standard deviation increase in TMT power variation is associated, on average, with a decrease in decision comprehensiveness by 0.37-points. The total effect of TMT power variation on decision speed is also negative and significant ($\beta = -0.86$, $p < 0.05$; 95% bias corrected CI = -1.83 to -0.00) suggesting that a one standard deviation increase in TMT power variation is associated, on average, with a decrease in decision speed by 0.55-points. Comparing these results with the model excluding the mediating variable is revealing. By including TMT information processing as mediating variable, the total effects of TMT power variation on decision comprehensiveness ($\beta$ increased from -0.24 to -0.57) and decision speed ($\beta$ increased from -0.27 to -0.86) have more than doubled. Consequently, including the mediating variable is meaningful and helps to considerably improve the model fit and predictions about the influence of TMT power variation on decision outcomes that would have otherwise been underestimated.

Table 4: Direct, Indirect, and Total Effects of TMT Power Variation

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>SE</th>
<th>z</th>
<th>Significance level</th>
<th>LL 96% CI</th>
<th>UL 95% CI</th>
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<td><strong>Direct effects</strong></td>
<td></td>
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<td>TMT power variation --&gt; Decision comprehensiveness</td>
<td>-0.11</td>
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<td>-0.42</td>
<td>$p &lt; 0.68$</td>
<td>-0.75</td>
<td>0.44</td>
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<tr>
<td>TMT power variation --&gt; Decision speed</td>
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<td>0.39</td>
<td>-0.63</td>
<td>$p &lt; 0.53$</td>
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<td>0.66</td>
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<tr>
<td><strong>Indirect effects</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TMT power variation --&gt; Decision comprehensiveness</td>
<td>-0.46</td>
<td>0.20</td>
<td>-2.26</td>
<td>$p &lt; 0.05$</td>
<td>-1.03</td>
<td>-0.09</td>
</tr>
<tr>
<td>TMT power variation --&gt; Decision speed</td>
<td>-0.62</td>
<td>0.27</td>
<td>-2.28</td>
<td>$p &lt; 0.05$</td>
<td>-1.34</td>
<td>-0.10</td>
</tr>
<tr>
<td><strong>Total effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TMT power variation --&gt; Decision comprehensiveness</td>
<td>-0.57</td>
<td>0.30</td>
<td>-1.94</td>
<td>$p &lt; 0.05$</td>
<td>-1.20</td>
<td>-0.01</td>
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<td>0.42</td>
<td>-2.07</td>
<td>$p &lt; 0.05$</td>
<td>-1.83</td>
<td>-0.00</td>
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</table>

Notes. Bootstrap sample size = 1,000. SE = standard error, LL = lower limit, UL = upper limit, CI = bias corrected confidence interval. Estimates, SE, z, and significance level show the results from the Sobel test and LL 96% CI and UL 95% CI build on bootstrapping.

Test of Alternative Models and Robustness Checks

We further tested the robustness of our findings by specifying alternative models. First, given the small sample size, we estimated alternative models with different sets of control variables (Buyl et al., 2011). In all alternative models reported below, the model fit was similar to or worse than our hypothesized model and the key
relationships were in the same direction as hypothesized and significant (results available upon request), demonstrating that our results are robust to variations in the control variables.

We specified three alternative models including different TMT level control variables that may also affect decision outcomes such as ‘TMT average position tenure’, ‘TMT average age’ and ‘TMT age heterogeneity’ (Simons et al., 1999) or ‘TMT vertical interdependence’ (Hambrick et al., 2014). The CEO likely has a central influence on TMT processes (Hambrick, 1994; Simsek et al., 2005) and we specified two alternative models to account for the CEO’s pivotal role and specifically, the CEO’s power (‘CEO age’ and ‘CEO tenure’ as well as ‘CEO dominance’ reflecting the relative amount of power of the CEO over e-commerce). TMT processes may also differ across industries and countries and we specified two alternative models including either ‘region’ (categorical variable dividing Europe into four regions) and ‘cultural power distance’ (Hofstede, 1980) or a dummy for ‘consumer good industry’ and alternatively ‘high technology industry’ as well as the ‘e-commerce start in the industry’ that respondents had to indicate. While the country and culture do not influence our latent constructs, we find that TMTs in the consumer goods industry are marginally negatively associated with decision speed compared to the manufacturing industry (β = -0.17, p < 0.1).

Second, there might be a possibility that endogeneity affects our results, especially the relationship between TMT information processing and both decision outcomes. To test this further, we specified an alternative models (Raes et al., 2013; Shaver, 2005). The alternative model allowed the error terms of TMT information processing and both decision outcomes to correlate as well as the error terms of the decision outcomes. For instance, correlating the error terms is a test for endogeneity providing consistent but also asymptotically efficient estimates, which 2SLS regression cannot (Shaver, 2005). The approach is also particularly suitable for small sample sizes (Raes et al., 2013). To identify this alternative model, we had to use instruments that only predict TMT information processing but not the decision outcomes. Since our estimations above have shown that TMT size and TMT position heterogeneity do not significantly predict the decision outcomes but TMT information processing, we restricted these two control variables as instruments to TMT information processing. The alternative model did not provide a better fit to the data (Chi2(124, n = 70) = 182.55, p < 0.001, CFI = 0.91, TLI = 0.89, RMSEA = 0.08) and the key relationships were significant and supported our hypotheses.

Further, one could argue that TMT power variation may be partly determined by TMT information processing behavior. To address this concern we specified an alternative model that uses TMT information processing as predictor for TMT power variation. The model showed a poor fit to the data (Chi2(44, n = 70) = 38.49, p < 0.71) and TMT information processing is not associated with TMT power variation (β
Based on these results, we are confident that our results are less likely to be biased by endogeneity.

Third, given the advantages of the SEM discussed above, we firmly believe that the SEM is better suited to address our research questions; however, re-estimating the model using multiple regressions can help to further increase the robustness of our findings. The results are in the Appendix. The findings are largely consistent with the SEM results. Only, the direct effect of TMT power variation on decision speed is not significant. However, the effect is close to conventional significance ($\beta = -0.55$, $p < 0.15$) and may be caused by the lower statistical power of the regression analysis since we did not impute missing values in the regression analysis and consequently, the sample size dropped to 50.

Fourth, since we rely on a single respondent in our study, common method bias might be a threat to the validity of our results. We followed Podsakoff et al. (2003) and recent studies that build on single respondents (e.g., Nell & Ambos, 2013) to reduce common method bias in the design of the survey as well as to detect it statistically. To mitigate potential biasing effect, we took several steps. First, we carefully constructed the survey, run pre-tests, and used established multidimensional constructs (Nell & Ambos, 2013). In order to decouple the responses to the three survey constructs, we placed some questions, which are irrelevant for this study, between the three constructs in the survey. Further, to avoid social desirability or consistency biases, we ensured absolute confidentiality and anonymity to the respondents in the cover letter of the survey invitation (Nell & Ambos, 2013). Moreover, we combined survey and archival data where possible to rely on multiple data sources.

Further, our key independent variable, TMT power variation, was not asked directly in the survey but calculated from the power matrix in several steps. It is unlikely that the respondents where able to guess the purpose of this question. Further, mediation models are not “likely to be part of the individual raters’ cognitive maps” (Chang et al., 2010, p. 180) and finding strong support for our full mediation model despite the threat of potential common method bias can be seen as strong evidence that these mediating effects actually exist (Nell & Ambos, 2013). All these steps lessen the likelihood that our results are biased by common method bias. To detect common method bias, we performed the Harman’s single-factor test and CFA (Nell & Ambos, 2013; Podsakoff et al., 2003) that have been reported above. These results suggest that the three latent constructs are empirically distinct and lend support that common method bias is less of a concern in our study. While we are not able to preclude common method bias in our study, all these steps helped to prevent or detect common method bias.
Discussion

Taking an information processing perspective, we have argued that in order for TMT power variation to have a meaningful impact on decision outcomes, it must affect the TMT’s information processing behavior. It is the effect of TMT power variation on the incentives of TMT members to participate in the decision processes as well as the openness of TMT members to exchange their ideas and their suggestions about alternative course of action that influences decision outcomes. Our study’s results provide strong support for this perspective. TMT power variation significantly predicts decision comprehensiveness and decision speed. Further, the primary impact of TMT power variation on these decision outcomes is realized through the TMT information processing behavior, which considerably increases the explanatory power of TMT power variation. Interestingly, when TMT power is distributed more evenly, TMTs take more comprehensive and faster decisions. Our study’s findings contribute to the understanding of the social and cognitive processes within the TMT as well as power in the TMT and structure as discussed in the following.

First, our study’s findings advance research on the underlying mediating social and cognitive processes in TMTs (Finkelstein et al., 2009; Hambrick, 2007; Lawrence, 1997). While most prior research applies an information processing perspective to link power to organizational outcomes (Greve & Mitsuhashi, 2007; Siegel & Hambrick, 2005), these studies do not test the mediating role directly. Our study addresses this shortcoming by providing not only theoretical but also empirical support for the information processing perspective in TMT research. Variation in TMT members’ power affects the decision processes by altering the number of individuals that interact to come up with a set of alternatives and by the information gathered about those alternatives by the individuals involved. Our study provides support to the argument that the impact of TMT characteristics is largely realized through the underlying information processing behavior of the TMT. Including this mediation considerably increases the effect size and explanatory power of TMT power variation. To date, few studies have explored these mediating processes between TMT characteristics and organizational outcomes (e.g., Cho & Hambrick, 2006).

Second, our study advances research by challenging the assumption that the TMT is a collective entity and that power is distributed equally within the TMT (Hambrick, 1994, 2007). Prior research on TMTs has often implicitly assumed that all TMT members collectively shape the firm’s strategic decisions (Hambrick, 1994; Hambrick et al., 2014; Priem et al., 1999) and thus, implicitly weighted TMT members equally in the decision processes (Hambrick, 2007). Prior studies on TMT power variation have relied on archival data sources and have consequently taken a macro perspective on power and studied the potential power variation among TMT
members using proxies such as pay dispersion (Ensley et al., 2007; Patel & Cooper, 2014; Siegel & Hambrick, 2005) or TMT tenure and title hierarchy (Greve & Mitsuhashi, 2007). In contrast to these studies, our study takes a micro perspective by studying the actual distribution of power across TMT members. Applying a micro perspective provides richer insights into the TMT processes and helps to deepen our understanding of varying influence of TMT members (Hambrick, 2007).

Further, the collective perspective on TMTs has neglected the possibility that TMT members may vary in the extent to which they have an impact on decision and organizational outcomes, even though differences likely exist. In support, Ocasio (1994) has already claimed that it is a natural phenomenon that there are TMT members with more power than others. Our study is one of the first to address power variation in TMTs with unique firsthand data, which allows deeper insights on power across different decision domains. The descriptive results of our study clearly point in this direction and reveal significant variation in the amount of power among TMT members across decision domains. Further, the relevant decision body seems to be restricted to a sub-team where several TMT members do not have any influence on the decision domain. For instance, our descriptive results show that, on average, only two thirds of the TMT members are actually involved in the decision process in a specified decision domain.

**Broader Implications for Top Management Team and Decision-Making Research**

Our study also has broader implications for research on TMT structure and composition. First, Hambrick (1994) already noted that “interestingly, and unfortunately, the structure of the top groups has gone almost totally without attention in research to date on TMGs [top management groups], and yet it would seem to be of great significance to any complete theory of top groups” (p. 179). Unfortunately, research in this area is still sparse (Finkelstein et al., 2009; Hambrick, 2007). Few studies have addressed different sub-teams (e.g., Li & Hambrick, 2005) and the TMT’s structure (e.g., Hambrick et al., 2014). Yet, our study provides some evidence from firsthand data that, depending on the specified decision domain, sub-teams of the TMT are formed to handle the decision domain. Further, our study shows the importance of studying sub-teams within the TMT, since the TMT’s information processing as well as decision outcomes are affected and more research in this area is needed.

Second, our study directly challenges the often implicit assumption that all TMT members have equal weight in decision processes, for example, when measuring TMT heterogeneity by using all TMT members’ demographics. Our findings provide support to the argument that this assumption may not be valid. Future research may consider using weighted TMT heterogeneity measurements that balance the TMT
members’ characteristics along their actual power over strategic decisions. Unfortunately, we were unable with our survey and archival data to unambiguously match the indicated roles of the TMT members in the survey with TMT demographics from archival data sources since archival role descriptions were more fine-tuned than our pre-established categories.

Finally, our study also contributes to the strategic decision-making literature by adding TMT power variation and TMT information processing as important antecedents to decision comprehensiveness and decision speed. Decision comprehensiveness is often used as a proxy for the rationality of the decision-making process (Fredrickson, 1984) and in this regard, our results suggest that when power is more equally distributed across all TMT members, the decision-making process can be characterized as more rational. Further, we find support that TMT power variation actually decreases decision speed.

Our results suggest that, realized through TMT information processing, low TMT power variation increases decision comprehensiveness and decision speed. While this might be surprising at first, Eisenhardt (1989) and Eisenhardt and Bourgeois (1988) also suggested that both decision outcomes are not mutually exclusive. Our finding may imply that TMTs with less power variation are also more effective in their information processing and speed up decision-making processes. Haleblian and Finkelstein (1993) provide support for this perspective by arguing that TMT meetings are less efficient when high power variation exists since more time is spent to reject the arguments of the powerful TMT members. Thus, our results suggest that TMTs with more equal power across TMT members not only take more comprehensive but also faster decisions.

**Practical Implications**

Exploring behavioral processes within the TMT helps CEOs and boards to better understand why and how the TMT affects the firm’s strategy and enables them to more directly influence these TMT processes. Our study’s findings provide the CEO or the board a means to more directly steer decision outcomes. For instance, when comprehensive decision-making is necessary such as in highly uncertain environments (Siegel & Hambrick, 2005), the CEO may choose to set up TMT members with fairly equal power over the decision domain to increase the comprehensiveness of the decision as well as to increase the speed of decision making. Moreover, knowing more about the effects of power variation within the TMT can help the CEO or boards to empower individual TMT members more thoughtfully and to pay attention to the power structure when setting up the TMT.
Limitations

Clearly, our study is not without limitations that provide opportunities for future research. First, the study relies on a single respondent. We did our best to reduce common method bias as discussed above, and are confident that our results are not biased to a great extent; however it is up to future research to test the effects of TMT power variation using multiple respondent. Moreover, one may argue that TMT power variation also suffers from a single respondent bias. The respondent may particularly overstate his or her own power. While we acknowledge that this might be the case, we believe that our results are still valid. The TMT power variation measure does not use the absolute power of the respondent but rather is interested in the relative distribution of power and thus, relies on the standard deviation and mean of all TMT members’ power. Further, we asked respondents to assess the power of TMT members across five decision domains, but our final measure solely relies on the decision on e-commerce. To empirically test this bias, we performed an additional post-hoc analysis to further assess this self-serving bias. Specifically, we ran a regression with TMT power variation as dependent variable and included the respondents’ demographic characteristics as well as dummy variables of the respondents’ position within the TMT. There were no significant effects, which support our contention that the position or characteristics of the respondent did not influence our measure.

Second, we use a unique dataset to test our hypotheses and, given that survey research is challenging with upper echelons, we were able to achieve an acceptable response rate to ensure a minimal number of observations required for our study. In small sample studies, statistical power is often a problem (Buyl et al., 2011; Shook et al., 2004; Simons et al., 1999). Low statistical power reflects the failure to detect a significant effect in an observation that really shows the effect and thus, indicates that we may have been unable to detect our hypothesized relationships with the SEM, even though the effect is present. Since we are able to find significant and consistent patterns of results for our key hypothesized relationships using SEM and multiple regressions, we are confident in our findings despite the small sample size. However, future research may try to obtain larger samples of TMTs to increase the confidence in our findings.

Third, we studied TMT power variation in a particular context. While this approach bears several advantages, such as more deep insights into TMT power variation at a micro level and more direct assessment of relationships between TMT power variation, TMT information processing, and decision outcomes, it is possible that other contexts reveal different relationships. Thus, we encourage future research to replicate the mediation analyses in different contexts such as other decision domains or cultural contexts.
Conclusion

Prior research on TMTs has often implicitly assumed that all TMT members collectively shape the firm’s strategic decisions and thus implicitly weighted TMT members equally in the decision processes. Studying TMT power variation from a micro perspective over one specified decision domain allowed us to study the underlying mechanism through which TMT power variation translates into decision outcomes. We conceptualize and, importantly, empirically tested the TMT’s information processing behavior as a mediating variable, showing that TMT power variation is fully mediated by TMT information processing. Thus, we provide novel insights on how TMT power variation affects TMT information processing and decision outcomes. We hope to stimulate more research on TMT power from a micro perspective and on mediating process variables such as social and cognitive factors to bridge between the gap between micro and macro level.
References


## Appendix

### Results of the Ordinary Least Square Regression Analysis

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<tr>
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<th>Model 1</th>
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<tbody>
<tr>
<td></td>
<td>Decision</td>
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<td>0.076 +</td>
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<td>0.613 *</td>
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<td>-1.519 *</td>
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<td>0.321 ***</td>
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* p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

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<td>Decision speed</td>
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<tr>
<td>Constant</td>
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<td>5.773 ***</td>
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* p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

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* p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001
Article II

Do Strategists (Think They) Matter?

A Study of Sources and Consequences of Chief Strategy Officers’ Perceived Discretion

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Abstract

We develop and test a conceptual model on how chief strategy officers’ (CSOs) power base affects their perception of discretion across different decision domains and its consequences for the firm’s strategy. Using archival and unique survey data of 116 CSOs of European firms, we find that CSOs’ perceptions of discretion are partially a function of their structural power and conditionally also of their expert power. Our findings further suggest that these relationships are significantly affected by other senior executives’ power, particularly of the chief executive officer (CEO) and the chief operating officer (COO). Finally, we reveal that, under certain conditions, CSOs’ perceptions of discretion are related to the firm’s strategy. By extending the analysis of managerial discretion to the individual level and by considering the CSO’s interactions with the CEO and the COO, the study contributes to research on managerial discretion and functional senior executives.
Introduction

The notion that senior executives' behavior and actions matter for the firm's strategic choices and performance is at the heart of managerial discretion (Hambrick & Finkelstein, 1987) and upper echelons research (Hambrick & Mason, 1984). To study executives' discretion, most prior studies have focused on environmental and organizational factors (e.g., Crossland & Hambrick, 2011; Finkelstein & Boyd, 1998; Finkelstein & Hambrick, 1990; Hambrick & Abrahamson, 1995) with a particular focus on the discretion of the chief executive officer (CEO; Crossland & Hambrick, 2011; Finkelstein & Boyd, 1998; Finkelstein & Hambrick, 1990; Halebian & Finkelstein, 1993).

Despite the strong interest in managerial discretion, prior research has been relatively silent on two important issues. First, research has focused on identifying exogenous factors of executives' perception of discretion and less attention has been paid to executives' individual sources of discretion (Carpenter & Golden, 1997; Finkelstein et al., 2009). Yet, research on attention (Cho & Hambrick, 2006; Ocasio, 1997) and bounded rationality (Cyert & March, 1963; Simon, 1955) suggests that individual differences in executives' perceptions exist. Second, the firm's strategic leadership is typically a shared activity, extending beyond the CEO (Cyert & March, 1963; Hambrick, 1994), and little is known about the discretion of other senior executives and their interplay with the CEO in affecting organizational outcomes. An emerging literature on functional executives supports the contention that other senior executives may matter (Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz & Scheef, 2014).

The purpose of this study is to examine the sources and consequences of differences in senior executives' perceptions of discretion. Using archival and unique survey data of 116 chief strategy officers (CSOs) of European firms, we study the discretion of this particular senior executive. Specifically, we examine the effects of CSOs' power base on their perceptions of discretion as well as an important consequence of such perception, the effect on the firm's strategy. The CSO is a senior executive who is specifically responsible for the firm's corporate strategy and plays a critical role in coordinating the firm's strategy processes (Menz & Scheef, 2014). Despite being among the leading strategists in the firm, the CEO is likely a powerful counterpart and thus, the question of the CSO's perception of discretion to affect the firm's strategy provides a particularly interesting setting for the study.

Specifically, we argue that individual differences in CSOs' structural, expert, and prestige power affect their perceptions of discretion through two cognitive processes. First, power shifts CSOs' attentional focus to alternative courses of action and second, power varies CSOs' awareness of the zone of acceptance granted by stakeholders (Hambrick & Finkelstein, 1987). Moreover, we argue that these
variations in CSOs’ perceptions of discretion are systematically related to the firm’s strategic conformity with the industry’s central tendency. CSOs, who believe to have more leeway to take idiosyncratic and bold action, are more likely to have a pronounced effect on the firm’s strategy. Further, we consider the CEO’s and the chief operating officer’s (COO’s) power as exogenous factors moderating theses relationships and, thus, account for the structure at the top of the organization as exogenous constraints to the CSO’s perception of discretion.

Our study contributes to research on managerial discretion and functional senior executives, particularly to research on the CSO. First, prior research has almost exclusively focused on organizational and environmental sources of managerial discretion, implicitly assuming that there are no significant differences between senior executives’ discretion in a similar organization or industry (Finkelstein et al., 2009). While controlling for these alternative explanations, we find that CSOs’ perceptions of discretion are partially a function of their structural power and, under certain conditions, of their expert power. Thus, our study shifts the attention to individual-level sources of managerial discretion and complements Carpenter and Golden’s (1997) study on executives’ locus of control as source of varying perceptions of discretion. Studying individual managerial discretion is particularly difficult due to the need of firsthand data. We contribute to this research by conducting the first field study of perceived managerial discretion, in which we directly ask the CSOs about their strategic latitude in different decision domains such as mergers and acquisitions (M&A) and resource allocation. This approach allows us to identify significant differences in CSOs’ perceptions of discretion across different decision domains.

Second, we contribute to research on functional senior executives (Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz, 2012; Menz & Scheef, 2014; Zhang, 2006) by considering the interplay between the CSO and two important stakeholders – the CEO and the COO. Our findings suggest that the CEO’s and COO’s power significantly affect the hypothesized relationships. For example, we find that only when the CEO is less powerful, the CSO’s expert power increases the CSO’s perception of discretion and that when the COO is less powerful, the CSO’s structural power has a stronger effect on the CSO’s perception of discretion. Further, we complement prior studies on functional executives that have exclusively focused on structural or macro-level factors to study the role of the respective functional executive (e.g., Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz & Scheef, 2014) with a micro-level study. We show that the perception of discretion of CSOs is context-specific and we reveal that the CSO’s perception of discretion is, under certain conditions, related to the conformity of the firm’s strategy with the industry’s central tendency. Specifically, we find that CSOs only have a pronounced effect on the deviance of the firm’s strategy when the CEO is powerful, suggesting that the CSO partners up with powerful CEO to affect the firm’s strategy.
Theoretical Background

The literature on managerial discretion addresses one of the fundamental concerns in strategic management research, whether, how, and when senior executives matter for the firm’s strategic choices and performance (Hambrick, 2007). Originally introduced by Hambrick and Finkelstein (1987), managerial discretion refers to an executive’s strategic latitude and reflects the executive’s freedom to make decisions and take actions. Depending on the level of discretion, the extent to which a firm’s development and respective outcomes are under control of senior executives varies. Finkelstein et al. (2009) summarize the concept’s basic idea as follows:

“For discretion to exist, an executive must have, and be aware of, multiple courses of action. As such, discretion is not absolute. It stems from contextual forces, but is also derived from within the executive. Stated another way, one executive might create or detect alternative courses of action in a given situation, while another in the same situation might not be aware of such alternatives. Thus, … an executive’s discretion is in part a function of his or her own characteristics, especially cognitive limits.” (Italics ours, p. 26)

In general, an executive’s discretion is determined on three different levels: the task environment, the internal organization, and executives’ characteristics (Hambrick & Finkelstein, 1987). The majority of the studies focuses on managerial discretion in various task environments, such as the characteristics of the firm’s industry (Finkelstein & Boyd, 1998; Finkelstein & Hambrick, 1990; Hambrick & Abrahamson, 1995; Hambrick et al., 1993) and the firm’s host country (Crossland & Hambrick, 2007, 2011) as well as the internal organization (Boyd & Salamin, 2001; Finkelstein & Boyd, 1998). Scholars consistently found that executives’ impact on organizational outcomes varies significantly depending on the industry’s and organization’s degree of discretion (Hambrick, 2007).

Most research on managerial discretion concerns the exogenous environment and less emphasis has been put on executives’ individual cognitive abilities that were the focus of Hambrick and Finkelstein’s (1987) original work. Scholars assume that executives within the similar setting such as a specific industry or country, perceive similar levels of discretion and thus, neglect individual differences in the perception of discretion (Carpenter & Golden, 1997). Even though Hambrick and Finkelstein (1987) suggested that managerial characteristics, such as cognitive complexity and power, are important determinants of individual differences in executives’ discretion, “researchers have not empirically considered these individual-level bases of discretion.” (Finkelstein et al., 2009, p. 33). The only exception is Carpenter and Golden’s (1997) simulation study revealing that executives’ locus of control determines their amount of perceived discretion, however, only for low discretion.
issues. In light of the sparse knowledge on individual differences in executives’ perception of discretion, there is a need for further studies (Carpenter & Golden, 1997; Finkelstein et al., 2009).

Chief Strategy Officer’s Perceived Discretion

Unsurprisingly, the majority of prior research on managerial discretion has focused on the discretion of the CEO – the highest-ranked and apparently most important executive – to affect organizational outcomes (e.g., Crossland & Hambrick, 2007; Crossland & Hambrick, 2011; Finkelstein & Boyd, 1998; Finkelstein & Hambrick, 1990; Li & Tang, 2010). However, a firm’s strategic leadership is typically a shared activity and involves executives other than the CEO (Finkelstein et al., 2009; Hambrick, 1994). Particularly, the COO and the CSO have recently been suggested to share the strategic leadership tasks with the CEO (Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz & Scheef, 2014; Zhang, 2006). Thus, understanding the sources and effects of the strategic latitude of individual executives other than the CEO within the TMT seems important.

With regards to the firm’s corporate strategy, a notable addition to the firm’s TMT has been the CSO (Angwin et al., 2009; Breene et al., 2007; Menz & Scheef, 2014), a development that happened along with the professionalization of strategy in recent years (Whittington et al., 2011). The CSO typically heads the firm’s strategy and corporate development function and is specifically responsible for the firm’s corporate strategy. However, in contrast to the COO (Zhang, 2006), the CSO is less handled as an heir apparent for the CEO’s job. The CSO also plays a critical role in coordinating the firm’s strategy processes and supports the CEO in strategy formulation and execution (Menz & Scheef, 2014). Thus, both senior executives have to work closely together on strategic tasks and yet, the CSO is clearly the less powerful executive in this relationship since the CEO remains ultimately accountable for the firm’s strategy (Menz & Scheef, 2014). Therefore, it is reasonable to assume that the CSO tends to team-up with the CEO rather than compete. However, having this powerful counterpart, the question about the CSO’s perception about his or her strategic latitude is a particularly interesting setting to study individual sources of discretion.

Constraints to the CSO’s Perception of Discretion

In their original work, Hambrick and Finkelstein (1987) argue that managerial discretion is determined by two factors: Executives’ awareness of the stakeholders’ zone of acceptance as well as executives’ cognitive abilities.

First, an executive “engages in ongoing calculation and guesswork of how much discretion he or she possesses” (Hambrick & Finkelstein, 1987, p. 377) and thus, an executive’s perception of discretion is partially a function of his or her awareness of the zone of acceptance of their strategic latitude granted by the stakeholders. If the
executive perceives to be within the zone of acceptance, discretion exists, and if not, discretion does not exist from his or her perspective. From the perspective of the CSO, an important stakeholder that constrains the zone of acceptance is the CEO. The CEO's power is likely to affect the CSO's freedom to perform a set of actions, particularly considering that the CEO is ultimately responsible for the firm's strategy (Menz & Scheef, 2014). In addition, CSOs' perception of their zone of acceptance may be constrained by the power of the COO. For example, prior research has revealed that the presence of a CSO in the TMT is less likely when a COO is already present (Menz & Scheef, 2014). The COO is responsible for the firm's internal operations and strategy implementation (Hambrick & Cannella Jr, 2004), which potentially overlaps with the CSO's responsibility for strategy formulation and implementation (Menz & Scheef, 2014). Moreover, with a powerful COO in the firm, the CEO can focus more on the firm's vision and strategy (Hambrick & Cannella Jr, 2004). Thus, from the perspective of CSOs, the CEO and COO are two important stakeholders who can constrain their zone of accepted strategic latitude.

Second and besides the CSO's awareness of the stakeholders' zone of acceptance, executives' cognitive abilities affect their attention to and awareness of alternative courses of action available to them, which directly affects their perceptions of discretion (Hambrick & Finkelstein, 1987). For an alternative option to be part of an executive's discretionary set the executive must be aware of the option (Hambrick & Finkelstein, 1987). Bounded rationality limits executives' capacities to process information (Cyert & March, 1963; Simon, 1955). As a consequence, executives necessarily have to be selective regarding the aspects of the environment that they focus their attention on, which results in a context-specific perception of the situation (Ocasio, 1997). Thus, an executive may consider options that others would not due to a different attentional focus (Hambrick & Finkelstein, 1987). For example, an executive with an extensive background in M&A may pay more attention to strategic alternatives, such as acquiring a competitor, than other executives. Research on the CSO has shown that CSOs vary in their age, tenure, and functional background (Angwin et al., 2009; Breene et al., 2007; Powell & Angwin, 2012), which may indicate a strong cognitive diversity and distinct cognitive abilities across CSOs.

Building on the above considerations, we develop hypotheses on the effects of CSOs' power base on their perceptions of discretion. We further argue that the CEO and the COO may constrain the CSO's perception of discretion, thereby accounting for these apparently critical relationships within the firm. In addition, as senior executives can only influence the firm's strategy in proportion to the amount of discretion they believe to possess (Hambrick & Finkelstein, 1987), we examine the effect of the CSO's perception of discretion on the firm's strategic conformity with the industry's central tendency (Finkelstein & Hambrick, 1990; Geletkanycz & Hambrick, 1997). Figure 1 illustrates the conceptual model.
Figure 1: Conceptual Model

Theory and Hypotheses

Determinants of the CSO’s Perceived Discretion

Hambrick and Finkelstein (1987) suggest that, beside personality characteristics, an executive’s personal power base can affect his or her perception of discretion. Yet identifying multiple forms of power is important to reflect the complexity of the construct (Finkelstein, 1992) and we therefore focus on three of the most established forms of power of executives: structural power, expert power, and prestige power.

The CSO’s structural power is reflected in the CSO’s formal hierarchical position (Finkelstein, 1992). Given that the CSO’s role is still an emerging position in many firms, CSOs have positions on different hierarchical levels, usually reporting directly to the CEO or, sometimes, to the chief financial officer. For instance, a study of S&P 500 firms found that about every second CSO was a formal TMT member in 2008 (Menz & Scheef, 2014). Thus, differences in CSOs’ structural power likely exist.

Structural power may affect the CSO’s perception of discretion in two ways. First, when occupying a higher hierarchical position, an executive’s legitimacy to exert influence on several decision domains increases accordingly (Finkelstein, 1992). Thus, CSOs who possess structural power should perceive a greater zone of acceptance granted by the stakeholders to influence different decision domains compared to lower ranked CSOs. Second, structural power may increase the CSO’s awareness of alternative courses of action as senior executives in higher hierarchical positions have access to and receive more critical information (Hambrick, 1981). Specifically, higher ranked CSOs have more responsibility for coordinating the strategy activities across organizational levels and units (Angwin et al., 2009). Through these boundary-spanning activities, CSOs become aware of unique courses
of action that are at their disposition. In sum, differences in the CSO’s structural power likely affect the CSO’s perception of discretion.

**Hypothesis 1a:** The CSO’s structural power is positively related to the CSO’s perceived discretion.

The CSO’s **expert power** is related to the distribution of the CSO’s prior professional experience across different functional specializations. In general, expert power is defined as the depth and breadth of executives’ functional expertise (Bunderson, 2003; Finkelstein, 1992; Hambrick, 1981). Through learning processes during their careers, executives’ functional experience adds further courses of action to the existing discretionary set (Kleindienst & Hutzschenreuter, 2010). CSOs largely vary in their functional backgrounds before occupying the CSO’s position coming from top management consulting firms and, even more frequently, from planning, functional, or line management roles (Breene et al., 2007).

First, executives’ perceptions of their discretionary set of options available to them varies through attentional processes. Executives necessarily have to be selective in their attention to aspects of their environment (Ocasio, 1997). Daerborn and Simon (1958), for instance, find that managers’ interpretation of issues reflected their functional background. Thus, we argue that the CSO’s breadth of functional experience affects the CSO’s attention to alternative courses of action available to them and consequently, his or her perception of discretion. Second, expertise that spans multiple functions may also provide the CSO with more credibility to assume a leading role in the firm’s strategic leadership. Hambrick (1981) supports this reasoning by suggesting that senior executives’ power is tied to their functional experience. For instance, CSOs with more diverse functional experiences are likely to perceive more discretion to act by increasing their perceived legitimacy. In sum, differences in CSOs’ expert power likely explain differences in their perceptions of discretion.

**Hypothesis 1b:** The CSO’s expert power is positively related to the CSO’s perceived discretion.

The CSO’s **prestige power** refers to the CSO’s personal prestige and status (Finkelstein, 1992). While all executives have some kind of elite status, there exist inner circles of elite, such as the attendance of certain universities (D’Aveni, 1990).

First, prestige power affects the CSO’s perceived discretion particularly through the varying stakeholder acceptance. The CSO’s strategic latitude is likely to increase when the CEO or other stakeholders believe that the CSO possesses an elite network. Indeed, prior research shows that prestige sends out powerful messages to others about the personal importance (Useem, 1979) and it helps senior executives...
to maintain an illusion of competence, credibility, and control (D'Aveni, 1990). Thus, prestige power increases the CSO's perceived zone of acceptance for his or her strategic latitude. Second, belonging to an elite social or professional network will enable the CSO to access relevant and high-quality information that others outside of the network do not have. Thus, we expect that elite networks may be a cue of attention that results in the CSO’s context-specific perceptions of alternative courses of action. In sum, differences in CSOs’ prestige power likely explain differences in their perceptions of discretion.

_Hypothesis 1c: The CSO’s prestige power is positively related to CSO’s perceived discretion._

So far we have argued that CSOs with a stronger power base perceive more strategic latitude by altering CSOs’ attentional focus to different sets of options and by affecting the CSO’s awareness of the scope of action granted by the stakeholders. Yet, there are likely to exist exogenous constraints, which may alter the significance of the CSO’s own power base as predictor of his or her perceived discretion. As introduced above, such exogenous constraints for the CSO’s perception of discretion are the CEO and the COO. Specifically, we argue that CSOs with a similar personal power base vary in their perception of discretion depending on whether the CEO and COO are particularly powerful.

Hambrick and Finkelstein (1987) suggest that the CEO is an important stakeholder to alter the discretion of other executives. Through their social interactions with the CEO, CSOs are likely to be sensitive to acceptable limits of their discretion, increasing the awareness of this exogenous constraint to their own degree of discretion. For instance, research has shown that powerful CEOs dominate strategic decision-making processes (Finkelstein, 1992; Haleblian & Finkelstein, 1993) and are less collaborative (Van der Vegt et al., 2010). Thus, CSOs in firms with a powerful CEO, in contrast to CSOs in firms with a less powerful CEO, are more alert to the CEO’s dominant behavior and less likely to act when it seems fruitless or refrain from action irrespective of their own power base. Hence, the power of the CEO decreases the CSO’s beliefs that his or her own power increases his or her discretion in a decision domain.

In addition, scholars have argued that powerful CEOs threaten the independent judgment of upper echelons, for example, of board members (Dalton & Kesner, 1987). Further, executives tend to develop a view on the decision domain that is aligned with those in power, such as the CEO (Bower, 1970; Mintzberg et al., 1976). As a consequence, CSOs in firms with a powerful CEO are more inclined than CSOs in firms with a less powerful CEO to perceive a limited spectrum of discretionary actions available to them, irrespective of their own power base. In sum, when the
CEO is powerful, the effects of the own power base on the CSO’s perception of discretion are limited.

Hypothesis 2: The CEO’s power negatively moderates the relationships between the CSO’s (a) structural power (b) expert power, and (c) prestige power and the CSO’s perceived discretion.

In addition, the CSO’s perception of his or her zone of accepted strategic latitude is likely to be constrained by the COO’s power. Indeed, prior research finds that the mere presence of a COO in the TMT significantly reduces the likelihood that a CSO is appointed to the TMT (Menz & Scheef, 2014). We expect that the power of the COO likely restricts the effect of the CSO’s own power base on the perception of his or her discretion.

A closer look at the roles of the COO and the CSO and their potential role overlap supports this reasoning. First, both roles may be responsible for similar tasks, such as strategy implementation, that the CEO could delegate to them. Having both roles at the same time, however, may be costly and less efficient. Hence, the CSO likely perceives a powerful COO as a rival and threat to the personal discretion. Further, the COO takes over the day-to-day operations and the monitoring of short-term goals, which frees the CEO to pursue more long-term strategy formulation work (Hambrick & Cannella Jr, 2004). This indirectly increases the perceived threat of the COO to the CSO, since the CEO likely feels less need for a CSO. Thus, particularly when the CSO perceives the COO to be powerful, the CSO’s own power base is less likely to predict the degree of perceived discretion of the CSO.

Hypothesis 3: The COO’s power negatively moderates the relationships between the CSO’s (a) structural power (b) expert power, and (c) prestige power and the CSO’s perceived discretion.

Consequences of the CSO’s Perceived Discretion for the Firm’s Strategic Conformity

In the preceding, we have argued that the CSO’s own power base affects the CSO’s perception of discretion. Knowing more about what determines CSOs’ perception of his or her strategic latitude is important when it matters for their organizations. Indeed, senior executives can only influence the firm’s strategy and performance to the extent to which they have or believe to have discretion (Hambrick & Finkelstein, 1987). Prior research on managerial discretion has yet found that perceived discretion is consequential (Carpenter & Golden, 1997; Crossland & Hambrick, 2011). We focus on the strategic conformity with the industry’s central tendency as an important organizational outcomes (Finkelstein & Hambrick, 1990),
which is also closely related to the CSO’s role. Prior research has suggested that financial performance outcomes are too distal for CSOs to have a pronounced effect on them (Menz & Scheef, 2014).

Strategic conformity refers to the extent to which a firm’s strategy is similar to the industry’s central tendency (Finkelstein & Hambrick, 1990). Executives who perceive more strategic latitude are more likely to affect important changes (Carpenter & Golden, 1997) since they are prone to take idiosyncratic and bold strategic action (Miller et al., 2013). Further, CSOs bring in a different skill set and competencies in the decision-making processes (Menz & Scheef, 2014). Particularly, when the CSO perceives discretion to influence a decision domain, the CSO can bring in his or her distinct competences and in this way facilitate more deviant strategies that would otherwise less likely be pursued. In addition, executives who perceive themselves to have much discretion are more likely to have confidence in their potential, which encourages action taking (Carpenter & Golden, 1997). In contrast, CSOs who perceive little discretion are less likely to initiate important strategic initiatives, but instead may attend to issues – as proposed in Hambrick and Finkelstein’s (1987) original work – that are less important for the firm’s strategic direction. In this regard, the CSO is more likely to focus on incremental aspects of the firm’s strategy, which involve fewer effort and risk. Further, executives who perceive little discretion less actively involve themselves in strategic discussions (Carpenter & Golden, 1997). Thus, CSOs who perceive limited discretion will less likely initiate large-scale initiatives, which have a pronounced effect on the firm’s strategy. In sum, we propose that CSOs who perceive more discretion are more likely to direct their firms towards deviant strategies and thus, towards less strategic conformity.

Hypothesis 4: The CSO’s perceived discretion is negatively related to the firm’s strategic conformity.

Above we have argued that the CSO’s perception of discretion benefits the deviance of the firm’s strategy from its industry norms by bringing in novel perspectives and increasing the CSO’s confidence in his or her potential to initiate bold strategic action. Yet, if CSOs face great exogenous constraints, the firm’s strategy will be overwhelmingly determined by other factors beyond the CSOs’ themselves. Prior research has suggested that executives’ effects depend on industry- or firm-level factors (Finkelstein & Boyd, 1998; Finkelstein & Hambrick, 1990; Hambrick et al., 1993). Analogically, we suggest that the effect of the CSO’s perceived discretion on the firm’s strategy varies with the constraints within the TMT, namely, with the power of the CEO and the COO.

Typically, the CEO delegates a set of strategy-related tasks to the CSO that would otherwise be his or her own responsibility. Yet, CEOs may vary in their behavior to transfer these tasks to the CSO. Activities concerning the firm’s strategy
are prestigious and highly visible and powerful CEOs may be less willing to delegate strategy formulation activities to the CSO, which have a more pronounced effect on the firm’s strategy. Indeed, prior research reveals that powerful CEOs are more likely to become overconfident and committed to the firm’s current strategy (Hayward et al., 2004). With a limited range of strategic choices, the CSO rarely places a distinctive mark on the firm’s strategy and, consequently, the negative effect of the CSO’s perceived discretion on the firm’s strategic conformity is likely less pronounced.

In contrast, when the CEO is less dominant, the CEO will be more willing to share strategy formulation tasks with the CSO as well as grant more strategic freedom to him or her. Allowed to influence more bold strategic action, the CSO’s perceived discretion will have a more pronounced effect on the deviance of the firm’s strategy from the industry’s central tendency. One important form of the CEO’s power is the CEO’s seniority, which is often a function of the CEO’s age (Hambrick, 1994). The CEO’s seniority has been shown to restrict the CEO’s range of perceptions and to increase risk aversion (Finkelstein & Hambrick, 1990). Hence, more senior CEOs would rather refrain from bold strategic action and comply with the industry conventions. Otherwise, less senior CEOs likely contribute fresh and divergent perspectives and are more willing to take risks (Finkelstein & Hambrick, 1990). The latter CEOs may therefore be more willing to grant the CSO to take bold strategic actions, which deviate from industry conventions. In sum, the negative effect of the CSO’s perceived discretion on the firm’s strategic conformity is likely to be less pronounced in firms with a powerful CEO.

**Hypothesis 5a:** The relationship between the CSO’s perceived discretion and the firm’s strategic conformity will be less strong when the CEO is powerful.

In addition, the magnitude of the effect of the CSO’s perceived discretion on the firm’s strategy should vary with the power of the COO. In firms in which the COO is powerful, this executive takes over much of the operational tasks from the CEO and allows the CEO to focus stronger on the firm’s strategic vision and long-term opportunities and threats (Zhang, 2006). Here, the CSO will have less influence on the firm’s strategy compared to a CSO who perceives a similar level of discretion but is in a firm with a less powerful COO. This is supported by prior research, which finds that the presence of a CSO is less likely when the TMT already has a COO (Menz & Scheef, 2014), which emphasizes the partly conflicting roles of both executives. In sum, the CSO will be more constrained to take distinctive strategic actions when faced with a powerful COO and, thus, the CSO’s perceived discretion will have a less pronounced negative effect on the firm’s strategic conformity.

**Hypothesis 5b:** The relationship between the CSO’s perceived discretion and the firm’s strategic conformity will be less strong when the COO is powerful.
Method

Sample and Data

The study builds on survey and archival data of European firms. We obtained the contact information of the CSOs of the largest firms in 14 European countries by manually searching the respective executives in the media and firm information (e.g., press releases,) as well as by directly contacting the firms.¹ Specifically, following prior research (Menz & Scheef, 2014), this included executives holding titles such as senior vice president strategy, head of strategic development, and executive vice president corporate development. Depending on the country’s population size, we searched the largest 30 to 100 listed firms in each country.

Following pre-tests with several academics and three CSOs, we invited 500 CSOs to participate in the electronic survey in the second quarter of 2013. The survey was distributed in English. Extensive follow-ups via e-mail led to 121 complete questionnaires (response rate 24%). We collected financial and other firm information from the Thomson Financial databases. Because of missing data, the sample size was reduced to 116 firms (93 for the strategic conformity models). The firms included in our sample were fairly large, with an average size of 36,522 employees. The participating CSOs had spent on average about seven years in their firm and about two years in their current position. Most frequently, they were between 41 and 50 years old. To account for potential non-respondent biases, we performed t-tests and a logit regression with a dummy variable coded as 1 if the company responded and 0 otherwise. A comparison of the firms’ employees and sales as well as 3-digit SIC code industry affiliation, country, and the gender of the respondent revealed no significant differences between these firms. Further, none of the variables predicted the likelihood of responding to the survey at conventional levels of significance.

Measures

CSO’s perceived discretion. Measurement approaches of managerial discretion widely vary (Boyd & Gove, 2006). Most studies use Hambrick and Finkelstein’s (1987) predictors of managerial discretion as proxies due to the difficulty of directly measuring managerial discretion (Boyd & Gove, 2006; Crossland & Hambrick, 2011; Hambrick & Abrahamson, 1995). The few studies that assess managerial discretion directly use experts to rate the level of managerial discretion, for example, in an industry or country (Crossland & Hambrick, 2011; Hambrick & Abrahamson, 1995). Our measure of CSO’s perceived discretion follows Carpenter and Golden (1997) approach of asking executives about their perceived discretion in different decision

¹ Firms from the following countries are included in our study: Austria, Belgium, Denmark, France, Finland, Germany, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.
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domains. Specifically, we asked the CSOs to indicate the degree to which they have influence to make decisions in four decision domains: resource allocation, budgeting, market expansion, and M&A. We used multiple decision domains since managerial discretion likely varies across different decision domains (Carpenter & Golden, 1997; Hambrick, 2007; Hambrick & Finkelstein, 1987).

We measured the CSO’s perceived discretion by asking the CSOs to indicate their influence on these decision domains compared to other functional senior executives. We used a 100-point constant-sum scale asking the CSOs to distribute 100 points among six organizational functions (finance, human resources, information technology, marketing, operations, and strategy), indicating the functions’ influence on these decision domains (see Appendix for details). The CSO’s perceived discretion measure was calculated as the amount of points allocated to strategy in a specified decision domain divided by 100 and then, averaged across decision domains. This measurement approach has the advantage that the CSO has to reflect his or her perceived discretion in relation to others, reducing self-reporting and overestimating biases (Finkelstein, 1992; Homburg et al., 1999). Moreover, using the influence of a particular organizational function within the firm is an appropriate proxy for the respective functional senior executive’s influence in the firm (Pfeffer, 1981).

**Strategic conformity.** A firm’s strategic conformity is “the degree to which a firm’s strategy matches the average strategic profile of its competitors in the same industry” (Finkelstein & Hambrick, 1990, p. 492). We follow prior research to select the following strategic indicators for the financial year 2013 (Finkelstein & Hambrick, 1990; Geletkanycz & Hambrick, 1997): (1) plant and equipment (P&E) newness (net P&E/gross P&E); (2) non-production overheads; (3) financial leverage (debt/equity); (4) inventory levels (inventories/sales); (5) capital intensity (fixed assets/employees). All indicators were log transformed to achieve normally distributed indictors (Miller et al., 2013). We did not consider advertising intensity as well as research and development (R&D) intensity since both indicators were unavailable for most of the firms included in our study. The strategic conformity of each indicator was assessed against industry medians at the 3-digit SIC code level (Miller et al., 2013). We used the strategic indicators of all listed firms from the respective 3-digit SIC code level industries of the participating European countries to calculate the median strategic profile of an industry. In a next step, we calculated the absolute differences between the focal firm’s strategic indicators and the respective median industry strategic indicators. In a final step, these absolute differences were multiplied by -1 such that higher values indicate greater conformity with the median industry strategic profile. We derive the formative strategic conformity index by standardizing and averaging the values of the six strategic conformity indicators.

**Independent variables.** To measure the CSO’s personal power base, we relied on survey data, complemented and verified by archival data. First, we assessed the
CSO’s structural power based on the formal organizational chart (Brass & Burkhardt, 1993), asking the CSOs about their formal hierarchical position and reporting line to the CEO (Medcof, 2008; Preston et al., 2008; Smaltz et al., 2006) and reflects whether the CSO is part of the TMT’s “inner circle” (Thompson, 1967). Using a dummy variable, we coded CSOs who directly reported to the CEO as 1 and 0 otherwise.

Second, we measured the CSO’s expert power using functional background breadth (Bunderson, 2003; Finkelstein, 1992). The CSOs were asked to indicate the number of years of experience in each of the following functional areas: administration, finance, general management, human resources, information technology, marketing and sales, operations, R&D, and strategy. Following Bunderson (2003), the measure is based on an adaptation of Blau’s (1977) heterogeneity index.

Third, we considered the CSO’s prestige power as a function of the CSO’s elite education (Finkelstein, 1992). We asked the CSOs to provide their highest educational degree as well as the name of the university where they obtained it. We then classified the universities, using the Times Higher Education World University Ranking 2012-2013 by Thomson Reuters. Since most CSOs in our sample completed their studies in Europe, we also considered the Financial Times European Business School Ranking 2012. A CSO was classified as having prestige power and coded as 1, if the CSO received the highest educational degree from one of the world’s top 20 universities or from one of Europe’s top 10 business schools, and as 0 otherwise. We conducted the analysis with different thresholds to include, for example, Europe’s top 25 business schools and the world’s top 100 universities, to test the robustness of the measurement and results remained consistent.2

Moderators. CEO power was measured using the CEO’s age that reflects the CEO’s power through his or her seniority (Hambrick, 1994). Because of the study’s European context, archival data on the CEO’s background was limited, which restricted the use of further power measurements suggested by Finkelstein (1992). COO power was measured based on the CSO’s perception of the COO’s influence in each decision domain. COO power was calculated as the amount of points allocated to operations in a specified decision domain divided by 100 and then, averaged across decision domains. Unfortunately, we were unable to obtain the COO’s age and thus, had to rely on the CSO’s perception. Yet, this approach seems reasonable since it is the CSO’s perception of the COO’s power that affects the CSO’s awareness of his or her accepted strategic latitude.

2 In line with Finkelstein (1992), we initially considered outside directorships as an alternative source of prestige power; however, none of the CSOs in our sample sat on another firm’s board of directors.
Control variables. For the analysis of the sources of the CSO’s perceived discretion, we included controls related to the firm’s host country, market environment and internal organization as three alternative explanations for executives’ perception of discretion (Crossland & Hambrick, 2011; Hambrick & Finkelstein, 1987). First, the national cultural value system of the firm’s headquarters’ country may affect the CSO’s perception of discretion (Crossland & Hambrick, 2007; Crossland & Hambrick, 2011). Therefore, we controlled for the host country’s power distance, which refers to the general acceptance of inequalities (Hofstede, 1980). To measure the CSO’s cultural values, we used Hofstede’s (1980) scores for the country’s power distance. Hofstede’s (1980) measures are the most widely used in the management and cultural value literatures (Kirkman et al., 2006) and, specifically, prior studies on managerial discretion relied on this cultural value framework (Crossland & Hambrick, 2011).

Second, to measure the firm’s market environment we used the same approach as above to calculate industry-level measurements. Market growth is calculated as the average annual sales growth of all firms in the same 3-digit SIC code industry from 2008 to 2012. Market uncertainty is measured as the standard deviation of the annual sales growth in the focal industry over the period 2008 to 2012. Both measures have been extensively applied in research on managerial discretion (e.g., Hambrick & Abrahamson, 1995; Li & Tang, 2010). Third, to control for organizational effects on CSOs’ perception of discretion, we used firm size calculated as the logarithm of the firm’s number of employees in 2012 (Finkelstein & Boyd, 1998). R&D and advertising intensity are also frequently used as firm-level proxies for managerial discretion; unfortunately, no such data were available for most of the companies included in our study. Finally, we controlled for the CSO’s firm tenure, because an executive’s tenure may affect the cognition and, thus, perception of discretion (Hambrick & Finkelstein, 1987).

For the analysis of the strategic conformity, we followed prior research (Delgado-Garcia & De La Fuente-Sabaté, 2010; Geletkanycz & Hambrick, 1997; Miller et al., 2013) and accounted for market growth, market uncertainty, firm size as defined above and added prior firm performance measured as the firm’s return on assets in 2012. Moreover, because of our study’s diverse macroeconomic setting with firms in 13 European countries, we controlled for country growth measured as the gross domestic product growth rate in 2012 in each country (Newman & Nollen, 1996). This data was obtained from the publicly available statistics of the OECD.

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3 We used uncertainty avoidance, long-term orientation, masculinity, and individualism as control variables in alternative models. The effects were not significant at conventional levels and their inclusion did not change the results reported here.

4 We also analyzed our data using CSO’s position tenure as well as CSO’s age as alternative control variables. However, the reported results did not change and the effects were not significant.
Results

The average discretion of the CSO across all decision domains is 0.28 (ranging from 0 to 0.76). However, there was much variation among CSOs in their perceptions of their discretionary limits (S.D. = 0.13) and CSOs perceptions of discretion varies significantly across the different decision domains. Table 1 displays the average perceived discretion scores of CSOs in each of the four decision domains. CSOs perceive their discretion much higher in decision domains regarding M&A (0.36) and market expansion (0.35). This corresponds with the CSO’s responsibility for strategy execution and particularly, corporate and business development and are therefore closely related to the CSO’s role (Menz & Scheef, 2014). In contrast, CSOs perceive substantially less discretion in decision domains regarding resource allocation (0.21) and budgeting (0.19). These decision domains can be characterized as more operative and are less related to the CSO’s core role.

T-tests between the four decision domains revealed a similar pattern. The results of the t-tests between M&A and resource allocation (t = 6.40; p < 0.001) as well as budgeting (t = 8.81; p < 0.001) and between market expansion and resource allocation (t = 5.54; p < 0.001) as well as budgeting (t = 7.71; p < 0.001) reveal significant differences. In contrast, the differences between M&A and market expansion (t = 0.28; p > 0.1) and between budgeting and resource allocation (t = -1.12; p > 0.1) are not significant. For additional validation we calculated correlations between CSOs’ perceived discretion scores across the four decision domains. As Table 1 shows, the correlations within the role-related decision domains (0.436; p<0.001) and within the more operation-related decision domains (0.433; p<0.001) are much stronger than the correlations between role-related and operation-related decision domains (between 0.191 and 0.293).

Table 1: CSO’s Perception of Discretion Across Decision Domains

<table>
<thead>
<tr>
<th>Decision Domain</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 M&amp;A</td>
<td>0.358</td>
<td>0.169</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Market expansion</td>
<td>0.348</td>
<td>0.197</td>
<td>0.436***</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>3 Budgeting</td>
<td>0.191</td>
<td>0.167</td>
<td>0.291**</td>
<td>0.293**</td>
<td>1.00</td>
</tr>
<tr>
<td>4 Resource allocation</td>
<td>0.212</td>
<td>0.189</td>
<td>0.199*</td>
<td>0.191*</td>
<td>0.433***</td>
</tr>
</tbody>
</table>

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Given these significant statistical differences as well as the theoretical reasoning for more role-related versus operation-related decision domains, we calculated two new measurements for CSO’s perceived discretion. First, the CSO’s perceived discretion in role-related decision domains was calculated as the average of the CSO’s perceived discretion on M&A and market expansion. Second, the CSO’s
perceived discretion in more operation-related decision domains was calculated as the average of the CSO’s perceived discretion on budgeting and resource allocation. We test our hypotheses in the following using the CSO’s perceived discretion in role-related decision domains and conduct a post-hoc analysis to test whether our hypotheses also hold in operation-related decision domains. This approach is similar to Carpenter and Golden (1997).

Table 2 presents the descriptive statistics and correlations for all variables included in our analysis. The correlations between the variables in the same models were all below 0.33, indicating that multicollinearity was not a problem in our analysis. This was further verified by the variance inflation factors that are all below 2.5.
Table 2: Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
<tr>
<td>CSO's perceived discretion</td>
<td>0.34</td>
<td>0.14</td>
<td>1.00</td>
<td>0.30</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.08</td>
<td>-0.03</td>
<td>-0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>CSO's perceived discretion in operation-related decision domains</td>
<td>0.19</td>
<td>0.15</td>
<td>1.00</td>
<td>0.30</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.08</td>
<td>-0.03</td>
<td>-0.04</td>
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<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>Strategic conformity</td>
<td>0.66</td>
<td>0.43</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
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<tr>
<td>CSO's structural power</td>
<td>0.67</td>
<td>0.47</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>CSO's expert power</td>
<td>0.45</td>
<td>0.25</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>CSO's prestige power</td>
<td>0.26</td>
<td>0.44</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>CSO's firm tenure</td>
<td>7.19</td>
<td>7.28</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>CEO's power</td>
<td>53.88</td>
<td>6.85</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
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</tr>
<tr>
<td>COO's power</td>
<td>0.22</td>
<td>0.17</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
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<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
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</tr>
<tr>
<td>Firm size</td>
<td>36.52</td>
<td>58.69</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
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<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
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</tr>
<tr>
<td>Prior firm performance</td>
<td>0.04</td>
<td>0.06</td>
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<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
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<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Market growth</td>
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<td>0.18</td>
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<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
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<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
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</tr>
<tr>
<td>Market uncertainty</td>
<td>0.12</td>
<td>0.26</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Country's power distance</td>
<td>35.66</td>
<td>11.02</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Country's growth</td>
<td>0.37</td>
<td>1.21</td>
<td>1.00</td>
<td>1.00</td>
<td>0.09</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
</tbody>
</table>

*p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.
Table 3 shows the results for the determinants of the CSO’s perceived discretion. Model 1 includes only the controls and we find that the country’s power distance (β = 0.484; p < 0.1), market growth (β = 0.909; p < 0.1), and firm size (β = -0.022; p < 0.05) affect the CSO’s perception of discretion, which is in line with prior studies’ findings. Further, the CSO’s firm tenure has a negative effect (β = -0.005; p < 0.05) on the CSO’s perception of discretion. Hypothesis 1 is tested in Model 2. Hypothesis 1a, suggesting that the CSO’s structural power is positively related to the CSO’s perceived discretion, is supported (β = 0.08; p < 0.01). Thus, when comparing a CSO who does not directly report to the CEO with a CSO who has a direct report all else equal, the latter perceives on average 0.08-points more discretion, which is equal to half a standard deviation (S.D. = 0.16) and thus, can be considered as fairly meaningful. Hypotheses 1b and 1c, however, which state that the CSO’s expert power (β = 0.014; p > 0.1) and CSO’s prestige power (β = 0.008; p > 0.1) are positively associated with the CSO’s perceived discretion, are not supported.

Hypothesis 2 positing that the CEO’s power negatively moderates the relationships between the CSO’s power base and the CSO’s perceived discretion is partly supported as shown in Model 4. The CEO’s power does neither moderate between the CSO’s structural power, nor between the CSO’s prestige power and the CSO’s perceived discretion. Thus, Hypotheses 2a and 2c are not supported. However, the CEO’s power negatively moderates the relationship between the CSO’s expert power and the CSO’s perceived discretion (β = -0.023; p<0.05), supporting Hypothesis 2b. As Figure 2 illustrates, only when the CEO’s power is low, the CSO’s expert power significantly increases the CSO’s perceived discretion. For instance, a CSO with an expert power of one (one S.D. above mean) perceives 0.08-points more discretion when the CEO has less power (one S.D. below the mean, i.e. about 47 years) compared to a powerful CEO (one S.D. above the mean, i.e. about 61 years).

Hypothesis 3 positing that the COO’s power negatively moderates the relationships between the CSO’s power base and the CSO’s perception of discretion is also partly supported as shown in Model 6. The moderations of the COO’s power on the CSO’s expert power and prestige power are not significant and thus, we find no support for Hypotheses 3b and 3c. However, the COO’s power negatively moderates the relationship between the CSO’s structural power and the CSO’s perception of discretion (β = -0.078; p < 0.01). As Figure 2 illustrates, when the CSO does not directly report to the CEO, the COO’s power does not affect the CSO’s perception of discretion. However, when the CSO directly reports to the CEO, the CSO perceives 0.15-points more discretion (equal to about one S.D.) if the COO’s power is low, which indicates a meaningful effect size.5

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5 We replicated the analyses with each decision domain as dependent variable. The results reported remain largely consistent for M&A and market expansion. For M&A, the interaction between COO power and CSO’s prestige power is also significant (β = 0.82; p < 0.05).
Table 3: Regression Analysis of the Sources of CSOs’ Perceived Discretion

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSO’s perceived discretion</td>
<td>CSO’s perceived discretion</td>
<td>CSO’s perceived discretion</td>
<td>CSO’s perceived discretion</td>
<td>CSO’s perceived discretion</td>
<td>CSO’s perceived discretion</td>
</tr>
<tr>
<td>Constant</td>
<td>0.484 ***</td>
<td>0.429 ***</td>
<td>0.390 ***</td>
<td>0.403 ***</td>
<td>0.406 ***</td>
</tr>
<tr>
<td>Country’s power distance</td>
<td>0.002 +</td>
<td>0.002 +</td>
<td>0.002 +</td>
<td>0.002 +</td>
<td>0.002 +</td>
</tr>
<tr>
<td>Market growth</td>
<td>0.909 +</td>
<td>1.007 *</td>
<td>1.145 *</td>
<td>1.258 *</td>
<td>0.823 +</td>
</tr>
<tr>
<td>Market instability</td>
<td>0.268</td>
<td>0.279</td>
<td>0.187</td>
<td>0.138</td>
<td>0.170</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.022 *</td>
<td>-0.023 *</td>
<td>-0.020 +</td>
<td>-0.022 *</td>
<td>-0.017 +</td>
</tr>
<tr>
<td>CSO’s tenure</td>
<td>-0.005 *</td>
<td>-0.004 *</td>
<td>-0.004 *</td>
<td>-0.004 +</td>
<td>-0.004 *</td>
</tr>
<tr>
<td>CSO’s structural power</td>
<td>0.084 **</td>
<td>0.077 *</td>
<td>0.083 *</td>
<td>0.082 **</td>
<td>0.077 **</td>
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<tr>
<td>CSO’s expert power</td>
<td>0.014</td>
<td>0.015</td>
<td>0.011</td>
<td>0.011</td>
<td>0.011</td>
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<tr>
<td>CSO’s prestige power</td>
<td>0.008</td>
<td>0.015</td>
<td>0.014</td>
<td>0.008</td>
<td>0.014</td>
</tr>
<tr>
<td>CEO’s age</td>
<td>-0.012</td>
<td>-0.020</td>
<td>-0.012</td>
<td>-0.020</td>
<td>-0.012</td>
</tr>
<tr>
<td>CEO’s age X CSO’s structural power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO’s age X CSO’s expert power</td>
<td>-0.023 *</td>
<td>-0.023 *</td>
<td>-0.023 *</td>
<td>-0.023 *</td>
<td>-0.023 *</td>
</tr>
<tr>
<td>CEO’s age X CSO’s prestige power</td>
<td>-0.030</td>
<td>-0.030</td>
<td>-0.030</td>
<td>-0.030</td>
<td>-0.030</td>
</tr>
<tr>
<td>COO’s power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.044 **</td>
</tr>
<tr>
<td>COO’s power X CSO’s structural power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.078 **</td>
</tr>
<tr>
<td>COO’s power X CSO’s expert power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.000</td>
</tr>
<tr>
<td>COO’s power X CSO’s prestige power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.057</td>
</tr>
<tr>
<td>N</td>
<td>116</td>
<td>116</td>
<td>116</td>
<td>116</td>
<td>116</td>
</tr>
<tr>
<td>R2</td>
<td>0.157 ***</td>
<td>0.218 ***</td>
<td>0.223 ***</td>
<td>0.254 ***</td>
<td>0.280 ***</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.113</td>
<td>0.162</td>
<td>0.157</td>
<td>0.167</td>
<td>0.228</td>
</tr>
<tr>
<td>Change in adjusted R2</td>
<td>0.049 **</td>
<td>-0.005</td>
<td>0.010</td>
<td>0.006</td>
<td>0.038 **</td>
</tr>
</tbody>
</table>

Standardized beta coefficients. + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Change in adjusted R2 for Model 2 is related to Model 1; for Model 3 and 5 to Model 2; and for Model 4 to Model 3 and Model 6 to Model 5.

Figure 2: CSO’s Perceived Discretion: Moderating Effects

a. The high and low of the continuous variables CEO power and COO power are determined by using one standard deviation above and below the mean.
Table 4 presents the results for the implications of the CSO’s perceived discretion on the firm’s strategic conformity. Hypothesis 4, which states that the CSO’s perceived discretion is negatively related to the firm’s strategic conformity, is not supported ($\beta = 0.006; p > 0.1$) as indicated in Models 2.

Model 4 shows the results for the moderation of the CEO’s power and we find a significant negative moderation ($\beta = -0.102; p < 0.05$). Figure 3 illustrates the finding. When the CEO is powerful, CSO’s perceived discretion decreases the strategic conformity. In contrast, when the CEO is less powerful, CSO’s perceived discretion increases the strategic conformity. Thus, we do not find support for Hypothesis 5a, which posits that the negative effect of the CSO’s perceived discretion on the firm’s strategic conformity is less strong when the CEO is powerful. Indeed, we find the opposite effect that powerful CEOs strengthen the negative effect of the CSO’s perceived discretion on the firm’s strategic conformity. However, the magnitude of the effect is rather small. A one standard deviation increase in the CSO’s perceived discretion (equal to 0.14) decreases (increases) the strategic conformity by 0.07 (0.07) when the CEO is (less) powerful. Nevertheless, the small effect size may at least partially be due to our study’s small sample size.

Model 6 shows the results for the moderation of the COO’s power and we also find a significant negative moderation ($\beta = -0.096; p < 0.05$). As Figure 3 illustrates, when the COO is (less) powerful, the strategic conformity decreases (increases) with the CSO’s perceived discretion. The magnitude of the effect is similar to the CEO’s power moderation above. Thus, we also do not find support for Hypothesis 5b but we find the opposite effect.

To test the robustness of our findings concerning the index for strategic conformity, we performed additional analysis with each individual component as dependent variable (Miller et al., 2013). Our findings are replicated for three out of five indicators (non-production overheads, financial leverage, inventory levels), which shows a reasonable convergence among the indicators as prior studies indicate (Miller et al., 2013). We also ran an analysis with a three-component index, which excluded plant and equipment newness and capital intensity and our findings were replicated.

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6 We also conducted the analysis including the CSO’s personal power base; however, none of the variables were significant. To conserve the degrees of freedom, these variables are not included in the final models.
Table 4: Regression Analysis of the Effects of the CSO’s Perceived Discretion

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.248</td>
<td>0.244</td>
<td>0.175</td>
<td>0.177</td>
<td>0.266</td>
</tr>
<tr>
<td>Country growth</td>
<td>0.044</td>
<td>0.045</td>
<td>0.041</td>
<td>0.043</td>
<td>0.050</td>
</tr>
<tr>
<td>Market uncertainty</td>
<td>-0.583 *</td>
<td>-0.584 *</td>
<td>-0.562 *</td>
<td>-0.560 *</td>
<td>-0.573 *</td>
</tr>
<tr>
<td>Market growth</td>
<td>1.802</td>
<td>1.745</td>
<td>2.079</td>
<td>2.108</td>
<td>2.158</td>
</tr>
<tr>
<td>Firm prior performance</td>
<td>0.539</td>
<td>0.525</td>
<td>0.506</td>
<td>0.512</td>
<td>0.448</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.043</td>
<td>0.044</td>
<td>0.050 +</td>
<td>0.049 +</td>
<td>0.040</td>
</tr>
<tr>
<td>CSO’s perceived discretion</td>
<td>0.006</td>
<td>-0.001</td>
<td>-0.001</td>
<td>0.027</td>
<td>-0.008</td>
</tr>
<tr>
<td>CEO’s power</td>
<td>-0.063</td>
<td>-0.057</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO’s power X CSO’s perceived discretion</td>
<td>-0.102 *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COO’s power</td>
<td>0.080 +</td>
<td>0.032</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COO’s power X CSO’s perceived discretion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.096 *</td>
</tr>
</tbody>
</table>

N: 93 93 93 93 93 93
R²: 0.099 + 0.099 0.118 + 0.164 * 0.129 + 0.179 *
Adjusted R²: 0.047 0.036 0.046 0.084 0.058 0.101
Change in adjusted R²: -0.011 0.010 0.038 * 0.022 0.043 *

Standardized beta coefficients. + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
Change in adjusted R² for Model 2 is related to Model 1; for Model 3 and 5 to Model 2; and for Model 4 to Model 3 and Model 6 to Model 5

Figure 3: Strategic Conformity: Moderating Effects

a. The high and low of the continuous variables CEO power and COO power are determined by using one standard deviation above and below the mean.

Post-hoc Analysis: CSO’s Perceived Discretion in Operations-Related Decision Domains

Since the descriptive statistics revealed significant differences in the CSO’s perceived discretion across decision domains, we examined our study’s boundaries in a post-hoc analysis that explicitly considered the CSO’s perceived discretion in more operations-related decision domains, such as budgeting and resource allocation. For instance, these operations-related decision domains can be interpreted as discretionary bounds and executives may sometimes miscalculate and overstep them (Hambrick & Finkelstein, 1987). Moreover, executives who perceive
much or little discretion may engage in different behavior (Carpenter & Golden, 1997).

Thus, we re-estimated our conceptual model for decision domains that are less related to the CSO’s core role. Considering the determinants of CSOs’ perceptions of discretion, the results cannot be replicated for the more operations-related decision domains. Overall the model fits are weak and none of the Hypotheses is supported, suggesting an important boundary condition of our conceptual model. CSOs’ power base and its interactions only predict CSOs’ perceived discretion in decision domains that are closely tied to the CSO’s core role. The results for the implications of the CSO’s perceived discretion on the firm’s strategic conformity in more operations-related situations are also not significant and the model fit is weak.7 Thus, the post-hoc analysis indicates that CSOs’ perceived discretion only affects decision domains when CSOs perceive high discretion in role-related situations but not in operations-related decision domains.

Discussion

Taking an individual-level perspective, we study the effects of the CSO’s structural, expert, and prestige power on his or her perception of discretion and an important consequence of such perception, its effect on the firm’s strategy. Against conventional wisdom, we only find weak support that the CSO’s power base directly affects the perception of discretion. What is more, we reveal that the effects depend on exogenous factors such as the power of the CEO and COO. Further, the study reveals that the CSO’s perception of discretion only has a pronounced effect on the firm’s strategy when the CSO interacts with a powerful CEO or COO. In the following, we discuss the study’s findings and its contributions to the literatures on managerial discretion and functional senior executives.

Individual Differences in Perceived Managerial Discretion

First, our study contributes to research on managerial discretion. Prior research on managerial discretion has almost exclusively focused on environmental and organizational sources of managerial discretion, assuming that there are no significant differences between senior executives in similar industries or organizations (Finkelstein et al., 2009). Our study shifts the attention to individual-level sources of managerial discretion and we advance a conceptual model on the cognitive processes of how CSOs’ power base affects their perception of discretion. Specifically, we have argued that power shifts CSOs’ attentional focus to alternative courses of action and that power varies CSOs’ awareness of their zone of strategic

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7 We replicated the analyses using each decision domain separately. The results reported here remain largely consistent for budgeting and resource allocation.
latitude granted by stakeholders (Hambrick & Finkelstein, 1987). Our empirical findings partially support this reasoning. While controlling for environmental and organizational explanations of discretion, we find that the CSO’s structural power increases the CSO’s perceived discretion, irrespective of the CEO’s amount of power. Thus, CSOs in higher hierarchical positions feel greater leeway to act no matter whether the respective CEO is particularly powerful or not. However, we find that the CSOs who directly report to their CEO perceive more discretion when the power of the COO is low. This supports prior findings that the COO and CSO likely have conflicting roles (Menz & Scheef, 2014).

Interestingly, however, the effect of the CSO’s expert power on the CSO’s perceived discretion depends on the CEO’s power. Only when the CEO’s power is rather low, the CSO’s breadth of functional experience is a valuable resource that increases the CSO’s perceived discretion. Further, we did not find that the CSO’s prestige power affects the CSO’s perceived discretion. One explanation is that because of the seniority of the CSO’s position, the signaling value of having attended an elite educational institution is less important. Indeed, senior executives typically have all demonstrated significant and sustained accomplishments during their professional careers (Hambrick, 1994), and thus, prestige of their education may not be a sufficient criteria to distinguish senior executives. In sum, we advance research on the individual sources of executives’ perception of discretion (Finkelstein et al., 2009) and complement prior research, which as focused on executives’ locus of control as source of individual differences in the perception of discretion.

Further, our study advances novel ways to study managerial discretion at the individual level. Prior studies have either relied on secondary data (Finkelstein & Hambrick, 1990; Li & Tang, 2010) or on expert ratings (Crossland & Hambrick, 2011; Hambrick & Abrahamson, 1995) to study managerial discretion. This is particularly due to the difficulty to get firsthand data on executives’ discretion (Boyd & Gove, 2006). We contribute to advance this research by conducting a first field study of perceived managerial discretion where we directly asked the CSOs about their influence in different decision domains. This approach allowed us to identify significant differences in CSOs’ perception of discretion across decision domains, which would not have been possible with other established measurement approaches.

In doing so, we are able to establish an important boundary condition of our study. Indeed, we show that the CSO’s power only predicts the CSO’s perceived discretion in decision domains, which are related to the CSO’s core role within the firm. In more distal decision domains to the CSO’s role such as budgeting, we do not find support for our conceptual model. Thus, we add to the managerial discretion research, which has not yet considered that managerial discretion may vary across decision domains. Hambrick (2007), however, provides support for this view suggesting that executives’
involvement may vary across decision domains. Further, this finding advances our understanding of the role of the CSO within the firm.

**The CSO’s Behavior within the Firm**

Our study also contributes to research on functional senior executives (Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz, 2012; Menz & Scheef, 2014; Zhang, 2006) by considering the interplay between the CSO and two important stakeholders – the CEO and the COO. Accordingly, our study is one of the first studies to consider the interactions among several senior executives and our findings suggest that it is important to consider these senior executive roles jointly. As discussed above, the power of the CEO and the COO significantly affect the hypothesized relationships of CSOs’ power on their perception of discretion. This finding suggests that the interactions among these three senior executives matter and that future research on functional senior executives should consider critical constellations among functional executives to enhance our understanding of the behavior and the formation of potential political coalitions at the top of organizations.

In this regard, our findings on the consequences of the CSO’s perception of discretion for the firm’s strategic conformity suggest that, against our hypothesis, the CEO and the CSO may be partners, who team-up to formulate and execute a deviant firm strategy. Our finding suggests that, when a CEO is more powerful, the CSO’s perceived discretion increases the deviance of the firm’s strategy from the industry’s central tendency. In contrast, when the CEO is less powerful, the CSO’s perceived discretion leads to higher strategic conformity. This suggests that powerful CEO likely plays a supportive role for the CSO whereas less powerful CEOs take on the adversary role. This consideration is supported by research on the COO-CEO duo where research has also found different role behavior (Zhang, 2006). We encourage future research to study in greater depth which role the CEO is more likely to take and under which conditions. For instance, future research could use qualitative interviews with CEOs and CSOs to develop a typology of the CEO-CSO interplay and role behavior.

The results on the interactions between the CSO and the COO are more puzzling. Against our hypotheses, the effect of the CSO’s perceived discretion on the firm’s strategic conformity is (less) strong when the COO is less (more) powerful. This finding suggests that firms have a more deviant strategy when the COO is powerful combined with a CSO who perceives more discretion. This finding warrants more research attention and may at least partially be explained by our measurement approach of the COO’s power, which is based on the CSO’s perception. However, studying the potentially conflicting roles of the CSO and COO seems to be a promising area of future research on functional senior executives.
Finally, we complement prior studies on functional executives that have exclusively focused on structural or macro-level factors to study the role of the respective functional executive (e.g., Hambrick & Cannella Jr, 2004; Marcel, 2009; Menz & Scheef, 2014) with a micro-level study. We reveal that the CSO’s perception of discretion is, under certain conditions, related to the firm’s strategic conformity. Thus, we extend prior research on the CSO that could not find an effect of the CSO on the firm’s performance (Menz & Scheef, 2014). This finding supports calls to study more proxy outcomes for functional executives (Menz, 2012; Menz & Scheef, 2014).

Yet, we do not find a direct effect of the CSO’s perceived discretion on the firm’s strategic conformity. One explanation may be the measurement approach of the firm’s strategic conformity. The indicators used to proxy the firm’s strategy are rather predictors of the firm’s business strategy than of the firm’s corporate strategy. However, prior research suggests that the CSO is primarily responsible for the firm’s strategy formulation and implementation at the corporate level as well as for corporate development activities (Menz & Scheef, 2014). Future research may therefore focus on the effect of CSO’s discretion on, for example, the firm’s corporate strategic change or M&A program. Given our data collection in 2013, we were unable to assess strategic change.

**Practical Implications**

Our study’s findings have several important implications for business practitioners, consultants, and CEOs, specifically for those involved in designing and staffing the CSO’s role. First, our results enhance the understanding of the CSO’s role design. We find consistently across firms, countries, and industries that CSOs perceive more discretion over decisions on M&A and market expansion whereas they perceive less discretion over decisions on resource allocation and budgeting. This indicates that some aspects of the CSO’s role are institutionally designed and we reveal an institutional boundary of the CSO’s role in firms. Our findings clearly suggest a lower involvement of the CSO in rather operations-related decisions and a focus of the CSO’s role on corporate and business development decisions. This finding informs, for example, CEOs who consider establishing such a role.

Further, our study offers specific advice how the CSO’s perceived discretion can be increased and also informs decisions on hiring CSOs. First, when firms want to empower the CSO the hierarchical setup is important. As simple as it sounds, the CSO’s proximity to the CEO increases the CSO’s perceived discretion, for example, during an acquisition. Hence, a firm that strives to empower its CSO should ensure that the CSO reports directly to the CEO. Second, the CSO’s tenure in the firm affects the CSO’s perception of discretion. Interestingly, the CSO perceives less discretion when being longer in the firm. Hence, firms that strive to empower the CSO should consider hiring a CSO from outside the firm when evaluating suitable
candidates. Third, the firm should be aware of the role of the COO when they strive to empower the CSO. Particularly, the CSO’s perception of discretion is considerably reduced when the firm also has a powerful COO. Firms should consider the potential role overlap between these two functional executives when empowering the CSO.

Limitations

Our study has limitations that offer further opportunities for future research. First, our measurement of perceived discretion assesses CSOs influence over several decision domains and thus, builds on the assumption that decisions convert into actions. We admit that the focus on decision domains instead of actions may generally overstate the amount of discretion that executives have (Hambrick & Finkelstein, 1987). However, there are at least two reasons to focus on decision domains. One the one hand, it is difficult to directly measure discretion since it may often be implicit (Hambrick & Finkelstein, 1987). For CSOs, it is more convenient to evaluate their influence on concrete decision domains than their potential repertoire of discretionary actions. The latter may be an avenue for future qualitative studies but was less suitable for our survey-based study, since executives are less willing to answer open-ended questions. On the other hand, we asked the CSOs about specific decision domains rather than their overall influence, which increases the reliability of the measurement (Hambrick & Finkelstein, 1987).

Second, the general overstatements of CSOs’ assessments of their discretion should not largely affect our results since all CSOs are equally disposed to this bias and, thus, individual differences remain. We performed an additional post-hoc analysis to further assess this self-serving bias. Specifically, we subtracted the mean score across the four decision domains from the score attributed to each decision domain. Like a fixed-effect analysis, this procedure eliminates response tendencies from the models (Carpenter & Golden, 1997). The results of this analysis are consistent with the results reported here.

Third, given the cross-sectional design of our study, we are unable to establish causality. In our survey, we asked CSOs in 2013 to assess their influence on several decision domains and lagged the sources of the CSO’s perceived discretion as well as the control variables by one year to (at least partially) establish causality. However, we were unable to lag the firm’s strategy by a year since the year 2014 is still ongoing. Future studies may use a longitudinal design to better study the causal relationships.

Fourth, we use a unique dataset to test our hypotheses and, given that survey research is challenging with upper echelons, we were able to achieve a high response rate to ensure an acceptable number of observations required for our study. However, in small sample size studies, statistical power is often a problem (Buyl et al., 2011). Low statistical power reflects the failure to detect a significant
effect in an observation that really shows the effect and thus, might be an explanation for our non-findings. Yet, we tested the statistical power of our regressions and all regressions had a statistical power above the level of 0.8, which has been suggested by Cohen (1988) as acceptable threshold. Further, the small sample size might be an explanation for the small effect sizes of our hypothesized relationships. We encourage future research to try to obtain larger samples to increase the confidence in our findings.

Fifth, we used the CEO's age as proxy for the CEO’s power since age has been suggested as one form of power (Hambrick, 1994). Given the study’s European context, archival data on the CEO’s background was limited, which restricted the use of further power measures as, for example, suggested by Finkelstein (1992). We further tested the CEO’s position and firm tenure as alternative proxy for the CEO’s power; however, we were unable to replicate our findings. This may suggest that it is particularly the CEO's seniority and less the power of the CEO, which drives our effects and we encourage future research to use different proxies for power. Yet, power is multifaceted (Finkelstein, 1992) and, for instance, a study in the US context could consider the CEO’s duality as proxy for the CEO’s power.

**Conclusion**

The question whether and when senior executives matter for firms’ strategic choices and performance is critical to strategic management research. Yet, most prior research has focused on environmental and organizational factors as sources of discretion. We advanced a study on executives’ power base as an individual level source of discretion. Further, our study provides novel insights on CSOs and their perceived discretion to affect the firm’s strategy. We hope that our study will stimulate future research in these two areas.
References


Appendix

Survey Measurement Scale of the CSO’s Perceived Discretion

Question: Please assess the influence of various centralized organizational functions on the following strategic decisions.

- Distribute 100 percent (in total) across the following functions depending on their degree of influence on the strategic decision.
- Functions with no influence receive 0 percent and functions that are not centralized should be left blank.

Example for M&A decision:

1. Influence of functions on decision on Merger & Acquisition

<table>
<thead>
<tr>
<th>(1) Finance</th>
<th>(2) HR</th>
<th>(3) IT</th>
<th>(4) Marketing/ Sales</th>
<th>(5) Operations</th>
<th>(6) Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
</tbody>
</table>

Article III

Why Do Some Strategists Foresee More Than Others?
Strategists’ Forward-Looking Mental Representations and Search Behavior

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Abstract

Building on construal level theory, we develop a conceptual model on how differences in strategists’ anticipation of the future affect their search behavior for alternative courses of action. We propose that it is the strategist’s psychological distance to the future event that affects the search breadth, depth, and intensity as well as the strategist’s ability to adapt the mental representation over time. We argue that the effect of psychological distance on the search behavior is realized through the type of forward-looking mental representation that the strategist forms of the future event. Specifically, strategists who experience a future event as more psychological distant form high-level mental representations that are decontextualized and abstract whereas strategists who experience a future event as psychological close form low-level mental representations that are contextualized and detailed. Additionally, we discuss the critical role of the future event’s complexity. Our article contributes to the sparse research on forward-looking search behavior as well as to the behavioral theory by enhancing the understanding of the role of mental representations.
Introduction

Cyert and March (1963) suggest that organizations are essentially backward-looking. Consequently, organizations’ search behavior has primarily been studied as a function of the organization’s past performance and learning processes from past experiences (e.g., Chen & Miller, 2007; Greve, 1998; Greve, 2003; Greve & Taylor, 2000). However, backward-looking search behavior implies that the past is predictive for future success (Nelson, 2008). If this is less the case, Simon (1947) suggests that cognitive images of the future must substitute for the lack of experience. These cognitive images of the future then need to guide the strategist to search for a set of alternative responses to the future event.

Gavetti and Levinthal (2000) are the first to elaborate on the idea that search behavior can also be grounded in the strategist’s cognitive image of the future and the authors emphasize the role of forward-looking mental representations. These mental representations are powerful means to represent future developments and its consequences (Farjoun, 2008). Including concepts, images, and cause-effect relationships (Thagard, 2005), these mental representations simplify the complexity of temporal, spatial, and causal relationships of the future event (Trope & Liberman, 2010; Weick, 1979). Few articles have considered the anticipation of future developments and likewise few is known about the process by which these forward-looking mental representations are formed and its consequences for search behavior (Gavetti et al., 2012; Gavetti et al., 2005).

The purpose of this study is to better understand how mental representations of a future event are formed and through which processes they translate into search behavior. A special focus is laid on the arising individual differences in strategists’ search behavior. We refer to future events as a prospective exogenous shock (Barreto & Patient, 2013) that entails potential critical consequences for an organization (Dutton & Webster, 1988) such as technology or macroeconomic developments. To study our research questions, we build on construal level theory (CLT; Liberman & Trope, 2008; Trope & Liberman, 2010), a theoretical perspective that is focused on the role of mental representations of a future event in explaining strategists’ behavior. CLT takes into account the psychological distance of strategists to a future event as main driver for systematic differences in their mental representations (Trope & Liberman, 2010). Psychological distance refers to a strategist’s “subjective experience that [a future event] is close or far away from the self, here, and now” (Trope & Liberman, 2010, p. 440).

CLT proposes that strategists construe psychological distant future events in high-level mental representations, which are “abstract, schematic and decontextualized representations that extract the gist from the available information” (Liberman & Trope, 2008, p. 1202). In contrast, strategists construe psychological close future
events in low-level mental representations, which are “concrete, relatively unstructured, contextualized representations that include subordinate and incidental features” (Liberman & Trope, 2008, p. 1201). For example, a strategist can either hold a high-level mental representation of the digitalization in the newspaper industry such as ‘the development of digital newspapers’ or a low-level mental representation such as ‘the use of electronic devises to access news and information, which diminishes the impact of physical newspapers by 25% annually’. The first, abstract mental representation is a relatively stable, general characteristic of the newspaper industry whereas the latter, contextualized mental representation is a less enduring and more specific characterization of the industry.

Building on CLT, we propose that it is the strategist’s psychological distance to the future event that affects the search breadth, depth, and intensity as well as the strategist’s ability to adapt the mental representation over time. We argue that these effects are realized through the type of forward-looking mental representation the strategist initially forms of the future event. Low-level mental representations cue strategists towards feasibility considerations and the detection of more complex cause-effect interdependencies that benefit search depth and stimulate strategists’ motivation to search intensively. High-level mental representations cue strategists to the notion that general patterns and global trends matter that benefits search breadth. Finally, we discuss the role of the future event’s complexity as important constrain to the effects of a particular type of mental representation on search behavior. Complexity alters the level of cognitive efforts needed to construe the future event as well as the fit with the degree of abstraction of the mental representation.

Studying forward-looking search behavior is also important for chief executive officers (CEOs) and chief strategy officers (CSOs). For instance, the CSO is, together with the CEO, responsible for the identification of threats and business opportunities in the firm’s environment and for long-term strategic planning (Menz & Scheef, 2014). By looking ahead, CSOs can take into account future developments such as macroeconomic and technological developments. Yet, research on strategists has often rested on the “outmoded conception of the strategist as the cognitive miser” (Hodgkinson & Healey, 2011, p. 1501). Further, senior executives’ cognition is increasingly recognized as source of the firm’s competitive advantage (Gavetti et al., 2012; Gavetti et al., 2005). For example, the way the CEO and CSO construe the future will influence the firm’s subsequent strategic choices, which can make firms reluctant to fully adapt to a prospective disruptive shock early on (Tripsas & Gavetti, 2000). By better understanding CEOs’ and CSOs’ cognition, such as their forward-looking mental representations, research can develop more specific recommendations about how the organization can purposefully stimulate cognitive processes to adapt successfully to future developments such as role design or staffing decisions.
The article mainly contributes to research on search behavior. First, we extend the research on forward-looking search (Chen, 2008; Gavetti & Levinthal, 2000) and discuss in depth the process of anticipating future events and its consequences for the firm’s search behavior that is largely absent in the behavioral theory (Gavetti et al., 2012). We complement Gavetti and Levinthal (2000) by discussing the cognitive mechanisms how forward-looking mental representations are formed initially and adapted over time. Further, we propose that the richness of forward-looking mental representations differs significantly across strategists, which translate into individual difference in strategists’ search behavior. Additionally, we contribute to the search literature by discussing the cognitive foundations of forward-looking search. Most of the search literature focuses on the organizational-level and our knowledge about individual search processes and its cognitive foundations is very limited (Billinger et al., 2014; Gavetti et al., 2012; Li et al., 2013; Maggitti et al., 2013). We introduce the strategist’s mental representation as critical mediating mechanism between the distance of the future event and search behavior and emphasize differences in search behavior based on these cognitive processes.

The article is structured as follows. First, we review prior research on backward-looking and forward-looking search models with a focus on both models’ differences. Second, we discuss how forward-looking mental representations are formed and how they change over time. Then, we elaborate on the effects of different types of mental representations on strategists’ search behavior. Finally, we introduce the complexity of the future event as main moderating variable before discussing the theoretical and practical implications of our article. Our conceptual model is summarized in Figure 1.

**Figure 1: Conceptual Model**
The Backward-Looking and Forward-Looking Model of Search Behavior

The behavioral theory suggests that organizations are essentially backward-looking with firms adapting their behavior based on their understanding of past outcomes and their past experiences (Cyert & March, 1963). For instance, strategists judge the organization’s performance relative to its aspiration. When performance goals are not met, strategists search for alternatives and adjust the firm’s existing routines if necessary (Cyert & March, 1963). Thus, the backward-looking search model reflects experience-based learning and selective adaptation of existing routines. However, adapting existing routines based on the past can only be successful if the past is predictive for future success (Nelson, 2008). In any other case, Simon (1947) suggests that cognitive images of the future must substitute for the lack of experience. These cognitive images of the future then need to guide the strategist to search for a set of alternative responses.

Gavetti and Levinthal (2000) are the first to emphasize the value of forward-looking mental representations and the critical role of cognitive processes in forward-looking search model. The authors suggest a strategist perceives the problem space of alternative responses to the future event as a simplified and incomplete image of the actual, more complex problem space. Chen (2008) aligns with this idea, suggesting that strategists’ forward-looking mental representations reflect the firm’s performance target based on the extrapolation from the firm’s historical performance.

While the backward-looking and forward-looking search model is important to understanding search behavior, there are notable differences. First, both logics differ in terms of what triggers the search process. The backward-looking search model suggests that strategists’ mental representations are based on their understanding of the past and search behavior is adjusted based on information from the past. Thus, search is triggered by past experiences and learning processes. In contrast, in the forward-looking search model, strategists’ mental representations are based on the cognitive images of future events (Gavetti & Levinthal, 2000). When a future event remains unnoticed, it does not exist or its manifestation is at least delayed (Levinthal & March, 1993). However, once the strategist detects the future event, forward-looking cognitive images trigger search processes and behavior is adjusted based on the anticipation of the future.

A second difference between backward-looking and forward-looking search is the degree of uncertainty. Remembering past events involves typically less uncertainty than anticipating future events. Thus, strategists in the forward-looking search model face higher uncertain costs and benefits (Gavetti, 2012) and the strategist’s cognitive abilities become more decisive. Third, backward-looking and forward-looking search differ in the susceptibility to cognitive limitations (Cyert & March, 1963). Bounded
rationality puts limitations to strategists’ cognitive capacity (Ocasio, 1997). Yet, in the backward-looking search model, strategists apply simple rules to judge how much search effort is needed by comparing, for example, the achieved to the desired performance (Chen, 2008; Greve, 2002), which involves less cognitive resources. In contrast, in forward-looking search, strategists have to simplify the complexity of the spatial, temporal, and causal relationships of the future event (Weick, 1979) and thus, face considerable cognitive limitations to construe the future.

**Differences in Forward-Looking Mental Representations**

While initial studies advance our understanding of forward-looking mental representations (Chen, 2008; Gavetti, 2012; Gavetti & Levinthal, 2000), these studies have focused on exploring the differences between backward-looking and forward-looking mental representations. To further inform the field, however, questions such as *how* forward-looking mental representations are initially formed, *how* they develop over time, and *what* consequences they entail should be considered (Gavetti *et al*., 2012). Echoing Gavetti (2012), it is time to more comprehensively understand the notion of forward-looking mental representations. We suggest that CLT suits well to investigating these research questions.

**Construal Level Theory’s Perspective on Forward-Looking Mental Representations**

CLT proposes that the strategist’s psychological distance to the future event affects how the strategist construes the future event and thus, determines the type of mental representation (Trope & Liberman, 2010). In the context forward-looking search, it is the psychological distance to the prospective exogenous shock itself that determines the mental representation.

An abstract or high-level mental representation reflects a strategist’s general set of thoughts about the future event including its core features (Trope & Liberman, 2010). These mental representations are “abstract, schematic and decontextualized representations that extract the gist from the available information” (Liberman & Trope, 2008, p. 1202). In contrast, a contextualized or low-level mental representation reflects a strategist’s situational thoughts about the future event that are embedded in rich and detailed information (Trope & Liberman, 2010). These low-level mental representations are “concrete, relatively unstructured, contextualized representations that include subordinate and incidental features” (Liberman & Trope, 2008, p. 1201).

For example, in the newspaper industry a strategist can hold either a high-level mental representation of the digitalization such as *‘the development of digital newspapers’* or a low-level mental representation such as *‘the use of electronic*
devises to access news and information that diminishes the impact of physical newspapers by 25% annually’. The first, abstract mental representations consist of stable, general characteristics of the newspaper industry whereas the latter, contextualized mental representation reflects less enduring and more specific characteristics of the industry. Hence, moving from an abstract to a contextualized mental representation involves adding detailed and subordinate features of the future event (Trope & Liberman, 2010). Yet, these different mental representations systematically alter the strategist’s cognitive processes, and affect the subsequent behavior. Before elaborating in detail systematic differences on the strategist’s search behavior, we start with discussing what determines forward-looking mental representations and how these mental representations adapt over time.

**Psychological Distance as Driver of Differences in Forward-Looking Mental Representations**

Psychological distance refers to a strategist’s “subjective experience that [a future event] is close or far away from the self [social], here [space], and now [temporal]” (Trope & Liberman, 2010, p. 440). Several empirical studies have shown that multiple objective distances, such as the temporal, spatial, and social distance, map on a common underlying psychological distance (Trope & Liberman, 2010). This means that multiple objective distances between a strategist and the future event converge to one perceived psychological distance. Thereby, an objective distance which is further away contributes to a higher perceived psychological distance. For example, for a traditional newspaper company in the late 1990s digitalization was a temporally distant event as digitalization was still in a very
early stage of development (temporally distant). CLT would assume that a strategist’s psychological distance to the future event was far and consequently, the strategist would form a high-level mental representation such as “development of a digital newspaper” or “new technology development”.

In contrast, a close psychological distance means that the strategist perceives the future event to be urgent, to occur in the same industry or geographical region as the company operates, or to have significant implications for the firm’s core identity. Taking the same example as above but advancing to the year 2010, CLT would predict that a strategist construes the digitalization as “new start-up companies offering digital news let our company’s quarterly sales drop by 25%” or “the increased use of electronic devises to access news and information deteriorates our current business model relying on physical newspapers”. The future event is construed in a vivid and contextualized manner with detailed subordinate features.

In a similar vein, the camera company Polaroid was facing a far social distance when confronted with the disruptive digital technology since Polaroid’s core identity did not associate with the digital technology (socially distant). Polaroid’s core assumptions built on the traditional razor-blade business model of selling cheap cameras and expensive films. From a CLT perspective, digital technology in cameras was a psychological distant future event for Polaroid’s strategists since it was outside Polaroid’s core identity (Tripsas & Gavetti, 2000). In support of this contention, the company’s former CEO stated in the annual report in 1984 that “[w]e believe that there is considerable potential in developing new hybrid imaging systems that combine instant photography and electronics” (Tripsas & Gavetti, 2000, p. 1152). From a CLT perspective, this mental representation of digital cameras as a hybrid imaging system is construed in abstract and schematic terms that do not include any contextualized features, illustrating how the psychological distance influences a strategist’s mental representations.

In sum, we propose that strategists’ psychological distance to the future event systematically alters the type of mental representation that they form of the future event.

**Proposition 1:** A future event that is psychological distant (close) to the strategist leads to a high- (low-) level mental representation of the future event.

### Adaptation of Forward-Looking Mental Representation

When anticipating the future, circumstances can change as novel information becomes available when the future event approaches. Thus, it is essential for strategists to continuously adapt their mental representations (Maggitti et al., 2013). Adaptation is likely to be beneficial for at least two reasons. First, the strategist is able to substitute weaknesses with novel information or revise the mental
representation in case the future event has lost its significance (Gavetti & Levinthal, 2000). Second, the adaptation of the mental representation may shed light on novel attributes of the future event that the strategist was not able to perceive up front (Gavetti & Levinthal, 2000). However, strategists are not equally capable to adapt their forward-looking mental representation. We suggest that the initially formed type of mental representation affects the subsequent ability to adapt the mental representation. Specifically, we propose that abstract and high-level mental representations are more likely to be persistent and therefore, tend to remain stable over time, which leads to a slower adaptation.

When strategists form a high-level mental representation, the evaluations of the future event focus on the essentials and core features, such as the future event’s general patterns and fundamental assumptions, which appear to be relatively consistent in face of novel, contextualized information or different contexts (Ledgerwood et al., 2010; Nussbaum et al., 2003). Hence, this global evaluation of the future event, which is evoked by the high-level mental representation, reduces the strategist’s ability to adapt the mental representation of the future event over time. In contrast, low-level mental representations are more sensitive to subordinate and contextualized features of the future event (Nussbaum et al., 2006; Nussbaum et al., 2003) and increase the strategist’s attention to novel information (Trope & Liberman, 2010). This sensitivity to local information of the future event enables the strategist to adapt the mental representation more quickly when exposed to novel information (Ledgerwood et al., 2010).

In sum, the degree of abstraction of the mental representation constitutes a mechanism to explain why some strategists are less capable to adapt their mental representations of a future event. For example, when the digital revolution in the photograph industry accelerated, Kodak’s strategists likely still held a high-level mental representation of the digital technology even though its long-term rival Fujifilm had long ago started to adapt its corporate strategy expanding into the cosmetics and LCD flat-screen industries using its chemical patents (Economist, 2012). While the information from its competitor Fujifilm was available to Kodak’s strategists, they seemed to be unable to adapt their mental representations to this contextualized information. In sum, we propose that high-level mental representations are less likely to adapt over time.

Proposition 2: Strategists with high- (low-) level mental representations are slower (faster) in adapting their mental representations of the future event.
Effects of High-Level Mental Representations on Search Behavior

Gavetti and Levinthal (2000) characterize forward-looking search as off-line evaluation of a broad set of alternatives that are outside the neighborhood of the firm’s current business. The authors argue that forward-looking mental representations are a simplified and crude extract of the actual problem space that contains significant less or only few local peaks compared to the actual problem space. Strategists “cannot envision the full set of alternatives available to [them], nor can [they] completely specify the causal linkages between possible alternative actions and possible outcomes” (Gavetti & Levinthal, 2000, p. 117). Accordingly, mental representations can induce variation into individual strategists’ search breadth and search depth in forward-looking search.

Search breadth refers to the extensiveness of alternatives that the strategist considers in the problem space (Gavetti & Levinthal, 2000). In terms of N-K modeling this is related to how many different attributes (e.g. facets of the future event) the strategist takes into account in the search. Independent from the extensiveness of search is the degree to which these alternatives are related (Gavetti & Levinthal, 2000). Search depth refers to the extent to which the strategist considers interdependences between the alternatives in the problem space (Gavetti & Levinthal, 2000). In terms of N-K modeling this relates to the strategist’s perceived degree of interdependence among the attributes and to the ruggedness of the problem space. Figure 2 illustrates both search outcomes and its combinations. These two dimensions of search are both relevant. First, the likelihood to detect innovative responses to the future event increases when the strategist considers more alternatives that are related to different attributes of the future event (high search breadth). Second, the likelihood to overinvest in suboptimal alternatives increases when the strategist fails to consider relevant interdependences among alternatives (low search depth).

Search intensity is yet established as another important search outcome (e.g., Chen, 2008; Greve, 2003; Li et al., 2013), which is defined as the level of effort and persistence that the strategist exerts to search for alternatives (Chen, 2008; Li et al., 2013). Search intensity is relevant since strategists may decline the opportunity to critically compare one alternative with other alternatives when stopping to early to gather alternatives after finding an initial satisficing alternative (Schwenk, 1984).

The three dimensions – how broad (breadth of search), how detailed (search depth), and how long (search intensity) – are used to characterize the strategist’s search behavior. In the following, we discuss how the two types of mental representations that strategists hold of a future event generate systematic differences in search behavior. We share the assumption with Gavetti and Levinthal (2000) that
strategists are able to identify the alternative with the highest payoff among the local peaks within the terrain of the problem space the strategist is able to construe; however, we do not assume that the strategist finds the global peak intentionally.

**Figure 2: Illustration of the Strategist’s Forward-Looking Search Behavior: Search Breadth and Depth**

The graphs illustrate the strategist’s forward-looking search behavior. The colorful parts of the problem space highlight the region of the problem space where the strategist searches depending on his or her search depth and search breadth.

a. Search breadth relates to the extensiveness of alternatives that the strategist considers in the problem space.

b. Search depth relates to the extent to which the strategist considers interdependences among alternatives, which is represented in the ruggedness of the landscape.

**Effects on Search Breadth**

Search breadth reflects the extensiveness of alternatives that the strategist considers in the problem space (Gavetti & Levinthal, 2000). Building on CLT, we propose that the strategist’s search breadth systematically varies with the strategist’s mental representation and thus, with the psychological distance to the future event.
Strategists with high-level mental representations have the attentional focus on global trends (Henderson *et al.*, 2006) and direct their search towards general information of the future event (Nussbaum *et al.*, 2003). This attention towards broad information and trends entails carryover effect on the strategist’s subsequent behavior (Malkoc *et al.*, 2010). Consequently, strategists are more likely to search for global, decontextualized patterns in the problem space. In contrast, strategists with low-level mental representations focus their attention on local deviations of trends (Henderson *et al.*, 2006) and are more sensitive to contextual information (Nussbaum *et al.*, 2003) that sets up strategists to search less broadly within the problem space.

To support the argument, the global (local) processing style triggered by the exposure to a high-level (low-level) mental representation spills over to subsequent tasks (Foerster & Higgins, 2005; Uelkuemen *et al.*, 2010). For instance, the categorization of the patterns of the future event into few and broad categories is associated with high-level mental representations (Liberman *et al.*, 2002) that translate into a subsequent broad search behavior because strategists are cued to the notion that general pattern matter. Yet, these general patterns in the search space also increase strategists’ ability to compare unusual alternatives (Malkoc *et al.*, 2005) broadening the strategist’s search. In contrast, strategists with a low-level mental representation tend to adhere a local processing style cued towards the importance of subtle details (Uelkuemen *et al.*, 2010). This tends to limit the extent to which the strategist searches the problem space. In sum, we propose that the type of mental representation systematically varies the strategist’s search breadth such that strategists with high-level mental representations search more broadly compared to strategists with low-level mental representations.

*Proposition 3:* Strategists with high- (low-) level mental representations of the future event are more (less) likely to search broadly.

**Effects on Search Depth**

Search depth reflects the extent to which the strategist considers interdependences between the alternatives in the problem space (Gavetti & Levinthal, 2000). We propose that the strategist’s search depth systematically varies with the strategist’s type of mental representation and thus, with the psychological distance to the future event.

Low-level mental representations focus the strategist’s attention on feasibility considerations (Liberman & Trope, 1998) which cues the strategist to discern interdependencies in the problem space since the strategist is more inclined to ask “how” questions such as “how are these alternatives connected” or “how does this alternative relate to payoffs”. In contrast, high-level mental representations put the emphasis on desirability consideration, asking why an alternative should be pursued.
(Liberman & Trope, 1998) and thus, the strategist searches for the overall attractiveness of the alternative’s payoff. This suggests that with a low-level mental representation the strategist is more capable of relating alternatives to each other in the search process compared to a strategist with a high-level mental representation who directs less attention to interdependences. In support, low-level mental representations construe the future event in rich images, which includes detailed and incidental features (Wakslak & Trope, 2009). This carries over to strategists’ subsequent behavior (Malkoc et al., 2010) and induces a search behavior that is focused on details and cause-effect relationships in the problem space.

Additionally, low-level mental representations have been associated with local processing styles that increase analytical thinking and increase strategists’ cause-effect understanding of the problem space (Foerster & Higgins, 2005). As introduced above, the processing style triggered by the exposure to a mental representation spills over to subsequent tasks (Foerster & Higgins, 2005; Uelkuemen et al., 2010). Strategists with low-level mental representations are able to process more complex thoughts (Uelkuemen et al., 2010) that will evoke a greater depth of search since strategists are cued towards detecting more interrelationships among alternatives and towards the notion that subordinate details matter (Uelkuemen et al., 2010). In sum, we propose that the type of mental representation systematically varies the strategist’s search depth such that strategists with high-level mental representations search less for interdependencies in the problem space compared to strategists with low-level mental representations.

Proposition 4: Strategists with high- (low-) level mental representations of the future event are less (more) likely to search in depth.

Effects on Search Intensity

Search intensity reflects the effort and persistence that the strategist exerts to search for alternatives (Chen, 2008; Li et al., 2013). Building on CLT, we propose that the strategist’s search intensity systematically varies with the strategist’s type of mental representation and thus, with the psychological distance to the future event.

Strategists with low-level mental representations are inclined to judge a future event as more likely inflating probability judgments whereas high-level mental representations deflate probability judgments (Wakslak & Trope, 2009). Inflated probability judgments related to low-level mental representations likely increase the motivation of strategists to search for alternatives. In support, research found that when a future event is more likely to occur, strategists allocate more time and resources to it (Dutton et al., 1990). Thus, strategists with low-level mental representations are more prone to engage in an intense search behavior.
Finally, strategists likely lack the motivation to engage in an intense search process when predominantly evaluating the overall attractiveness of the solutions. A greater psychological distance and a high-level mental representation makes an outcome less contingent on the strategist’s action and thus, reduces the strategists’ motivation to act (Trope & Liberman, 2010). In support, findings show that, even though students have the desire to pass the exam, they are less motivated to study for an exam in the distant future since it is still possible to compensate for this failure of effort later (Trope & Liberman, 2010). In sum, compared to strategists with high-level mental representation, strategists with low-level mental representation of the future event are more inclined to search intensively for alternatives in the problem space.

Proposition 5: Strategists with high- (low-) level mental representations of the future event are less (more) likely to search intensively.

The Role of the Future Event’s Complexity

The above propositions indicate that there is no single best type of mental representation to optimize the strategist’s search behavior; instead, there are trade-offs particularly between search depth, intensity and breadth. In the following, we discuss the role of the future event’s complexity to assess which type of mental representation is more suitable for the strategist’s search depending on the complexity of the future event. Several studies on search behavior have shown the critical role of complexity (Barroso & Giarratana, 2013; Billinger et al., 2014; Farjoun, 2008; Gavetti et al., 2005; Knudsen & Levinthal, 2007; Maggitti et al., 2013). The more complex the future event, the more complex the problem space of potential alternatives (Maggitti et al., 2013). Particular, in context of forward-looking search, complexity seems to be important, since it increases the demand for strategists’ limited cognitive resources (Farjoun, 2008).

Complexity of the problem space reflects the heterogeneity and interdependence of the characteristics of the future event (Barroso & Giarratana, 2013; Billinger et al., 2014). The complexity of a firm’s positioning strategy is, for example, a function of the interdependence of functional decisions (e.g. marketing, finance, strategy) and of the heterogeneity of decisions, e.g. product portfolio, resource allocation etc. (Farjoun, 2008). Analogically, the complexity of a future event reflects the heterogeneity of the attributes of the future event (e.g. economic, technological, demographic, regional influences) and the interdependence of these attributes (e.g. joint impact on marketing, finance, strategy, sales). Thus, future events might differ in terms of their level of complexity. Yet, complexity does not have a direct influence on search behavior but rather systematically influences attentional processes (Barroso &
Giarratana, 2013) and the cognitive effort to search the problem space (Farjoun, 2008).

The formation of a mental representation requires cognitive effort, which constrains the strategist’s ability to evaluate the temporal, causal, and spatial relationships of the future event (Dellaert et al., 2008). The more vivid and detailed a mental representation, such as a low-level mental representation, the more cognitive effort is needed to construe the future event, and the more restrictive is the cognitive capacity constrain (Dellaert et al., 2008). Hence, differentiating between high-level and low-level mental representations, the latter requires more cognitive effort since the future event is construed in its detailed facets.

The cognitive capacity restriction that results from construing the future event implies a trade-off between the richness of the mental representation and the working memory load to search the problem space (Dellaert et al., 2008). This trade-off becomes more important when the complexity of the future event is high. The complexity of the problem space increases the demand for strategists’ limited cognitive resources to search the problem space (Farjoun, 2008). Thus, when faced with a highly complex future event, construing the event in a low-level mental representation may already take up most of the strategist’s cognitive resources that are traded off against the cognitive resources for the search. Consequently, the strategist’s cognitive resources to search the problem space are constrained. Thus, we can expect that for highly complex future events, low-level mental representations lead to less search depth and intensity since less cognitive resources are available for search. In contrast, when the complexity of the future event is low or moderate, more cognitive resources are available for search and the benefits of low-level mental representations for search depth and intensity can play out.

When construing a highly complex future event in a high-level mental representation less resources are needed since this type of mental representation abstracts and simplifies the causal, temporal, and spatial relationships considerably (Trope & Liberman, 2010). Hence, the strategist’s cognitive resources are less constrained to search the problem space. Hence, we can expect that for highly complex future events, high-level mental representations contain more benefits for search breadth compared to settings with low or moderate complexity.

Second, the search literature suggests that one way to reduce the cognitive efforts when faced with highly complex events is the incentive to use of simplified decision rule (Barroso & Giarratana, 2013; Knudsen & Levinthal, 2007; Simon, 1955). We propose that the level of abstraction of mental representation must fit with the type of decision rule applied in order to effectuate search. This finds support in the CLT suggesting that the message framing must match with the level of abstraction of the mental representation in order to process a message (White et al., 2011).
The use of simplified decision rules for highly complex future events matches with high-level mental representations that are based on simple mental representations of the future event. This fit allows strategists to focus their attention on the search process and thus, amplifies benefits for search breadth. However, the simplified decision rule does not match with low-level mental representations that are based on complex mental representations. This mismatch distracts strategists’ attention and inhibits search behavior. In sum, we argue that the effects of high-level mental representations on search breadth are stronger when the future event’s complexity is high; however, when the future event’s complexity is high, the effects of low-level mental representations on search depth and breadth are weaker.

**Proposition 6a:** The relationship between high- (low-) level mental representation and search breadth is stronger (weaker) when the complexity of the future event is high.

**Proposition 6b:** The relationship between high- (low-) level mental representation and search depth is stronger (weaker) when the complexity of the future event is high.

**Proposition 6c:** The relationship between high- (low-) level mental representation and search intensity is stronger (weaker) when the complexity of the future event is high.

**Discussion**

Taking a CLT perspective, we have developed a forward-looking model of search behavior. Specifically, we propose that it is the strategist’s psychological distance to the future event that affects the search breadth, depth, and intensity as well as the strategist’s ability to adapt the mental representation over time. We argue that these effects are realized through the type of forward-looking mental representation the strategist forms of the future event. Low-level mental representations cue strategists towards feasibility considerations and the detection of more complex cause-effect interdependencies that benefit search depth and stimulate strategists’ motivation to search intensively. High-level mental representations cue strategists to the notion that general patterns and global trends matter that benefit search breadth. Finally, we discuss the role of the future event’s complexity as important constrain to the effects of a particular type of mental representation on search behavior. Complexity alters the level of cognitive efforts needed to construe the future event as well as the fit with the degree of abstraction of the mental representation.
Theoretical Implications

Our study contributes to research on search behavior (Billinger et al., 2014; Chen, 2008; Gavetti & Levinthal, 2000; Knudsen & Levinthal, 2007; Li et al., 2013) and more general, to the behavioral theory (Cyert & March, 1963; Gavetti et al., 2012; March & Simon, 1958) in two ways.

First, we extend the research on forward-looking search (Chen, 2008; Gavetti & Levinthal, 2000). While most of the prior literature on search has studied the backward-looking logic based on aspiration and experiential learning (Baum et al., 2005; Chen & Miller, 2007; Greve, 1998, 2003; Greve & Taylor, 2000), firm behavior also comprises forward-looking intelligence (Gavetti & Levinthal, 2000). Research on the forward-looking aspects of strategy-making is largely absent in the behavioral theory (Gavetti et al., 2012). Initial studies on forward-looking search have focused on explaining differences between backward-looking and forward-looking search and its interactions (Chen, 2008; Gavetti & Levinthal, 2000). Yet, we extend this prior research by elaborating on the cognitive mechanism behind forward-looking search and we propose how strategists’ forward-looking search can differ based on strategists’ psychological distance to the future event and the type of mental representation that is formed as a consequence.

Specifically, we add to Gavetti and Levinthal (2000) in several ways. First, we discuss how strategists initially acquire mental representations of the future event. This prior study conceptualizes forward-looking mental representations as strategists’ perception of a simplified version of the problem space; however, does not discuss how strategists initially form these mental representations (Gavetti et al., 2012). We propose that the strategist’s psychological distance to the future event is an important dimension that explains how mental representations are initially acquired. While we also contend that strategists hold a simplified mental representation (Gavetti & Levinthal, 2000), we propose that the richness of the forward-looking mental representations can differ significantly across strategists. These variations across strategists have not yet been discussed. Thus, our conceptual model shifts attention towards the underlying process of search which complements the model of Gavetti and Levinthal (2000). Finally, while Gavetti and Levinthal (2000) undertake an initial explorative study of the adaptation of mental representations over time, the authors do not provide a theoretical explanation why mental representations shift or not. We add to this discussion by suggesting that strategists with low-level mental representations of the future event are more likely to adapt their mental representations over time.

Further, we add to Chen (2008) who provides a first empirical test of forward-looking and backward-looking search behavior and their interdependence. Since the study uses the organizational-level of analysis, it is unable to draw conclusions about
the variance across individual strategists’ search behavior. We complement Chen (2008), by a conceptual model that explains variation in search intensity at the individual level. Moreover, the study conceptualizes forward-looking mental representations as extrapolation of the past performance trend. In this context, we show that forward-looking mental representations are primarily a function of the nature of the future event itself.

Moreover, we extend Barreto and Patient (2013) who introduce the shock distance to a critical event as driver for differences in strategists’ interpretations. The authors build on the initial notion of CLT, which builds on desirability and feasibility considerations; however, do not elaborate on the mediating role of mental representations that is central to CLT (Trope & Liberman, 2010). Thus, we provide a more detailed and elaborated cognitive mechanism on how distance between the future event and the strategist affects outcomes. Further, we extend this study’s thoughts and relate strategist’s psychological distance to systematic differences in search behavior across strategists.

While our conceptual model is dedicated to better understanding the role of forward-looking search behavior, we acknowledge that organizational search behavior consists of both forms of search: the forward- and backward-looking search (Gavetti & Levinthal, 2000). For instance, Gavetti and Levinthal (2000) propose that forward-looking mental representations are the starting point for backward-looking search. Extracted from their findings, we can expect that backward-looking search moderates the relationship between the type of forward-looking mental representation and search behavior. For instance, performance at the aspiration level makes strategists more prone to narrow down their focus towards further improving existing competencies (March, 1991) and towards sticking with strategies that were successful in the past (Lant et al., 1992). This implies that strategists who have formed low-level mental representations of the future event may perform less intense search when performing at the aspiration level compared to strategists who perform below the aspiration level that feel more urgency for adapt organization’s behavior. Thus, even though we do not explicitly integrate propositions on backward-looking search, our conceptual model is also able to embrace findings from this research.

Second, we add to research on search behavior by substantiating research on the psychological foundations that has attracted significantly less attention (Gavetti et al., 2012). Most of the search literature focuses on the organizational-level and our knowledge about individual search processes is very limited (Billinger et al., 2014; Gavetti et al., 2012; Li et al., 2013; Maggitti et al., 2013). We build on the notion that search is a human capacity (Li et al., 2013) and our model acknowledges the critical role of the individual strategist in organizational search. Further, we discuss strategists’ mental representations as critical determinant in explaining individual search behavior.
Implications for Future Research

CLT holds in many different situations (Trope & Liberman, 2010), however, particularly in the management context more theoretical and empirical research is needed to map the theories impact. One avenue for future research would be to empirically test some of the effects proposed by our conceptual model in business settings. This would specifically have two advantages. First, most of CLT’s foundations have been derived in controlled, experimental settings with only few studies using non-experimental settings (e.g., Magee et al., 2010). Testing our conceptual framework in the business environment could, for example, be done in a natural experiment using a prospective exogenous shock. Barreto and Patient (2013) provide an example on how to operationalize psychological distance in a business setting. The authors operationalize shock distance as an ordinal variable depending on how close the strategist’s business unit is to the locus of the shock. While the natural gas business unit is closest to the deregulation in the gas industry, corporate headquarter units are further away (Barreto & Patient, 2013). Another method would be to ask strategists open-ended questions to describe a future event or to use the letters to the shareholders to assess the CEO’s psychological distance by analyzing the use of abstract formulations. For example, linguistic software such as Semin and Fiedler (1988) Linguistic Categorization Model make such assessments possible by coding a text according to the abstractness of the words used. Additionally, neuroscience can in detail inform researchers about the mental representation of a future event as the contextualized and vivid information of a low-level mental representation are processed in different regions of the brain (e.g., Perrine & Decety, 2001; Raos et al., 2007).

Another avenue for future research is to explore the boundary conditions of our conceptual model. Our article delineates the cognitive mechanism to explain systematic differences in strategists’ cognition in the forward-looking search model at the individual level. However, strategists usually do not search in isolation but are embedded in a larger organizational context (Knudsen & Levinthal, 2007) which represent an important boundary condition of our conceptual model. Thus in a next step, a theory at the meso- and organizational-level should be developed that addresses how strategists’ mental representations are, for example, influenced by other strategists and how these accumulate at the organizational level.

Finally, future research may want to examine additional moderating variables. These may benefit our understanding of the circumstances under which the mental representations lead to differing conclusions. Future research could study moderating factors between psychological distance and mental representation. For example, on the individual level, personality traits such as openness to experience may vary the impact of the strategist’s psychological distance on the abstractness of the mental representation. Openness to experience describes a strategist’s inclination towards
imagination and curiosity and strategist’s openness to new ideas and unconventional perspectives (George & Zhou, 2001). Hence, we may expect that strategists showing greater openness to experience are likely to experience a future event as less psychological distant.

Further, environmental- and organizational-level factor may alter the effect of mental representations on the strategists’ search behavior. We have already suggested the complexity of the future event as important moderator. Further, the strength of the effect of forward-looking mental representations on search behavior may depend on the competitive and general environment. Eisenhardt and Bourgeois (1988), for instance, suggest that in environments “in which there is rapid and discontinuous change in demand, competitors, technology and/or regulation […] information is often inaccurate, unavailable, or obsolete” (p. 816). In this environment, strategists’ forward-looking mental representations become more critical, and particularly, low-level mental representations. As discussed, these low-level mental representations enable faster adaptation.

**Implications for Practice**

Our conceptual framework may help to understand the heterogeneity in strategists’ anticipation of future developments. By looking ahead, strategists can take into account future events such as macroeconomic and technological developments and thus, enable their organizations to prepare for these critical future contingencies. Particularly, when the future developments do not resample the past, such as in case of a disruptive shock, the backward-looking search behavior is less promising to help firms to survive. Studying forward-looking search behavior is particularly important for CEOs and CSOs. For instance, the CSO is particularly responsible for the identification of threats and business opportunities in the firm’s environment and for long-range strategic planning (Menz & Scheef, 2014). By looking ahead, CSOs can take into account future developments. Yet, research on strategists has often rested on the “outmoded conception of the strategist as the cognitive miser” (Hodgkinson & Healey, 2011, p. 1501). Moreover, senior executives’ cognition is increasingly recognized as source of the firm’s competitive advantage (Gavetti et al., 2012; Gavetti et al., 2005). Thus, by better understanding CEOs’ and CSOs’ cognition such as their forward-looking mental representations, research can develop more specific recommendations for boards and CEOs about how the organization can purposefully stimulate different types of mental representations of the future as outlined below.

There are several possibilities to affect strategists’ psychological distance to future events. Strategists’ anticipated emotions, for example, reduce the psychological distance to a future event since emotions provide an additional source of information. Strategists with strong anticipated emotions likely construe more rich
and emotion-laden images of the future event (Fiedler, 2007) and feel a stronger sense of proximity (Van Boven et al., 2010). CEOs may influence this emotional experience through CSOs’ role designs. CSOs who are in a more emotionally arousing role such as heading a strategic initiative to address the future event feel more involved compared to CSOs who work on the future event as one of multiple tasks in their role. The level of involvement and whether the CSO has a central or peripheral role has been suggested by CLT research to affect the emotional arousal (Van Boven et al., 2010). Thus, the role design provides CEOs or boards with a means to affect CSOs’, and generally strategists’, psychological distance to the future event.

Moreover, the long-term strategic planning process is often perceived as a bureaucratic process with strategists being forced to read hundreds of pages of cold text prepared by analysts. However, changing the process towards a more vivid, emotion-laden process, including imagination tasks or visualization tools would likely enable strategists to draw a psychological distant future event closer whereas more bureaucratic processes draw the future event further apart (Fiedler, 2007).

Nevertheless, strategists may also have a pre-disposition to construe a future event in high-level or low-level mental representations (Levy et al., 2002). Thus, strategists who are predisposed to form low-level mental representations may be particularly suited to work in foresight units or on strategic initiative that address the business impact of future events such as initiatives on strategic implications of demographic change or the digitalization.

Conclusion

To conclude, CLT provides an intriguing theoretical perspective to study forward-looking search behavior. We introduce strategists’ psychological distance to a future event as important driver of systematic differences in strategists’ mental representations of the future event. These low-level and high-level mental representations provide a cognitive explanation for differences in strategists’ search behavior. We hope our study stimulates more research in this area.
References


Weick KE. 1979. *The social psychology of organizing*. Addison-Wesley: Reading, MA.

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