CEO Experience Variety and its Strategic, Remunerative, and Performance Outcomes

D I S S E R T A T I O N
of the University of St. Gallen,
School of Management,
Economics, Law, Social Sciences,
and International Affairs
to obtain the title of
Doctor of Philosophy in Management

Submitted by:

Philipp E.M. Mueller

from

Basel and Zurich

Approved on the application of

Prof. Winfried Ruigrok, PhD

and

Prof. Simon Ian Peck, PhD

Dissertation no. 4786

Gutenberg, Schaan, 2018

The University of St. Gallen, School of Management, Economics, Law, Social Sciences, and International Affairs hereby consents to the printing of the present dissertation, without hereby expressing any opinion on the views herein expressed.

St. Gallen, May 22, 2018

The President:

Prof. Dr. Thomas Bieger

This dissertation is dedicated to my grandmother Mémé.
She was the best. And she would have been most proud.

Acknowledgements

Writing this dissertation has been both an enriching learning experience and a personal challenge. The whole process has not only provided me with the opportunity to learn much, but also to grow personally. Yet, this was only possible due to the generous support of several people, to whom I owe gratitude and to whom I continue to look up to.

My sincerest appreciation goes to my advisor Winfried Ruigrok. His openness to my project, his guidance and continuous support, as well as his availability to discuss my questions made him an exceptional supervisor. I would also like to thank my co-advisor Simon Peck. He continuously challenged me and thus helped me to improve my work. He made a highly motivating and encouraging counterpart.

A special note of thanks goes to Dimitrios Georgakakis. He is not only a colleague and friend, but also served as an invaluable mentor. Most of what I know about academic thinking, rigorous analyses, and academic writing, I have learned from him. Therefore, I am very thankful for his support and mentorship.

I would also like to mention Peder Greve. He was always open to methodological questions, and his interest in my work was a strong motivation. Furthermore, I wish to express my gratitude to my colleagues at the Research Institute for International Management (FIM). Tomas Casas i Klett, Roger Moser, Davide Gremmo, Arnd Niehausmeier, and Georg Guttmann have been excellent colleagues. Our discussions and their willingness to help me out when called upon were important contributions to completing this dissertation. Finally, I thank Riki Schlickenrieder and Isabelle Chemelli for their kindness and support. To the whole FIM team: Your team spirit is great, and I will keep many wonderful memories from my time with you.

Finally, my deepest gratitude goes to those closest to my heart. In particular, I would like to thank my parents for everything they taught me and for their unconditional support throughout my life. So to speak, this dissertation is the culmination of their efforts to ensure that I have received an excellent education. In that sense, much of the credit actually belongs to them. In addition, I am always able to rely on my brother, Andreas, whose support is invaluable. Moreover, I am indebted to my best friend, Patrick, with whom I was able to share all the ups and downs during the writing of this dissertation. Without all of you, this dissertation would not have been possible.

Basel, December 22, 2017 Philipp E.M. Mueller

Abstract

Chief Executive Officers (CEOs) and their backgrounds are crucial. In particular, CEO experience variety—defined as a continuum from low variety (i.e., specialization or experience *depth*) to high variety (i.e., generalism or experience *breadth*)—has been shown to impact individual-level outcomes (i.e., career advancement and compensation), team-level outcomes (i.e., top management team (TMT) change and TMT processes), and firm-level outcomes (i.e., strategic change).

However, despite these important insights, scholars still possess merely limited theoretical and empirical clarity about CEO experience variety and its outcomes. Therefore, the main purpose of this dissertation is to shed light on the complex nature of CEO experience variety, to study a selection of important individual and organizational implications, and to point towards critical contingencies.

Four cumulative studies provide a first attempt in this direction. They examine (a) the current state of the literature and the main future research opportunities, (b) the impact of CEO experience variety on strategic change (and the moderating role of TMT turnover), (c) the relationship between CEO experience variety and CEO compensation (and the moderating influence of firm and industry complexity), and (d) the association between CEO experience variety and firm performance (and the moderating role of firm and industry complexity).

The empirical setting consists of 305 CEO successions between 2007 and 2013 at large public firms in four European countries (Germany, the Netherlands, Switzerland, and the United Kingdom). The datasets were analyzed using ordinary least squares (OLS) regression analyses.

Taken together, the four studies provide three main insights. First, CEO experience variety and its outcomes are more complicated than previously assumed. Thus, simplistic theoretical notions and methodological approaches need to be discarded. Second, the relationships between CEO experience variety and its strategic, remunerative, and performance outcomes are non-linear, indicating that CEO experience might indeed be a ‘double-edged sword’. Third, these relationships are contingent upon important firm-internal and -external factors which should thus be considered in the context of the CEO selection process.

Overall, this dissertation confirms the importance of CEO experience variety while highlighting its complex nature. This thesis thus hopes to provide future research a useful foundation and inspiration to further refine academic and practical understanding of this important construct.

Zusammenfassung

CEOs und ihre Karrierehintergründe sind von entscheidender Bedeutung. Dabei kommt insbesondere der sogenannten ‚CEO experience variety' eine tragende Rolle zu. Dieses Konstrukt umfasst nicht nur die *Breite* (im Sinne von Heterogenität), sondern auch die *Tiefe* (im Sinne von Spezialisierung) von Karriereerfahrungen von CEOs und wird in dieser Arbeit als Trade-off konzeptualisiert, bei welcher die Zunahme von einer Dimension (z.B. *Breite*) zwangsmässig zur Abnahme der anderen führt (z.B. *Tiefe*).

Ungeachtet dessen besitzen wir nach wie vor nur mangelhafte theoretische und empirische Klarheit bezüglich der Eigenschaften und Folgen von ‚CEO experience variety'. Deshalb hat die vorliegende Doktorarbeit die folgenden Ziele: Erstens sollen neue Erkenntnisse über die komplexe Natur der ‚CEO experience variety' gewonnen werden. Zweitens soll eine Auswahl von wichtigen strategischen und finanziellen Auswirkungen, sowohl für CEOs als auch für Unternehmen, untersucht werden. Drittens werden in diesem Kontext bedeutsame Moderatoren beleuchtet.

Vier kumulative Studien stellen einen ersten Schritt in diese Richtung dar. Diese Studien befassen sich mit (a) dem aktuellen Stand der Literatur und den dringlichsten Forschungslücken, (b) dem Einfluss von ‚CEO experience variety' auf strategische Veränderungen, (c) dem Einfluss von ‚CEO experience variety' auf die Vergütung von CEOs sowie (d) dem Einfluss von ‚CEO experience variety' auf die Rentabilität von Unternehmen.

Der empirische Rahmen dieser Arbeit sind 305 CEO-Wechsel, welche zwischen 2007 und 2013 bei den größten kotierten Unternehmen in vier europäischen Ländern stattgefunden haben (Deutschland, die Niederlande, Schweiz und das Vereinigte Königreich). Die Datensätze wurden mit OLS-Regressionsmodellen untersucht.

Zusammenfassend formuliert führen die Studien zu drei Haupterkenntnissen: Erstens sind ‚CEO experience variety' und ihre Auswirkungen komplizierter als bisher angenommen. Zu vereinfachende theoretische und methodologische Ansätze müssen daher hinterfragt und weiterentwickelt werden. Zweitens sind die Beziehungen zwischen ‚CEO experience variety' und den untersuchten abhängigen Variablen nicht linear. Dies bedeutet, dass ‚CEO experience variety' ein zweischneidiges Schwert darzustellen scheint. Drittens hängen die Auswirkungen von ‚CEO experience variety' von wichtigen internen und externen Faktoren ab, welche bei der Wahl von CEOs berücksichtigt werden sollten. Damit offeriert diese Arbeit hoffentlich Grundlagen und Inspiration für weiterführende Forschung auf diesem wichtigen Gebiet.

Table of contents

List of figures

List of tables

Alphabetical list of acronyms and abbreviations

B.Sc.	Bachelor of Science
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
CHE	Switzerland
DEU	Germany
DOI	Degree of Internationalization
e.g.	exempli gratia (for example)
et al.	et alii (and others)
FIM	Research Institute for International Management
GBR	the United Kingdom
GLS	Generalized Least Squares
HLM	Hierarchical Linear Models
i.e.	id est (this is)
IPO	Initial Public Offering
MBA	Master of Business Administration
M&A	Mergers and Acquisitions
MNC	Multinational Corporation
M.Sc.	Master of Science
NLD	the Netherlands
OLS	Ordinary Least Squares
PhD	Doctor of Philosophy
R&D	Research and Development
ROA	Return on Assets
SIC	Standard Industry Classification
SME	Small and Medium-sized Enterprise
STATA	Statistical Analysis Software
TMT	Top Management Team
VIF	Variance Inflation Factor

1 Introduction

1.1 Relevance of the dissertation

1.1.1 Academic relevance

CEOs and their backgrounds are of decisive significance. CEOs are the figureheads—and presumably the most powerful actors—in their organizations (Cannella & Holcomb, 2005). They possess considerable authority over strategic decisions (Crossland, Jinyong, Hiller, & Hambrick, 2014) and exert a disproportionate influence on their firms (Herrmann & Nadkarni, 2014; Nadkarni & Herrmann, 2010). To understand the significance of CEOs, researchers have focused on CEO experience. Indeed, the notion that individual skills, knowledge, and experiences affect individual and organizational outcomes is central to human capital theory (Becker, 1964; Ployhart & Moliterno, 2011), social capital theory (Burt, 1992; Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998), upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), and other theories applied in the strategic leadership literature.

Over the past decades, however, CEO backgrounds have changed significantly. The "decline of the traditional organizational career" (Briscoe, Hall, & Frautschy DeMuth, 2006: 30) has substantially increased the proportion of CEOs with highly varied career backgrounds (Crossland et al., 2014). This development has been reflected in the emerging literature on CEO experience variety. Establishing CEO experience variety as a valid and significant construct, studies in this nascent stream have made important inroads. Indeed, they have shown that CEO experience variety not only impacts CEO career advancement (Fitzsimmons & Callan, 2016; Georgakakis, Dauth, & Ruigrok, 2016) and CEO compensation (Custodio, Ferreira, & Matos, 2013), but also TMT processes (Buyl, Boone, Hendriks, & Matthyssens, 2011; Georgakakis, Greve, & Ruigrok, 2017) and TMT composition (Crossland et al., 2014) as well as strategic change (Crossland et al., 2014).

Nevertheless, the field of CEO experience variety still lacks theoretical and empirical clarity. First, most of the extant literature builds on 'the more the better' logic (Khanna, Jones, & Boivie, 2014; Ployhart & Moliterno, 2011). This has recently been questioned by authors suggesting that CEO experience variety is not necessarily beneficial because CEOs with highly diverse career backgrounds might merely possess superficial knowledge. For example, Buyl et al. (2011: 170) suggested that such CEOs could "suffer from the 'jack of all trades but master of none' syndrome." Similarly, Crossland et al. (2014: 656) emphasized that "CEO career variety is not necessarily meritorious or beneficial," because "the cognitive outcome may be superficial breadth

without mastery of anything in particular." Nevertheless, empirical research has yet to address the potentially negative implications of CEO experience variety.

Second, studies in this stream have adopted either human capital arguments or social capital ones to develop their hypotheses. Although these two theoretical foundations are unquestioned, only very limited studies have used both theories in tandem. Therefore, authors have called for a concurrent consideration of human and social capital theory, in order to adequately capture the complex nature of CEO experience variety (Georgakakis et al., 2016).

Third, CEO experience variety has generally been operationalized as the sum of experiences (i.e., the number of firms or industries in which an executive has worked), divided by total career length (e.g., Crossland et al., 2014; Custodio et al., 2013). However, this measure does not adequately reflect experience *depth*, as the time spent in each of these firms or industries is not considered. Crossland et al. (2014: 668) therefore stressed the need to develop "more fine-grained measures of CEOs' prior experiences," as this would help to better understand the complex nature of CEO experience variety.

Fourth, except for Crossland et al.'s (2014) study on strategic change, prior research on firm-level outcomes has been noticeably absent. In particular, no study appears to have empirically addressed the performance implications of CEO experience variety. Similarly, this young research field has yet to devote attention to a variety of potentially important contingencies on the firm- and industry-level.

With focus on the outcomes of CEO experience variety, this dissertation seeks to address the above-mentioned points. Thus, taken together, its academic relevance lies primarily in its attempt to fill the various research gaps characterizing a highly significant field of inquiry.

1.1.2 Practical relevance

This dissertation also has important practical ramifications. On the one hand, CEOs seem to matter more and more. Prior research has shown that the 'CEO effect', i.e., the proportion of variance in firm performance attributable to individual CEOs, has significantly increased over the last six decades (Quigley & Hambrick, 2015).[1] On the other hand, CEO successions are an increasingly frequent phenomenon (Chen & Hambrick, 2012; Wowak, Hambrick, & Henderson, 2011; Zhu & Shen, 2016).

[1] The notion of an increasing 'CEO effect' receives support from studies observing a 'flattening of the firm', which results in a higher, more direct impact of CEOs on their firms (Ferreira & Sah, 2012; Rajan & Wulf, 2006).

Strategy&'s annual CEO succession study of the world's largest 2,500 companies has shown that CEO turnover has increased from 13% in 2000 to 17% in 2015 (Aguirre, Karlsson, & Neilson, 2016). Whereas the CEO position used to be the last step before retirement (Lee, 2011), average CEO tenures have meanwhile decreased (Wiersema, 2002; Zhang, 2008). Thus, CEOs are now being replaced more frequently than in the past. Both trends (i.e., an increasing 'CEO effect' and an increasing frequency of CEO successions) increase the need for a better understanding of CEO experience variety, its internal and external moderators, and its various implications.

Their profound impact makes CEO successions one of the most crucial organizational changes (Datta, Rajagopalan, & Yan, 2003; Finkelstein, Hambrick, & Cannella, 2009; Kesner & Sebora, 1994; Zhang & Rajagopalan, 2004). They are even considered critical for firm survival (Smith & White, 1987). Thus, CEO selection is one of the board's most important tasks (Lorsch & Khurana, 1999), or even the most important one (Tian, Haleblian, & Rajagopalan, 2011; Vancil, 1987). In this light, a better understanding of observable CEO characteristics such as CEO experience variety might help boards, executive search consultants, and others involved in the CEO selection process to take well-informed and firm-appropriate decisions.[2]

1.2 Purpose of the dissertation and research questions

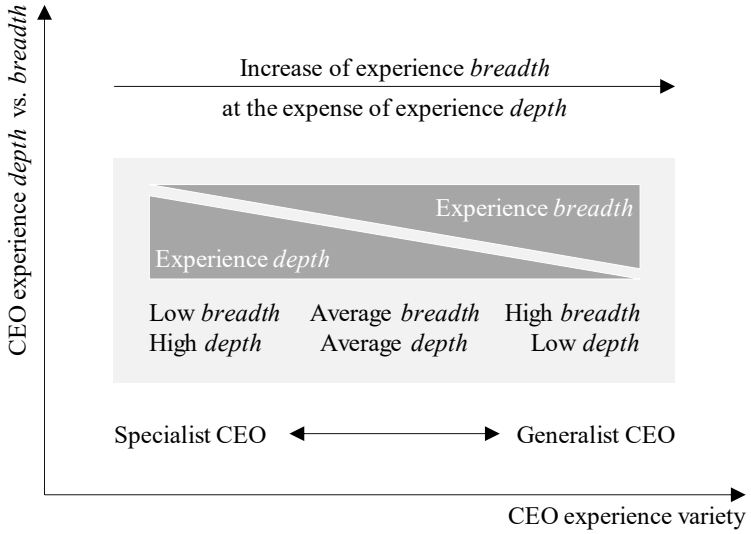
The main purpose of this dissertation is (a) to shed light on the complex nature of CEO experience variety, (b) to study its strategic, remunerative, and performance outcomes, and (c) to point towards critical contingencies.

The construct of CEO experience variety thus lies at the heart of this dissertation and requires a brief introduction. In this thesis, CEO experience variety is defined as a continuum from specialization (i.e., experience *depth*) to generalism (i.e., experience *breadth*). This allows capturing the trade-off between the *depth* and *breadth* of a CEO's career experience. This approach not only follows the calls for more nuanced considerations of the CEO experience variety construct (Bunderson & Sutcliffe, 2002; Crossland et al., 2014), but is also required to achieve the main purpose described above (i.e., to capture the complex nature of the construct). Figure 1 illustrates the basic logic underlying this conceptualization of CEO experience variety. The graph shows that

[2] The increasing share of outside CEO successors (Aguirre et al., 2016; Zhang, 2008) further increases the need to understand the mechanisms through which CEO experience variety impacts firms. According to Zhu and Shen (2016: 2695), "about one third of new CEOs are appointed from outside the firm (Chen & Hambrick, 2012; Zhang & Rajagopalan, 2010)." Compared to inside CEO successors, outsiders are much less known to the boards appointing them. Therefore, boards partly need to rely on observable CEO characteristics.

while increasing CEO experience variety expands experience *breadth*, it inevitably leads to diminishing experience *depth*.

Figure 1: CEO experience variety and the trade-off between experience depth and breadth



Source: Author

In what follows, a literature review (research question 1) is followed by three empirical studies (research questions 2 to 4). The three empirical studies respond to the most important research opportunities that were identified in the literature review. Together, these four studies aim to answer the following overall research question:

> *Overall research question. What are the implications—for CEOs and for firms—of CEO experience variety? What are important contingencies, and how do they impact the mechanisms surrounding CEO experience variety?*

To answer this overarching question, the four papers discuss specific research questions capable of answering the overall question. The specific questions are:

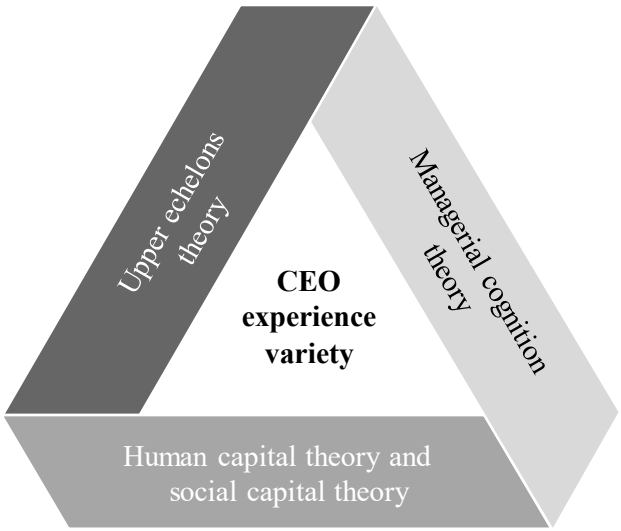
> *Research question 1. What is the current state of knowledge about CEO experience variety? What should be addressed by future research?*
>
> *Research question 2. How does CEO experience variety impact strategic change? What is the moderating role of TMT turnover?*
>
> *Research question 3. How does CEO experience variety impact CEO compensation? What is the moderating role of firm and industry complexity?*
>
> *Research question 4. How does CEO experience variety impact firm performance? What is the moderating role of firm and industry complexity?*

Considering the research frameworks of all three empirical studies reveals that—while focusing on the outcomes of CEO experience variety—this dissertation adopts three complementary lenses. First, the compensation study adopts an *individual lens*, by studying the personal remuneration implications of CEO experience variety. Second, the strategic change study adds a *team lens*, by including TMT turnover as an moderator and by considering an array of important TMT controls. Third, the performance study uses a *firm lens*, by analyzing the impact of CEO experience variety on firm performance.

1.3 Theoretical research scope

In line with the above research questions, the main theoretical foundation of this doctoral thesis is upper echelons theory. However, two other theoretical domains have been consulted to contribute to understanding the mechanisms surrounding CEO experience variety: (a) human capital and social capital theory; (b) managerial cognition theory. Figure 2 illustrates how these theories form the theoretical research scope.

Figure 2: Theoretical research scope



Source: Author

From the outset, scholars have advocated combining upper echelons theory with other theoretical perspectives (Hambrick & Mason, 1984). It has been argued that "through the integration of theories that are concerned with executive behaviors and choice, […] the upper echelons perspective may provide its richest predictions" (Carpenter, Geletkanycz, & Sanders, 2004: 772). Although these theories focus on distinct relationships, they are symbiotic and are best used in combination. As their

features might be difficult to distinguish, what follows offers a simplified introduction for readers less familiar with these theories. Obviously, this outline reflects neither the entire spectrum nor the value of these theories.

Establishing the link. Upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984) establishes the link between CEO characteristics and firm outcomes. In brief, it states that based on individual backgrounds (e.g., work experience in foreign countries), executives take decisions (i.e., foreign market entries) that impact organizational outcomes (e.g., firm profitability). However, upper echelons theory offers no direct explanation of either the mechanisms underlying strategic decisions or the expected direction of any such relationship (i.e., whether positive or negative performance implications can be expected). Therefore, upper echelons researchers rely on other theories to link executive characteristics with specific organizational outcomes.

Establishing the direction. Both human capital theory (Becker, 1964; Ployhart & Moliterno, 2011) and social capital theory (Burt, 1992; Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998) make suggestions about the value of certain individual characteristics by relating such characteristics (e.g., education or social relationships) with individual outcomes (e.g., compensation) and organizational outcomes (e.g., firm profitability). Focusing on the value of individual characteristics, they offer predictive statements (e.g., that higher education should result in higher compensation) and offer certain high-level reasons (i.e., that higher education leads to higher employee productivity). However, neither human capital theory nor social capital theory covers the detailed underlying mechanisms that would explain its predictions (e.g., why exactly does higher education make an employee more productive).

Establishing the explanation. Hence, theories from other disciplines have been used to explain the underlying mechanisms (Crook, Todd, Combs, Woehr, & Ketchen, 2011). These theories include managerial cognition theory (Walsh, 1995). This theory provides insights into how individual experiences (e.g., higher education) translate into the ability to process information (e.g., through a broader repertoire of mental frameworks) and subsequently into decision-making quality (e.g., more informed choices).

Combining these theories enables upper echelons researchers to link individual characteristics (e.g., education) with organizational outcomes (e.g., firm profitability), while providing consistent argumentations (e.g., higher education results in broader cognitive repertoires, which results in better strategic decisions, which results in higher firm profitability, etc.).

The next section discusses the three theories in greater detail. The contributions of this dissertation are described in the final chapter, after the literature review and the three empirical papers.

1.4 Main theoretical perspectives

1.4.1 Upper echelons theory

Definitions and origins. Established by Hambrick and Mason (1984), upper echelons theory is defined as a strategy theory that links individual characteristics and organizational outcomes. As leadership of complex organizations is a shared responsibility, the 'upper echelons' are defined as the CEO and the other TMT members (Hambrick, 2007). Upper echelons theory originates in the concept of bounded rationality, which assumes that strategic situations are generally too complex to be fully understood (Cyert & March, 1963). Thus, rather than assessing situations objectively, executives are merely capable of interpreting them (Finkelstein et al., 2009). To do so, they must rely on their 'givens', i.e., their individual set of experiences and values. These enable executives to take decisions under uncertainty (Hambrick & Mason, 1984). This, in turn, implies that executives always work within the bounds of their own intellects (Cannella & Holcomb, 2005).[3]

Main assumptions. Upper echelons theory is based on two main assumptions: First, executives take decisions based on individual characteristics. Second, these decisions impact the strategic and financial outcomes of their firms. Consequently, differences in firm strategic behavior and performance might be explained by differences in executives' characteristics. This process is illustrated in Figure 3.[4]

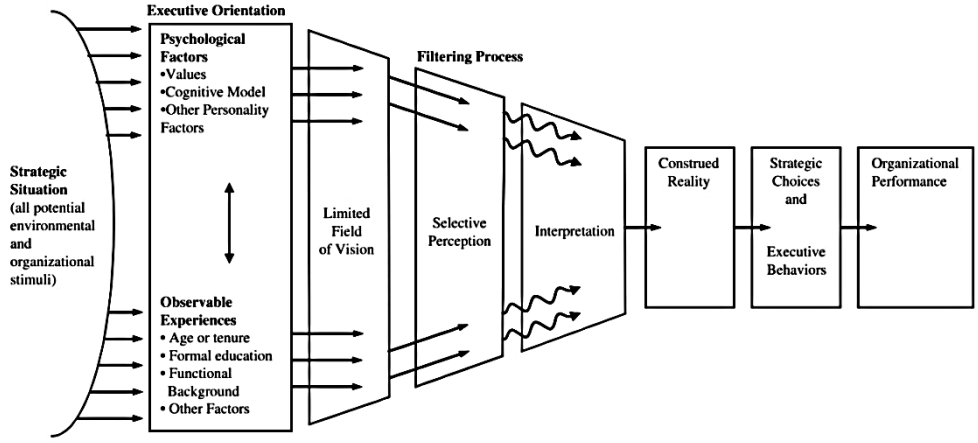
The '*filtering process*' stands at the heart of upper echelons (Cannella & Holcomb, 2005). To make sense of an ambiguous and complex '*strategic situation*', executives apply three filters: the '*limited field of vision*' (i.e., the fraction of topics taken notice of), '*selective perception*' (i.e., those topics that receive direct attention), and '*interpretation*' (i.e., the meaning attached to these topics). This filtering process is the sense-making process that happens within an executive's 'bounds'. It is as such shaped by the '*executive's orientation*', which reflects his or her psychological makeup and experiences. Filtering results in the executive's '*construed reality*'—his or her eventual

[3] Its emphasis on the role of individuals roots upper echelons theory in the behavioral theory of the firm (Cannella & Holcomb, 2005; Hambrick, 2007). The latter introduced a sociological perspective into the economic theory of the firm. Viewed from a behavioral angle, complex strategic choices are primarily a result of behavioral factors, rather than a result of rational calculations of optimal choices (Finkelstein et al., 2009).

[4] See Appendix 1.1 for the original illustration of the filtering process as provided by Hambrick and Mason (1984).

view of the situation—which serves as a basis for '*strategic choices*' and '*executive behaviors*'.[5] Together, these are expected to impact '*organizational performance*'.

Figure 3: Strategic choice under conditions of bounded rationality



Source: Finkelstein et al. (2009: 46)

Overall, "it is the executive's orientation […] that engages the filtering process, and which in turn yields a construed reality, gives rise to strategic choices, and ultimately affects organizational performance" (Finkelstein et al., 2009: 49). Now, since psychological factors are difficult to measure, Hambrick and Mason (1984) suggested using various managerial characteristics (i.e., nationality, age, work experience, etc.) as proxies for the underlying differences in cognitions, values, and perceptions.[6]

Expected outcomes. A key tenet of upper echelons theory is that top executives influence organizational outcomes. Originally, Hambrick and Mason's (1984) upper echelons model identified multiple strategic choices (e.g., diversification, mergers & acquisitions (M&A), product innovation, etc.) and performance measures (e.g., profitability, growth, etc.). Both are influenced by upper echelon characteristics via the perceptual and decision-making process illustrated above. The original model is shown in Appendix 1.2.[7]

[5] The initial model highlighted the fact that values might impact not only the filtering process, but also the final strategic choice, "because theoretically, a decision maker can arrive at a set of perceptions that suggest a certain choice but discard that choice on the basis of values" (Hambrick & Mason, 1984: 195).

[6] From the beginning, Hambrick and Mason (1984: 196) were aware of the limitations of such proxies, stating that "demographic indicators may contain more noise than purer psychological measures." However, as top executives are often unwilling to provide psychometric data, and as some of the background characteristics have no close psychological analogs, recourse to observable proxies was frequently made by researchers and reaffirmed by substantial evidence (Hambrick, 2007).

[7] As part of their literature review, Carpenter et al. (2004) developed a refined version of the upper echelons model. See Appendix 1.3 for their stylized model of the upper echelons perspective.

Prior research. Upper echelons theory has inspired a multitude of research, which has been synthesized by several comprehensive literature reviews. On the one hand, there are two general literature reviews (Carpenter et al., 2004; Jackson, 1992) and a contribution on the multi-level issues in upper echelons research (Cannella & Holcomb, 2005). On the other hand, Hambrick (2007) provided an update on theoretical developments that recapitulated the original theory and discussed important moderators (i.e., 'managerial discretion' and 'executive job demands'), theoretical refinements (i.e., 'behavioral integration'), and directions for future research. Most recently, 'structural interdependence' within TMTs has been introduced as another moderator (Hambrick, Humphrey, & Gupta, 2015).

1.4.2 Human capital theory

Definitions and origins. Human capital has been defined as an individual's stock of skills, knowledge, and experiences.[8] Therefore, human capital is an individual-level resource, which is developed by an individual and which resides within the individual. The concept of human capital has a long tradition. Ever since Adam Smith (1723–1790), scholars from diverse fields have understood an individual's abilities as a source of economic value (Ployhart & Moliterno, 2011).

Main assumptions. Individuals differ with regard to their human capital. From an economic point of view, the division of labor accounts for individual specialization at the workplace (Becker, 1964). From a human point of view, individual educational tracks and career paths (which are chosen based on a person's natural endowment, background, and motivation) account for substantial differences in skills, knowledge, and experiences.

Expected outcomes. According to Becker (1964), who established human capital theory in economics, such specialization and diversity translate into differences in the value of individual human capital, which in turn results in three main outcomes. First, higher stocks of competence increase an individual's ability to perform labor and thus to create economic value. Second, firms profit from their employees' higher levels of human capital. Building on their employees' greater ability to create economic value, such firms might be able to achieve sustained competitive advantages and higher profitability (Coff, 1997, 1999; Mahoney & Pandian, 1992; Wright, McMahan, & McWilliams, 1994). Third, as firms profit from higher individual human capital, they

[8] However, these terms have often been used interchangeably (Harris & Helfat, 1997; Khanna et al., 2014).

are willing to reward it. Therefore, to return to the individual level, employees with higher levels of human capital are expected to receive higher compensation.[9]

Prior research. Extant research has mainly taken two perspectives. The first perspective focuses on individual-level outcomes and is therefore called the '*micro*' perspective (Ployhart & Moliterno, 2011; Wright & Boswell, 2002). This perspective has been widely applied to predict individual compensation (e.g., Bragaw & Misangyi, 2015; Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Fisher & Govindarajan, 1992; Gerhart & Milkovich, 1990; Harris & Helfat, 1997; Mincer, 1997). It has also been associated with other individual-level outcomes such as career advancement and job mobility (e.g., Antel, 1986; Eriksson, 1991; Georgakakis et al., 2016).

The second perspective focuses on firm-level outcomes and is therefore called the '*macro*' perspective. Prior research has concentrated on the impact of human capital on two dimensions in particular: strategy (e.g., Hitt, Biermant, Shimizu, & Kochhar, 2001; Jensen & Zajac, 2004; Pennings, Lee, & Van Witteloostuijn, 1998; Wright, Smart, & McMahan, 1995) and firm performance (e.g., Bantel & Jackson, 1989; Crook et al., 2011; Daily, Certo, & Dalton, 2000; Huselid, 1995).

Link to social capital theory.[10] According to Geletkanycz, Boyd, and Finkelstein (2001), the prevailing assumption has been that managerial resources are embodied in executives' human capital (i.e., knowledge, skills, and experience). However, scholars have argued that this view is incomplete, because executives' social networks (i.e., social capital) also impact individual and organizational outcomes. Therefore, authors have begun to apply human capital theory and social capital theory in tandem (e.g., Kor & Sundaramurthy, 2009; Oldroyd & Morris, 2012; Tian et al., 2011). For example, prior research suggests that human capital is only beneficial in conjunction with the opportunities created by social capital (Burt, 1997a, 1997b). Therefore, Burt (1997a: 339) concluded that "managers with more social capital get higher returns to their human capital." In addition, the information accumulated through personal networks is important for building human capital (Coleman, 1988; Fonti & Maoret, 2016). Following the same logic, Oldroyd and Morris (2012) found that executives with abundant social capital are able to develop an information advantage. In the past, combining human capital theory and social capital theory has also been endorsed by

[9] This argument holds not only *a priori*, in the sense that measurable differences in human capital (e.g., an MBA degree) are visible to employers who tailor compensation to expected results, but also *ex post*, when employees exhibit higher productivity and are then rewarded with higher compensation (Khanna et al., 2014).

[10] In short, the concept of social capital is based on an individual's social network ties. Scholars have argued that the 'goodwill' built through personal relationships represents a valuable resource (Adler & Kwon, 2002; Burt, 1992). Chapter 1.4.3 provides a detailed introduction.

authors arguing that both theories are conceptually and empirically difficult to unravel (Coleman, 1988; Lester, Hillman, Zardkoohi, & Cannella, 2008; Nahapiet & Ghoshal, 1998).

1.4.3 Social capital theory

Definitions and origins. According to most definitions, social capital represents the value that individuals and organizations derive from interpersonal relationships (Adler & Kwon, 2002; Fonti & Maoret, 2016; Leana & Van Buren, 1999). Similar to human capital, social capital is thus an individual-level resource, as the concept captures personal relationship networks and their value to individuals. However, in contrast to human capital, social capital is not owned exclusively, as relationships always belong jointly to the parties involved (Burt, 1992; Nahapiet & Ghoshal, 1998).[11]

The origins of social capital theory lie in sociological research undertaken in the 1960s, which focused on the role and importance of relationships in families and communities (Durlauf & Fafchamps, 2005; Nahapiet & Ghoshal, 1998). Around 1990, researchers began using social capital theory in economic research. It was conceptualized either as an antecedent of human capital (Coleman, 1988) or as a direct antecedent of individual- and firm-level returns (Baker, 1990; Burt, 1992). Then, between 1990 and 2010, social capital theory developed from a status of 'emerging excitement' (Adler & Kwon, 2002) into an 'established' and 'matured' field of research (Kwon & Adler, 2014).

Main assumptions. Social capital theory builds on "the central proposition […] that networks of relationships constitute a valuable resource" (Nahapiet & Ghoshal, 1998: 243). The value of social ties is driven primarily by the privileged access to information and opportunities arising from human interaction (Burt, 1992, 1997a; Hillman & Dalziel, 2003; Oldroyd & Morris, 2012). More specifically, the value of social capital has been located in the 'goodwill' available to individuals or groups (Adler, 2001; Adler & Kwon, 2002). Such goodwill determines the flow of information, influence, and solidarity among the members of a particular network (Adler & Kwon, 2002; Cao, Maruping, & Takeuchi, 2006; Nahapiet & Ghoshal, 1998).

Expected outcomes. Social capital research is broadly divided into two schools (Burt, 2005; Johnson, 2006). One is the '*closure*' school. Based on Coleman's (1988)

[11] With regard to organizations, social capital may take two forms (Fonti & Maoret, 2016). On the one hand, *inter-firm* social capital emanates from relationships across organizational boundaries (Somaya, Williamson, & Lorinkova, 2008). On the other, *intra-firm* capital arises from relationships among employees of the same firm (Payne, Moore, Griffis, & Autry, 2011).

research, this school builds on the expectation that social networks create returns for their members, mainly by functioning as informal monitoring and sanctioning systems. These returns are thus based on excluding actors (i.e., on 'closing out' other individuals). The other is the '*structural holes*' school. Based on Burt's (1992) work, this school expects individuals who establish connections between otherwise unconnected actors to achieve competitive advantages. Hence, these returns are based on bringing together actors, i.e., on establishing relationships that 'fill the holes' and unfold opportunities. While neither school has become dominant (Johnson, 2006; Payne et al., 2011), researchers have attempted to reconcile them (Burt, 2005). Regardless of the underlying school, and bar some few exceptions, social capital is associated with positive outcomes for both individuals and firms (Carpenter, Li, & Jiang, 2012).

Prior research. Several authors have provided literature reviews on social capital from a general perspective (e.g., Adler & Kwon, 2002; Burt, 2005). More recent reviews have focused on theoretical developments (Kwon & Adler, 2014; Payne et al., 2011). Broadly speaking, the extant literature provides significant evidence that social capital impacts *individual-level* outcomes such as career advancement (Ibarra, 1995; Podolny & Baron, 1997) and compensation (Belliveau, O'Reilly, & Wade, 1996; Burt, 1997a; Geletkanycz et al., 2001; Seibert, Kraimer, & Liden, 2001).[12]

On the *firm-level*, selected prior studies indicate that executives' social capital impacts strategy (Eisenhardt & Schoonhoven, 1996; Geletkanycz & Hambrick, 1997), competitiveness (Wu, 2008), and performance (Collins & Clark, 2003; Fischer & Pollock, 2004; Fonti & Maoret, 2016; Geletkanycz & Hambrick, 1997; Peng & Luo, 2000).[13]

1.4.4 Managerial cognition theory

Definitions and origins. Managerial cognition theory defines executives as primarily responsible for absorbing, processing, and spreading information (Walsh, 1995) and as facing ample complex and ambiguous information (Mintzberg, Raisinghani, & Theoret, 1976; Schwenk, 1984). In essence, managerial cognition theory answers the question about how managers "[…] see their way through what may

[12] In addition, studies have focused on the influence of social capital on underlying factors such as managerial performance (Baldwin, Bedell, & Johnson, 1997; Rodan & Galunic, 2004), power (Brass & Burkhardt, 1993), knowledge creation (McFadyen & Cannella, 2004), and creativity (Perry-Smith & Shalley, 2003).

[13] Moreover, empirical findings suggest that social capital impacts intermediate factors such as technological and product innovation (Ahuja, 2000; Smith, Collins, & Clark, 2005; Tsai & Ghoshal, 1998) or entrepreneurship (Stam & Elfring, 2008).

be a bewildering flow of information to make decisions and solve problems" (Walsh, 1995: 280).

The origins of managerial cognition theory lie in psychological research on social cognition. Defined as the "study of how people make sense of others and themselves and how cognitive processes influence behavior" (Fiol & O'Connor, 2003: 56), social cognition research has established that the human mind impacts information processing and decision-making in predictable ways. During the 1980s, this link was recognized by management researchers, who subsequently spearheaded further studies on cognitive processes (Walsh, 1995).

Main assumptions. To process the incoming flow of information, executives are assumed to utilize their 'knowledge structures'. According to Walsh (1995: 286), knowledge structures are "mental templates consisting of organized knowledge about an information environment that enables interpretation and action in that environment" (286).[14] Executives' knowledge structures are assumed to be the accumulated results of personal experience (Prahalad & Bettis, 1986).[15] In this sense, they also continue to evolve as executives' careers develop (Daft & Weick, 1984; Nadkarni & Barr, 2008). Previous studies have also argued that knowledge structures might be self-reinforcing, as executives use previously acquired knowledge to process new information, which might further strengthen their initial knowledge structure (Angriawan & Abebe, 2011).

Expected outcomes. Except for the most novel information, executives are expected to employ their knowledge structures (i.e., their past experience in similar circumstances) to steer present information processing (Walsh, 1995). Knowledge structures are thus subjective representations of the environment, or individual lenses (Nadkarni & Narayanan, 2007), which enable decision-makers to interpret information and convert insights into organizational action (Huff, 1982).

Prior research. Given the vast variety of research based on managerial cognition theory, this section merely refers to the existing literature reviews. Two of these summarize the development and breadth of the extant managerial cognition literature. First, Walsh's (1995) comprehensive review covers the first decade of managerial cognition research. More recently, Narayanan, Zane and Kemmerer (2011) provided

[14] Knowledge structures are well-established in strategic management literature. They are also referred to as 'strategic schemas' (Lyles & Schwenk, 1992; Nadkarni & Narayanan, 2007), 'cognitive maps' (Calori, Johnson, & Sarnin, 1994; Daft & Weick, 1984), 'cognitive bases' (Hambrick & Mason, 1984), or otherwise (Lyles & Schwenk, 1992).

[15] During their careers, individuals face a variety of situations, complications, and solutions. Some individuals will make a series of new and different experiences, perhaps due to personality traits, family tradition, or other reasons. Others, however, will experience a more repetitive stream of experiences (Crossland et al., 2014). Regardless of the motives underlying career moves, career variety will shape an individual's cognitive and experiential stock (Dragoni, Oh, Vankatwyk, & Tesluk, 2011; Fiske & Taylor, 1991; McCall, Lombardo, & Morrison, 1988; Tesluk & Jacobs, 1998).

another integrative review, which focused on the cognitive perspective in strategic management. The authors used Walsh's (1995) study as a starting point and covered the subsequent fifteen years of research. Other reviews have taken either a broader and more psychological approach (Hodgkinson & Healey, 2008) or a focused approach on specific topics such as competition (Hodgkinson, 1997).

Differentiation from information processing theory. To avoid confusion, the distinction between managerial cognition theory and information processing theory is worth clarifying. Essentially, while managerial cognition is an individual-level concept, information processing initially referred to the firm-level. Information processing theory, established by Tushman and Nadler (1978), is an organizational theory that views organizations as information processing systems. Firms are assumed to be open social systems that are confronted with external and internal uncertainty and complexity (Daft & Weick, 1984). Therefore, a critical task for a firm is to develop mechanisms that efficiently process information. In short, "information processing refers to the gathering, interpreting, and synthesis of information in the context of organizational decision-making" (Tushman & Nadler, 1978: 614). Ultimately, the fit between information processing requirements and the firm's information processing capacities determines organizational effectiveness and success. However, the initial theory did not focus on human factors, but rather on structural factors such as organizational structure, coordination, and control mechanisms (Tushman & Nadler, 1978).[16]

1.5 Empirical setting

1.5.1 Sample development

1.5.1.1 Approach

The three empirical studies gathered in this cumulative dissertation are based on a database that includes information on 305 CEO successions at 330 of the largest public firms in four major European countries (occurring between 2007–2013). The sample of companies and the list of CEO successions were developed step-by-step using a set of pre-defined criteria described below.

The starting point was the list of all public firms headquartered in four European countries—Germany (DEU), the Netherlands (NLD), Switzerland (CHE), and the

[16] Subsequent research drew on information processing theory to explain the benefits of teams. Researchers suggested that, with increasing team size, teams have a higher information processing capacity (e.g., Dutton & Duncan, 1987; Haleblian & Finkelstein, 1993; Sanders & Carpenter, 1998). This argument was later extended to team diversity. Such research suggests that teams with a variety of skills, knowledges, and experiences are far better at solving complex problems (e.g., Bantel & Jackson, 1989; Buyl et al., 2011; Certo, Lester, Dalton, & Dalton, 2006; Eisenhardt & Schoonhoven, 1990; Wanous & Youtz, 1986).

United Kingdom (GBR)—as of December 31, 2007. Various steps were taken to ensure that the companies in the final sample were comparable in terms of size and character, operational throughout the complete study period, and autonomous with regard to their CEO succession decisions. All listed firms in these countries were ranked by market capitalization, and the largest 100 were selected given that they fulfilled the following criteria: (a) they were not small and medium-sized enterprises (SMEs) based on the European Union's (2016) definition (i.e., max. 250 employees, €50 million annual revenue, and €43 million total assets); (b) they were not pure holding entities or investment vehicles (i.e., companies with a primary two-digit Standard Industry Classification (SIC) code of 67 were excluded); (c) they were neither acquired by another firm nor nationalized over the study period (2007–2013); (d) they were not subsidiaries of another firm; (e) their operational headquarters were not outside the selected countries; (f) they were not family-controlled companies.[17]

This resulted in a final sample of 330 companies. The sample includes 86 companies in Germany, 68 in the Netherlands, 89 in Switzerland, and 87 in the United Kingdom. These firms were active in 51 industries, based on their categorization into two-digits SIC codes. The full list of companies is provided in Appendix 1.4.

Next, all CEO successions at these companies between January 1, 2007 and December 31, 2013 were identified. The total number of CEO successions was 340. Out of these, 35 succession events concerned either interim CEOs, Co-CEOs, or new CEOs with a tenure of less than a year.[18] These cases were excluded, in order to ensure comparability, because interim CEOs and Co-CEOs are appointed following different succession processes and negotiations compared to regular permanent CEOs (Bragaw & Misangyi, 2015; Crossland et al., 2014).[19]

Thus, the final number of CEO successions was 305. Over the study period, these successions were distributed as follows: 44 in 2007, 48 in 2008, 44 in 2009, 34 in 2010, 51 in 2011, 46 in 2012, and 38 in 2013. Country-by-country breakdown was as follows: 78 in Germany, 55 in the Netherlands, 89 in Switzerland, and 83 in the United Kingdom. Appendix 1.5 includes an overview with the key sample information.

[17] A firm was categorized as family-controlled if a family was both a majority shareholder (i.e., voting rights above 50%) (Miller, Minichilli, & Corbetta, 2013) and had operational control (i.e., a family member was either the acting CEO or Chairman of the Board) (Minichilli, Nordqvist, Corbetta, & Amore, 2014).

[18] Interim CEOs were identified based on annual reports and press releases. Search terms included "interim CEO", "acting CEO", "stepped in as temporary CEO until the appointment of a permanent CEO", etc. (Ballinger & Marcel, 2010: 264). Co-CEOs were identified following the same approach, using keywords such as "Co-CEO". CEOs with a tenure of less than a year were identified using CEO departure dates, as provided in annual reports or press releases.

[19] CEOs with tenures of less than a year were excluded because of the unavailability of reliable compensation data for partial years and because of the impossibility of reliably measuring their impact on firm performance.

1.5.1.2 Theoretical reasoning

The decisions that led to the final sample were made with the overall objective to provide an appropriate sample for this dissertation. The reasons behind these decisions are explained below.

Focus on new CEOs. This thesis focuses on newly appointed CEOs because the CEO succession context permits an undistorted study of the consequences of CEO experience variety (Chen, 2015; Crossland et al., 2014). Indeed, past research has emphasized that CEO tenure affects strategic decision-making (Hambrick & Fukutomi, 1991; Miller, 1991; Shen & Cannella, 2002a).[20] In contrast, newly appointed CEOs "are about to take up the job and thus have no serious organizational entrenchment issues" (Chen, 2015: 1896). Similarly, some authors have suggested that the post-succession period is that period when new CEOs attempt to have the greatest impact (Ocasio, 1994; Tushman & Romanelli, 1985) and to implement major strategic and organizational changes (Hambrick et al., 1993) while remaining strongly committed to their own mental paradigms and "initiating strategies that reflect their knowledge base and experiences" (Herrmann & Datta, 2002: 552).

Focusing on new CEOs, the present study ensures that neither organizational entrenchment (e.g., CEO power) nor personality change (e.g., CEO inflexibility) distorts the impact that CEOs have on their firms (Hambrick & Fukutomi, 1991; Henderson, Miller, & Hambrick, 2006; Miller & Shamsie, 2001). This approach enhances within-sample comparability with regard to the CEO effect on firm outcomes (Crossland et al., 2014).

Countries. The four countries' stock markets are significant in terms of size. The 'Deutsche Börse', 'Euronext Amsterdam', 'SIX Swiss Exchange', and 'London Stock Exchange' were among the top five European stock exchanges by domestic market capitalization as of December 2007 (World Federation of Exchanges, 2016). Thus, the development of their largest constituents drives the development of substantial shareholder wealth. In addition, all four countries have adopted reporting standards that require listed companies to publish demographic, background, and compensation data of their CEOs and TMTs. This enables the collection of reliable data from annual reports and corporate websites (Georgakakis, 2014).

Companies. Large firms, including those in this dissertation's sample, are likely to favor CEOs with general skills (as opposed to specialist skills) (Xuan, 2009).

[20] Multiple studies have suggested that executives with longer tenures tend to develop a strong adherence to the status quo (Finkelstein & Hambrick, 1990; Hambrick, Geletkanycz, & Fredrickson, 1993; Weng & Lin, 2014).

Moreover, companies like Siemens, Philips, Nestlé, and HSBC are able to attract CEOs with different backgrounds (Ruigrok, Georgakakis, & Greve, 2013). Both factors make such companies particularly suited to studying CEO experience variety.

Study period. Following previous studies, upper echelons research should be longitudinal, as this enables researchers to capture environmental influences (Hambrick, 2007; Nielsen, 2010b). The period 2007 to 2013 was chosen to ensure the longest possible longitudinal dataset.[21]

1.5.2 Data collection

Overall, data collection spanned three levels: individual, firm, and industry (following Georgakakis, 2014; Greve, 2009). Information was gathered on acting CEOs, their predecessors, the corresponding TMTs and boards, the firms, and their primary industries.

Executive data were hand-collected primarily from the companies' annual reports, websites, and press releases (Harris & Helfat, 1997; Zhang & Rajagopalan, 2010). Missing information was gathered using biographical databases (e.g., LexisNexis, Who is Who in Europe, Factiva, Munziner Online) or triangulated web sources (e.g., LinkedIn or newspaper articles). Similar to previous strategic leadership studies using European samples, TMT members were identified by the self-reported definitions published in the respective annual reports (Boone, Van Olffen, Van Witteloostuijn, & De Brabander, 2004b; Greve, Nielsen, & Ruigrok, 2009; Nielsen & Nielsen, 2013; Ruigrok et al., 2013). Firm and industry data were retrieved from the Bloomberg and ThomsonONE databases.

The final dataset included 305 CEO profiles, 305 predecessor profiles, 5,165 TMT member profiles for 865 TMTs, 2'236 board member profiles for 305 boards, and firm data for 330 companies. The following data completion rates were achieved: 38% for the strategic change study (i.e., complete data for 115 out of 305 CEO successions), 67% for the compensation study (i.e., 205 out of 305 CEO successions), and 66% for the performance study (i.e., 201 out of 305 CEO successions).[22]

[21] On the one hand, the *last year considered* (i.e., 2013) was defined by the publication dates of annual reports. At the time of data collection (i.e., in 2016), the latest fully available annual reports were those of 2015. As the empirical papers capture the impact of CEOs until the second year after the year of succession, 2013 was the last year in which a CEO succession could be considered. On the other hand, the *first year considered* was defined by the availability of CEO and TMT data. Collecting data in 2016 ruled out going back further than 2006, as data availability became minimal when looking back more than ten years. As the studies include pre-succession data for the year before the succession, the first possible year of observation was 2007 (i.e., for which reliable pre-succession data for 2006 could still be found).
[22] These completion rates are determined primarily by the difficulty of finding information on a CEO's entire career history and on all TMT members. Nevertheless, these rates are comparable to similar studies building on entire career background data (Crossland et al., 2014; Georgakakis et al., 2017; Rodenbach & Brettel, 2012).

To ensure that final datasets did not differ from full datasets with all CEO successions (i.e., including incomplete data), several Kolmogorov-Smirnov tests in STATA 15 were run. Results were non-significant in all cases, indicating that no statistically significant differences exist between succession events with complete data and succession events with incomplete data.[23]

1.5.3 Research design and methods

All three empirical studies presented here test and contribute to evolving theory. Each therefore has a deductive *research design*. Data were measured and analyzed using quantitative *research methodology*. Given the nature of the hypotheses, the OLS regression technique was applied. This *analytical technique* permits straightforward assessment of non-linear relationships. It employs a pre-defined sequence to enter the variables and allows testing the significance and direction of non-linear associations (Cohen, Cohen, West, & Aiken, 2003). STATA 15 was used for all regressions, additional analyses, and robustness checks.

1.6 Structure of the dissertation

This dissertation is structured into six chapters. The introduction (chapter 1) is followed by four cumulative papers (chapters 2 to 5) and a conclusion (chapter 6).

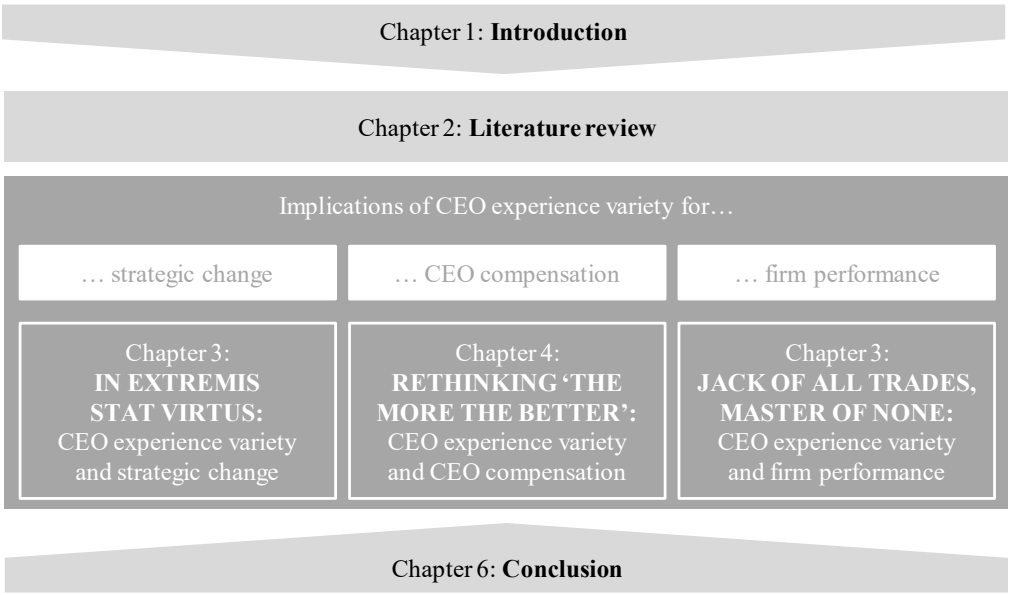
The literature review (chapter 2) surveys the current state of literature on CEO experience variety. On the one hand, it highlights the relevance of the CEO experience variety, both from an individual and from an organizational point of view. On the other hand, it summarizes the existing literature into a research framework and provides recommendations for future research.

The three empirical papers (chapters 3 to 5) study the implications of CEO experience variety and its contingent nature. Chapter 3 studies the impact of CEO experience variety on strategic change and the moderating effect of the degree of post-succession TMT turnover. Chapter 4 focuses on the relationship between CEO experience variety and CEO compensation and considers the firm's internal and external complexity as a moderating influence. Chapter 5 (i.e., the third empirical study) not only relates CEO experience variety to post-succession firm performance, but also considers the contingent nature of this relationship and includes the firm's internal and external complexity as moderators.

[23] Detailed descriptions are provided in the empirical studies.

Finally, Chapter 6 synthesizes the findings of this doctoral thesis and explains their main implications for theory and practice. Figure 4 illustrates the structure of the dissertation.

Figure 4: Structure of the dissertation



Source: Author

CEO EXPERIENCE VARIETY: A REVIEW AND GUIDE FOR FUTURE RESEARCH

Abstract: CEO experience variety has emerged as an important area of interest. However, while the literature has established significant individual and organizational implications, no systematic review and synthesis has focused on CEO experience variety. To address this gap, we integrate the extant literature on CEO experience variety and develop an integrative framework that links the antecedents, characteristics, processes, and consequences of CEO experience variety. Reviewing 50 studies spanning more than three decades of research, we identify the main concepts and research streams. Our review identifies room for theoretical and methodological improvement and provides recommendations for future research.

Keywords: CEO experience variety; CEO career background; specialists vs. generalists; upper echelons theory; human and social capital theory

2.1 Introduction

CEOs matter. They are the figureheads and presumably the most powerful actors of their firms (Cannella & Holcomb, 2005). Having considerable authority over strategic decisions (Crossland et al., 2014), they exert a disproportionate influence on their firms (Herrmann & Nadkarni, 2014; Nadkarni & Herrmann, 2010). In addition, CEOs seem to matter more and more. Recent research has shown that the 'CEO effect', i.e., the variance in firm performance attributable to individual CEOs, has significantly increased over the last six decades (Quigley & Hambrick, 2015).

To understand why—and how—CEOs matter, researchers from different fields have focused on CEO experience. Indeed, the notion that individual skills, knowledge, and experiences affect individual and organizational outcomes is central to human capital theory (Becker, 1964; Ployhart & Moliterno, 2011), social capital theory (Burt, 1992; Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998), upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), and other theories applied in the strategic leadership literature. Drawing on these theories, numerous studies have established that CEO experience significantly impacts access to information, information processing, strategic decision-making, and ultimately firm performance.

However, CEO experience is subject to change. Over the past decades, CEO career backgrounds have changed significantly. The "decline of the traditional organizational career" (Briscoe et al., 2006: 30) has led to a substantial increase in the proportion of CEOs with highly varied career backgrounds (Crossland et al., 2014). This change has been reflected in the CEO literature. An emerging research stream has shifted attention to CEO experience variety (e.g., Buyl et al., 2011; Crossland et al., 2014; Custodio et al., 2013; Fitzsimmons & Callan, 2016). These studies emphasize the structure of experience, i.e., the variety within an executive's career background.

The emerging stream of CEO experience variety has created renewed interest in the field of CEO experience. At the same time, however, this field still lacks theoretical and empirical clarity. While addressing different research questions, extant studies have employed different theoretical and methodological approaches. Therefore, despite broad scholarly interest, research has so far yielded merely dispersed and inconsistent results. Generally, little consensus exists on the antecedents, processes, and consequences of CEO experience. We possess no more than a limited understanding of the variables of interest and their interrelationships. Given the relevance and large potential of this field, an integrated model able to consolidate fragmented insights and provide a basis for future research is needed. While there are several excellent literature

reviews on CEO successions (Giambatista, Rowe, & Riaz, 2005; Hutzschenreuter, Kleindienst, & Greger, 2012; Kesner & Sebora, 1994; Ma, Seidl, & Guérard, 2014), to the best of our knowledge, there has been no systematic and integrative review of CEO experience in general and CEO experience variety in particular.[24]

Addressing this void, the following literature review focuses on CEO experience variety. It identifies the main variables of interest and their dominant interrelationships and thus establishes a shared understanding and terminology. It also outlines avenues for future research based on its review of 50 articles published in major journals over the last three decades. Our review shows that the field of CEO experience research is still unfolding its potential. Thus, while the field has developed several comprehensively analyzed research streams, others remain unexplored or are only just emerging.

Our review provides five main suggestions for future research. First, the combined use of different theories is a prerequisite for capturing the complex mechanisms surrounding CEO experience variety. Second, research should examine the potentially negative implications of extensive levels of CEO experience variety. Especially the potentially non-linear firm performance implications of CEO experience variety require empirical attention. Third, methodologically, more nuanced measurements are required to adequately capture the nature of CEO experience variety and its manifold outcomes. Fourth, researchers should explore the underlying mechanisms of CEO experience variety. Finally, future research should focus on the experience variety of executives other than the CEO.

The rest of this review is organized as follows: First, based on a careful examination of the extant literature, we develop an integrative research framework for CEO experience variety. This framework is then used to review and synthesize the literature along distinct research streams. Finally, we identify potential directions for future research, hopefully to further advance one of the most important fields of strategic leadership.

[24] Our review has highlighted the difficulty of distinguishing between ‘CEO experience’ and ‘CEO experience variety’. In the extant literature, the terms have often been used interchangeably. On the one hand, some ‘CEO experience’ studies actually concern the variety within a CEO’s experience background, depending on the theoretical and methodological operationalization of the constructs. On the other, all ‘CEO experience variety’ studies might feasibly be classified as ‘CEO experience’ research.

2.2 Method

2.2.1 Identification of journals and papers

Our literature search focused on articles published in major academic journals. Such articles have been considered 'certified knowledge' with the highest impact on their fields (Hutzschenreuter et al., 2012). The rigorous peer review process of major outlets is expected to ensure high quality (Narayanan et al., 2011).

We first consulted the 2016 Thomson Reuters InCites Journals Citation Report. We selected the categories 'Business', 'Management', and 'Finance'. Next, we chose the top 50 journals (based on the five-year average impact factor) to provide a comprehensive review, as scholars have called for thorough literature reviews that are not limited to a small number of outlets (Short, 2009). All 50 journals in the final list (Appendix 2.1) have a five-year average impact factor of 2.678 or higher (up to 9.741).

To identify the relevant papers, we ran a search using EBSCOhost and keywords related to CEOs, CEO experience, and CEO experience variety. Our search string consisted of two variations for the CEO and twelve variations for CEO experience and CEO experience variety.[25] The database search returned 195 unique papers from 35 journals. To be included in the literature review, papers had to meet two conditions. First, they had to focus on experiences made by CEOs during their lives and careers (e.g., education or firm experience), and not on personality traits potentially developed as a consequence of such experiences (e.g., CEO narcissism). Second, the papers had to consider CEO experiences as independent, dependent, or moderating variables (as opposed to studies that focused on other phenomena, but mentioned indirect links to CEOs and CEO experiences). To identify the relevant papers, we marked all abstracts with checks (for criteria matches), question marks (in case of uncertainty), and crosses (for those to be eliminated). For those with question marks, we then read the introduction and, if necessary, the whole paper.

The final list of papers included 50 studies from 16 journals, published between 1982 and 2017. The most prominent journals in our review are: Strategic Management Journal (12 papers, i.e., 24%), Journal of Management Studies (6 papers, i.e., 12%), and Academy of Management Journal (5 papers, i.e., 10%).[26] Although a continuous flow of publications is evident, interest in these topics has recently increased considerably: 42% of the papers were published in the last five years (Appendix 2.3).

[25] The complete search string (used with a Boolean search) was: "(CEO OR Chief Executive Officer) AND (background characteristics OR career background OR career diversity OR career variety OR experience OR generalist OR generalism OR specialist OR specialization OR expert OR expertise OR specificity)".
[26] For an overview of the 16 journals and the corresponding number of papers, see Appendix 2.2.

2.2.2 Development of the framework

Following prior research, we established an analytical framework as a basis for our literature review (Narayanan et al., 2011; Rajagopalan, Rasheed, & Datta, 1993). This is required to systematically discern patterns within a large number of studies and to evaluate their contributions to the respective literature (Ginsberg & Venkatraman, 1985).

Obviously, the large number of studies implies significant differences among the papers. Nevertheless, our systematic review enabled us to draw general conclusions about the main areas of interest. First of all, the characteristics of CEO experience variety are studied to explain why CEOs behave in certain ways under certain conditions. Second, the processes resulting from different CEO experience varieties have been studied in the context of TMTs, boards, and more broadly CEOs' current firms. Both dimensions have been shown to have consequences for individual-, team-, and firm-level outcomes. Finally, although receiving little academic attention so far, CEO experience variety has various antecedents. Therefore, a comprehensive framework needs to include not only the characteristics and processes associated with CEO experience variety, but also its antecedents and consequences.

Correspondingly, our framework of CEO experience variety is structured into four dimensions: '(A) Antecedents', '(B) Characteristics', '(C) Processes', and '(D) Consequences'. These dimensions structure our review framework. Below, we briefly introduce the main concepts within these dimensions:

(A) Antecedents. Our framework includes two concepts as antecedents of CEO experience variety. The first concept is '(A1) Demographics', because researchers have argued that an individual's demographics (especially gender) might impact his or her opportunities to make certain experiences. Second, '(A2) Personal background' describes a CEO's social roots (e.g., his or her family's social class).

(B) Characteristics. Little consensus exists on the vocabulary for describing CEO experience from different angles. Therefore, we settled on three main concepts within '(B) Characteristics'. The first concept, '(B1) Type', distinguishes between personal experiences (i.e., in private life or the military), educational experiences (i.e., university studies), or professional experiences (i.e., workplace). The second, '(B2) Level', describes the hierarchical level of the CEO's experience. This ranges from operational experiences (e.g., work experience as a financial analyst) through leadership experience (e.g., work experience as a team leader in a finance division) to strategic experience (e.g., work experience as a Chief Financial Officer (CFO)). The third, '(B3) Structure',

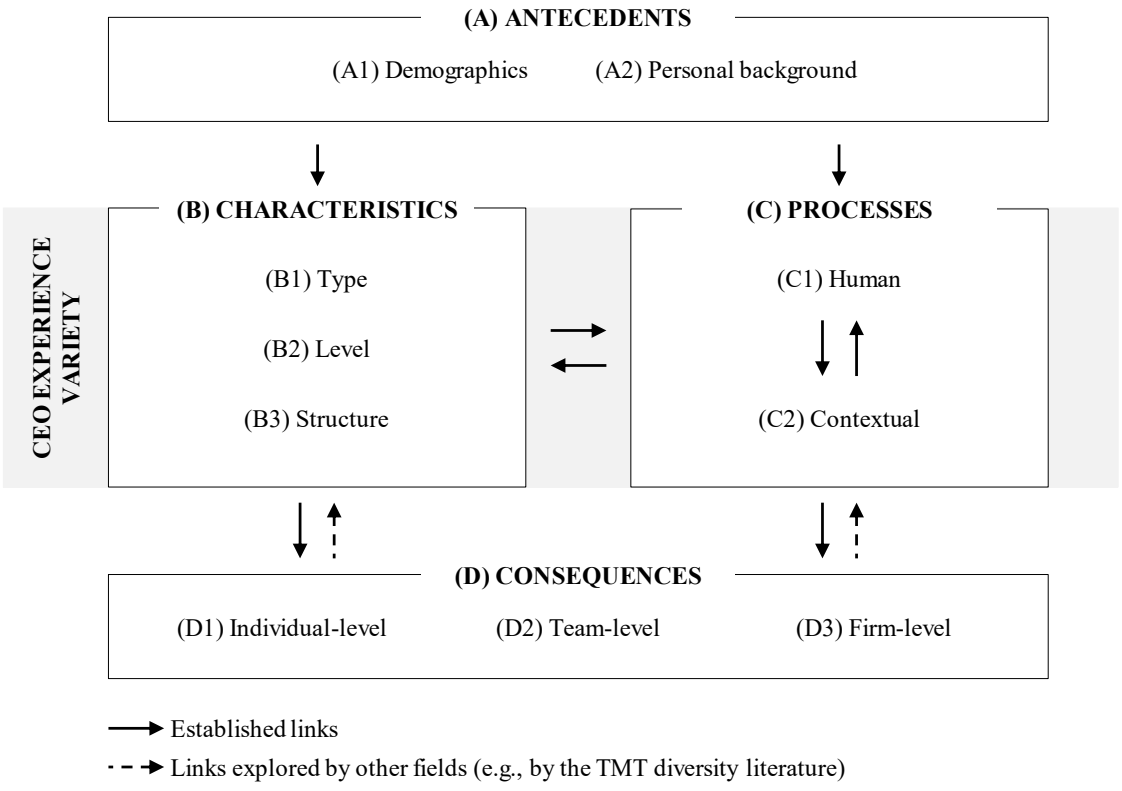
refers to the variety within a CEO's experience. It brings into focus the difference between specialization (i.e., narrow-specialized experience in a few areas) and generalism (i.e., broad-generalist experience in many areas).

(C) Processes. Two concepts were identified in '(C) Processes'. First, '(C1) Human' processes involve the mechanisms that unfold between the CEO, the TMT, and the board (as driven by CEO experiences). Second, '(C2) Contextual' processes comprise internal conditions (e.g., strategic change or turnarounds) and external ones (e.g., degree of competition).

(D) Consequences. Research has established three relevant concepts. First, '(D1) Individual-level' consequences refer to an executive's career advancement and compensation. Second, '(D2) Team-level' consequences describe the impact of CEO experience variety on team-level outcomes (e.g., TMT change or TMT compensation). Third, '(D3) Firm-level' consequences involve strategic change and performance implications.

Figure 5 shows the dimensions, concepts, and their interrelations in our integrative review framework. See Appendix 2.4 for a more detailed version.

Figure 5: Review framework



Source: Authors

2.2.3 Identification of the research streams

We clustered the literature into research streams covering the same concepts and links.[27] We identified three established (I to III) and two emerging (IV and V) research streams. Table 1 presents the five research streams and their main research links.

Stream I(a): Individual-level implications: Career advancement. This stream focuses on how CEO experience variety affects an executive's career progress and the likelihood of being appointed as CEO. Further, research has studied how CEO experience variety impacts the likelihood of post-succession CEO turnover (i.e., new CEO survival).

Stream I(b): Individual-level implications: CEO compensation. This stream links CEO experience variety and CEO compensation. Studies in this stream have often considered the moderating effects of firm-level conditions (e.g., degree of internationalization (DOI) or restructuring).

Stream II: Team-level implications. This stream links CEO experience variety with TMT change, both generally (in terms of general TMT entries and departures) and concerning the appointment and replacement of specific TMT members (i.e., CFOs). It has also associated CEO experience variety with TMT pay.

Stream III(a): Firm-level implications: Strategic change. The link between CEO experience variety and strategic change has received most attention. Some studies have considered the interacting effects with the firm's TMT or board as well as with the firm's internal and external contexts.

Stream III(b): Firm-level implications: Firm performance. The main interest of this stream is how CEO experience influences firm performance. Most of these studies investigate how CEO experience interacts with TMT characteristics or firm characteristics to impact firm performance.

Stream IV: Upper echelons processes. This is the first of two emerging research streams. Studies in this stream have begun to investigate how CEO experience and TMT or board experiences interact to create positive synergistic effects or negative effects such as team conflicts.

Stream V: Depth vs. breadth. This second emerging stream concerns whether the structure (i.e., the *depth* and *breadth*) of a CEO's experience matters for individual-level outcomes (e.g., career advancement or compensation) as well as for firm-level outcomes (e.g., strategic change).

[27] To ensure that the identified research streams are of academic relevance, they had to include at least three studies.

Table 1: Research streams and corresponding links

Reserach streams and corresponding links	Papers[a]	
	Authors	Count[b]
Stream I(a): Individual-level implications: Career advancement		10
$A_1 \rightarrow B_1 \rightarrow D_1$	Fitzsimmons, Callan, & Paulsen, 2014	1
$B_1 \rightarrow D_1$	Norburn, 1989; Van Der Merwe & Van Der Merwe, 1985	2
$B_{1,2} \rightarrow C_{1,2} \rightarrow D_1$	Fitzsimmons & Callan, 2016; Georgakakis, Dauth, & Ruigrok, 2016; Gomulya & Boeker, 2014; Guthrie & Datta, 1997; Smith & White, 1987; Westphal & Fredrickson, 2001; Zhu & Shen, 2016	7
Stream I(b): Individual-level implications: CEO compensation		5
$B_1 \rightarrow D_1$	Fulmer, 2009; Harris & Helfat, 1997	2
$B_{1,2,3} \rightarrow C_{1,2} \rightarrow D_1$	Carpenter, Sanders, & Gregersen, 2001; Custodio, Ferreira, & Matos, 2013; Peng, Sun, & Markoczy, 2015	3
Stream II: Team-level implications		4
$B_{1,3} \rightarrow D_2$	Crossland, Jinyong, Hiller, & Hambrick, 2014; Custodio & Metzger, 2014; Gore, Matsunaga, & Eric Yeung, 2011; Hambrick & Cannella, 2004	4
Stream III(a): Firm-level implications: Strategic change		22
$A_2 \rightarrow B_1 \rightarrow D_3$	Kish-Gephart & Tochman Campbell, 2015	1
$B_{1,2,3} \rightarrow D_3$	Barker & Mueller, 2002; Bernile, Bhagwat, & Rau, 2017; Bigley & Wiersema, 2002; Crossland et al., 2014; Custodio & Metzger, 2014; Graffin, Carpenter, & Boivie, 2011; Herrmann & Datta, 2006; Hitt & Tyler, 1991; Malmendier, Tate, & Yan, 2011; Reed & Reed, 1989; Song, 1982; Wang, Holmes, Oh, & Zhu, 2016; Zhu & Chen, 2015	13
$B_{1,2} \rightarrow C_{1,2} \rightarrow D_3$	Chakravarty & Grewal, 2016; Dittmar & Duchin, 2016; Fondas & Wiersema, 1997; Herrmann & Datta, 2002; May, 1995; Weng & Lin, 2014; Xuan, 2009	8
Stream III(b): Firm-level implications: Firm performance		15
$B_{1,2} \rightarrow D_3$	Custodio & Metzger, 2013; Stuart & Abetti, 1990; Wang et al., 2016	3
$B_{1,2,3} \rightarrow C_{1,2} \rightarrow D_3$	Beal & Yasai-Ardekani, 2000; Buyl, Boone, Hendriks, & Matthyssens, 2011; Carpenter et al., 2001; Daily, Certo, & Dalton, 2000; Georgakakis, Greve, & Ruigrok, 2017; Gomulya & Boeker, 2014; Hsu, Chen, & Cheng, 2013; Karaevli, 2007; Reed & Reed, 1989; Roth, 1995; Saboo, Sharma, Chakravarty, & Kumar, 2017; Zhu & Shen, 2016	12
Stream IV: Upper echelons processes		5
$B_1 \rightarrow C_1$	Forbes, Korsgaard, & Sapienza, 2010	1
$B_{1,3} \rightarrow C_1 \rightarrow D_3$	Buyl et al., 2011; Georgakakis et al., 2017; Sundaramurthy, Pukthuanthong, & Kor, 2014; Zhu & Shen, 2016	4
Stream V: *Depth* vs. *breadth*		5
$B_3 \rightarrow D_{1,2,3}$	Crossland et al., 2014; Fitzsimmons & Callan, 2016	1
$B_3 \rightarrow C_{1,2} \rightarrow D_{1,2}$	Buyl et al., 2011; Custodio et al., 2013; Georgakakis et al., 2016; Georgakakis et al., 2017	4

a $N = 50$

b Some papers are allocated to more than one research stream

Source: Author

2.3 Review of the articles

In the following, we review the literature along the above five research streams, in order to identify key insights, emerging patterns, and research gaps. Two comments are worth mentioning for clarification. First, while some of the studies provide insights beyond our scope, we restrict our discussion to the key insights related to CEO experience variety. Second, a few papers appear within more than one research stream, as they hypothesize and test multiple relationships that belong to multiple streams. Within each stream, we only discuss the points related to the respective research stream. Appendix 2.5 summarizes the key points of all 50 studies.[28]

2.3.1 Stream I(a): Individual-level implications: Career advancement

Studies in this stream have attempted to identify the link between a CEO's background experience and his or her career advancements. In particular, authors sought to identify those experiences that influence CEO appointments.

What are the main findings? A first set of studies tried to define how CEOs differ from other top executives. Norburn (1989) suggested that CEOs are indeed a 'breed apart', whose variety of functional and firm experience stands out. Similarly, Van Der Merwe and Van Der Merwe (1985) attempted to identify distinctive CEO characteristics. They found that most CEOs possess a functional background in general administration and an educational background in finance. Notably, these two studies used comparably basic methodologies, making their results not easily repeatable.

A second set of studies examined the relationship between specific firm characteristics, specific executive experiences, and the executive's appointment as a CEO. Guthrie and Datta (1997) studied the relationship between a number of firm characteristics and new CEO's pre-succession experience attributes. Their results suggested that multiple firm characteristics are associated with the selected CEO's organizational tenure, age, and functional background experience. Thus, these attributes matter at the time of CEO selection. Similarly, Gomulya and Boeker (2014) argued that CEO attributes send messages to important stakeholders and the broader public about CEO credibility. They argued and found that firms having to publish more severe financial restatements were more likely to appoint CEOs possessing previous CEO or turnaround experience and a more elite education.

Focusing on CEO background experience, Georgakakis, Dauth, and Ruigrok (2016) studied the impact of CEO international experience on an executive's career

[28] Appendix 2.6 shows how the studies are allocated to the different research streams.

advancement towards the top. The authors found evidence for a U-shaped relationship. Thus, international experience initially accelerates career progress until a threshold where social network costs outweigh human capital benefits. More broadly, Fitzsimmons and Callan (2016) tried to assess the CEO capital that is valuable and thus determinative at the time of CEO selections. Their results suggest that boards view CEO capital in relatively narrow terms, that CEO social capital plays a decisive role in all CEO appointments, and that firms value CEO capital only when developed in specific industry or organizational contexts. Finally, Fitzsimmons, Callan, and Paulsen (2014) focused on gender. Their study suggests that women have limited access to career-relevant experience from childhood, thus significantly and cumulatively limiting their ability to gain the experience needed to access CEO roles.

A third set of studies highlighted the importance of the former CEO and the board. On the one hand, Smith and White (1987) found that the former CEO's career specialization and previous strategy simultaneously yet independently predict the new CEO's career specialization. Indeed, CEOs not only tend to be succeeded by individuals with similar career specializations, but a positive relationship also exists between the previous strategy and the successor's specialization. On the other hand, Westphal and Fredrickson (2001) found that board directors are inclined to select new CEOs whose strategic experience is consistent (a) with their own experience and (b) with the strategy that they favor for the firm.

Finally, Zhu and Shen's work (2016) on CEO survival constitutes the last set of studies. They argued that CEOs who are better able to build positive relationships with boards are more successful. They also found that if new outside CEOs have prior experience with diverse boards, the likelihood of post-succession CEO turnover decreases.

What can be generalized? Taken together, the research in this stream has established that an executive's background has a significant impact on his or her career advancement and the likelihood of being appointed as a CEO (Georgakakis et al., 2016; Gomulya & Boeker, 2014; Smith & White, 1987; Westphal & Fredrickson, 2001).

Our review also shows that research in this stream has taken several promising inroads. For instance, Zhu and Shen (2016) have provided first insights into the post-CEO-succession phase, in their attempt to identify those CEO experiences that determine the CEO's survival chances. Given that CEO replacements have become more and more frequent (Chen & Hambrick, 2012; Wowak et al., 2011; Zhang, 2008), and given that CEO successions are considered disruptive (Friedman & Saul, 1991;

Kesner & Sebora, 1994; Shen & Cannella, 2002a), such research might help boards of directors, executive search consultants, and others involved in CEO selection to take well-informed and sustainable decisions. Second, Fitzsimmons et al. (2014) studied gender disparities and found that demographics like gender might impact a future CEO's opportunities to make certain experiences. Their study is among the few to actually consider the antecedents of CEO experience variety. Third, Georgakakis et al. (2016) were the first to explore non-linear relationships and found that more experience may not necessarily be beneficial.

What are the research gaps? Generally, research in this stream is sparse. This is partly due to the difficulty to empirically study the executive characteristics that might serve as antecedents of CEO successions. Such studies generally require large datasets (with data on executives who became CEOs and executives who did not). Much of the extant literature in this field is limited by the fact that only executives who became CEOs are included (Fitzsimmons et al., 2014). Moreover, it has not yet established whether career advancement and experience variety are based on voluntary decisions or not. For example, CEOs with high experience variety might have changed positions repeatedly out of curiosity or were forced to change roles due to personal conflicts with supervisors, avoidance of commitment (Mowday & Spencer, 1981), or other contextual situations (Crossland et al., 2014). We thus encourage researchers to shed further light on CEO experience variety as a predictor of CEO career advancement. This may be achieved by adding empirical clarity by overcoming sample limitations and by adding theoretical clarity about the voluntary nature of career moves.

Our review also indicates that more (conceptual) research is required to move beyond conventional antecedents and outputs. On the one hand, only two studies used CEO experience as an independent variable, which was operationalized either as international experience (Georgakakis et al., 2016) or as prior board experience (Zhu & Shen, 2016). Thus, an explicit focus on other facets such as industry or firm experience might yield valuable insights. On the other hand, other career-related outcomes of CEO experience variety might be worth considering. For example, job satisfaction or career aspirations (Georgakakis et al., 2016) could have important mediating implications on individual-, team-, and firm-level outcomes.

Finally, understanding of the contingencies surrounding the CEO experience-CEO career advancement relationships is still limited. In the context of CEO appointments, the interaction between board characteristics (Westphal & Fredrickson, 2001) or differential corporate governance systems (Zhu & Shen, 2016) might be

important. Similarly, firm characteristics such as the focal firm's industry might interact with CEO career experiences to impact CEO selection (Guthrie & Datta, 1997).

2.3.2 Stream I(b): Individual-level implications: CEO compensation

Another interesting research stream has focused on the impact of CEO experience on CEO compensation. This stream includes five studies that are either anchored in the executive capital literature (i.e., using human capital or resource-based view arguments) or in the agency literature.

What are the main findings? Two studies found a positive impact of CEO international experience on CEO compensation (Carpenter, Sanders, & Gregersen, 2001; Peng, Sun, & Markoczy, 2015). These studies also highlighted the contingent nature of this relationship, which has been shown to be moderated by firm characteristics such as global strategic posture (Carpenter et al., 2001) or governance factors at the board level (Peng et al., 2015).

Fulmer (2009) suggested that CEO compensation packages are designed for retention purposes: CEOs with more valuable experience—and who are thus more likely to be enticed away—are expected to receive higher compensation. The study provides evidence for a positive relationship between CEO management experience (albeit proxied by age) and CEO compensation. A decade earlier, Harris and Helfat (1997) established that external CEO successors receive greater initial compensation than their internal counterparts because of the costs of losing firm-specific skills and the risks associated with switching firms. Their results also indicated that external successors from outside the industry receive a greater pay premium than external successors from within their new firm's industry.

Finally, Custodio et al. (2013) suggested that CEOs with general managerial skills receive a pay premium due to increased market demand for their broad-generalist skills. Indeed, their results indicated that generalist CEOs earn 19% more than their specialist counterparts and that this pay premium increases (a) when firms hire an outsider and switch to generalists and (b) when CEOs are hired to perform complex tasks such as restructurings.

What can be generalized? Although this research stream only consists of five studies, four general observations can be made. First, the studies clearly point towards positive compensation implications of CEO human capital. Second, the "decline of the traditional organizational career" (Briscoe et al., 2006: 30) has been reflected in research on the value of generalist CEOs and on the corresponding compensation

implications.[29] Acknowledging that broad-generalist experience has become more important for CEOs (Murphy & Zabojnik, 2004), the literature has underscored that CEO experience variety not only fosters career advancement (Ferreira & Sah, 2012; Wang & Murnighan, 2013), but also results in higher CEO compensation (Custodio et al., 2013). Nevertheless, all of these studies use absolute levels of CEO experience. These include dummies for industry experience (Harris & Helfat, 1997), dummies for international experience (Peng et al., 2015), years of international work experience (Carpenter et al., 2001), and age as a proxy of CEO management experience (Fulmer, 2009). They also include Custodio et al.'s (2013) composite measure which is based on the number of positions, firms, and industries, as well as on dummies for prior CEO experience and conglomerate experience. Fourth, CEO succession origin has been shown to have important remunerative implications (Custodio et al., 2013; Harris & Helfat, 1997). This supports the importance of a CEO's firm and industry experience.

What are the research gaps? Our review suggests that certain important questions have remained unanswered. First, we believe that CEO social capital deserves more attention. Except for Peng et al. (2015), none of the reviewed studies consider social capital arguments. This is surprising because "a CEO's standing within a social network is a core part of the value the she or her adds to the organization (Leana & Van Buren, 1999)" (Cao et al., 2006: 565). It also surprising because research has demonstrated the importance of social capital (Collins & Clark, 2003; Rodan & Galunic, 2004; Seibert et al., 2001). Moreover, various authors have argued that human and social capital should be considered in tandem, in order to adequately capture the value of executives and to reflect the difficulty of disentangling these forms of capital, conceptually and empirically (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015).[30] Therefore, future research should use and reconcile both theories. It needs to heed the notion that human and social capital intersect and require simultaneous consideration (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015).

Yet another factor that has not been addressed is the combined effect of CEO experience variety and CEO compensation on firm performance. Research considering the interactive effect of CEO experience variety and CEO compensation on firm performance is a promising avenue for future research, as little is known about the motivations of highly experienced executives (Crossland et al., 2014). Such an

[29] This decline leads to a substantial increase in the proportion of CEOs with broad-generalist career backgrounds (Crossland et al., 2014).

[30] For example, previous studies have argued that human capital cannot be leveraged without the opportunities created by social capital (Burt, 1997a, 1997b). Similarly, the information from social networks is an important source for building human capital (Coleman, 1988; Nahapiet & Ghoshal, 1998).

undertaking would reflect Hambrick's (2007: 339-340) call for "theory and research considering the combined effects of executive characteristics and compensation systems," which was based on the observation that "almost no literature examines executive characteristics and compensation in tandem […]."

Further, future studies should reflect the formal and informal institutions that might impact the CEO experience-CEO compensation mechanisms. On the one hand, formal institutions such as corporate governance policies (Carpenter et al., 2001) are likely to moderate the bargaining power that CEOs take from their experience backgrounds. On the other hand, informal institutions such as the values or norms of board members might shape compensation decisions vis-à-vis CEO experience backgrounds (Peng et al., 2015).

Overall, our review supports those authors who have claimed that the determinants of CEO compensation still remain unclear (Geletkanycz et al., 2001; Gomez-Mejia, 1994). Given the CEO's status as the firm's best paid executive (Pandher & Currie, 2013), we strongly encourage researchers to close these gaps.

2.3.3 Stream II: Team-level implications

Questions such as "How do CEOs change their TMTs?" and "How do CEOs compensate their TMTs?" inspire this stream of research. These two questions reflect the two broad approaches that are evident in the articles under review. The first approach focuses on changes in the TMT's composition, the latter on TMT compensation.

What are the main findings? Crossland et al. (2014) argued that CEOs with high career variety possess not only a personal disposition towards change, but also broader mental models. The authors suggested that these two characteristics result in TMT change. They found that CEO career variety is associated with higher TMT turnover, but not with greater TMT heterogeneity. Two studies focused explicitly on specific TMT members. On the one hand, Custodio and Metzger (2014) found that new CEOs who are financial experts replace incumbent CFOs more often than CEOs without financial expertise. According to the authors, this confirms the notion that CEOs with financial expertise become more involved in financial matters and therefore tend to replace incumbent and entrenched CFOs in order to facilitate change. On the other hand, Hambrick and Cannella (2004) found that CEOs lacking operational experience and experience in managing the focal firm are more likely to appoint a Chief Operating Officer (COO). The authors argued that such CEOs have experience repertoires that

limit their capacity to oversee internal operational affairs and thus appoint COOs to offset their own limitation.

The second approach, with TMT compensation as the dependent variable, has received less scholarly attention. Among the reviewed studies, only Gore, Matsunaga, and Yeung (2011) considered that CEOs with financial expertise might exert stronger oversight of financial policies. Correspondingly, they provided evidence that CEOs with finance career backgrounds tend to use lower levels of incentive-based compensation for their CFOs.

What can be generalized? Although the small number of studies in this stream prevents generalization, we make three cautious observations. First, studies in this stream confirm that CEO successions are disruptive events (Friedman & Saul, 1991; Shen & Cannella, 2002a). They also suggest that the characteristics of the new CEO matter for incumbent TMT members. In particular, new CEOs with high experience variety—and who are thus accustomed to change—seem to use their 'mandate for change' (Finkelstein et al., 2009; Karaevli & Zajac, 2013) also within the realms of their TMTs (Crossland et al., 2014). Second, specific functional experiences seem to lead to selective changes among the TMT. For example, CEOs with financial experience replace CFOs more often than not (Custodio & Metzger, 2014), whereas CEOs without operational experience tend to appoint COOs (Hambrick & Cannella, 2004). Third, CEO experiences might impact how a CEO compensates his or her TMT (Gore et al., 2011).

What are the research gaps? Our review of this stream reveals certain important gaps. For example, none of the studies reviewed considered the performance implications of TMT change, nor the interaction between CEO characteristics and TMT characteristics. To capture these complex mechanisms, future research needs to move beyond measures that capture TMT change per se. Rather, we suggest considering the type of change and its performance implications.[31]

Since only one study has focused on TMT compensation implications, more research is needed to enrich our understanding of this link. Other unaddressed aspects include not only special types of CEOs such as interim CEOs or Co-CEOs (Hambrick & Cannella, 2004), but also other TMT outcomes such as TMT motivation.

[31] For example, TMT change that enhances complementarities between the CEO's and the TMT's experiences and skills could be expected to have positive implications.

2.3.4 Stream III(a): Firm-level implications: Strategic change

Research on the impact of CEO experience variety on strategic change has received significant attention. Indeed, 22 out of 50 papers have focused on CEO experience variety as an antecedent of strategic change. Broadly, these studies can be categorized into three main categories, depending on their operationalization of the dependent variable: studies on the *occurrence* of strategic change, on the firm's *strategic direction*, and on its *strategic resource allocation*.

What are the main findings? The first set of studies considered different CEO characteristics and whether these impact the *occurrence* of strategic change per se. Bigley and Wiersma (2002) found that CEO heir-apparent experience moderates the relationship between CEO power and corporate strategic refocusing. Similarly, Weng and Lin (2014) linked CEO executive experience within the focal firms with strategic change (and found support for a negative relationship). More broadly, Crossland et al. (2014) developed the concept of 'CEO career variety'. This reflects the notion that CEOs with higher experience variety have broader mental maps ('cognitive side') and favor experimentation and novelty ('motivational side'). Their results indicated a positive relationship between CEO career variety and strategic novelty. In support of these studies, the meta-analysis of Wang, Holmes, Oh, and Zhu (2016) provided evidence that CEO experience variety (i.e., tenure, formal education, prior career experience) is significantly associated with a firm's strategic change. Finally, Fondas and Wiersema (1997) applied socialization theory (Schein, 1988; Van Maanen & Schein, 1979) to build a theoretical framework linking CEO characteristics with strategic outcomes. They argued that socialization theory represents a more robust theoretical rationale for identifying potential individual and situational characteristics that support or restrain strategic change following CEO succession.

Within the second category, early studies examined the impact of CEO career backgrounds on the firm's *strategic direction* in the form of the chosen diversification strategy. Song (1982) found evidence that firms that pursue internal diversification have a higher proportion of CEOs with a career emphasis on marketing and production. Reed and Reed (1989) attempted to validate these results, but found no significant relationship. This was attributed to methodological differences and the possibility that other factors might mask the influence of CEO characteristics. Herrmann and Datta (2002, 2006) provided two studies on the impact of CEO experience on the mode of international diversification strategies. They found that CEO experience is associated with full-control foreign market entry modes (Herrmann & Datta, 2002) and impacts

the choice of the firm's foreign direct investment strategy (Herrmann & Datta, 2006). Similarly, Zhu and Shen (2015) argued and found that the more a CEO has witnessed a certain type of strategy at other firms, the more the focal firm will adopt that type of strategy. Finally, regarding the evaluation of acquisition targets, Hitt and Tyler (1991) found that the CEO's decision models vary depending on executive characteristics such as age and work experience. At the same time, the authors found no evidence of an effect of formal education on strategic decisions.

The third set of studies considered how CEO experience variety impacts a CEO's *strategic resource allocation* decisions. Such studies linked CEO backgrounds such as education and functional experience (i.e., research & development (R&D) experience) with specific resource allocation preferences (i.e., higher R&D spend) (Barker & Mueller, 2002; May, 1995).[32] Using CEO functional experience as a moderator, Chakravarty and Grewal (2016) found that the influence of analyst forecasts on unexpected CEO reactions (i.e., reductions in advertising and R&D budgets) is smaller when the CEO has output experience. Xuan (2009) focused on divisions, rather than functions, and found a pattern of 'reverse-favoritism', i.e., CEOs allocate significantly more capital to divisions to which they were not previously affiliated.

Regarding corporate finance decisions, two studies revealed that CEOs with finance career backgrounds pursue less conservative financial policies (Custodio & Metzger, 2014). In contrast, CEOs making negative experiences at previous firms take more conservative corporate financial decisions (Dittmar & Duchin, 2016). Researchers have also highlighted the impact of childhood experiences on a CEO's financial decision-making. The impact on the CEO's risk aversion has attracted particular interest. For example, studies have related early life exposure to fatal disasters (Bernile, Bhagwat, & Rau, 2017), a childhood during the Great Depression (Malmendier, Tate, & Yan, 2011), or a middle-class background (Kish-Gephart & Tochman-Campbell, 2015) with higher CEO risk aversion. Malmendier et al. (2011) also considered the impact of military experiences and found that CEOs with military experience pursue more aggressive financial policies. This is the only study in our review that considers the impact of CEO military experience.

One study could not be classified into the above categories: Graffin, Carpenter, and Boivie's (2011) study on 'strategic noise'. The authors suggested and found that

[32] Interestingly, while Barker and Mueller (2002) found no significant impact of the *level* of education (once the CEO has attained a college degree), they discovered that the *type* of education matters. According to their results, significant increases in R&D spending were found at firms with CEOs holding advanced science-related degrees.

firms are less likely to inject strategic noise (i.e., the simultaneous announcement of strategic news) when the newly appointed CEO has prior CEO experience.

What can be generalized? Two general observations can be made about this stream. First, the reviewed studies clearly indicate that CEO experience variety impacts strategic change. In fact, the extant literature provides comprehensive evidence that differences in CEO backgrounds lead to differential choices regarding the *occurrence* of strategic change (i.e., whether to initiate strategic change at all), the *strategic direction* (i.e., which markets to steer the firm towards), and *strategic resource allocation* (i.e., how to achieve competitive advantage in the chosen markets). But although the importance of CEO experience variety in the context of strategic change has been clearly established, only one empirical study considered performance implications. Reed & Reed (1989) suggest that a fit between CEO experience and diversification strategy results in higher firm performance.

Second, CEO early life experiences have received increasing attention. With one study on the role of CEO social class (Kish-Gephart & Tochman-Campbell, 2015) and two studies on traumatic early life experiences (Bernile et al., 2017; Malmendier et al., 2011), research in this stream deviates from the conventional focus on educational or work experience. This is supplemented by the only study on CEO military experience (Malmendier et al., 2011).

What are the research gaps? While the impact of CEO experience on the *degree* of strategic change (i.e., whether and how far CEO experience variety impacts strategic change) has received considerable interest, our review reveals that research in this stream has so far largely neglected the resulting *quality* of strategic change (i.e., the corresponding performance implications). Doing so could be fruitful because researchers have questioned the assumption that strategic change is beneficial per se (Kelly & Amburgey, 1991; Oehmichen, Schrapp, & Wolff, 2016; Weng & Lin, 2014).

Another research gap concerns the timing of strategic change. This stream lacks knowledge about whether and how different CEOs change their strategic resource allocation over time (Xuan, 2009). A related question would be how CEOs with different experience backgrounds overcome organizational inertia to implement strategic change (Hitt & Tyler, 1991). Clearly, such questions would require researchers to expand the scope beyond the first three to five years after CEO succession (Crossland et al., 2014).

Our review also suggests that different types of strategic change present worthwhile research opportunities. The extant literature focuses largely on major

strategic changes (operationalized as changes in resources allocations). However, certain CEOs or firms might adopt change initiatives that build on small-scale and incremental changes (Wang et al., 2016). Thus, to complete our understanding of strategic change, researchers should replicate strategic change studies with other types of strategic change (Hitt & Tyler, 1991).

Finally, although some studies have explored contingencies that influence strategic change and the interaction between CEO experience variety and strategic change, we believe that other important moderators also require attention. In particular, internal factors such as organizational culture (Pettigrew, 1987, 2012), organizational structure (Ginsberg & Buchholtz, 1990; Meyer, Brooks, & Goes, 1990), and organizational governance mechanisms (Miller & Friesen, 1980; Simons, 1994) might influence a CEO's ability to initiate strategic change. Future research, relying on primary firm data, could capture such dimensions and complement our understanding of the contingencies surrounding the impact of CEO experience on strategic change.

2.3.5 Stream III(b): Firm-level implications: Firm performance

Studies on the performance implications of CEO experience variety constitute the second largest research stream. Largely anchored in upper echelons theory, these studies have identified mechanisms around CEO education and different facets of CEO work experience.

What are the main findings? Two studies have included CEO education as an indicator of CEO experience. Drawing on the fit between CEO characteristics and firm strategy, Reed and Reed (1989) found that CEO education and the selected diversification strategy interact to impact firm performance. Similarly, Hsu, Chen, and Cheng (2013) found that CEO education positively moderates the relationship between firm internationalization and firm performance. They concluded that CEO education and the corresponding information processing capabilities help to realize the performance benefits of firm internationalization.

CEO work experience has been operationalized in several ways. First, starting with international experience, our review has found a positive impact of CEO international experience on firm performance (Carpenter et al., 2001; Daily et al., 2000; Roth, 1995). This relationship has been shown to be positively moderated by firm internationalization (Daily et al., 2000), firm international interdependence (Roth, 1995), or TMT international experience (Carpenter et al., 2001). This indicates not only the positive impact of executive experience variety on leadership capabilities and on

the ability to manage complex firms, but also the contingent character of experience variety. Both points were confirmed by Hsu, Chen, and Cheng (2013), who found that CEO international experience positively moderates the relationship between firm internationalization and firm performance. They concluded that the information processing advantages gained from international experience are crucial to develop the positive performance implications of firm internationalization.

Second, focusing on functional experience, multiple studies have paid attention to the fit between a CEO's functional background and certain firm characteristics. Relevant studies include Reed and Reed (1989) and Beal and Yasai-Ardekani (2000), who focused on the interaction effect between CEO functional experience and the firm's diversification strategy on firm performance. Both studies found that congruence between specific CEO functional experience (e.g., prior R&D experience) and specific competitive strategies (e.g., differentiation through product innovation) results in higher firm performance. Similarly, Saboo, Sharma, Chakravarty, and Kumar (2017) have recently shown that CEOs with throughput functional background positively impact the relationship between innovation overlap and acquisition performance.

Third, CEO industry experience has been shown to positively impact the CEO's ability to successfully pursue M&As (Custodio & Metzger, 2013). This is due to such CEOs' ability to negotiate better deals and to pay lower premiums for M&A targets. Karaevli's (2007) study on 'CEO outsiderness' (a concept based on both firm and industry experience) found no evidence for a main effect between CEO outsiderness and firm performance. However, significant moderating effects were found when considering contextual factors such as TMT change.

Moving beyond the three conventional types of work experience (i.e., international, functional, and industry experience), another set of studies has shed light on the role of selected types of experience. For example, Stuart and Abetti (1990) found that CEO prior senior management experience in entrepreneurial ventures positively impacts firm performance. Moreover, CEO prior turnaround experience has been shown to result in more positive reactions from external stakeholders such as the stock market, financial analysts, and the mass media (Gomulya & Boeker, 2014). Finally, Zhu and Shen (2016) found that a new outside CEO's prior experience with more diverse boards not only reduces the likelihood of post-succession CEO turnover, but also increases post-succession firm performance.

An intriguing direction has been taken by two studies contributing to the debate on the performance implications of generalist versus specialist CEOs. On the one hand,

Buyl et al. (2011) concluded that generalist CEOs (i.e., CEOs with experience in more than one functional category) have a negative moderating impact on the relationship between TMT functional diversity and firm performance. On the other, Georgakakis, Greve, and Ruigrok (2017) found that the negative performance effects of knowledge-based TMT faultlines are likely to be overcome when the CEO possesses a diverse career background.

Our review also included the meta-analysis of CEO experience by Wang et al. (2016). Confirming several of the above studies, the authors found that CEO characteristics (including CEO education and CEO prior career experience) are positively associated with firm performance.

What can be generalized? Research in this stream clearly highlights the importance of CEO experience variety. Several studies confirm the positive performance implications of CEO education and CEO work experience. At the same time, our review also emphasizes that the set of appropriate CEO characteristics—required for a CEO to positively impact firm performance—depends on the fit between CEO characteristics and the specific organizational requirements. Indeed, the majority of studies takes a contingency view and argues that the CEO's performance implications are contingent on team- and firm-level factors. Correspondingly, studies on the direct relationship between CEO experience and firm performance have been rare (e.g., Carpenter et al., 2001).

We make two additional observations. On the one hand, research in this stream has established that not the *amount*, but the *type* of experience, is relevant (Beal & Yasai-Ardekani, 2000; Reed & Reed, 1989; Stuart & Abetti, 1990). Further, recent research in this stream has shifted attention to the *structure* of CEO experience, especially the variety within an executive's career background. These studies have so far focused on the indirect performance implications of generalist versus specialist CEOs (Buyl et al., 2011; Georgakakis et al., 2017). Notably, they all focus on linear relationships and, with some few exceptions, rely on absolute measures of CEO experience (i.e., level of education, number of years, number of positions, etc.).

What are the research gaps? Several factors require further attention. First, research has established that it is not the CEO alone who influences firm performance (Datta et al., 2003; Zajac, 1990). Rather, leadership of complex organizations is not only a shared responsibility (DeChurch, Hiller, Murase, Doty, & Salas, 2010; Ensley, Hmieleski, & Pearce, 2006), but also an interactive process where "upper managers bring together and interpret information for the system as a whole" (Daft & Weick,

1984: 285). Correspondingly, this stream could benefit from studies that include executives other than the CEO (Buyl et al., 2011). For example, TMT members might be able to offset a CEO's experience limitations (Beal & Yasai-Ardekani, 2000; Hsu et al., 2013; Roth, 1995). Similarly, neither the role of nor the interaction with boards and other key stakeholders has been sufficiently considered (Zhu & Shen, 2016).

Second, most of the extant literature builds on 'the more the better' logic (Khanna et al., 2014; Ployhart & Moliterno, 2011). This has been questioned by authors suggesting that CEO experience variety is not necessarily beneficial because CEOs with highly diverse career backgrounds might merely possess superficial knowledge. For example, Buyl et al. (2011: 170) suggested that due to its broadness, the experience of highly generalist CEOs might be too superficial. That is, generalist CEOs might have a reduced ability to process information and to contribute positively to firm performance. Nevertheless, empirical research in this stream has not yet addressed the potentially negative implications of CEO experience variety.

Third, our review indicates that this stream would benefit from a more refined understanding of the internal and external contingencies that affect the relationship between CEO experience variety and firm performance. On the one hand, corporate governance policies (Zhu & Shen, 2016) or changing TMT dynamics (Karaevli, 2007) might represent important internal factors. On the other hand, external factors of interest could be strategic groups (Karaevli, 2007) or alliances (Saboo et al., 2017).

Finally, research in this stream has not considered the long-term performance implications of CEO experience variety (Hsu et al., 2013; Karaevli, 2007).

2.3.6 Stream IV: Upper echelon processes

The first of the two emerging streams focuses on TMT and board processes that are impacted by CEO experience variety. These studies, which are all anchored in the upper echelons tradition, have thus largely used CEO experience variety as a moderator of how TMTs or boards collaborate as human beings.

What are the main findings? Forbes, Korsgaard, and Sapienza (2010) found that venture boards have more conflicts when deciding to accept new financing at a reduced valuation. Moreover, the relationship between reduced valuation and conflict is especially acute if such boards include a CEO with founder experience.

Two studies took firm performance as the dependent variable. First, Buyl et al. (2011) suggested that CEO expertise affect TMT effectiveness because of its impact on the exchange and integration of distributed knowledge within the TMT. The authors

found that TMTs with diverse functional backgrounds have a less positive impact on firm performance when led by a generalist CEO. The authors suggested that generalist CEOs might possess superficial knowledge that ultimately decreases their ability to act as effective TMT integrators. Second, Georgakakis et al. (2017) found that the negative firm performance implications of TMT faultlines are likely to be overcome when (a) the CEO socio-demographically resembles the TMT, (b) the CEO possesses a diverse career background, and (c) the CEO has overlapping team tenure with other TMT members. These results highlight that the relational, informational, and socialization interface between the CEO and other TMT members has important implications for TMT processes and ultimately for firm performance.

Instead of firm performance, Sundaramurthy, Pukthuanthong, and Kor (2014) focused on initial public offering (IPO) performance. The authors developed a model to test the synergies between the CEO's and the board's human and social capital. They found that the CEO's and the board members' experience as board members of public companies have positive synergistic effects on IPO performance. Thus, critical interaction effects also exist between CEO and board experience.

Finally, Zhu and Shen (2016) found that if new outside CEOs have prior experience with more diverse boards, the likelihood of post-succession director turnover decreases. The authors suggested that new CEOs who have previously worked with less diverse boards might experience more conflicts with the new board. This, in turn, will result in higher post-succession director turnover.

What can be generalized? Our review leads to two generalizations. Further meaningful implications, for both theory and practice, have yet to emerge from an increasing number of studies to be undertaken within this stream. First, the available empirical evidence clearly underlines the importance of CEO experience variety in the context of both TMT processes (Buyl et al., 2011; Georgakakis et al., 2017) and board processes (Forbes et al., 2010). Second, the reviewed articles also suggest that the implications of different CEO backgrounds might be both positive and negative. For instance, certain CEO characteristics might help to overcome negative TMT aspects such as faultlines (Georgakakis et al., 2017), while other CEO characteristics might increase TMT conflict (Forbes et al., 2010).

What are the research gaps? Our review of this stream points to several hitherto largely neglected factors. Particularly in this stream, it is imperative that future research includes more non-CEO data (Forbes et al., 2010). For example, the experience variety of TMT or board members is likely to also impact team dynamics. We also encourage

researchers to further explore the impact of board independence (Zhu & Shen, 2016). Similarly, a measure such as 'TMT independence' might be conceived as capable of capturing a TMT's independence from the corresponding CEO. More independent TMTs are likely to interact differently with different CEO experience backgrounds.

Another promising research opportunity lies in analyzing the micro-processes determining the relationships between CEO experience variety and upper echelon processes. This would require the use of direct measures based on data sources such as multiple case studies (Georgakakis et al., 2017). Although such efforts to move beyond the conventional demographic proxies and the predominant use of archival data are certainly challenging, they have much potential to enrich our understanding of the upper echelon processes.

Finally, our review indicates that research in this stream needs to expand the scope of CEO experiences and their interactions (Sundaramurthy et al., 2014). For example, other influential CEO experiences such as past leadership experience as CEO or start-up experience might have important ramifications for upper echelon processes (Zhu & Shen, 2016).

2.3.7 Stream V: *Depth* vs. *breadth*

The second nascent stream in our review is inspired by the question whether CEO experience *depth* (i.e., specialization) or *breadth* (i.e., generalism) matters. The fact that all of the studies in this stream were published after 2011 indicates the vibrancy of this research stream.

What are the main findings? In response to the increasing proportion of CEOs with widely diverse career backgrounds, Crossland et al. (2014) suggested that the variety of distinct professional and institutional experiences reflects a CEO's motivations and cognitions. On the 'motivational side', CEOs with high career variety have an inherent desire for change and experimentation. On the 'cognitive side', experience variety imparts a broad repertoire of perspectives and experiences. Crossland et al. (2014) found a positive relationship between CEO career variety and strategic dynamism and strategic distinctiveness. Moreover, high CEO career variety leads to greater TMT turnover (but not TMT heterogeneity).

Buyl et al. (2011) studied whether generalist or specialist CEOs are better equipped to manage diverse TMTs. They argued that CEOs with broad functional backgrounds better stimulate knowledge exchange among and behavioral integration of TMTs. Interestingly, however, their results showed that TMTs with diverse functional

backgrounds increase firm performance less when the team is led by a generalist CEO. The authors suggested that generalist CEOs might suffer from the 'jack of all trades but master of none syndrome', i.e., they possess superficial knowledge, which actually limits their ability to be an effective team integrator. While Buyl et al.'s (2011) results question the merits of CEO experience variety, Georgakakis et al. (2017) suggested that CEO experience variety positively moderates the relationship between TMT faultlines and firm performance. Indeed, their results show a more positive image of CEO experience variety, indicating that CEOs with diverse career backgrounds are better equipped to overcome the negative performance implications of TMT faultlines.

Custodio et al. (2013) provided insights on the compensation implications of CEO generalism. They argued and found that CEOs with general managerial skills receive higher compensation compared to their narrow-specialized counterparts. In addition, they observed that this relationship is contingent on CEO succession origin and job complexity.

Finally, two studies investigated CEO experience variety as an antecedent of CEO successions. On the one hand, Fitzsimmons and Callan (2016) took a general approach to assess the relevance of CEO experience variety in the context of CEO selections. Their results suggested that the structure of CEO experience matters because boards mainly consider two factors: the *depth* and *breadth* of the candidate's industry experience (under normal circumstances), and the candidate's specific track record for dealing with crises (under special circumstances). More specifically, Georgakakis et al. (2016) focused on international experience variety. They found evidence for a U-shaped relationship between international experience variety and the 'time to the top' (i.e., the CEO position), indicating that CEO experience variety—and the associated trade-off between *depth* and *breadth*—is a complex construct.

What can be generalized? Over the past decades, CEO career backgrounds have changed significantly. There was a substantial increase in the proportion of CEOs with broad-generalist career backgrounds (Briscoe et al., 2006; Crossland et al., 2014). Our review indicates that this shift has been reflected in the literature on generalist versus specialist CEOs. We also observe that CEO experience variety has been associated with various concepts on the level of the individual, the team, and the firm. These concepts include CEO career advancement (Fitzsimmons & Callan, 2016; Georgakakis et al., 2016) and CEO compensation (Custodio et al., 2013), TMT behavioral integration (Buyl et al., 2011; Georgakakis et al., 2017) and TMT change (Crossland et al., 2014), as well as firm-level implications such as strategic change (Crossland et al., 2014).

Taken together, this underlines the high potential of the CEO experience variety construct. Nevertheless, at this point, we must note that the empirical evidence remains fragmented, as studies to date have rarely focused on similar concepts or relationships.

Finally, this stream has largely focused on the positive implications of CEO experience variety, such as appointment to CEO (Fitzsimmons & Callan, 2016), CEO pay premiums (Custodio et al., 2013), TMT efficiency (Buyl et al., 2011; Georgakakis et al., 2017). In contrast, only Georgakakis et al. (2016) have empirically addressed potentially negative implications.

What are the research gaps? At this stage, this stream requires both clarity and refinement regarding the measurement of CEO experience variety. The extant literature has largely used '*absolute*' measures of CEO experience. These include dummies to categorize CEOs into specialists and generalists (Buyl et al., 2011) and composites based on absolute measures such as the number of functions, firms, and industries (Crossland et al., 2014; Custodio et al., 2013; Georgakakis et al., 2017). The exception was Georgakakis et al. (2016), who used the Blau index (1977) based on the relative proportion of a CEO's career length spent in a certain experience category (e.g., countries). While '*absolute*' approaches tend to capture a CEO's absolute stock of experience, '*relative*' ones such as the Blau index (1977) seem to be better suited to capture variety within a CEO's career background.

Future studies are also likely to benefit from more direct data collection methods. Anchored in the upper echelons paradigm, most of the extant literature has relied on demographic 'proxy' data. Direct approaches such as surveys or multiple case studies are required (Georgakakis et al., 2016) to gain a refined understanding of the underlying mechanisms through which CEO experiences impact information processing, decision-making, and the various individual-, team-, and firm-level outcomes.

Moreover, prior research in this emerging stream has primarily examined the impact of CEO experience variety on individual-level outcomes such as career advancement and compensation (Custodio et al., 2013; Georgakakis et al., 2016; Wang & Murnighan, 2013) or on team-level outcomes such as TMT composition and integration (Buyl et al., 2011; Crossland et al., 2014; Georgakakis et al., 2017). However, except for Crossland et al.'s (2014) study on strategic change, research on the direct impact of CEO experience variety on firm-level outcomes has been noticeably absent. Thus, we encourage researchers to focus on other firm-level implications, including firm performance.

Finally, the debate between generalism and specialization is closely linked to research on executive information processing. Deeply rooted in the human capital literature, this debate has been influential across different disciplinary traditions such as strategic management (Bunderson, 2003; Karaevli & Hall, 2006), organizational behavior (Anderson, 2012; Kang & Snell, 2009; Wang & Murnighan, 2013), and corporate finance (Brockman, Lee, & Salas, 2016; Mishra, 2014). Therefore, we would welcome increasing reflection on the interdisciplinary implications of the findings in this stream.

2.4 Avenues for future research

In what follows, we first describe general methodological and analytical observations, based on an overall assessment of the 50 papers under review. We then discuss five specific research recommendations in more detail (Chapter 2.4.2). These reflect our review's most important implications.

2.4.1 Methodological and analytical observations

Research design and theoretical foundations (see Figure 6(a)–(b)). The vast majority (98%) of the studies under review have a deductive research design, aimed at empirically testing or extending theory. Thus, with only one conceptual paper (i..e., Fondas & Wiersema, 1997), the field seems to lack conceptual work that integrates existing knowledge, combines different streams, suggests new theoretical explanations, and distinctively points towards new research opportunities. The most prominent theoretical foundation was Hambrick and Mason's (1984) upper echelons theory (35%), followed by human capital or social capital theory (12%). Among the other theories (35%), established theories such as agency theory or the resource-based view (7% and 6% respectively) were used. Our review also indicates that authors used more than one theory to establish their hypotheses only in about one third of all cases (32%).[33] This reflects significant potential for combining theories. Indeed, authors have increasingly called for the combined use of theories to adequately understand the complex nature and mechanisms of CEO experience variety (e.g., Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015).

[33] Most of the studies that used more than one theory were anchored in upper echelons theory (Hambrick & Mason, 1984) and used one other theory to explain the mechanisms predicted by the upper echelons theory. These were primarily managerial cognition theory (Walsh, 1995), human capital theory (Becker, 1964; Ployhart & Moliterno, 2011), or social capital theory (Burt, 1992; Kwon & Adler, 2014).

Research frameworks (see Figure 6(c)–(e)). On the one hand, our review shows a clear preference for the use of the variable CEO experience variety as an independent variable. CEO experience variety was the independent variable in 70% of all cases. This indicates that Hambrick's (2007: 338) call to study "executive characteristics as consequences rather than causes" has only been partially followed by researchers in the field. Thus, there is room to focus on the antecedents of CEO experience variety—and thus to build 'antecedents theory' (Lawrence, 1997)—as well as on its moderating influences. On the other hand, almost half of the studies (47%) completely refrained from the use of moderators. Thus, the contingencies of CEO experience variety relationships require further academic attention. In the reviewed studies, finally, the dominant type of relationship is clearly linear (i.e., 96% of all studies). This is in line with the general criticism that "much of the empirical research in the strategy area has traditionally relied on linear models," although "relationships among most of the commonly sued constructs are linear only within relatively narrow ranges" (Rajagopalan et al., 1993: 378). In addition, several authors have implied the possibility of non-linear relationships, specifically in the context of CEO experience variety (e.g., Buyl et al., 2011; Crossland et al., 2014).

Study design and data (see Figure 6(f)–(h)). First, while 65% of the reviewed studies employed a longitudinal study design, 35% used a cross-sectional research design. Second, the large majority of studies (81%) used a sample based on U.S. firms, followed by few European samples (9%), Asian ones (4%), or ones based on firms from other regions. Our results thus confirm Hambrick (2007: 339), who noted that "the overwhelming majority of empirical upper echelons studies have used samples of American firms." Research in other national contexts might therefore expand our understanding of CEO experience variety (Gomulya & Boeker, 2014), especially in light of different CEO backgrounds as well as other institutional and social contexts (Kish-Gephart & Tochman-Campbell, 2015). Importantly, only three papers have used multi-country samples (i.e., Buyl et al., 2011; Georgakakis et al., 2016; Georgakakis et al., 2017). This is noteworthy because the effects of CEOs might differ across countries (Crossland & Hambrick, 2007, 2011). Therefore, we encourage research based on multi-country samples in order to allow comparisons across different country settings.

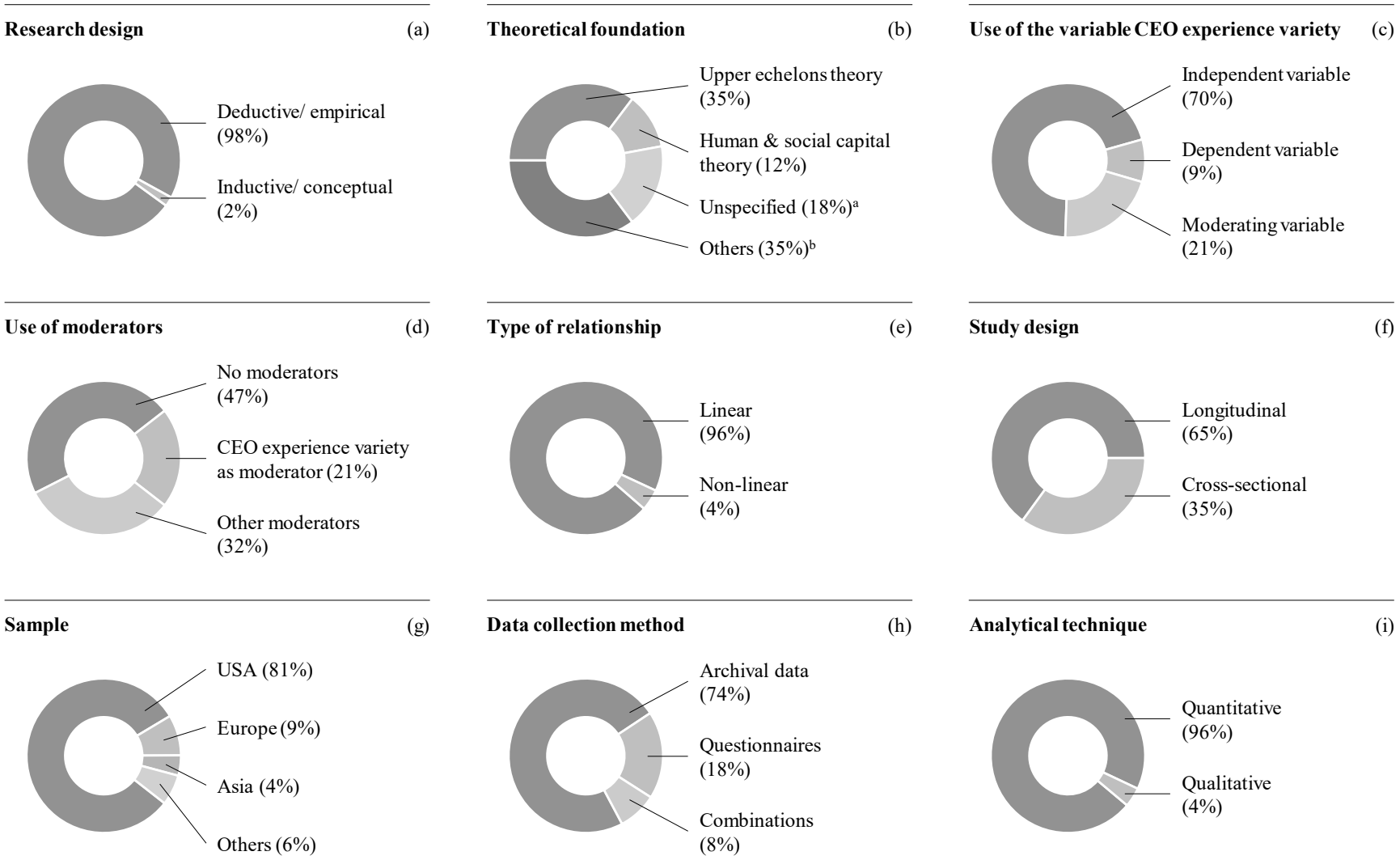
Third, our review shows that the preferred data collection method was the use of archival data (74%). In an attempt to open the 'black box' of executive research (Hambrick, 2007; Lawrence, 1997), 18% of the studies used questionnaires while 8% relied on combined approaches. Nevertheless, these figures indicate the continuous

need for less conventional approaches such as surveys or field experiments (Bantel & Jackson, 1989) in order to assess the validity of findings (Herrmann & Datta, 2002). Clearly, it is challenging to experimentally capture the mechanisms surrounding CEO successions because experiments are inherently artificial and tend to have low external validity (Giambatista et al., 2005). Nevertheless, we encourage researchers to consider the potential of experiments to advance understanding of phenomena such as CEO decision-making or TMT dynamics.

Analytical technique (see Figure 6(i)). Last but not least, our review shows that 96% of empirical studies used a purely quantitative analytical technique. While most of these studies rely on OLS regressions, other techniques such as Generalized Least Squares (GLS), Hierarchical Linear Models (HLM), and logistic regressions were also used more than once. Structural equations modeling (advocated for testing mediating effects) or other approaches such as dynamics systems (for more complex models) have not been used in the reviewed papers. However, while we would welcome some balance, we refrain from suggesting a one-size-fits-all approach, given that each technique has its own advantages and limitations (Giambatista et al., 2005).

Moreover, our review confirms those authors who have called for more methodological rigor in the CEO and strategic management literature (Boyd, Gove, & Hitt, 2005; Giambatista et al., 2005). First, only few studies report regression diagnostics to consider potential violations of regression assumptions (i.e., regarding normality, linearity, and homoscedasticity). Second, only few studies explicitly address multicollinearity and report variance inflation factor (VIF) results. Third, we recommend that future studies consistently use graphs to facilitate the interpretation of moderating effects. Finally, studies that test and report curvilinear relationships are encouraged to follow the test procedures outlined by Haans et al. (2016) and by Lind and Mehlum (2010). These authors have provided a comprehensive set of tests to confirm the existence of (inverted) U-shaped relationships (including significance of both slopes, Sasabuchi (1980) test for U-shaped relationships, location of the estimated turning point, and adding a cubic term to test for a S-shaped relationship).

Figure 6: Methodological and analytical observations



a 'Unspecified' includes studies without clearly stated theories
b 'Others' includes studies based on theories other than upper echelons, human capital, or social capital theory

Source: Author

2.4.2 Recommendations for future research

The above methodological and analytical observations suggest several avenues for future research. Essentially, they amount to deviating from dominant approaches. Clearly, such endeavors would be complicated by the inherent complexities of the field. Nevertheless, or all the more, we encourage researchers to move beyond the above predominant approaches, in order to advance the field.

Below, we describe five concrete research recommendations that integrate the most important findings of our review. These recommendations span several research streams and offer a synthesized view of what is needed after more than three decades of CEO experience research. Table 2 provides an overview.

Table 2: Overview of research opportunities

Research stream		Research opportunities	
		Description	Expected contribution
I	Combine theories to understand CEO experience variety and its implications	a) Consider human and social capital in tandem b) Extend theoretical scope beyond most frequently used theories (e.g., consider theories such as organizational learning and adaptation)	Adequately capture and understand the impact of CEO experience variety on individual-level consequences (e.g., compensation) and firm-level consequencs (e.g., strategic change or firm performance)
II	Explore the potentially negative implications of CEO experience variety	Study the potentially detrimental implications of CEO experience variety and explore non-linear relationships between CEO experience variety and its outcomes	a) Expand conventional wisdom (i.e., move beyond 'the more the better') b) Disentangle the interplay between the benefits and costs of CEO experience variety c) Reveal the complex and curvilinear nature of CEO experience variety
III	Develop the measurements of CEO experience variety	Develop a refined conceptualization and measurement of CEO experience variety, capturing both *depth* and *breadth* of CEO experience variety	a) Reflect the shift towards the structure of CEO experience variety b) Observe the trade-off between the *depth* and *breadth* of career experience c) Enhance explanatory power through consideration of curvilinear relationships
IV	Explore the underlying mechanisms of CEO experience variety	a) Use direct measures instead of demographix 'proxies' b) Rely on data collection approaches such as in-depth interviews, surveys, or experiments	a) Understand the micro-processes underlying CEO experience relationships b) Open the upper echelons 'black box'
V	Expand focus to other executives than the CEO	Examine the influence of the CEO-TMT or CEO-board interface on the implications of CEO experience	a) Understand and appreciate the interactive role of top managers b) Understand how redundancies, complementarities, etc. of human and social capital impact the mechanisms surrounding CEO experience variety

Source: Authors

2.4.2.1 First research recommendation: Combine theories to understand CEO experience variety and its implications

An important concern was not only the use of one singular theory in most papers, but also, more generally, the dominance of some few theories across all research streams. Anchored in upper echelons theory, many of the reviewed studies draw on two theories to explain the value of managerial resources: human capital theory (Becker, 1964; Ployhart & Moliterno, 2011) and social capital theory (Burt, 1992; Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998). Although both theoretical foundations are unquestioned, only a few studies (i.e., Fitzsimmons & Callan, 2016; Sundaramurthy et al., 2014) have used both theories in tandem.

However, several authors have argued that human and social capital should be considered in tandem, in order to adequately capture the value of executives and to reflect the difficulty of disentangling these forms of capital, conceptually and empirically (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015).[34] Similarly, authors have called for human and social capital theory to be considered together, in order to adequately capture the impact of generalism versus specialization (Georgakakis et al., 2016).

The combined use of human and social capital theory promises to fill important gaps in our understanding of various implications of CEO experience variety. These include individual-level consequences such as CEO compensation. Here, future research could add to the literature studying the impact of managerial capital on CEO compensation by drawing either on human capital (e.g., Carpenter et al., 2001; Harris & Helfat, 1997; Mackey, Molloy, & Morris, 2014; Peng et al., 2015) or on social capital theory (Belliveau et al., 1996; Geletkanycz et al., 2001). Moreover, studies on team-level outcomes such as TMT behavioral integration (e.g., Buyl et al., 2011; Georgakakis et al., 2017) are likely to benefit from a combined consideration, as both human and social capital impact the CEO's ability to act as a 'bridge builder' and to effectively establish behavioral integration. Finally, the same applies to both firm-level research streams (i.e., firm performance and strategic change), as both human (Coff, 1997; Hitt et al., 2001) and social capital (Burt, 1997a; Hillman & Dalziel, 2003; Kang & Snell, 2009; Oldroyd & Morris, 2012) are associated with economic value for the firm.

[34] As described by Oldroyd and Morris (2012: 399), there are mechanisms in which "social capital and human capital are recursive, with each reinforcing and increasing the other." For example, previous studies have argued that human capital cannot be leveraged without the opportunities created by social capital (Burt, 1997a, 1997b). Similarly, the information from social networks is an important source for building human capital (Coleman, 1988; Nahapiet & Ghoshal, 1998).

More generally, we recommend future research to extend its theoretical scope beyond the most frequently used theories. This echoes Giambatista et al. (2005: 982-983), whose review of the succession literature advocates the use of other "theoretical lenses, such as organizational learning and adaptation (Rowe, Cannella, Rankin, & Gorman, 2005), change and inertia (Haveman, 1993; White, Smith, & Barnett, 1997), […] and combinations like life cycle theory (Giambatista, 2004), which integrates learning, change, and inertia (Hambrick & Fukutomi, 1991)."

2.4.2.2 Second research recommendation: Explore the potentially negative implications of CEO experience variety

Our literature review indicates a lack of theoretical and empirical exposition towards potentially detrimental implications of CEO experience variety. Indeed, the extant literature has largely taken a 'the more the better' view (Khanna et al., 2014; Ployhart & Moliterno, 2011). This is surprising, as authors have suggested that abundant levels of generalism are not necessarily valuable. Among these are Buyl et al. (2011) who suggested the 'jack of all trades but master of none' syndrome for CEOs with broad-generalist career backgrounds as well as Crossland et al. (2014) who emphasized the potentially superficial cognitive outcomes of high levels of experience variety. Likewise, Sundaramurthy et al. (2014: 865) concluded that although "the concept of human and social capital conjures up a positive image leading to the assumption that more is beneficial […], in addition to these benefits, the costs of such capital also need to be considered."

We thus encourage researchers to empirically address the potentially negative implications of extensive levels of CEO experience variety. More generally, we urge researchers to envision non-linear models that take into account that CEO experience variety might initiate mechanisms that are more complex than straightforward linear relationships.

We see several potential non-linear relationships. Above all, these include the relationship between CEO experience variety and firm performance, following the 'jack of all trades but master of none' argument above (Buyl et al., 2011). In our review, and to the best of our knowledge, no empirical attempt has been made to study the direct firm performance implications of CEO experience variety. As such, a key dependent variable in the strategic management literature (i.e., firm performance) is still uncharted territory. Another promising avenue would be to study the association between CEO experience variety and CEO compensation. As a result of the board's evaluation process

(Peng et al., 2015), CEO compensation is considered to reflect a CEO's human (Carpenter & Wade, 2002; Cho & Shen, 2007; Fulmer, 2009) and social capital (Geletkanycz et al., 2001). Given that extensive levels of CEO experience variety might have negative implications on the value of a CEO's human and social capital (Georgakakis et al., 2016), this could be reflected in decreasing pay levels. This, in turn, would have interesting implications for the corporate governance literature, as it would attribute a certain ability to boards to tailor CEO compensation packages to specific CEO career backgrounds.

Research in these directions has the potential to enrich our understanding of the complex nature of CEO experience variety and to show that extensive levels of CEO experience variety indeed have a 'dark side' (Mishra, 2014).

2.4.2.3 Third research recommendation: Develop the measurements of CEO experience variety

Careful scrutiny of the studies reviewed reveals how the operationalization of CEO career backgrounds has evolved during the last three decades of research. Early studies focused on the *amount* of CEO experiences, such as years of work experience or the number of companies worked for (e.g., Norburn, 1989). Later, researchers emphasized the relevance of the *type* of CEO experience, such as entrepreneurial experience. In that sense, Stuart and Abetti (1990: 160) concluded that "it is not the amount of experience but the type of experience that is important." The next set of studies took a contingency perspective and asserted that the *fit* between the CEO's experiences and the firm's internal and external requirements interacts to shape the various dependent variables. For example, Beal and Yasai-Ardekani (2000) argued and found that superior performance results in conditions where managerial functional experiences are congruent with the requirements of particular competitive strategies. Lately, the emergent research stream on *depth* and *breadth* of CEO experience (see Chapter 2.3.7) has shifted attention to the *structure* of an individual's career background, meaning the continuum from narrow-specialist to broad-generalist experiences. In the words of Wang et al. (2016: 825), "CEO prior career experience needs more attention" while "in particular, the use of specific versus general measures of CEO prior career experience appears to matter."

In terms of measurements, the above development is reflected in the shift from *absolute levels of CEO demographics* (e.g., level of education or length of firm tenure) towards the *relative diversity within a CEO's career background* (e.g., generalism

versus specialization). However, at this point, we express our concern over construct-related issues.

CEO experience variety has generally been operationalized as the sum of experiences (e.g., the number of firms or industries in which an executive has worked), divided by total career length (Crossland et al., 2014; Custodio et al., 2013). However, this measure does not adequately reflect experience *depth*, as the time spent in each of these firms or industries is not considered. Indeed, previous studies have argued that, in order to capture the effects of CEO experience diversity, research should consider two factors: (a) the *breadth* of experience related to the number of areas in which an individual has worked, and (b) the *depth* of experience that this individual has gained in each of these areas (Cannella, Park, & Lee, 2008).

We thus encourage researchers to develop a refined conceptualization and measurement of CEO experience variety. Such an undertaking would need to follow the insights of Bunderson and Sutcliffe (2002), who called for a conceptualization and measurement of CEO experience variety that allows observing the trade-off between the *depth* and *breadth* of career experience. Specifically, we suggest that CEO experience variety should be understood as a continuum from specialization (i.e., experience *depth*) to generalism (i.e., experience *breadth*). Applying both dimensions (i.e., *depth* and *breadth*) would thus allow us to understand not only whether a CEO has worked in many different institutional settings, but also whether he or she has spent sufficient time in each to adequately absorb relevant knowledge.

We expect that such an approach would be theoretically and empirically fruitful, as it allows the consideration of potentially curvilinear relationships that cannot be tested with dichotomous variables (Georgakakis et al., 2016). Thus, it is time to respond to Crossland et al.'s (2014) call to adopt more finely-grained approaches that enable a more nuanced consideration of the CEO experience variety construct and its complex implications.

2.4.2.4 Fourth research recommendation: Explore the underlying mechanisms of CEO experience variety

Anchored in upper echelons theory (Hambrick & Mason, 1984), the majority of the reviewed studies used demographic variables as proxies for CEO background experiences. This approach not only offers the benefits of data accessibility and objectivity, but is also well-established. Nevertheless, several researchers have drawn attention to the theoretical and empirical limitations of the underlying assumption that

demographic characteristics are reliable indicators of executive cognition (Datta et al., 2003; Priem, Lyon, & Dess, 1999; Weng & Lin, 2014).

Future research should thus advance methodologically by using direct measures—instead of CEO demographics as 'proxies'—to enable understanding of the micro-processes underlying CEO experience relationships (Beal & Yasai-Ardekani, 2000; Buyl et al., 2011; Georgakakis et al., 2017). To overcome the limitations of archival demographic data, research should thus rely on data collection approaches such as in-depth interviews, surveys, or experiments (Hsu et al., 2013; Saboo et al., 2017; Weng & Lin, 2014). Such in-depth analyses might also be a response to Roth's (1995) call for research focusing on small companies.

2.4.2.5 Fifth research recommendation: Expand focus to other executives than the CEO

By definition, the scope of our literature review has yielded a set of studies focusing on CEOs. Nevertheless, future research frameworks might also include executives other than the CEO. To the extent that CEOs are boundedly rational actors, they require advice and resources from the entire TMT to deal with environmental complexity (Buyl et al., 2011; Cannella & Holcomb, 2005; Heyden, Van Doorn, Reimer, Van Den Bosch, & Volberda, 2013). Thus, the TMT might have an important moderating influence on the impact of CEO experience on its various outcomes. Indeed, several authors have stressed the relevance of considering the CEO and the TMT in conjunction (Buyl et al., 2011; Klimoski & Koles, 2001; Ling, Simsek, Lubatkin, & Veiga, 2008), given that organizational leadership is a shared responsibility (Carpenter et al., 2004; Hambrick, 2007).

Nevertheless, out of the 50 studies in our review, only four included TMT or board attributes as moderating variables. Therefore, we encourage future studies to collect data on board-member and TMT-member characteristics (Kish-Gephart & Tochman-Campbell, 2015) and to examine the influence of the CEO-TMT or CEO-board interface on the implications of CEO experience. This would help us not only to further understand the CEO's impact on organizations, but also to appreciate the interactive role of top managers.

For example, human capital redundancies might impact CEO compensation, as suggested by Carpenter et al. (2001: 506): "the strategic value of human capital, in terms of individual bargaining power, may decline to the extent that there are readily accessible within-firm substitutes (Coff, 1999)." Moreover, we expect that TMTs could

compensate for their CEO's limitations to some extent (Hsu et al., 2013; Roth, 1995). This, in turn, might have implications for various outcomes such as strategic change or firm performance. Such comprehensive analyses might provide important insights and contribute to answering the claim made by Westphal and Fredrickson (2001: 1133): "more generally, as a wider set of actors seek influence over decision-making outcomes, perspectives on strategic choice may need to reconsider dominant assumptions about *who* really determines the strategic direction of the firm."

2.5 Conclusion

We reviewed the last three decades of CEO experience research. Based on our review, we developed an integrative framework, including not only the characteristics and processes, but also the antecedents and consequences of CEO experience. We then identified five research streams—three established and two emerging ones—and assessed the literature along these streams. This review underlines that the literature on CEO experience has established a rich basis for understanding CEO experience variety and its individual-, team-, and firm-level implications. Collectively, this research has a long history and now forms a distinct perspective in the strategic management literature.

This study makes important theoretical contributions. In developing an integrative framework and synthesizing the literature along research streams, our review not only provides a common language and basis for future research, but also highlights that CEO experience variety is more complex than previously assumed. Most notably, future research needs to consider the trade-off between experience *depth* and *breadth* and to move beyond linear notions of CEO experience variety (both theoretically and methodologically).

Our review has relevant implications for practice as well. As CEO replacement is becoming increasingly frequent (Chen & Hambrick, 2012; Wowak et al., 2011; Zhang, 2008), our insights might help boards of directors, executive search consultants, and others involved in CEO selection to take well-informed and firm-appropriate decisions.

Still, much remains to be done. Based on our review, we made five main recommendations for developing research that is theoretically sound, methodologically rigorous, and practically meaningful. We made these suggestions in the hope to inspire future research and in the belief that this field continues to have considerable potential to provide theoretical contributions and empirical discoveries that enrich our understanding of CEO experience variety.

IN EXTREMIS STAT VIRTUS: CEO EXPERIENCE VARIETY AND STRATEGIC CHANGE

Abstract: Scholars still possess merely limited knowledge of the implications of CEO experience variety for strategic change. We shed light on this important topic by integrating seemingly opposing predictions in the managerial cognition literature. We argue that increasing CEO experience variety is initially associated with the drawbacks of decreasing experience *depth,* resulting in lower levels of strategic change. However, after a certain threshold, the benefits of experience *breadth* prevail increasingly, resulting in greater strategic change. Analyzing 115 CEO successions, we find support for the theorized U-shaped relationship. Furthermore, our results suggest that this U-shaped relationship is contingent upon the degree of post-succession TMT turnover. We contribute to the literature on strategic change and managerial cognition theory and add a more nuanced perspective to the emerging research on CEO experience variety.

Keywords: CEO succession; CEO experience variety; strategic change; executive cognition; TMT turnover

3.1 Introduction

Strategic change is imperative for firm survival (Kraatz & Zajac, 2001). Firms are operating in increasingly complex, dynamic, and competitive environments undergoing constant change (Nadkarni & Herrmann, 2010; Teece, Pisano, & Shuen, 1997). Strategic change enables firms to cope with these environmental shifts through resource reallocation (Carpenter, 2000; Crossland et al., 2014; Wiersema & Bantel, 1992). Thus, in essence, strategic change is a strategic imperative (Eisenhardt & Martin, 2000).

In particular, CEO successions have been identified as major catalysts for strategic change, given the CEOs' formal and symbolic importance (Giambatista et al., 2005; Hutzschenreuter et al., 2012; Zhang & Rajagopalan, 2004). Formally, CEOs are the figureheads—and presumably also the most powerful actors—in their organizations (Cannella & Holcomb, 2005). They have considerable authority over strategic decisions (Crossland et al., 2014) and exert a disproportionate influence on their firms (Herrmann & Nadkarni, 2014; Nadkarni & Herrmann, 2010). Moreover, new CEOs are often appointed with a symbolic 'going-in mandate for change' (Finkelstein et al., 2009; Karaevli & Zajac, 2013). As such, CEO turnover is not only used to realign the firm and the environment, but also to overcome organizational inertia and resistance (Ocasio, 1994; Tushman & Romanelli, 1985).

However, the extant literature offers inconsistent findings on how far new CEOs are able to initiate strategic change. While some CEO successions result in strong strategic change (Miller, 1993; Romanelli & Tushman, 1994), other newly appointed CEOs are less able to overcome organizational inertia and resistance to change (Hutzschenreuter et al., 2012; Wiersema, 1992, 1995). In fact, "whether and how newly selected CEOs influence the strategy direction of their organizations" remains unclear (Datta et al., 2003: 101). Correspondingly, the main purpose of this paper is to understand why some CEOs are able to initiate high levels of strategic change, while others are not.

Therefore, we draw on upper echelons (Hambrick & Mason, 1984) and managerial cognition theories (Daft & Weick, 1984; Walsh, 1995). While upper echelons studies have consistently shown that top managers' experiences predict the likelihood and content of major strategic change (Finkelstein & Hambrick, 1996; Westphal & Fredrickson, 2001), recent inroads have been made towards understanding the impact of CEO experience variety. Crossland et al. (2014) argued that CEO career variety influences how CEOs perceive, interpret, and act in strategic situations. Their results suggest that CEO career variety indeed impacts strategic change. From a different, yet

related perspective, CEO cognition researchers have argued that experience variety impacts a CEO's cognitive map (Fiske & Taylor, 1991), and hence his or her strategic decision-making (Herrmann & Nadkarni, 2014). These authors understand the CEO as the 'chief cognizer' and decision-maker (Calori et al., 1994; Gioia & Chittipeddi, 1991).

However, despite these important insights, scholars still possess a limited understanding of the strategic change implications of CEO experience variety. On the one hand, earlier studies on how CEOs influence their firms' strategic direction have been rare and focused mainly on CEO demographics (Datta et al., 2003). On the other hand, the emerging field of CEO experience variety research (e.g., Crossland et al., 2014) has solely acknowledged the merits of CEO experience variety, although managerial cognition research suggests that experience variety is not merely beneficial.

We begin to address these issues by taking a comprehensive view and by integrating seemingly opposing predictions from the managerial cognition theory. Extending extant wisdom, our central argument is that CEO experience variety and strategic change are interrelated through two mechanisms. First, in terms of cognitive *depth*, increasing CEO experience variety is associated with cognitive ambiguity, reducing the CEO's openness to strategic change. Second, in terms of cognitive *breadth*, increasing CEO experience variety imparts the benefits of cognitive awareness, understanding, and openness to strategic change. Together, these mechanisms result in a U-shaped relationship between CEO experience variety and strategic change. Further, we take a contingency perspective and argue that TMT turnover influences the relationship between CEO experience variety and strategic change. We find support for our predictions using data from 115 CEO successions at large European firms during the period 2007 to 2013.

This study's contributions are both theoretical and practical. Theoretically, we first advance our understanding of a hitherto one-sidedly researched phenomenon by departing from prior research, which has so far neglected the drawbacks of experience variety. Integrating the seemingly contradictory cognitive *depth* and cognitive *breadth* perspectives, our study adds conceptual clarity to the nascent literature on CEO experience variety (Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007). Second, our results substantiate the central tenet of upper echelons theory—that a CEO's past experience matters for the organization (Geletkanycz & Black, 2001; Hambrick, 2007)—by unveiling the complex and non-linear nature of the relationship between CEO experience variety and firm performance. Third, our results indicate that an important contingency exists in the form of TMT

turnover. We thus contribute to the contingency perspective on strategic leadership (Gupta, 1984) by highlighting the moderating effect of TMT turnover. To explain "why some chief executive successions lead to a change in a firm's strategic direction" (Fondas & Wiersema, 1997: 561), future research thus needs to consider the entire TMT and the changes in its composition.

Overall, our results not only suggest that CEO experience variety plays a more nuanced and more complex role than theorized so far. They also provide practical prescriptions for the CEO profiles required to initiate strategic change.

3.2 Theory development

3.2.1 Literature review

3.2.1.1 Main research streams and perspectives

Research on strategic change has followed two streams. The first has focused on the *initiation* of strategic change, the second on its *performance implications* (Herrmann & Nadkarni, 2014). The first stream covers the *initiation* period of strategic change in response to shifts in the environmental context. It focuses on the phase when "the knowledge of the need to change is built and a decision to make a change is made" (Dutton & Duncan, 1987: 108). Accordingly, extant studies have concentrated on the environmental and organizational antecedents of strategic change (Audia, Locke, & Smith, 2000; Kelly & Amburgey, 1991; Kraatz & Zajac, 2001; Zajac & Kraatz, 1993).

The second stream has studied the *performance implications* of strategic change. It has mainly analyzed the positive and negative implications of strategic change on firm performance (Herrmann & Nadkarni, 2014). On the one hand, strategic change has been considered beneficial for overcoming organizational inertia and a mechanism for inducing adaptability and innovativeness (Kraatz & Zajac, 2001; Romanelli & Tushman, 1994). On the other hand, strategic change might be disruptive and traumatic, resulting in inefficient resource allocation and detrimental performance outcomes (Zajac, Kraatz, & Bresser, 2000).[35] Therefore, researchers have considered the role of environmental and organizational moderators (Audia et al., 2000; Kraatz & Zajac, 2001; Zajac & Kraatz, 1993; Zajac et al., 2000). They have explored the processes related to strategic change implementation, such as making supportive changes in organizational structures, processes, communication, governance, etc. (Dutton &

[35] Reflecting these ambivalent arguments, research in this stream has provided mixed results. While some studies found positive relationships between strategic change and firm performance (Grimm & Smith, 1991; Zajac & Kraatz, 1993), others found negative relationships (Kraatz & Zajac, 2001; Naranjo-Gil, Hartmann, & Maas, 2008) or no relationship at all (Zajac & Shortell, 1989).

Duncan, 1987; Fiss & Zajac, 2006; Greiner & Bhambri, 1989; Rajagopalan & Spreitzer, 1997).

Within these two streams, researchers have taken three distinct perspectives to understand how executives impact strategic change: the *rational*, the *learning*, and the *cognitive* perspective (Rajagopalan & Spreitzer, 1997).[36] The *rational* perspective considers strategic change a planned and sequential search for and implementation of optimal strategic solutions (Mintzberg, 1990). Rational executives optimize firm performance by defining and realizing strategic visions that establish a fit between an objectively observable environment and the firm.

The *learning* perspective, in contrast, describes strategic change as an evolutionary and iterative process (Lant, Milliken, & Batra, 1992). In an uncertain and dynamic environment, managers attempt to create understanding and to proactively impact the environment through iterative actions (Koberg, 1987; Lant & Mezias, 1992). This means that they take a series of small learning steps leading to minor and major changes in the firm's strategy.

Finally, the *cognitive* perspective is the only perspective with an explicit focus on the role of managerial cognitions (Rajagopalan & Spreitzer, 1997). Accordingly, strategic change arises from how executives subjectively interpret their environments, develop strategic alternatives, and take decisions (Garbuio, King, & Lovallo, 2011; Gioia & Chittipeddi, 1991; Rajagopalan & Spreitzer, 1997). According to managerial cognition theory, executives are primarily responsible for absorbing, processing, and spreading information (Walsh, 1995), while facing ample complex and ambiguous information (Mintzberg et al., 1976; Schwenk, 1984).[37] To cope with these challenges, executives are assumed to employ their knowledge structures (Eggers & Kaplan, 2013; Helfat & Martin, 2015). According to Walsh (1995: 286), knowledge structures are "mental templates consisting of organized knowledge about an information environment that enables interpretation and action in that environment."[38] These knowledge structures are assumed to be the accumulated results of managerial experience (Prahalad & Bettis, 1986; Walsh, 1995), as experience shape the structure and content of an individual's cognitive framework (Baron & Ensley, 2006; Gavetti & Levinthal, 2000; Maitland & Sammartino, 2015). Executives thus depend on their

[36] For a detailed discussion of the three lenses and the corresponding studies, we refer to the literature review provided by Rajagopalan and Spreitzer (1997).
[37] In essence, the managerial cognition perspective answers the question how managers "[…] see their way through what may be a bewildering flow of information to make decisions and solve problems" (Walsh, 1995: 280).
[38] Knowledge structures are also referred to as 'strategic schemas' (Lyles & Schwenk, 1992; Nadkarni & Narayanan, 2007), 'cognitive maps' (Calori et al., 1994; Daft & Weick, 1984), or 'cognitive bases' (Hambrick & Mason, 1984).

career experiences (Beyer, Chattopadhyay, George, Glick, Ogilvie, & Pugliese, 1997; Bunderson & Sutcliffe, 2002; Crossland et al., 2014) which evolve through an executive's career (Daft & Weick, 1984; Nadkarni & Barr, 2008).

3.2.1.2 CEO cognition, CEO experience variety, and strategic change

Research in the upper echelons tradition has implicitly or explicitly adopted the *cognitive* perspective when linking executive characteristics with strategic change. Extant upper echelons studies have highlighted the importance of top managers, particularly of CEOs, in the context of strategic change (Rajagopalan & Spreitzer, 1997). This research has laid the foundations for understanding the impact of CEO characteristics on strategic change. While some studies have focused on demographic factors such as age or education (Bantel & Jackson, 1989; Datta et al., 2003; Thomas, Litschert, & Ramaswamy, 1991; Wiersema & Bantel, 1992; Zhang & Rajagopalan, 2010), others have focused on CEO tenure (Finkelstein & Hambrick, 1990; Hambrick et al., 1993), or on CEO succession origin (Bigley & Wiersema, 2002; Karaevli, 2007; Shen & Cannella, 2002a; Zhang & Rajagopalan, 2004).

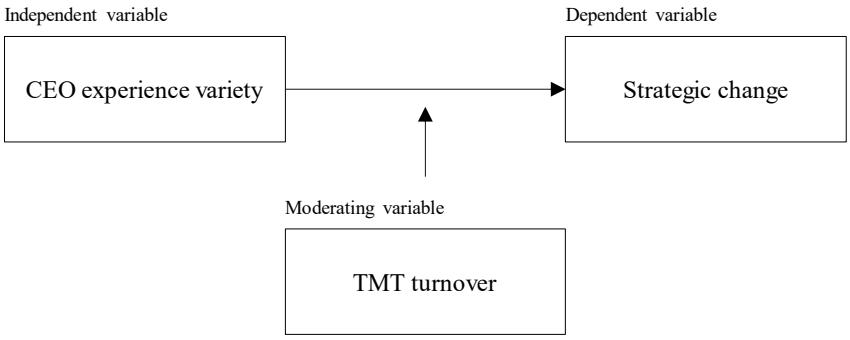
Taking an important inroad, Crossland et al. (2014) recently emphasized the cognitive significance of CEO experience variety. They argued that variety in a CEO's background impacts his or her mental structure and thus strategic change behavior. This reflects the understanding of the CEO as the 'chief cognizer' and decision-maker (Calori et al., 1994; Gioia & Chittipeddi, 1991; Herrmann & Nadkarni, 2014). Moreover, their results substantiated the argument that experience variety shapes the CEO's cognitive map (Fiske & Taylor, 1991) and is thus likely to be reflected in the CEO's post-succession strategic agenda.[39]

3.2.2 Research framework and development of hypotheses

The basic assumptions in the strategic change and managerial cognition literatures described above provide the basis for our research framework. We focus on the *initiation* of strategic change and adopt the *cognitive* perspective to build our hypotheses. Figure 7 depicts our overall model, including the moderator (to be introduced further down). In the following, we discuss and integrate the cognitive *breadth* and cognitive *depth* perspectives.

[39] Researchers have argued that cognitive maps—which are shaped by prior experience (Boeker, 1997; Geletkanycz & Hambrick, 1997)—explain how CEO attributes prompt specific strategic behaviors (Nadkarni & Herrmann, 2010). In short, due to their individual perception and filtering, executives may take significantly different strategic decisions in objectively similar situations (Crossland et al., 2014).

Figure 7: Research framework



Source: Authors

3.2.2.1 Cognitive breadth and the merits of CEO experience variety

Taking a cognitive *breadth* perspective, researchers have traditionally emphasized the benefits of increasing CEO experience variety and have developed three main arguments to explain the relationship between CEO experience and strategic change.

The first argument rests on the *awareness* of strategic options. Experience variety is expected to impart an increasing range of perspectives and paradigms (Crossland & Hambrick, 2007). Past studies have shown that broader experience results in executives being more likely to consider a wider range of options (Datta & Rajagopalan, 1998). Indeed, extant research has shown that managers with diverse career experiences are better able to recognize and evaluate a wider array of options (Karaevli & Hall, 2006). Thus, CEOs with high experience variety have a broader awareness of potential options in any decision-making situation.

The second argument rests on the *understanding* of strategic options. CEO experience variety provides broader knowledge and experience repertoires from different settings. Studies have shown that CEO experience variety provides broad cognitive and experiential stocks (Dragoni et al., 2011; McCall et al., 1988; Tesluk & Jacobs, 1998). It thereby promotes greater understanding of different strategic options. For example, prior evidence indicates that executives with varied experience use more criteria to assess different acquisition targets (Hitt & Tyler, 1991). Such understanding is based on an accentuated flexibility to process unfamiliar information and to derive novel insights. Indeed, higher experience variety provides not only a broader knowledge repertoire, but also greater ability to derive an abstract principle from specific situations (Dalziel, Gentry, & Bowerman, 2011). Particularly in new environments, executives depend on such 'mental flexibility'. Prior research has shown that experience variety is a key prerequisite for developing general principles that enable executives to

'strategically conceptualize' and to transfer existing knowledge to current situations (Karaevli & Hall, 2006; Neale & Northcraft, 1990).

The third argument rests on the *openness* to strategic change. Strategic change means abandoning established strategies. Therefore, identifying creative solutions and an openness to change are fundamental for initiating strategic change (Herrmann & Nadkarni, 2014; Wiersema & Bantel, 1992). CEO experience variety is expected to foster a dispositional preference for novelty and change (Crossland et al., 2014). Based on their experience of diverse strategic approaches, cognitive *breadth* allows CEOs to develop more creative and more innovative strategic alternatives than CEOs with low experience variety (George & Jing, 2001; Maddux, Adam, & Galinsky, 2010; Maddux & Galinsky, 2009). Because such CEOs are more likely to come up with unique options themselves, they are also more likely to consider more radical change and to perceive more novel options as feasible (Crossland et al., 2014). Also, executives who use more information are more likely to emphasize the positive aspects of an issue (Thomas & McDaniel, 1990). In addition, decision-makers who have more complete information about presumed cause-effect relations tend to perceive causes as more controllable (Eisenhardt, 1989; Thomas, Clark, & Gioia, 1993).

Together, these three arguments form a well-documented basis for explaining a CEO's disposition towards strategic change. With increasing levels of experience variety, CEOs are expected to have increasing *awareness*, *understanding*, and *openness* towards strategic change. Initially, low CEO experience variety suggests remaining committed to the status quo. Such executives have narrow experience stocks and lack diverse experiences from different settings (Datta & Rajagopalan, 1998). This limits their ability to see outside the box. For example, Karaevli and Hall (2006: 7) argued that "managers who have spent most of their careers in a single industry, for example, have a limited knowledge and skill base, and are more likely to engage in a limited search for information, compared to a person with more varied experience (Cyert & March, 1963)." Previous research has associated narrow cognitive stocks with cognitive inflexibility (Henderson et al., 2006), and with a psychological adherence to familiar 'recipes' (Finkelstein & Hambrick, 1996) and the status quo. Such executives risk being trapped in 'core rigidities' (Leonard-Barton, 1992) or 'career routines' (Hall, 1986), as well as over-relying on existing competencies (Levinthal & March, 1993). In contrast, high experience variety strengthens the CEO's understanding and ability to adapt to multiple perspectives. Such CEOs are able to quickly and effectively notice and interpret new and diverse environmental information. They are also likely to consider a

wide array of strategic alternatives, including those deviating significantly from the status quo. The resulting openness to and the acceptance of change provide the basis for being able to precipitate strategic change (Nadkarni & Herrmann, 2010).

Therefore, according to the theoretical arguments and the evidence of the cognitive *breadth* perspective, increasing CEO experience variety is expected to impart a higher propensity for strategic change.

3.2.2.2 Cognitive depth and the liabilities of CEO experience variety

While the merits of increasing CEO experience variety are well-documented, we argue that strategic change research could benefit from addressing some previously excluded theoretical aspects from the cognitive *depth* perspective. Three of its main arguments in particular counter the prevailing positive view of CEO experience variety.

The first argument rests on the *cognitive clarity* that is associated with low CEO experience variety. Such executives possess a more profound knowledge repertoire (Datta, Guthrie, & Rajagopalan, 2002). Their knowledge is "deeper, localized, embedded, and invested within particular knowledge domains" (Kang & Snell, 2009: 68). Previous studies have argued that individuals who accumulate expertise develop more complex knowledge structures (Westphal & Fredrickson, 2001). Such first-hand experience results in a 'causal depth of knowledge' and 'coherent knowledge' (Nelson & Winter, 1982). Maitland and Sammartino (2015: 1557) argued that "expertise is distinguished by the ability to recognize and retrieve from long-term memory large numbers of chunks or patterns that are relationally similar to a problem at hand." These patterns concern the underlying structural relationships among different aspects of an environment, rather than superficial characteristics (Gentner, Loewenstein, Thompson, & Forbus, 2009; Gregoire, Barr, & Shepherd, 2010). For example, in-depth industry knowledge is expected to convey an understanding of competitors, suppliers, etc. This, in turn, provides awareness of an industry's critical profitability drivers (Angriawan & Abebe, 2011). CEOs with low experience variety spend more time in fewer firms and industries and thus have sufficient time to gain valuable experiences. Indeed, previous studies have shown that longer-tenured executives better understand an industry's complexities, dynamics, and challenges (Bergh, 2001; Henderson et al., 2006). Thus, experts have a "piercing insight that allows them to see through complexity," and therefore recognize "what is essential, and ignore the rest" (Collins, 2001: 91).

The second argument rests on *cognitive efficiency*. Expertise is associated with more efficient knowledge acquisition and assimilation within the respective domains of

expertise (Brown & Duguid, 1991; Kang & Snell, 2009; Kelly, Mastroeni, Conway, Monks, Truss, Flood et al., 2011). Wang and Murnighan (2013) argued that experts, through their profound knowledge, excel at a small number of tasks. This is expected to result in higher cognitive efficiency and more accurate predictions (Ford & Baucus, 1987). Previous research suggests that repeated applications enhances decision-makers' heuristics for specific domains and also their expertise (Dane, 2010). Consequently, they are able to process information quickly. Indeed, past research has shown that experts are able to accurately and efficiently recognize and respond to a narrow set of complicated issues (Wang & Murnighan, 2013).

The third argument rests on the initial *cognitive reluctance* to change associated with increasing CEO experience variety. With increasing CEO experience variety, a CEOs' cognitive *depth* inevitably declines. Between low and medium levels of CEO experience variety, CEOs start to gain experiences from outside their domains of expertise. This adds ambiguity to their knowledge structures (Schwenk, 1984), as the initial expansion of an executive's knowledge structure adds information that is equivocal to the existing mental maps.[40] Although such CEOs have an increased awareness of strategic alternatives, they might lack the capability to sufficiently understand these options and their implications. As a consequence, CEOs are expected to experience (a) reduced decision-making rationality and (b) increased decision-making intuition. Both of these consequences are expected to lower decision-making effectiveness. On the one hand, reduced rationality is assumed to have a negative relationship with decision-making effectiveness (Dean & Sharfman, 1996; Elbanna & Child, 2007; Khatri & Ng, 2000). On the other hand, more intuitive decisions—taken amid uncertainty—tend to be based on less effective decision-making processes as well (Daft & Lengel, 1986; Dean & Sharfman, 1993). This effect might be particularly distinct in the context of strategic change, as strategic change is intrinsically liable to involve risks (Lant et al., 1992; Tushman & Rosenkopf, 1996; Virany, Tushman, & Romanelli, 1992) and uncertainty (Lant et al., 1992). Indeed, extant studies have shown that CEOs who feel insecure tend to adopt more conservative strategies (Miller, Kets De Vries, & Toulouse, 1982; Miller & Toulouse, 1986). Such CEOs are less open to change and therefore seek strategic agendas that are characterized by strategic persistence (Datta et al., 2003).

[40] In addition, more inflowing information increases the share of irrelevant information (O'Reilly, 1980).

In sum, the theoretical arguments and evidence of the cognitive *depth* perspective predict that increasing CEO experience variety diminishes the CEO's propensity for strategic change.

3.2.2.3 Implications for strategic change

Both the cognitive *breadth* and the cognitive *depth* perspectives directly address the relationship between CEO experience variety and strategic change. Therefore, extending previous research, we consider both perspectives. We combine the cognitive *depth* predictions of a negative relationship between CEO experience variety and strategic change at low to medium levels of CEO experience variety with the positive cognitive *breadth* predictions towards high levels of CEO experience variety.

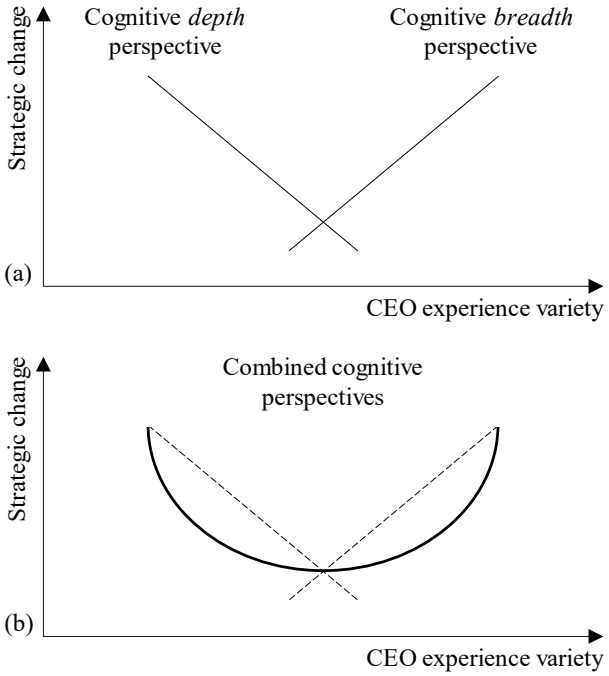
At low levels of CEO experience variety, CEOs possess high cognitive *clarity* and cognitive *efficiency*. Their particular knowledge structures enable them to 'see through complexity' (Collins, 2001) and to be open to strategic change. Then, towards average levels of CEO experience variety, increasing cognitive ambiguity diminishes the CEOs' propensity for strategic change. In turn, the positive consequences of cognitive *breadth* become increasingly dominant towards high levels of CEO experience variety. High CEO experience variety creates broad knowledge structures and broad cognitive *awareness* and *understanding*. Their ability to 'strategically conceptualize' (Karaevli & Hall, 2006; Neale & Northcraft, 1990) makes such CEOs again more open to strategic change.

Concurring with these arguments, we expect decreasing strategic change consistent with the cognitive *depth* perspective until the merits of cognitive *breadth* reverse the trend. Accordingly, we expect high levels of strategic change either at meaningfully low or at meaningfully high levels of CEO experience variety and low levels of strategic change at moderate levels of CEO experience variety. Thus:

> *Hypothesis 1. There is a U-shaped relationship between CEO experience variety and strategic change.*

Figure 8(a) illustrates the opposing predictions of the cognitive *depth* and the cognitive *breadth* perspectives about the relationship between CEO experience variety and strategic change. Figure 8(b) shows the additive combination of both perspectives (shown as dotted lines) and the hypothesized U-shaped relationship between CEO experience variety and strategic change (shown in bold).

Figure 8: Expected relationship between CEO experience variety and strategic change



Source: Authors

3.2.2.4 The moderating effect of TMT turnover

The idea that the new CEO influences strategy alone is unrealistic (Datta et al., 2003; Zajac, 1990). Rather, the new CEO and his or her strategic change agenda are constrained or encouraged by the organizational context within which these changes take place (Finkelstein & Hambrick, 1996). Previous upper echelons research has identified the TMT as a main aspect of the organizational context (e.g., Buyl et al., 2011; Klimoski & Koles, 2001; Ling et al., 2008). In essence, leadership of complex organizations is not only a shared responsibility (DeChurch et al., 2010; Ensley et al., 2006), but also an interactive process where "upper managers bring together and interpret information for the system as a whole" (Daft & Weick, 1984: 285).

As a consequence, TMT composition influences the perspectives from which executives examine strategic issues and the information that will be taken into account (Plambeck & Weber, 2010). Therefore, TMT turnover has an important impact on team interaction and strategic decision-making (Karaevli, 2007; Shen & Cannella, 2002a).[41]

While most extant studies have studied the (moderating) impact of TMT turnover on firm performance (e.g., Karaevli, 2007; Shen & Cannella, 2002a; Tushman & Rosenkopf, 1996; Virany et al., 1992), we focus on how TMT turnover influences the

[41] Previous research has found that all TMT members and their interactions impact the firm's strategic behavior (Carpenter et al., 2004; Hambrick, 2007; Tushman & Rosenkopf, 1996).

CEO's propensity to initiate strategic change. Above, we have argued that the CEO's *understanding* and subsequent *openness* towards strategic change are key to determining his or her propensity to initiate strategic change. Drawing on the cognitive arguments in the existing TMT turnover and strategic change literature, we postulate that TMT turnover influences precisely these two cognitive processes, i.e., *understanding* and *openness*.

On the one hand, TMT turnover is expected to increase the CEO's *understanding* of strategic change contexts. First, TMT turnover increases the entire TMT's cognitive *breadth*, as new team members contribute different skills and perspectives (Lant et al., 1992; Tushman & Rosenkopf, 1996). The corresponding cognitive heterogeneity increases the diversity of information sources and perspectives (Boone, Van Olffen, Van Witteloostuijn, & De Brabander, 2004a; Finkelstein & Hambrick, 1996). Previous research has considered TMT turnover as the CEO's attempt to "clear executive deadwood" (Shen & Cannella, 2002a: 721), with a view to facilitating strategic reorientation (Friedman & Saul, 1991; Helmich & Brown, 1972; Kesner & Dalton, 1994; Wiersema, 1995). Because TMT members are constrained by their experiences, TMT turnover serves as a means for replacing obsolete knowledge (Keck & Tushman, 1993; Wiersema & Bantel, 1992) and for creating TMTs with fresh and diverse perspectives (Finkelstein & Hambrick, 1990). Second, at the same time, the TMT's increased tenure heterogeneity (Tushman & Rosenkopf, 1996) is expected to result in more open problem-solving practices and more extensive communication (Finkelstein & Hambrick, 1990; Wagner, Pfeffer, & O'Reilly, 1984). Thus, TMT turnover enables CEOs to increase their *understanding* of strategic change situations, particularly through the availability of more perspectives as well as through more communication with the TMT.

On the other hand, we posit that TMT turnover increases the CEO's *openness* towards strategic change. Again, TMT turnover decreases the average TMT tenure (Tushman & Rosenkopf, 1996). This, in turn, reduces the TMT's commitment to the status quo and increases the readiness to take risks and to depart from conventions (Finkelstein & Hambrick, 1990). Evidence from previous research suggests that longer-tenured executives develop cognitive inflexibility (Hambrick et al., 1993; Henderson et al., 2006; Miller & Shamsie, 2001). Thus, TMT turnover is associated with cognitive diversity, which increases the TMT's willingness to challenge and to be challenged. It also enhances creativity and the openness to change (Boone et al., 2004a; Finkelstein & Hambrick, 1996). Therefore, new TMTs are more likely to be receptive to change,

to follow different decision-making processes, and to execute strategic change (Lant et al., 1992; Tushman & Rosenkopf, 1996; Wiersema & Bantel, 1992). In particular, the *openness* of CEOs towards strategic change is related to the TMT's cognitive flexibility (Nadkarni & Herrmann, 2010; Peterson, Martorana, Smith, & Owens, 2003). CEOs who are exposed to new and alternative points of views are better able to rapidly identify strategic challenges and to develop high-quality solutions (McDonald, Khanna, & Westphal, 2008; Nadkarni & Herrmann, 2010). Intensive discussions and validating new information reduces biased perceptions and interpretations (McDonald & Westphal, 2003). This, in turn, reduces the reluctance to strategic change (Nadkarni & Narayanan, 2007; Shimizu & Hitt, 2004).

Concurring with these arguments, we posit that as TMT turnover increases, the initial liabilities of decreasing cognitive *breadth* are neutralized by the merits of TMT turnover. Therefore, the U-shaped relationship between CEO experience variety and strategic change flattens. This leads to our second hypothesis:

> *Hypothesis 2. TMT turnover moderates the U-shaped relationship between CEO experience variety and strategic change. Under conditions of high TMT turnover, the U-shaped relationship will flatten (i.e., become less pronounced than under conditions of low TMT turnover).*

3.3 Methods

3.3.1 Sample and data collection

Our sample is based on large listed firms headquartered in four European countries (Germany, the Netherlands, Switzerland, and the United Kingdom) as of December 31, 2007. To select our sample, we filtered all listed firms in these countries by market capitalization, and the largest 100 were selected given that they fulfilled the following criteria: (a) they were not small and medium-sized enterprises based on the European Union's (2016) definition (i.e., up to 250 employees, €50 million annual revenue, and €43 million total assets); (b) they were not pure holding entities or investment vehicles (i.e., companies with a primary two-digit SIC code of 67); (c) they were neither acquired by another firm nor nationalized over the study period (2007–2013); (d) they were not subsidiaries of another firm; (e) their operational headquarters were not outside the selected countries; (f) they were not family-controlled companies.[42]

[42] A firm was categorized as family-controlled if a family was both a majority shareholder (i.e., voting rights above 50%) (Miller et al., 2013) and had operational control (i.e., a family member was either the acting CEO or Chairman of the Board) (Minichilli et al., 2014).

This resulted in a final sample of 330 companies. We then identified all CEO successions (excluding interim CEOs, Co-CEOs, and CEOs with less than a one-year tenure) at these companies between January 1, 2007 and December 31, 2013. The total number of CEO successions was 305. Similar to the studies of Crossland et al. (2014) and Chen (2015), we focused on newly appointed CEOs, because the CEO succession context allows an undistorted study of the consequences of CEO experience variety.[43]

We hand-collected executive data primarily from the companies' annual reports, websites, and press releases (Harris & Helfat, 1997; Zhang & Rajagopalan, 2010). For missing information, we used biographical databases (e.g., LexisNexis, Who is Who in Europe, Factiva, Munzinger Online), or triangulated web sources (e.g., LinkedIn or newspaper articles). Similar to previous strategic leadership studies using European samples, TMT members were identified by the self-reported definition included in annual reports (Boone et al., 2004a; Nielsen & Nielsen, 2013). Firm and industry data were retrieved from the Bloomberg and ThomsonONE databases.

Overall, we achieved a data completion rate of 38%, meaning that we had complete data for 115 out of 305 CEO successions.[44] To ensure that our final dataset of 115 CEO successions did not differ from the 190 CEO successions with incomplete data, we ran several Kolmogorov-Smirnov tests in STATA 15, testing strategic change (i.e., the dependent variable) and TMT turnover (i.e., the moderating variable). Results were non-significant in both cases, with a combined p-value of 0.29 for strategic change and 0.55 for TMT turnover, indicating that no statistically significant differences exist between succession events with complete data and succession events without complete data.

[43] Past research has underlined that CEO tenure affects strategic decision-making (Hambrick & Fukutomi, 1991; Miller, 1991; Shen & Cannella, 2002a). In contrast, newly appointed CEOs "are about to take up the job and thus have no serious organizational entrenchment issues" (Chen, 2015: 1896). This allows enhancing within-sample comparability with regard to the CEO effect on firm outcomes (Crossland et al., 2014).

[44] This completion rate is determined primarily by the difficulty of finding information on a CEO's entire career history, on all TMT members, and on the different dimensions used to operationalize strategic change.

3.3.2 Measures

3.3.2.1 Dependent variable

Strategic change. The extant literature follows mainly two approaches to define strategic change (Zhang & Rajagopalan, 2010). On the one hand, researchers have considered overall changes in the *strategic direction* of the firm (i.e., 'where to play'). Studies in this tradition have mainly used changes in a firm's product diversification (e.g., Boeker, 1997; Wiersema & Bantel, 1992) or geographic diversification (e.g., Sanders & Carpenter, 1998). On the other hand, researchers have focused on the firm's *strategic resource allocation* (i.e., 'how to win'). Studies in this tradition have relied on a definition of strategic change as the overall alteration of a firm's resource allocation pattern in key strategic dimensions (e.g., Karaevli, 2007; Quigley & Hambrick, 2012; Zhang & Rajagopalan, 2010). This approach is based on the understanding that actively altering the resource allocation pattern enables a firm to adapt to environmental shifts and to achieve competitive advantages (Oehmichen et al., 2016).

This study follows the second tradition, to conceptualize strategic change, and considers the variation in a firm's resource allocation pattern within key strategic dimensions. This approach was chosen for two reasons. First, these resource allocation dimensions are considered to be controllable by the CEO (Finkelstein & Hambrick, 1990; Quigley & Hambrick, 2012).[45] Second, this approach allows selecting complementary dimensions of a firm's resource allocation pattern, "each focusing on an important but specific aspect of the firm's strategic profile" (Finkelstein & Hambrick, 1990: 2).

Consistent with previous research, we operationalize strategic change using a composite measure of strategic resource reallocation. Following Oehmichen et al. (2016), we used four strategic indicators: (1) plant and equipment newness (net P&E/ gross P&E); (2) overhead efficiency (general and administrative expenses/ sales); (3) inventory levels (inventories/ sales); (4) financial leverage (total debt/ equity). These items capture distinct aspects of a firm's strategic profile (Finkelstein & Hambrick, 1990). A change in these indicators suggests resource reallocation and thus strategic change (Carpenter, 2000; Oehmichen et al., 2016; Weng & Lin, 2014). Specifically, the variable strategic change was calculated as follows:

First step: Calculating the change. First, we calculated the difference of these variables from the year prior to succession (year $t-1$) to the first year after succession

[45] In contrast, the overall strategic direction of the firm tends to fall under the board's responsibility (at least in the four European countries of our sample).

(year $t + 1$), taking t as the year of succession (Karaevli, 2007). For example, Δ firm financial leverage = (firm financial leverage$_{t+1}$ − firm financial leverage$_{t-1}$).

Second step: Adjusting for industries. We then subtracted the industry median to consider industry effects (Karaevli, 2007). We defined 'industry' as all those firms in our sample that have the same primary two-digit SIC code. Hence, industry-adjusted Δ firm financial leverage = (firm financial leverage$_{t+1}$ − firm financial leverage$_{t-1}$) − (industry median financial leverage$_{t+1}$ − industry median financial leverage$_{t-1}$).[46] This approach allows capturing strategic change more distinctively, because firms that retain high levels of strategic change even after industry-adjustment are considered to deviate strongly not only from their own past resource allocation patterns, but also from their industry's central tendencies (Zhang & Rajagopalan, 2010).[47]

Third step: Taking absolute values. Next, we took the absolute value of the industry-adjusted variance scores and standardized these absolute values within the sample (mean = 0; standard deviation = 1) (Crossland et al., 2014; Oehmichen et al., 2016; Weng & Lin, 2014; Zhang & Rajagopalan, 2010).[48]

Fourth step: Aggregating the indicators. The sum of the four standardized values was used as a measure of overall strategic change (Crossland et al., 2014; Karaevli, 2007; Quigley & Hambrick, 2012). Higher scores indicate greater strategic change.[49]

Regardless of the construct's broad acceptance in the strategic change literature, we ran a factor analysis to check the suitability of the composite measure of strategic change. The four components loaded cleanly on a single underlying factor, with factor loadings between 0.39 and 0.68. Also, the underlying factor fulfilled the criteria of an Eigenvalue greater than 1, having an Eigenvalue of 1.275. Thus, our decision to operationalize strategic change in the same way as prior research (e.g., Oehmichen et al., 2016) is supported.

[46] The focal firm was excluded in calculating industry medians (Huson, Malatesta, & Parrino, 2004; Zhang & Rajagopalan, 2010).

[47] As a robustness check, we ran Model 3 with non-industry-adjusted strategic change as the dependent variable (while including industry dummies to control for industry effects). Compared to the results presented here, results remained unchanged in terms of direction and significance. This was the first of a series of alternative measures that we used as robustness checks. While none led to substantially different findings, results are available upon request from the authors.

[48] On the one hand, the use of absolute values is required given the focus on the *degree* of strategic change (instead of the *quality* of strategic change). Not taking absolute values would imply that higher levels of change would be beneficial across all four dimensions. For some of the dimensions (i.e., inventory levels or financial leverage), such an assumption is not necessarily adequate. On the other hand, standardization is necessary given the different scales of the dimensions.

[49] As a robustness check, we used the average of the four standardized values to create our aggregated measure of strategic change, following the other half of extant research that does not use the sum (Oehmichen et al., 2016; Zhang & Rajagopalan, 2010). For all hypotheses, results were consistent with those reported here.

3.3.2.2 Independent and moderator variables

CEO experience variety. This variable represents a continuum of the degree to which a new CEO has acquired diverse career experience from different firms and industries. It is a composite measure and calculated as the sum of a CEO's firm and industry experience diversity. First, firm and industry experience diversity were calculated using Blau's (1977) index formula, expressed as $1-\sum {p_i}^2$, where p_i is the exact proportion of a CEO's career (in years) spent in a firm i or industry i (Bunderson & Sutcliffe, 2002). Second, we summed firm and industry experience diversity to receive an overall measure of CEO experience variety (Crossland et al., 2014; Zajac & Westphal, 1996).[50] Following the recommendations of Haans, Peters, and Ze (2016), our independent variable was neither mean-centered nor standardized, as both transformations are unnecessary from a mathematical point of view and tend to confuse result interpretation.[51]

High scores indicate experience *breadth* from various firms and industries, while low scores indicate high levels of career specialization, i.e., experience *depth*. For example, Eckhard Cordes—who became Metro's CEO in 2007—provides an example of a pure specialist who spent his 31-year career in one firm and thus in one industry (CEO experience variety = 0.00). At the other end of the spectrum would be a highly generalist CEO like Patrick De Maeseneire. Prior to being appointed CEO of Adecco in 2009, he spent his 30-year professional career at seven firms in six different industries (CEO experience variety = 1.63).[52]

Our conceptualization of CEO experience variety allows a clear focus on the strategic human capital required at the helm of the organization (Datta & Iskandar-Datta, 2014; Finkelstein et al., 2009). Based on the established typology in the managerial career literature (Karaevli & Hall, 2006), we distinguish between 'institutional specialization' (i.e., firm and industry experience) and 'functional specialization' (i.e., experience in sales, finance, engineering, etc.) (Smith & White, 1987; White, Smith, & Barnett, 1994). The first type represents the *strategic, conceptual experience* needed to successfully fulfill the CEO's strategic responsibility (Bragaw & Misangyi, 2015; Hambrick & Quigley, 2014; Katz, 1974; Zajac, 1990). The

[50] As the elements had similar means (0.47 for firm experience and 0.36 for industry experience), we took the simple sum to calculate our aggregate measure of experience variety (Crossland et al., 2014).
[51] On the one hand, "the results obtained with centered data and raw data are mathematically equivalent and mean-centering does not increase the power to detect quadratic or interaction effects." On the other hand, "standardization does very much the same except that all coefficients and standard errors, not just those of X as in the case of mean-centering, will change predictably and systematically" (Haans et al., 2016: 1184).
[52] Gerald Quindlen, who became CEO of Logitech in 2008, exhibits an average level of CEO experience variety of 0.81. He spent his 24-year career at three firms in three different industries.

second represents the *operational, technical knowledge* required by functional heads within the TMT (e.g., the CFO).[53] Similarly, previous CEO research has emphasized the importance of 'general managerial skills' based on firm and industry experience (Custodio et al., 2013). It has also underlined the relevance of conceptual skills which are transferable across firms and industries (Castanias & Helfat, 1991, 2001; Katz, 1974; Kotter, 1982).

TMT turnover. This variable was operationalized as the average of TMT additions and deletions, following previous studies (Karaevli, 2007; Tushman & Rosenkopf, 1996).[54] To capture the full effect of CEO succession on TMT composition, we considered TMT changes over a period of two years (Shen & Cannella, 2002a). Treating t as the year when the succession occurred, we first calculated the percentage of new TMT members. We did this by dividing the number of TMT members who were part of the TMT in the year after the succession $(t + 1)$, but not during the predecessor's last year $(t - 1)$, by team size $(t - 1)$. Second, the proportion of exits was calculated as the number of executives who left the TMT between the predecessor's last year $(t - 1)$ and the end of the new CEO's first year $(t + 1)$, divided by the new team size $(t + 1)$. We averaged the percentage values of the TMT entries and exits to determine the overall indicator for TMT turnover. Higher values indicate higher overall turnover.

3.3.2.3 Control variables

To control for confounding factors that potentially affect the level of strategic change, we applied a comprehensive set of control variables at the CEO level, the TMT level, and the firm level.

CEO MBA. CEO education might influence strategic decision-making (Fondas & Wiersema, 1997; Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010). In particular, Master of Business Administration (MBA) programs have been shown to alter CEOs' strategic behavior (Bertrand & Schoar, 2003; Crossland et al., 2014; Ghoshal, 2005).

[53] Previous literature has based the distinction between strategic and operational experience on the argument that conceptual skills are particularly important for CEOs, who mainly need to scan and interpret complex environments (Daft & Weick, 1984; Garg, Walters, & Priem, 2003), as well as analyze and decide strategic issues (Karaevli & Hall, 2006; Katz, 1974). According to Katz (1974: 96), "at the top level of an organization, conceptual skill becomes the most important skill of all for successful administration. A chief executive may lack technical or human skills and still be effective if he has subordinates who have strong abilities in these directions. But if his conceptual skill is weak, the success of the whole organization is jeopardized."

[54] We identified TMT members based on the information provided in the firm's annual report, following the majority of upper echelons studies (Carpenter et al., 2004).

Following Crossland et al. (2014), we used a binary variable, taking the value of 1 for CEOs who have an MBA and 0 otherwise.[55]

CEO career length. This variable was measured as the CEO's total career length in years (beginning with the first position). Where information on the first position was unavailable, we calculated CEO career length using the year of graduation with the most recent degree as a starting point (while excluding MBAs or other executive education degrees, which are typically acquired after an individual's career start). We included career length to control for the effects of a CEO's human capital (Chung & Luo, 2013). Naturally, CEOs with longer careers are more likely to acquire diverse experience (Hamori, 2006).[56]

CEO outside succession origin. As a dichotomous variable, CEO outside succession origin takes the value of 1 for outsiders, and the value of 0 for insiders. In line with previous studies, outsiders were defined as CEOs with firm tenures of two years or less (Hambrick & Fukutomi, 1991; Zhang & Rajagopalan, 2004). Outside CEO succession has been associated with several advantages for strategic change. First, outsiders have fresh perspectives and new knowledge (Harris & Helfat, 1997; Zhang & Rajagopalan, 2004). This should enable them to search more comprehensively for strategic alternatives and to define more adaptive strategies (Zhang & Rajagopalan, 2010). Second, CEOs are often appointed with an explicit mandate for change (Cannella & Lubatkin, 1993; Finkelstein et al., 2009). Therefore, they tend to receive more support for strategic change from key constituents (Zhang & Rajagopalan, 2010). Third, lacking emotional commitment to or vested interests in the status quo, outside CEO successors are better suited to enact strategic change (Finkelstein & Hambrick, 1996; Karaevli, 2007; Zhang & Rajagopalan, 2010). However, in contrast to these benefits, previous research has also indicated the disadvantages of outside CEO succession for strategic change. On the one hand, as outside CEOs tend to have a limited understanding of the firm's internal resources and capabilities, implementing strategic change might prove more challenging (Zhang & Rajagopalan, 2010). On the other hand, outside CEO successors might focus on getting to know the firm prior to initiating strategic change

[55] We also ran our models with CEO education instead of CEO MBA (Karaevli, 2007; Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010). The control variable CEO education was coded using the following scale: 1 = no educational degree; 2 = Bachelor's degree (Bachelor of Science (B.Sc.) or Bachelor of Arts (B.A.)); 3 = Master's degree (Master of Science (M.Sc.) or Master of Arts (M.A.)); 4 = Master in Business Administration (MBA); 5 = Doctoral degree (Pegels, Song, & Baik, 2000; Slater & Dixon-Fowler, 2010). The main effect and the moderating effects remained significant and the relationships did not change.

[56] As a robustness check, we also tested the hypotheses using CEO age instead of CEO career length (Karaevli, 2007; Weng & Lin, 2014). This measure was operationalized as the number of years since the CEO's birth, until and including the year of succession (Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010). The results were identical in terms of direction and significance.

(Karaevli & Zajac, 2013; Mintzberg, 1973), in order to avoid rushed and inappropriate strategic initiatives (Kotter, 1982). Moreover, outsiders might encounter more resistance from incumbent TMT members (Helmich & Brown, 1972; Shen & Cannella, 2002a).

CEO functional diversity. This measure was calculated using Blau's (1977) index formula, expressed as $1 - \sum {p_i}^2$, where p_i is the relative proportion of a CEO's career spent in a function i (Bunderson & Sutcliffe, 2002). Similar to prior research, we coded a CEO's functional experience using the following ten categories: engineering, production, finance, research and development, marketing and sales, business administration, legal affairs, human resources, strategic development, others (Cannella et al., 2008). We controlled for CEO functional diversity because it is a frequently studied aspect of executives' career backgrounds (Cannella et al., 2008; Carpenter et al., 2004; Crossland et al., 2014; Finkelstein et al., 2009).

CEO-Chairman duality. In line with extant studies on strategic change, we controlled for several governance variables (Rajagopalan & Spreitzer, 1997). These might influence the CEO's degree of latitude within the firm (Finkelstein, 1992). First, we accounted for the potential power that a CEO might accumulate if he or she also chairs the board (Wiersema & Zhang, 2011). CEO-Chairman duality was a dummy variable, coded 1 if the new CEO was also the board chair in the year before the succession ($t - 1$) and 0 otherwise (Chen, 2015; Westphal & Fredrickson, 2001; Zhang & Rajagopalan, 2010).

CEO incentive compensation. Second, evidence from previous studies suggests that compensation patterns influence strategic decision-making (Goodstein & Boeker, 1991; Sanders & Hambrick, 2007). Therefore, we controlled for a CEO's incentive compensation. Following Crossland et al. (2014), we calculated incentive compensation as follows: total compensation minus cash compensation (salary and bonus), divided by total compensation, multiplied by 100.

Board independence. Third, we controlled for board independence, which was measured as the proportion of outside (non-employee) directors on the board (Weng & Lin, 2014; Zajac & Westphal, 1996; Zhang & Rajagopalan, 2010) during the year preceding the succession ($t - 1$) (Chen, 2015).[57]

[57] To increase emphasis on governance controls, we also ran our models including the variable board size, measured as the number of board members (Karaevli & Zajac, 2013; Oehmichen et al., 2016; Zhang & Rajagopalan, 2010). Results for all hypotheses were identical in terms of the significance and direction of relationships. However, as the control board size was not significant ($p = 0.32$) and did not change the R^2 of the model, we dropped board size in order to keep the number of control variables low.

Predecessor CEO tenure. This variable was calculated as the number of years during which the predecessor served as CEO, i.e., until he or she was replaced by the new CEO. Previous research has suggested that long CEO tenures are associated with organizational inertia (Hambrick & Fukutomi, 1991). Thus, new CEOs who follow predecessors with longer tenures tend to face a greater build-up of required change (Miller, 1991; Quigley & Hambrick, 2012).

TMT tenure. As leadership of a complex organization is a shared activity (DeChurch et al., 2010; Ensley et al., 2006), we controlled for TMT characteristics (Carpenter et al., 2004; Hambrick, 2007). On an individual level, previous research has indicated that longer tenure results in higher commitment to the status quo (Hambrick et al., 1993; McClelland, Xin, & Barker, 2010), and thus impacts strategic decision-making (Crossland et al., 2014). Within teams, longer organizational tenures result in higher social cohesion. This, in turn, further increases the reluctance to challenge the status quo (Michel & Hambrick, 1992) and results in more persistent strategies (Finkelstein & Hambrick, 1990; Grimm & Smith, 1991; Shen & Cannella, 2002a). Particularly important in the context of CEO successions and strategic change, team longevity also results in teams that are less receptive to new inputs (Wiersema & Bantel, 1992). Our measure of TMT tenure is calculated as the average of all TMT members' team tenure (including the CEO), as of the year of succession.

TMT diversity. In the strategic change literature, TMT heterogeneity is expected to have both positive and negative implications (Crossland et al., 2014). While some studies have highlighted the positive outcomes of TMT diversity such as increased creativity (Bantel & Jackson, 1989), others have associated TMT diversity with negative implications such as decreased group cohesion (Michel & Hambrick, 1992). Our measure of TMT diversity is an aggregate of age, gender, nationality, and functional diversity. First, as age is a continuous variable, we calculated age diversity as the standard deviation of the incumbent TMT's age divided by the mean (Murray, 1989). For gender, nationality, and functional diversity, we used the Blau (1977) index, calculated as $1-\sum {p_i}^2$, with p_i being the relative share of TMT members in a given category i (i.e., gender, nationality, or dominant function). Following previous research, we calculated an overall degree of TMT diversity by first rescaling age diversity to vary from 0 to 1, and then by summing the four components into a composite measure (Westphal & Zajac, 1995).

Pre-succession firm performance. This measure was calculated using the average industry-adjusted ROA for the two years before the year of succession (Karaevli, 2007).

Past research has identified inferior prior performance as a central impetus for strategic change (Tushman & Romanelli, 1985; Wiersema & Bantel, 1992). This occurs because board and TMT members fear hostile takeovers, internal upheavals, or losing their jobs (David, Kochhar, & Levitas, 1998; Westphal & Fredrickson, 2001). Therefore, poorly performing firms are more likely to initiate strategic change (Weng & Lin, 2014).

Frequent CEO replacements. This was calculated as a dummy variable, taking the value of 1 for companies with more than one succession event during the study period (2007–2013), and 0 for those with only one such event. As CEO successions are considered disruptive events (Friedman & Saul, 1991; Kesner & Sebora, 1994; Shen & Cannella, 2002a), serial CEO changes might decrease a firm's ability to implement post-succession strategic change.

Firm size. On the one hand, previous research has associated increasing firm size with complexity (Carpenter & Sanders, 2002; Henderson & Fredrickson, 1996; Wiersema & Bantel, 1992). Like bureaucracy (Boeker, 1997), complexity translates into inertial tendencies (Tushman & Romanelli, 1985) and hence complicates strategic change (Cooper, Patel, & Thatcher, 2014; Karaevli & Zajac, 2013; Tihany, Ellstrand, Daily, & Dalton, 2000; Westphal & Fredrickson, 2001). On the other hand, larger firms, having more extensive resources at their disposal, might be more likely to initiate change initiatives (Boeker, 1997). Following previous research, we measured firm size as the natural logarithm of annual sales (in the year of succession) (Carpenter & Sanders, 2002; Chung & Luo, 2013; Henderson et al., 2006; Karaevli, 2007; Ridge, Aime, & White, 2015; Westphal & Fredrickson, 2001).[58]

Firm overall diversification. Higher diversification has been shown to increase the need for strategic initiatives, as diversification adds to the variety of customers, suppliers, and stakeholders (Michel & Hambrick, 1992). Extant studies suggest that organizational complexity is driven both by product (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986) and by geographical diversification (Henderson & Fredrickson, 1996; Sanders & Carpenter, 1998). Therefore, we used an overall measure of diversification, which consists of the firm's product diversification and geographical diversification. Both were calculated using Palepu's (1985) entropy measure for total diversification, expressed as $\sum_{i=1}^{N} P_i \ln(1 / P_i)$, with P_i being the share of the ith segment of the firm's total sales at the year of succession. As an established measure of diversification, Palepu's entropy measure

[58] As a robustness check, we used the natural logarithm of the number of employees at the year of succession (Karaevli, 2007; Zhang & Rajagopalan, 2010). Results remained unchanged.

reflects the number of segments in which a firm operates and weights each segment according to its contribution to total sales (e.g., Geletkanycz et al., 2001; Hambrick & Cannella, 2004; Menz & Scheef, 2014; Ridge et al., 2015; Westphal & Fredrickson, 2001; Wiersema & Bantel, 1992; Zajac & Westphal, 1996). We summed both dimensions of diversification to achieve an overall measure of diversification (Westphal & Fredrickson, 2001).[59] Low scores indicate low diversification, whereas high scores indicate high diversification.

Industry munificence. In the strategic change literature, industry characteristics have often been recognized as drivers of change (Hoskisson & Hitt, 1990; Wiersema & Bantel, 1992). We first controlled for environmental munificence as an indicator of the resources flowing into an organization (Boeker, 1997) and of the firm's corresponding ability to accumulate the slack required to implement change. This measure was calculated as the regression coefficient of time on the annual average sales of companies in the same industry over the sample period (2007–2013), divided by the mean value of sales for the same firms during the same period (Dess & Beard, 1984; Nielsen, 2009).

Industry dynamism. Second, we included industry volatility as a control variable (Oehmichen et al., 2016). Previous research suggests that instability in the firm's industry context increases the need for strategic change (Crossland et al., 2014; Westphal & Fredrickson, 2001). To capture the industry's volatility and unpredictability, we operationalized industry dynamism as the fluctuation of industry sales (Weng & Lin, 2014). We divided the standard error of the slope coefficient of industry sales (i.e., the total sales of firms with the same one-digit SIC codes) over the study period (i.e., 2007–2013) by the mean value of industry sales for the same period (Nielsen & Nielsen, 2013; Zhang & Rajagopalan, 2004).

Year and country dummies. As CEO successions occurred at different times, we included binary control variables for calendar years (i.e., 2007–2013) (Crossland et al., 2014; Weng & Lin, 2014). We also included country dummies (i.e., Germany, the Netherlands, Switzerland, and the United Kingdom) to capture macro-economic effects and unobserved potential heterogeneity associated with country affiliation (Hambrick & Quigley, 2014). For both years and countries, we omitted one category in each case.

[59] As a robustness check, we used the average of product and geographical diversification, instead of summing the two. We obtained the same results. Furthermore, we tested our hypotheses with separate measures of diversification instead of the composite measure. To do so, we used two separate control variables: the firm's DOI (calculated as foreign sales divided by total sales, as of the year of succession) and the firm's product diversification (measured using Palepu's entropy measure of total diversification, as outlined). However, as both controls were non-significant (DOI: $p = 0.28$; product diversification $p = 0.41$) and decreased the R^2 of the model, we used the composite measure in the final models presented in this paper.

3.4 Results

3.4.1 Estimation methods

Similar to prior work in the area of CEO experience variety, our sample is restricted to new CEO appointments (e.g., Chen, 2015; Crossland et al., 2014). While this approach enhances comparability between CEOs in our sample, it might introduce sample selection bias. Therefore, following previous research, we used a Heckman two-stage model (e.g., Chen, 2015; Karaevli, 2007; Weng & Lin, 2014; Westphal & Fredrickson, 2001; Zajac & Westphal, 1996).[60]

Correct application of a two-stage approach requires the use of instrumental variables that are associated with the dependent variable in the first-stage model, but are unrelated to the dependent variable in the second-stage model (Certo et al., 2016; Larcker & Rusticus, 2010). Our instrumental variables were (a) the industry rate of CEO turnover and (b) CEO age. While industry patterns of CEO turnover are likely to affect CEO replacement, they are unlikely to impact firm outcomes (Karaevli & Zajac, 2013). In addition, although CEO age positively relates to CEO replacement in the focal firm (Huson et al., 2004; Wagner et al., 1984), it does not seem to significantly impact strategic change (Crossland et al., 2014; Weng & Lin, 2014). To test the suitability of our instruments, we ran correlation analyses. Results show that the industry rate of CEO turnover and CEO age are both correlated with the likelihood of CEO replacement in the focal firm ($p = 0.0000$ and $p = 0.0000$ respectively), but unrelated to strategic change ($p = 0.3617$ and $p = 0.6610$ respectively). This substantiates the appropriateness of the selected instruments.

The first-stage model is a selection model that estimates the likelihood of CEO succession based on the full sample. Correspondingly, our model had a sample size of $N = 2{,}160$.[61] To predict the likelihood of CEO succession, we ran the following Probit model (see Appendix 3.1 for details regarding operationalization and for results):

$$\text{CEO succession} = \alpha + \beta_1 \text{ firm size} + \beta_2 \text{ firm performance} + \beta_3 \text{ decline in market share} + \beta_4 \text{ CEO age} + \beta_5 \text{ CEO firm tenure} + \beta_6 \text{ CEO-Chairman duality} + \beta_7 \text{ Recent CEO succession} + \beta_8 \text{ Industry rate of CEO turnover} + [\beta_9 \text{ country dummies}] + [\beta_{10} \text{ year dummies}] + e$$

[60] The Heckman (1979) two-stage model allows controlling for sample selection bias in cases where the dependent variable is only observed for a sub-sample of a larger population (Certo, Busenbark, Hyun-Soo, & Semadi, 2016).
[61] Due to missing data, this number is slightly lower than the maximum possible number of 2,310 observations, which would correspond to all firm-year pairs (i.e., 330 firms multiplied by a study period of seven years).

We then calculated the inverse Mill's ratio based on the results of the first-stage model (Hamilton & Nickerson, 2003) and included this variable, named 'Likelihood of CEO succession', in our second-stage model. Results are presented in Appendix 3.2. Since the results of the second-stage model are identical with the regression results presented in this paper (i.e., Table 4), we can conclude that our results are not artifacts of sample selection bias.

3.4.2 Main analysis

Table 3 presents the means, standard deviations, correlations, and reliabilities for the study variables. To check for multicollinearity, we first examined the correlations among the independent variables. Results show that strategic change was positively and significantly associated with industry dynamism ($\beta = 0.33$; $p < 0.001$). Furthermore, strategic change was negatively and significantly correlated with CEO functional diversity ($\beta =$ -0.20; $p < 0.05$), TMT diversity ($\beta =$ -0.23; $p < 0.05$), and firm size ($\beta =$ -0.35; $p < 0.001$). Second, we calculated the VIF scores, which quantify the degree of a regression's multicollinearity.[62] With an average VIF of 1.32 and a maximum of 1.58, results were below the recommended threshold of 10, indicating that our results are not significantly affected by multicollinearity (Cohen et al., 2003). Finally, we conducted regression diagnostics to consider potential violations of regression assumptions. Residuals do not appear to violate any assumptions concerning normality, linearity, and homoscedasticity.

We tested our hypotheses using an OLS hierarchical regression analysis. We ran several models, adding the independent variables in a pre-specified sequence. This approach is used to assess how the variables contribute individually and jointly to explaining variance in the dependent variable (Tabachnick & Fidell, 2014). Table 4 reports the results of our regressions. All models were based on 115 observations (i.e., complete datasets). Also, all models were significant (p-values below 0.01), while the R^2 increased from model to model—indicating that the addition of variables increased the explanatory power of the models.[63]

[62] Detailed VIF results are shown in Appendix 3.3.

[63] The adjusted R^2 indicates the percentage of variation explained only by those independent variables that actually affect the dependent variable. In contrast to the R^2, the adjusted R^2 decreases if predictors are added that do not fit the model. As seen in Table 4, the adjusted R^2 does not decrease from Model 1 through Model 4, indicating that the additional variables add explanatory value to the models.

Table 3: Descriptive statistics and correlation matrix

Variables[a]	Mean	S.D.	Strategic change	CEO experience variety	CEO MBA	CEO career length	CEO outside succession origin	CEO functional diversity	CEO-Chairman duality	CEO incentive compensation	Board independence	Predecessor CEO tenure	TMT tenure	TMT diversity	TMT turnover	Pre-succession firm performance	Frequent CEO replacements	Firm size[b]	Firm overall diversification	Industry munificence
1 Strategic change	-0.13	1.94																		
2 CEO experience variety	0.86	0.46	-0.13																	
3 CEO MBA	0.19	0.40	0.09	-0.04																
4 CEO career length	25.83	5.28	-0.12	0.03	-0.06															
5 CEO outside succession origin	0.45	0.50	0.18	0.13	0.09	-0.02														
6 CEO functional diversity	0.52	0.24	-0.20 *	0.10	0.12	-0.14	0.09													
7 CEO-Chairman duality	0.03	0.16	-0.14	-0.05	-0.08	0.21 *	-0.04	0.01												
8 CEO incentive compensation	31.23	19.80	0.03	0.02	0.21 *	0.01	0.03	0.01	0.04											
9 Board independence	0.88	0.12	0.10	-0.05	-0.02	-0.12	0.00	-0.08	-0.25 **	0.02										
10 Predecessor CEO tenure	8.29	5.54	0.02	-0.07	-0.07	-0.14	-0.14	0.13	-0.11	-0.13	0.05									
11 TMT tenure	4.07	2.19	-0.16	-0.05	-0.17	0.16	-0.19 *	-0.06	0.19 *	0.08	-0.22 *	0.24 **								
12 TMT diversity	1.48	0.45	-0.23 *	0.03	0.19 *	0.04	-0.07	0.05	0.11	0.41 ***	0.04	-0.17	-0.05							
13 TMT turnover	0.45	0.26	0.15	0.08	0.07	-0.01	-0.06	-0.16	-0.18	0.09	0.15	-0.18	-0.21 *	0.13						
14 Pre-succession firm performance	0.10	6.14	-0.08	-0.08	0.09	0.10	-0.03	0.05	0.06	0.27 **	-0.03	0.00	0.10	0.24 *	-0.08					
15 Frequent CEO replacements	0.39	0.49	0.04	-0.07	-0.03	0.07	0.06	-0.10	0.09	0.19 *	0.15	-0.44 ***	-0.20 *	-0.04	0.22 *	-0.02				
16 Firm size[b]	8.51	1.65	-0.35 ***	-0.15	-0.02	0.13	-0.17	0.04	0.08	-0.03	-0.04	-0.02	-0.07	0.22 *	0.08	-0.16	0.01			
17 Firm overall diversification	2.12	0.72	-0.11	0.07	0.07	0.22 *	-0.08	-0.06	0.06	0.05	0.08	-0.03	0.01	0.26 **	0.19 *	-0.19 *	0.00	0.41 ***		
18 Industry munificence	0.05	0.02	0.00	-0.07	0.01	0.19 *	0.04	-0.20 *	-0.02	0.03	0.15	-0.04	-0.02	0.06	0.04	-0.02	0.06	-0.04	0.24 **	
19 Industry dynamism	0.07	0.03	0.33 ***	0.02	-0.01	0.10	-0.03	-0.10	0.09	-0.07	-0.16	-0.06	-0.02	-0.15	0.02	-0.02	0.12	-0.24 *	0.00	0.03

a $N = 115$

b Logarithm

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Authors

Table 4: Regression results with strategic change as dependent variable

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		3.37	(2.72)	4.04	(2.64)	4.43	(2.70)	6.91 *	(2.99)
Controls	CEO MBA		0.32	(0.54)	0.20	(0.54)	0.23	(0.52)	0.10	(0.53)
	CEO career length		-0.03	(0.04)	-0.02	(0.04)	-0.03	(0.04)	-0.03	(0.03)
	CEO outside succession origin		0.56	(0.38)	0.61	(0.37)	0.73 *	(0.36)	0.64 †	(0.35)
	CEO functional diversity		-1.68 *	(0.71)	-1.43 *	(0.68)	-1.31 †	(0.69)	-1.35 †	(0.68)
	CEO-Chairman duality		-0.60	(1.19)	-0.80	(0.97)	-0.81	(0.94)	-0.82	(1.02)
	CEO incentive compensation		0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
	Board independence		-1.19	(2.58)	-1.35	(2.51)	-1.29	(2.50)	-1.66	(2.63)
	Predecessor CEO tenure		0.01	(0.03)	0.01	(0.04)	0.02	(0.04)	0.03	(0.03)
	TMT tenure		-0.07	(0.08)	-0.09	(0.08)	-0.09	(0.08)	-0.09	(0.07)
	TMT diversity		-0.69	(0.53)	-0.67	(0.53)	-0.69	(0.52)	-0.65	(0.52)
	TMT turnover		0.86	(0.86)	1.00	(0.86)	1.05	(0.84)	-3.25	(1.98)
	Pre-succession firm performance		-0.02	(0.03)	-0.03	(0.02)	-0.03	(0.02)	-0.03	(0.02)
	Frequent CEO replacements		-0.20	(0.33)	-0.36	(0.34)	-0.33	(0.35)	-0.48	(0.33)
	Firm size[b]		-0.24 †	(0.15)	-0.31 *	(0.15)	-0.26 †	(0.15)	-0.30 *	(0.15)
	Firm overall diversification		-0.02	(0.28)	0.07	(0.26)	0.07	(0.25)	-0.05	(0.25)
	Industry munificence		-6.68	(14.13)	-9.83	(13.92)	-9.66	(13.86)	-5.45	(13.41)
	Industry dynamism		13.69	(9.34)	13.71	(9.30)	14.36	(8.82)	16.83 †	(8.97)
Main effect	CEO strategic experience variety	*H1*			-0.88 **	(0.33)	-3.22 **	(1.01)	-8.79 **	(2.53)
	CEO strategic experience variety^2						1.65 *	(0.72)	4.88 **	(1.77)
Moderating effect	CEO strategic experience variety x TMT turnover	*H2*							13.36 *	(5.40)
	CEO strategic experience variety^2 x TMT turnover								-7.56 *	(3.50)
Statistics	F-test		2.10 **		2.57 ***		3.33 ***		3.96 ***	
	R^2		0.41		0.44		0.47		0.51	
	Change in R^2				0.03		0.03		0.04	
	Adjusted R^2		0.23		0.27		0.29		0.33	
	Change in adjusted R^2				0.04		0.03		0.04	

a N = 115. Standard errors are indicated in brackets. Country and year dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

Source: Authors

Model 1, our base model, only includes the control variables.[64] Two controls were statistically significant. CEO functional diversity (β = -1.68; $p < 0.05$) was negatively and significantly correlated with strategic change (although it became partially significant starting with Model 3). Firm size (β = -0.24; $p < 0.10$) had a negative and partially significant correlation with strategic change.

Model 2 includes the non-squared independent variable, in order to test for a potential linear relationship. Results show that CEO experience variety was significantly and negatively related to strategic change (β = -0.88; $p < 0.01$).[65]

Hypothesis 1 predicts an U-shaped relationship between CEO experience variety and strategic change. Model 3 therefore included the squared term of CEO experience variety. This model is based on the following equation, with Y = strategic change and X = CEO experience variety:[66]

$$Y = \alpha + \beta_1 X + \beta_2 X^2 + e$$

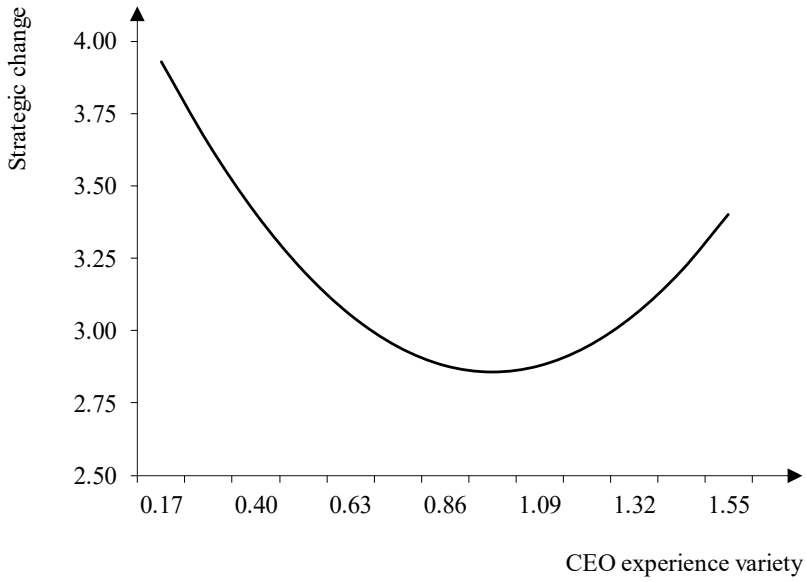
First, in regression analyses, the existence of curvilinear relationships becomes evident if adding the squared predictor adds significant incremental variance, after running the model solely with the linear relationship (Cohen et al., 2003). Model 3 shows that adding the squared predictor adds significant incremental variance, with a change in R^2 of 0.03. Second, the significance of curvilinear relationships is determined by a significant β_2 (Haans et al., 2016). As seen in Model 3, the p-value for CEO experience variety^2 (i.e., β_2) is significant ($p < 0.05$). Third, the type of curvilinear relationships is determined by the coefficient of β_2, with a positive β_2 indicating a U-shaped relationship (Haans et al., 2016). Model 3 shows that the coefficient for CEO experience variety^2 (β = 1.65) is positive. Thus, our results provide significant support for Hypothesis 1. Figure 9 depicts the U-shaped relationship between CEO experience variety and strategic change.

[64] The number of control variables is in line with recent prior research (e.g., Crossland et al., 2014; Karaevli & Zajac, 2013; Oehmichen et al., 2016). Nevertheless, we ran the model excluding those six control variables that could be considered less important (i.e., CEO career length, CEO duality, CEO incentive compensation, predecessor CEO tenure, frequent CEO successions, and industry dynamism). The R^2 decreased by only two percentage points (from 0.44 to 0.42), indicating that R^2 is not inflated by the number of control variables. Also, the main effect remained unchanged in terms of significance and direction. Results are available from the authors upon request.

[65] These results have theoretical and practical relevance from a corporate governance perspective. Neither the board (i.e., CEO duality, CEO incentive compensation, and board independence), nor the TMT control variables (i.e., TMT tenure, TMT diversity, except for TMT turnover), are significantly correlated with strategic change. These corporate governance measures are usually added to control for CEO power. While CEO power lies beyond our scope, our results suggest that CEO experience variety might impact CEO power. This might represent an avenue for future research in the context of the literature studying the impact of CEO power on strategic change (Bigley & Wiersema, 2002; Finkelstein, 1992; Fischer & Pollock, 2004).

[66] Control variables impact neither theorization nor the mathematical properties of the hypothesized relationship between the independent and the dependent variable (Haans et al., 2016). They are not shown here for reasons of space.

Figure 9: CEO experience variety and strategic change



Source: Authors

Hypothesis 2 considers whether the relationship between CEO experience variety and strategic change is moderated by TMT turnover. Model 4 is therefore specified as follows:

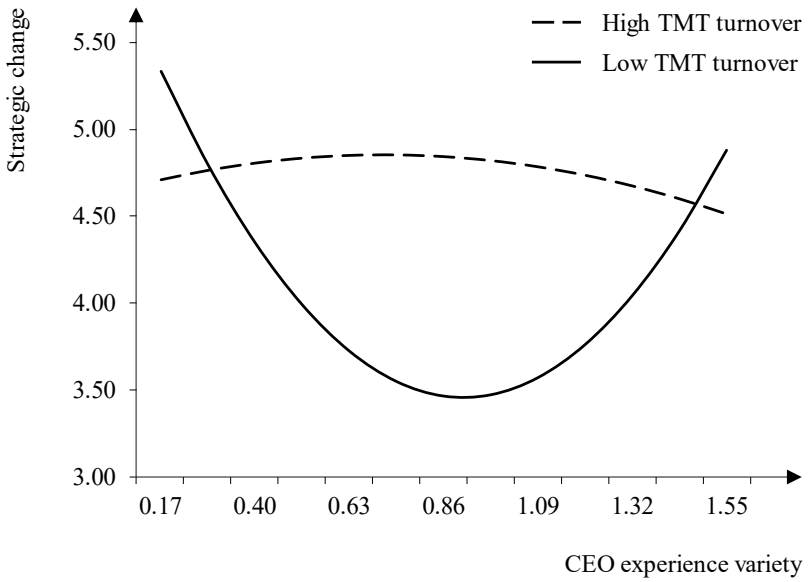
$$Y = \alpha + \beta_1 X + \beta_2 X^2 + \beta_3 XZ + \beta_4 X^2 Z + \beta_5 Z + e$$

This equation includes the moderator, $Z =$ TMT turnover, and introduces interactions between the moderator and the independent variable as well as the squared independent variable (Aiken & West, 1991).

The significance of a moderating effect is determined by the p-value of β_4. Model 4 shows that the interaction term β_4 (i.e., CEO experience variety^2 x TMT turnover) is significant ($\beta =$ -7.65; $p < 0.05$). Furthermore, according to Haans et al. (2016: 1187), the above specification allows a straightforward test of the type of moderating effects: "a flattening occurs […] for U-shaped relationships when $\beta_4$is negative." Results for Model 4 thus support Hypothesis 2. As such, our results indicate that the moderator TMT turnover flattens the relationship between CEO experience variety and strategic change. To facilitate interpretation, results are shown in Figure 10. The graph illustrates that, under conditions of high TMT turnover, the curve is significantly flattened, to an extent that the curve changes from a U-shape to an inverted U-shape. Generally speaking, this means that high TMT turnover enables CEOs with average CEO experience variety to achieve high levels of strategic change. Meanwhile, under conditions of low TMT turnover, the curve remains unchanged compared to the shape

of the main effect. Although we assumed that TMT turnover would flatten the relationship, this finding exceeds the initially assumed effect of TMT turnover, as the moderating effect shape-flips the U-shaped relationship between CEO experience variety and strategic change.

Figure 10: Moderating effect of TMT turnover



Source: Authors

Model 4 has an R^2 of 0.51, indicating that the combined variables in the model explain 51% of the variance in strategic change. We also calculated Cohen's f^2, which indicates effect sizes in multiple regressions. With values of 0.69 and higher, all models exceed the reference threshold of 0.35, which is considered to indicate large effect sizes (Cohen, 1988).

3.4.3 Robustness checks

Composite tests. Our independent variable, CEO experience variety, was calculated as a composite of firm and industry experience. While our decision to focus on these two dimensions was driven by theoretical arguments, other studies have also considered functional experience (e.g., Crossland et al., 2014; Custodio et al., 2013). Therefore, we applied three tests to check whether aggregating the two components was the right choice (see Appendix 3.4 for an overview). First, we ran a factor analysis. The two components firm and industry experience loaded cleanly on a single underlying factor, with factor loadings of 0.834 and 0.832, while functional experience loaded on a different factor. Also, only Factor 1 fulfilled the criteria of an Eigenvalue greater than

1, having an Eigenvalue of 1.388. Second, we ran a correlation analysis. Results showed that firm and industry experience were strongly correlated at $R = 0.77$ ($p < 0.001$). In contrast, functional experience correlated neither with firm experience ($R = 0.05$; $p = 0.41$), nor with industry experience ($R = 0.01$; $p = 0.88$). Third, we calculated Cronbach's alpha for the two components firm experience and industry experience. Results showed a scale reliability coefficient of 0.87, which exceeds the generally accepted limit of 0.70 for new constructs (Nunnally & Bernstein, 1994). Adding CEO functional variety lowered the scale reliability coefficient to 0.57. Taken together, all results supported our theoretical decision to operationalize CEO experience variety as a composite of CEO firm experience variety and CEO industry experience variety.

U-shape tests. In addition, we conducted multiple tests to confirm the observed U-shaped relationship, as recommended by Haans et al. (2016) and by Lind and Mehlum (2010). A summary is shown in Appendix 3.5. First, we assessed whether both slope tests were significant (Haans et al., 2016; Lind & Mehlum, 2010). For U-shaped relationships, the slope at the lower bound needs to be negative and significant, while the slope at the upper bound needs to be positive and significant. The slope for the lower bound was -8.79 ($p < 0.001$), while the slope of the upper bound was 7.10 ($p < 0.05$). To further confirm this, we ran the Sasabuchi (1980) test for U-shaped relationships, as suggested and provided by Lind and Mehlum (2010). With a p-value of 0.02, this overall test re-confirmed the presence of the U-shaped relationship. Second, the curve's estimated turning point needs to be located within the relevant data range of the main predictor (Haans et al., 2016). Therefore, we calculated the curve's estimated turning point (0.90) and its confidence intervals (0.73, 1.56) using Fieller's standard error (Haans et al., 2016; Lind & Mehlum, 2010). These values are within the observed range of CEO experience variety (ranging from 0.00 to 1.63).[67] Finally, we added a cubic term (i.e., CEO experience variety^3) to Model 3, in order to exclude a potential S-shaped relationship. Results for the cubic term were partially significant at the 0.10 level, but did not significantly improve model fit (with a R^2 of 0.50, compared to a R^2 of 0.47 in Model 3).

Nevertheless, we ran a series of additional checks to ensure that the possibility of a S-shaped relationship can be discarded. First, we ran the CURVEFIT module in STATA 15. This module produces curve estimation statistics for different regression models. Results provided no support for a S-curve relationship, indicating that a cubic

[67] For further illustration: 44% of the observations have a value for the independent variable (i.e., for CEO experience variety) below the turning point.

relationship does not fit the data. Second, we decomposed our dependent variable strategic change, because the four dimensions of strategic change—plant and equipment newness, overhead efficiency, inventory levels, and financial leverage—might induce collinearity that translates into results implying a S-shaped curve. Among the four dimensions of strategic change, change in overhead efficiency showed the highest single factor loading (i.e., 0.68). Therefore, we computed Model 3 (incl. the cubic term of CEO experience variety) with change in overhead efficiency as the dependent variable. In this model, the cubic term becomes insignificant (with a p-value 0.30).[68] Third, we ran the analysis without outliers, as they tend to provide misleading results pointing towards S-shaped relationships. There are two approaches to removing outliers: winsorizing and trimming. We thus ran the analysis with strategic change winsorized to exclude the bottom and top 5% (Tukey, 1960). In addition, we ran the analysis using a trimmed dataset, without the bottom and top 5% values of strategic change. In both cases, the cubic term was no longer partially significant, with p-values of 0.14 for the winsorized dataset and 0.27 for the trimmed dataset. Thus, all results suggest that the observed relationship is indeed quadratic.

Sample tests. Given the timeframe of our sample (i.e., 2007–2013), we conducted the analysis with a sub-sample limited to 2009 and later ($N = 80$). This approach was chosen to preclude any confounding influences of the 2008 financial crisis. While we reached higher R^2-levels (0.60 in Model 4), the observed relationships did not change in terms of significance and direction. Moreover, we took a sub-sample limited to firms with a DOI greater than zero. This test aimed at ensuring comparability among large multinational corporations (MNCs) and excluded a number of firms only operating within their domestic markets. Again, the results—based on a sample with $N = 112$—were equivalent to those reported here.[69]

3.5 Discussion

The main insights of this study are twofold. First, we found a U-shaped relationship between CEO experience variety and strategic change, with high levels of strategic change evident around either meaningfully low or meaningfully high levels of CEO experience variety. Second, our results indicate that TMT turnover significantly alters the relationship between CEO experience variety and strategic change. High

[68] Importantly, Model 3 provides significant support for the U-shaped relationship also when overhead efficiency is used as the dependent variable (instead of the composite measure of strategic change). This further suggests that the partially significant results for the cubic interaction term might result from using an aggregated dependent variable.
[69] Detailed results are available from the authors upon request.

levels of TMT turnover significantly flatten the U-shape, indicating that TMT turnover not only offsets the factors initially preventing CEOs from initiating strategic change but also intensifies their inclination towards change.

These findings are directly related to our aim to determine why certain CEO successions result in higher levels of strategic change, while others do not (Hambrick et al., 1993). Our results thus have important theoretical and practical implications.

3.5.1 Theoretical implications

This paper's first and main contribution is to the strategic change and managerial cognition literatures. These literatures have suggested that strategic choices are influenced by previous executive experiences (Westphal & Fredrickson, 2001). However, whether and how new CEOs influence their firm's strategic agenda has remained an unresolved question (Datta et al., 2003; Gioia & Chittipeddi, 1991). Previous studies in this field are sparse and have focused mainly on how *absolute levels* of CEO demographics (e.g., level of education and length of firm tenure) impact the initiation of strategic change (Datta et al., 2003; Herrmann & Nadkarni, 2014). While recent research has provided a basis for examining the *relative diversity* of CEO careers (Crossland et al., 2014), such studies have been one-sided, focusing merely on the merits of cognitive *breadth*. We contribute to this nascent stream of research by showing that CEO experience variety impacts strategic change—not straightforwardly, however, but non-linearly. Integrating the seemingly contradictory cognitive *depth* and cognitive *breadth* perspectives, our study provides conceptual clarity and empirical support for a U-shaped relationship between CEO experience variety and strategic change. Moreover, our results indicate that specialist CEOs generally achieve higher levels of strategic change compared to their generalist counterparts (see Figure 9). Thus, our results not only point towards the importance of CEO cognition (Datta et al., 2003; Herrmann & Nadkarni, 2014; Rajagopalan & Spreitzer, 1997), but also offer a more complete understanding of the complex relationship between CEO experience variety and strategic change.

Second, this study provides further evidence for the central tenets of upper echelons theory, i.e., that executives are bound by the past (Cyert & March, 1963; Geletkanycz & Black, 2001) and that varying executive experience impacts strategic decision-making (Hambrick & Mason, 1984). While some studies have shown that new top managers set new strategic directions and initiate change (Grimm & Smith, 1991; Tushman & Romanelli, 1985; Westphal & Fredrickson, 2001), others have suggested

that executives can be constrained and experience difficulties in enacting change (Crossland et al., 2014; Hambrick et al., 1993). Our results confirm that CEOs not only have the overall responsibility for the firm, but also that their characteristics have significant organizational consequences (Finkelstein & Hambrick, 1996). This reflects Crossland et al.'s (2014: 667) conclusion that "there is considerable evidence that some executives, in some circumstances, can be catalysts for major change in their organizations (e.g., Chen & Meindl, 1991; Gioia & Chittipeddi, 1991)."

Finally, our results not only confirm the importance of CEOs in enacting strategic change, but also describe the circumstances that might strengthen or hinder their efforts to be catalysts of change. As noted by Hambrick and Quigley (2014: 473), "having an accurate grasp of whether—or how much, when, and where—top executives matter is centrally important for advancing theory and research […]." In this sense, our results show that TMT turnover significantly influences the relationship between new CEO experience variety and strategic change. This supports the contingency perspective of strategic leadership (Gupta, 1984; Guthrie & Datta, 1998). To the extent that CEOs are boundedly rational actors (Cyert & March, 1963), they will require the entire TMT's advice and resources to deal with complexity. Our results support the notion that while strategic change might have been initiated by the incumbent TMT, implementing strategic change often requires dramatic TMT turnover (Tushman & Rosenkopf, 1996).

3.5.2 Limitations and directions for future research

The results of this study are bound by the limitations inherent in our research design. First, although we considered a comprehensive set of control variables and examined the role of an important moderator (i.e., TMT turnover), other factors might influence strategic change and the interaction between CEO experience variety and strategic change (Datta et al., 2003). In particular, internal factors such as organizational culture (Pettigrew, 1987, 2012), organizational structure (Ginsberg & Buchholtz, 1990; Meyer et al., 1990), and organizational governance mechanisms (Miller & Friesen, 1980; Simons, 1994) might influence a CEO's ability to initiate strategic change. Future research, relying on primary firm data, could capture such dimensions and complement our understanding of the contingencies surrounding the impact of CEO experience variety on strategic change.

Second, anchored in upper echelons theory (Hambrick & Mason, 1984), we used demographic variables as proxies to hypothesize on CEO cognition. This approach offers the benefits of data accessibility and objectivity and is well-established in the

CEO and strategic change literature (e.g., Crossland et al., 2014; Fondas & Wiersema, 1997; Hambrick et al., 1993; Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010). Nevertheless, researchers have called attention to the theoretical and empirical limitations of the underlying assumption that demographic characteristics are reliable indicators of executive cognition (Datta et al., 2003; Priem et al., 1999; Weng & Lin, 2014). Future research should not only advance methodologically by measuring the underlying psychological constructs of CEO experience variety with survey or experimental methods (Weng & Lin, 2014). It should also theoretically reconcile the upper echelons perspective with the CEO psychology literature (e.g., Chatterjee & Hambrick, 2007; Herrmann & Nadkarni, 2014; Hiller & Hambrick, 2005; Nadkarni & Herrmann, 2010). One interesting avenue for future research would be to consider the different motives for strategic change and their impact. Evidence from previous research suggests that executives act differently if they perceive decisions to be motivated by opportunity, rather than by crisis (Elbanna & Child, 2007; Jackson & Dutton, 1988). Accordingly, CEOs with similar CEO experience variety might behave differently in different contexts (e.g., in turnaround situations).

Third, as shown in Figure 9, our results suggest that CEOs with low experience variety (i.e., specialists) ultimately achieve higher levels of strategic change than their counterparts with high experience variety (i.e., generalists). This insight contributes to the nascent human capital literature on the value of generalist versus specialist CEOs (Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007). However, it is beyond the scope of this paper to further study this intriguing difference. Thus, future research could investigate an array of contingencies on the individual-, team-, and firm-level that might enrich our understanding of those factors that explain the different value of specialist versus generalist CEOs.

Finally, while we focused on the *degree* of strategic change (i.e., to establish whether and how far CEO experience variety impacts strategic change), our analysis neglected the *quality* of strategic change (i.e., the corresponding performance implications). Doing so could be fruitful, because researchers have questioned the assumption that strategic change is beneficial per se (Kelly & Amburgey, 1991; Oehmichen et al., 2016; Weng & Lin, 2014). Thus, to continue with this line of enquiry, future studies could link CEO experience variety with the CEO's ability to initiate and implement change initiatives that result in superior performance.

3.5.3 Practical implications and conclusion

Our results are important for practitioners as well. In parallel to an increasing need for strategic change (Kraatz & Zajac, 2001; Nadkarni & Herrmann, 2010), CEO replacements have become a more and more frequent phenomenon (Chen & Hambrick, 2012; Wowak et al., 2011; Zhang, 2008). In addition, the share of new CEOs with diverse experience backgrounds has substantially increased as well. This has been referred to as the "decline of the traditional career path" (Briscoe et al., 2006: 30). At the intersection of these trends, our insights might help boards, executive search consultants, and others involved in CEO selection to choose CEO profiles that support the firm's strategic change agenda.

Overall, this study highlights the importance and complexity of CEO experience variety in the context of strategic change. We therefore hope that our results will spur further research on how certain attributes dispose CEOs towards specific strategic behaviors.

RETHINKING ‘THE MORE THE BETTER’: CEO EXPERIENCE VARIETY AND CEO COMPENSATION

Abstract: CEO experience variety is a key background characteristic of CEOs, impacting the value and compensation of a CEO. While the prevailing ‘the more the better’ view emphasizes the merits of CEO experience variety, we also acknowledge its drawbacks and suggest that the relationship between CEO experience variety and CEO compensation follows an inverted U-shape. Using the complementary arguments of human and social capital theory, we argue that the merits of increasingly varied human and social capital initially enhance a CEO’s value and compensation. After a certain threshold, however, the drawbacks associated with extensive experience variety offset its merits and diminish CEO value and pay. Our analysis of 205 CEO successions provides significant support for our hypotheses. We thus contribute to ongoing efforts to align human capital theory, social capital theory, and the CEO experience variety literature.

Keywords: CEO experience variety; CEO generalism and specialization; CEO compensation; human and social capital theory; upper echelons theory

4.1 Introduction

CEO compensation is a puzzle. On the one hand, it has attracted continuous and extensive attention (e.g., Boyd, 1994; Chen, 2015; Cho & Shen, 2007; Datta & Iskandar-Datta, 2014; Devers, Cannella, Reilly, & Yoder, 2007; Geletkanycz et al., 2001; Henderson & Fredrickson, 1996; Pandher & Currie, 2013). Previous research has focused on both the antecedents and the consequences of CEO compensation (for reviews, see Devers et al., 2007; Finkelstein et al., 2009; Gomez-Mejia & Wiseman, 1997). Indeed, together with executive compensation, CEO compensation is one of the most studied topics in strategic management research (Chen, 2015). This is driven by the role of the CEO, not only as the firm's figurehead (Cannella & Holcomb, 2005), but also as its best paid executive (Pandher & Currie, 2013). On the other hand, the determinants of CEO compensation still remain unclear (Geletkanycz et al., 2001; Gomez-Mejia, 1994).

To understand the determinants CEO compensation, researchers have focused on CEO career backgrounds (e.g., Carpenter et al., 2001; Harris & Helfat, 1997; Kaplan, Klebanov, & Sorensen, 2012; Peng et al., 2015; Wowak et al., 2011; Zajac & Westphal, 1995). Over the past decades, however, CEO career backgrounds have changed significantly. The "decline of the traditional organizational career" (Briscoe et al., 2006: 30) has led to a substantial increase in the proportion of CEOs with broad-generalist career backgrounds (Crossland et al., 2014).

This shift has been reflected in research on the value of generalist CEOs and on the compensation implications of generalism. Acknowledging that broad-generalist experience has become more important for CEOs (Murphy & Zabojnik, 2004), this nascent stream has underscored that generalism not only fosters career advancement (Ferreira & Sah, 2012; Wang & Murnighan, 2013), but also results in higher CEO compensation (Custodio et al., 2013; Wang & Murnighan, 2013). While these studies have provided important insights, several aspects require further consideration.

On the one hand, the extant literature has largely taken a 'the more the better' view (Khanna et al., 2014; Ployhart & Moliterno, 2011). This is surprising, as authors have suggested that abundant levels of generalism are not necessarily valuable. For example, Buyl et al. (2011: 170) suggested that CEOs with broad-generalist career backgrounds could "suffer from the 'jack of all trades but master of none' syndrome," i.e., possessing merely superficial knowledge. Likewise, Sundaramurthy, Pukthuanthong, and Kor (2014: 865) concluded that although "the concept of human and social capital conjures up a positive image leading to the assumption that more is beneficial […], in addition

to these benefits, the costs of such capital also need to be considered." Thus, there is a lack of theoretical exposition towards the detrimental implications of broad-generalist career backgrounds.

On the other hand, studies in this stream have either adopted human capital arguments or social capital arguments to develop their hypotheses. Although these two theoretical foundations are unquestioned, only very limited studies, if any at all, have used both theories in tandem. Therefore, authors have called for a concurrent consideration of human and social capital theory, in order to adequately capture the impact of generalism versus specialization (Georgakakis et al., 2016).

We attempt to address these gaps in two ways: first, by considering both the merits and the drawbacks of increasing levels of CEO experience variety (i.e., generalism); second, by considering the arguments of both human and social capital theory. Specifically, our central argument is that the relationship between CEO experience variety and CEO compensation follows an inverted U-shaped relationship. Initially, increasing levels of CEO experience variety are perceived as beneficial as the merits of more human capital (i.e., better decision-making) and social capital (i.e., access to privileged information and opportunities) take effect. However, after a certain threshold, these merits are outweighed by the drawbacks associated with high levels of CEO experience variety. At this point, CEOs tend to reach information processing and network constraints that exceed the merits of increasing levels of CEO experience variety. Thus, our core premise is that only at its optimum level, CEO experience variety constitutes a managerial resource that is perceived as valuable, thus positively impacting CEO compensation. Furthermore, we argue that CEO compensation partly depends on role complexity (Ciscel & Carroll, 1980; Hambrick, Finkelstein, & Mooney, 2005; Henderson & Fredrickson, 1996).

We tested our hypotheses with data from 205 CEO successions and found significant support for the inverted U-shaped relationship between CEO experience variety and CEO compensation. Our results also suggest that the rewards of CEO experience variety are contingent upon the degree of industry complexity.

We thus contribute to the literature in several ways. First, our results counter the prevalent 'the more the better' view (Khanna et al., 2014; Ployhart & Moliterno, 2011). To the best of our knowledge, this is the first study to empirically test and find potentially negative compensation implications of CEO experience variety. We thus contribute to the nascent literature on CEO experience variety (Buyl et al., 2011; Custodio et al., 2013; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007), suggesting that

CEO experience variety might indeed be a double-edged sword, with both positive and negative implications.

Second, we add to prior research that studied the impact of managerial capital on CEO compensation by drawing either on human capital (e.g., Carpenter et al., 2001; Harris & Helfat, 1997; Mackey et al., 2014; Peng et al., 2015) or on social capital theory (Belliveau et al., 1996; Geletkanycz et al., 2001). Reconciling both theories, our study pays heed to the notion that human and social capital intersect and require simultaneous consideration (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015).

Third, this study also extends the literature on executive job demands (Chen, 2015; Hambrick et al., 2005; Janssen, 2001). Our results indicate that industry complexity significantly influences executive job demands and compensation. This supports Chen (2015), who provided first empirical evidence that job demands impact CEO compensation. In addition, research on job demands has so far largely focused on firm-level drivers such as company size (Ciscel & Carroll, 1980), product diversification (Henderson & Fredrickson, 1996), the level of internationalization (Carpenter et al., 2001), or turnarounds and acquisitions (Chen, 2015; Custodio et al., 2013). However, studies of industry-level drivers of job demands, such as industry complexity, have been noticeably absent.

Finally, our results not only point towards a more nuanced and complex understanding of CEO experience variety, but also have relevant practical implications. The above-mentioned increase in broad-generalist career backgrounds (Briscoe et al., 2006; Crossland et al., 2014) is accompanied by a general increase in executive compensation (Cremers & Grinstein, 2014; Murphy & Zabojnik, 2007). Therefore, firms could profit from a better understanding of the drivers of CEO compensation, in order to avoid inadequate compensation packages. From a manager's point of view, moreover, executives aspiring to become CEOs should consider that generalism is not necessary beneficial, as extensive CEO experience variety may result in lower compensation.

4.2 Theory development

4.2.1 Literature review

4.2.1.1 Main research streams

In the context of managerial capital, two distinct research streams have emerged in the literature on the determinants of executive compensation. The first one is the *rent creation* stream. This stream considers the skills and knowledge of executives as the managerial capital that enables firms to generate rents (Castanias & Helfat, 1991, 2001). In this view, CEOs can contribute to the firm's rent generation through valuable know-how (Pandher & Currie, 2013). Correspondingly, CEO compensation is seen as a tool to compensate for executive capital, to incentivize CEOs, and to align the interests of owners and CEOs (Peng et al., 2015).

The second stream focuses on *rent extraction*. This stream argues that executives use their know-how as a bargaining chip to appropriate a share of the firm's rents (Bebchuk, Fried, & Walker, 2002; Pandher & Currie, 2013; Wade, O'Reilly, & Pollock, 2006).[70] Thus, CEO compensation is influenced by the CEO's power and ability to offset the governance efforts designed to restrain his or her compensation (Combs & Skill, 2003; Finkelstein, 1992; Peng et al., 2015; Van Essen, Otten, & Carberry, 2015; Westphal & Zajac, 1995).

We focus on the former stream (i.e., *rent creation*), as our hypotheses are based on human and social capital theory. Nonetheless, we discuss the implications of the latter stream (i.e., *rent extraction*) in the conclusion.

4.2.1.2 CEO human and social capital and the value of a CEO

Much of the established literature on CEO compensation draws on two theories to explain the value of managerial resources: human capital and social capital theory. Human capital theory focuses on the economic value of an individual's skills, knowledge, and experiences (Becker, 1964; Ployhart & Moliterno, 2011). Due to different educational tracks and career paths, individual human capital differs: Higher levels of human capital are associated with higher productivity, and thus with higher economic value for the firm (Coff, 1997; Hitt et al., 2001). In contrast, social capital theory refers to the value derived from an individual's social relationships (Burt, 1992; Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998). The value of social ties is driven

[70] Relating the *rent creation* and *rent extraction* streams, Carpenter et al. (2001: 493) argued that "when a firm's ability to generate rents depends on intangible resources embedded in human capital, those who control such resources may be able to appropriate a share of the rents as well."

primarily by the privileged access to information and by the opportunities arising from human interactions (Burt, 1997a; Hillman & Dalziel, 2003; Kang & Snell, 2009; Oldroyd & Morris, 2012).

Both human and social capital theory share the central tenet that unique managerial resources impact not only an individual's economic value, but also his or her compensation. On the one hand, assuming a functioning labor market, human capital is expected to determine CEO compensation, as pay is driven by unique personal credentials (Chen, 2015; Combs & Skill, 2003). As a result of the board's evaluation process (Peng et al., 2015), CEO compensation is thus considered to reflect a CEO's human capital (Carpenter & Wade, 2002; Cho & Shen, 2007; Fulmer, 2009).[71] On the other hand, social capital is also assumed to be reflected in executive pay (Geletkanycz et al., 2001). Indeed, "a CEO's standing within a social network is a core part of the value the she or her adds to the organization (Leana & Van Buren, 1999)" (Cao et al., 2006: 565). Correspondingly, research has demonstrated the importance of social capital (Collins & Clark, 2003; Geletkanycz & Hambrick, 1997; Rodan & Galunic, 2004; Seibert et al., 2001), as well as its compensation implications for CEOs (Belliveau et al., 1996; Brown, Gao, Lee, & Stathopoulos, 2012).

Finally, several authors have argued that human and social capital should be considered in tandem, in order to adequately capture the value of executives and to reflect the difficulty of disentangling these forms of capital, conceptually and empirically (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015). For example, previous studies have argued that human capital cannot be leveraged without the opportunities created by social capital (Burt, 1997a, 1997b). Similarly, the information from social networks is an important source for building human capital (Coleman, 1988; Nahapiet & Ghoshal, 1998).

4.2.1.3 CEO experience variety as an indicator of human and social capital

CEO experience variety, defined as a continuum from specialization to generalism, is an indicator of both human and social capital. This definition of CEO experience variety captures not only the whole array of a CEO's distinct professional experiences (Crossland et al., 2014), but also the continuous and complex nature of a

[71] According to Fulmer (2009), CEO credentials not only represent past experiences, but also serve as signals for future performance. Spence (1973: 357) argued that "the employer cannot directly observe the marginal product prior to hiring. What he does observe is a plethora of personal data in the form of observable characteristics and attributes of the individual, and it is these that ultimately must determine his assessment of the lottery he is buying."

CEO's career background (Bunderson & Sutcliffe, 2002; Cannella et al., 2008; Finkelstein et al., 2009).

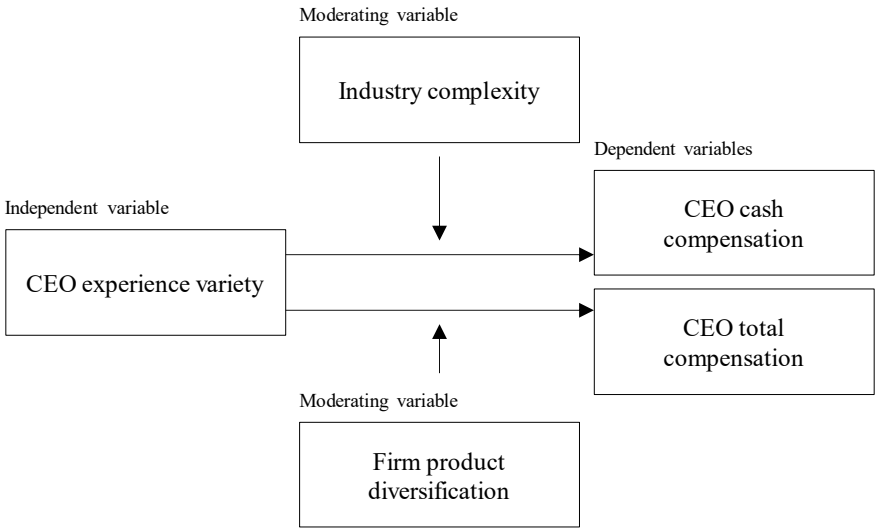
Clearly, the variety in a CEO's professional career is reflected in the breadth of an individual's skills, knowledge, and experiences, and thus in his or her human capital (Becker, 1964; Ployhart & Moliterno, 2011). Similarly, CEO experience variety is an indicator of social capital, because CEOs with broad-generalist career backgrounds are likely to possess diverse social and professional networks (Campion, Cheraskin, & Stevens, 1994; Crossland et al., 2014).

These arguments have received support from recent studies on the impact of CEO experience variety on CEO compensation. Custodio et al. (2013) found a pay premium for generalist CEOs.[72] Similarly, Brockman, Lee, and Salas (2016) found not only a pay premium for generalists, but also that this is driven by increasing demand for generalist skills. This confirmed Murphy and Zabojnik (2004), whose early model suggested that generalists receive higher pay because general managerial skills are more needed.

4.2.2 Research framework and development of hypotheses

We have seen that CEO experience variety is a valid indicator of a CEO's human and social capital, thus defining his or her value and compensation. Figure 11 shows how we integrate these arguments into our research framework.

Figure 11: Research framework



Source: Authors

[72] These results have been supported by Datta and Iskandar-Datta (2014), who found a significant pay premium for generalist CFOs (although using education as a proxy for CEO experience variety, and not work experience).

Although we test all three forms of CEO compensation—cash compensation, long-term compensation, and total compensation (Cho & Shen, 2007; Henderson & Fredrickson, 1996; Ridge et al., 2015)—we focus our theory development and result interpretation on cash and total compensation. On the one hand, previous authors have theoretically argued that "because experience is relatively permanent, stable, and cumulative, it is most likely to influence pay via the permanent, stable, and cumulative dimension of pay (i.e., base salary)" (Fulmer, 2009: 668). On the other hand, our empirical data indicates that cash compensation is the main determinant of total compensation. Indeed, in our full sample, CEO cash compensation makes up 76% of CEO total compensation (with a median of 80%).

In what follows, we explain the mechanisms through which human and social capital determine the relationship between CEO experience variety and CEO compensation.

4.2.2.1 The merits of human and social capital associated with increasing CEO experience variety

Traditionally, human and social capital research has underscored the merits of increasing CEO experience variety. Below, we discuss the main arguments of both theories and summarize the expected compensation implications for CEOs.

Human capital. Increasing CEO experience variety means increasing generalism. Previous research has identified three main benefits of generalism. First, generalists know a wider range of options. CEO career variety provides a broad cognitive and experiential stock on which CEOs can draw (McCall et al., 1988; Tesluk & Jacobs, 1998). This enhances their ability to effectively process diverse information at the time of strategic decision-making (Crossland et al., 2014).[73]

Second, generalists perceive a wider range of options. Experience variety acquired through career mobility across different firms and industries is expected to impart an increasing range of paradigms when dealing with strategic complexity (Crossland & Hambrick, 2007). Managers with diverse career backgrounds and broader knowledge are therefore seen to recognize and to evaluate a wider array of strategic options (Datta & Rajagopalan, 1998; Karaevli & Hall, 2006).[74]

[73] The information processing advantages of broad repertoires have been substantiated by several studies. For example, Dragoni et al. (2011) found that higher levels of variety in managerial experience pertain to the more multifaceted diagnosis and solution of business problems. Similarly, Hitt and Tyler (1991) provided evidence that executives with varied experience use more criteria to assess strategic situations.

[74] Similarly, Crossland et al. (2014) argued that such CEOs will perceive a larger number of options as feasible, compared to their narrow-specialized counterparts.

Third, generalists possess greater flexibility to assess options. They are more flexible in analyzing unfamiliar information and in deriving novel insights (Dane, 2010). High levels of experience variety provide individuals not only with a broader repertoire of knowledge to individuals, but also with greater aptitude for generating abstract principles from specific situations (Dalziel et al., 2011). Indeed, previous research shows that experience variety is a key prerequisite for developing general principles, as it enables CEOs to 'strategically conceptualize' and transfer existing knowledge to new situations (Karaevli & Hall, 2006; Neale & Northcraft, 1990). Norburn (1989) regarded "the CEOs' exposures to a wider variety of situations [...] as particularly critical because they served as early training for complex multi-dimensional decision-making" (Karaevli & Hall, 2006: 364). In a similar vein, previous research has shown that career experience exceeding the current firm's focal industry reduces the CEO's psychological commitment to the status quo (Hambrick et al., 1993).

Taken together, increasing levels of CEO experience variety have merits from a human capital point of view. These merits relate to the CEO's ability to process information and to take adequate strategic decisions (Crossland et al., 2014; Dane, 2010; Karaevli & Hall, 2006). This ability is a prerequisite for successful management (Finkelstein et al., 2009; Henderson & Fredrickson, 1996). Therefore, these human capital merits increase CEO value (Mackey et al., 2014), and hence CEO compensation (Custodio et al., 2013).

Social capital. As with human capital, the extant social capital literature stresses the merits of increasing CEO experience variety from various firms and industries. Such experiences help to build valuable social networks, which has been associated with three main benefits. First, generalists have greater access to information. More relationships with other individuals from various firms and industries increases the number of potentially available sources of information (Baker, 1990).

Second, generalists have greater access to opportunities. The value of larger social networks is also driven by the corresponding access to opportunities (Burt, 1997a; Oldroyd & Morris, 2012).[75] Indeed, Hu and Liu (2015) showed that CEOs with more diverse career backgrounds seem to have expanded access to valuable opportunities by exploiting their diverse personal networks.

Third, generalists with inter-firm and inter-industry experience have access to better information. On the one hand, broad networks might not only increase the number

[75] More specifically, the value of social capital has been located in the 'goodwill' available to individuals or groups (Adler, 2001; Adler & Kwon, 2002). Such goodwill determines the flow of information, influence, and solidarity among members of a network (Adler & Kwon, 2002; Cao et al., 2006; Coleman, 1988; Nahapiet & Ghoshal, 1998).

of information sources, but also the relevance, quality, and timeliness of information (Adler & Kwon, 2002). On the other hand, research indicates that while intra-industry ties (resulting from specialization within an industry) stimulate conformity, inter-industry ties (resulting from generalism) promote new thinking and change (Geletkanycz & Hambrick, 1997; Sundaramurthy et al., 2014). Overall, previous studies have shown that access to large and diverse information networks benefits strategic decisions, such as the selection of M&A targets (Beckman & Haunschild, 2002).

On balance, social capital theory suggests that increasing CEO experience variety increases CEO value, as the corresponding social connections constitute a valuable organizational resource (Geletkanycz et al., 2001; Granovetter, 1985).

In sum, the arguments of human and social capital theory suggest that increasing levels of CEO experience variety have positive implications, as they strengthen access to information, the stock of information, and the ability to process information. Thus, greater CEO experience variety is expected to result in higher CEO compensation.

4.2.2.2 The drawbacks of human and social capital associated with increasing CEO experience variety

Despite the above merits, increasing CEO experience variety has also been associated with drawbacks. Below, we discuss the main arguments of both theories, prior to recapitulating the expected implications for CEO compensation.

Human capital. Recent studies have suggested that CEO experience variety might also have drawbacks. Buyl et al. (2011: 170) noted that such CEOs could "suffer from the 'jack of all trades but master of none' syndrome," i.e., that they merely possess superficial knowledge. Similarly, Crossland et al. (2014: 656) emphasized that "CEO career variety is not necessarily meritorious or beneficial," because "the cognitive outcome may be superficial breadth without mastery of anything in particular." Research offers two explanations for these drawbacks.

First, such executives might not have enough time to sufficiently comprehend the industries and firms they have worked in. This is due to limited learning abilities and the inherent conflict between the number of fields that can be mastered and the depth of knowledge in each of them (Anderson, 2012). Moreover, as a 'common body of knowledge' exists within each industry (Hambrick, 1982), a certain tenure is needed to develop industry-specific competency (Henderson et al., 2006). The time available to build human capital is further shortened by 'adjustment costs'. Executives switching firms go through an 'adjustment period', during which existing human capital is tailored

to the new environment (Hatch & Dyer, 2004; Mahoney, 1995; Mahoney & Pandian, 1992; Teece et al., 1997). During adjustment, the accumulation of new human capital is reduced while the executive focuses on adapting and integrating (Denis, Langley, & Pineault, 2000) rather than on swiftly acquiring new knowledge.[76] Net progress is therefore minimal: when constantly swimming upstream, potential progress is limited (Henderson et al., 2006).

Second, frequent career moves are expected to increase uncertainty, which, in turn, increases the need to process information (O'Reilly, 1980). However, an individual's ability to effectively process information is limited and declines once cognitive limits are reached (O'Reilly, 1980; Tushman & Nadler, 1978). Previous research has shown that in such situations, not only an individual's decision-making ability declines, but also his or her performance (Boone, Van Olffen, & Van Witteloostuijn, 2005; Carpenter & Fredrickson, 2001; Wadhwa & Kotha, 2006).[77] Moreover, executives might attempt to offset these limits with counterproductive cognitive tactics. Among these are 'simplification processes' (Schwenk, 1984; Staw, Sandelands, & Dutton, 1981) and the temptation to react to 'low validity cues' (Manis, Fichman, & Platt, 1978; O'Reilly, 1980). These tactics might lead to unfavorable results, as they reduce decision-making quality and accuracy (Manis et al., 1978).

Taken together, these arguments suggest that highly generalist CEOs spend too little time within each firm or industry. This limits their ability to develop valuable human capital, to process information, and to successfully contribute to firm performance (Buyl et al., 2011).

Social capital. Despite the undoubted value of social networks, social capital is also associated with drawbacks under certain conditions (Adler & Kwon, 2002; Oldroyd & Morris, 2012). On the one hand, studies have shown the limitations of social capital in the form of structural constraints, which make personal network ties less useful than they could be otherwise (Adler & Kwon, 2002; Oldroyd & Morris, 2012). Specifically, time and effort (Burt, 1992) are needed to maintain network ties as well as the overall network structure (Reagans & Zuckerman, 2001, 2008). In the case of high-

[76] In a similar vein, Hamori (2010) suggested that too frequent career moves are not valued by employers, as they question the respective executive's ability to integrate with the previous firms and to demonstrate his or her value.

[77] A wide range of studies have provided support for this effect. Meier (1963) found that overwhelmed employees completely stop processing information until they have caught up with their processing tasks. Schick, Gordon, and Haka (1990) showed that too much information results in confusion, an inability to set priorities, and the difficulty of recalling information. Similarly, Malhotra (1984) related too much information to confusion, cognitive strain, and dysfunctional consequences.

level CEO experience variety, these maintenance costs tend to outweigh the benefits of a CEO's social network.

On the other hand, researchers have highlighted that cognitive constraints associated with high levels of social capital might limit the value of an individual's ability to profit from large social networks (Oldroyd & Morris, 2012). Such constraints include limited control (Buskens & Van De Rijt, 2008; Ryall & Sorenson, 2007) and overembeddedness (Gargiulo & Benassi, 2000; Uzzi, 1997). Moreover, previous research has distinguished between two types of network ties: strong versus weak (Granovetter, 1983). Although both types are considered valuable (Georgakakis et al., 2016), generalists might be unable to develop strong ties, because this would require long-term interactions within the same environment (James, 2000). However, such strong ties are considered a particularly valuable and trustworthy source of information (Levin & Cross, 2004).

In sum, the arguments of human and social capital theory suggest that increasing levels of CEO experience variety have negative implications, due to time constraints, structural constraints, and cognitive constraints. Thus, greater CEO experience variety is expected to result in lower CEO compensation.

4.2.2.3 An integrated view of CEO experience variety and its impact on CEO compensation

We have described the merits and the drawbacks of CEO experience variety posited by the extant human capital and social capital literature. Whereas previous research has treated the arguments for and against CEO experience variety as opposing and separate concepts, we argue that they are complementary and require simultaneous consideration.

Our reasoning rests on the fundamental notion that the relationship between CEO experience variety and CEO compensation is driven by two concurrent multiplicative mechanisms. On the one hand, increasing CEO experience variety imparts the benefits associated with higher levels of human and social capital. Increasing access to information, a greater stock of information, and the ability to process information are expected to enhance CEO value (Finkelstein et al., 2009; Geletkanycz et al., 2001; Granovetter, 1985; Henderson & Fredrickson, 1996; Mackey et al., 2014). On the other hand, greater CEO experience variety is also associated with the drawbacks of increasing levels of human and social capital. Time constraints, structural constraints, and cognitive constraints diminish CEO value (Buyl et al., 2011; Crossland et al., 2014).

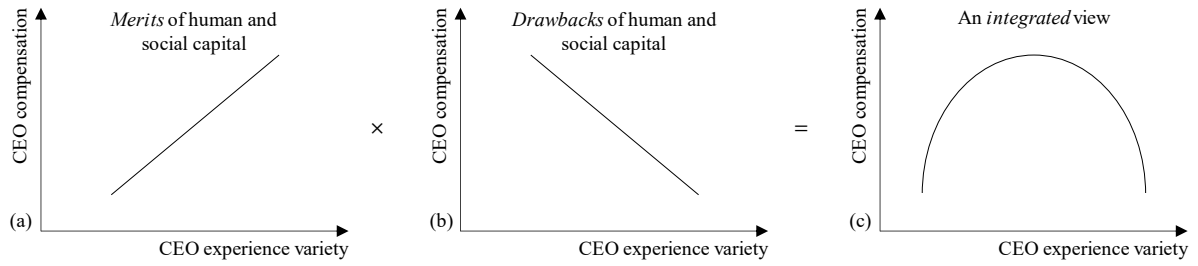
These two mechanisms, one positive, the other negative, are expected to increase CEO value and compensation to a certain level, after which they decrease. Put differently, we expect an optimum, after which the drawbacks offset the merits. Hence, we posit:

Hypothesis 1(a). There is an inverted U-shaped relationship between CEO experience variety and CEO cash compensation.

Hypothesis 1(b). There is an inverted U-shaped relationship between CEO experience variety and CEO total compensation.

Figure 12(a) illustrates the expected positive relationship between CEO experience variety and CEO compensation, based on the merits of increasing human and social capital. Figure 12(b) depicts the opposing negative predictions, based on the drawbacks of human and social capital. Figure 12(c) then shows the multiplicative combination of both views and the corresponding predicted inverted U-shaped relationship between CEO experience variety and CEO compensation.

Figure 12: Expected relationship between CEO experience variety and CEO compensation



Source: Authors

Next, we argue that contingencies may shape the relationship between CEO experience variety and CEO compensation.

4.2.2.4 Moderating effects

CEOs are compensated for the level of complexity that they must manage (Carpenter et al., 2001; Henderson & Fredrickson, 1996; Sanders & Carpenter, 1998). Indeed, previous research has suggested that complexity and the corresponding information processing requirements have significant implications for executive compensation (Finkelstein & Hambrick, 1996; Gomez-Mejia & Wiseman, 1997; Gomez-Mejia, 1994; Sanders & Carpenter, 1998).

Partly, prior research has taken a *demand-side perspective*, drawing on the notion of executive job demands (Hambrick, 2007; Hambrick et al., 2005). According to this

perspective, executives have to cope with different levels of environmental complexity, which is reflected in different levels of compensation (Ciscel & Carroll, 1980; Henderson & Fredrickson, 1996). Authors taking a *supply-side perspective* have argued that the ability to process complex information is rare and valuable (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Sanders & Carpenter, 1998). In this perspective, most executives lack the skills required to cope with the volume and the diversity of information associated with highly complex contingencies (Govindarajan, 1989; Gupta, 1988; Gupta & Govindarajan, 1984). This is considered to be problematic because "CEOs play a critical role as information processors" (Henderson & Fredrickson, 1996: 576) and because the ability to process information is critical for achieving high firm performance (Eisenhardt, 1989; Haleblian & Finkelstein, 1993; Prahalad & Bettis, 1986). Consequently, firms with higher information processing requirements offer higher compensation packages to CEOs, in an attempt to attract the most capable candidates (Pfeffer & Davis-Blake, 1987).

Taken together, these perspectives predict that higher information processing demands result in higher CEO pay levels. Correspondingly, we expect that the relationship between CEO experience variety and CEO compensation is moderated by two key contextual factors that impact the information processing demands for CEOs: environmental complexity (i.e., industry complexity) and organizational complexity (i.e., firm product diversification).

Industry complexity. On the one hand, the firm's environmental complexity impacts the information processing demands imposed on executives (Hambrick et al., 2005). Previous research has identified industry heterogeneity as a main determinant of industry complexity (Chen, Zeng, Lin, & Ma, 2015; Dess & Beard, 1984; Keats & Hitt, 1988; Palmer & Wiseman, 1999). Generally, industry heterogeneity impacts complexity in two interrelated ways: first, through the number of stakeholders, and second, through the number of necessary decisions. First, whereas some environments are homogenous and comparably simple, others include multiple stakeholders and contingencies (Hambrick et al., 2005).[78] Second, environments differ in the number of decisions they require. While some industries demand a constant stream of decisions (e.g., pricing or promotions), others leave fewer choices to executives, due to constraints or missing ambiguity (Hambrick et al., 2005). Moreover, more complex

[78] Hambrick et al. (2005: 476) provided the following example: "An industry composed of many direct and indirect competitors, in which the product is sold through a large number of channels to heterogeneous customers and where technology changes rapidly, is complex and poses considerable demands on the executive, compared to a more simple and homogeneous environment (Eisenhardt, 1989)."

environments are associated with higher uncertainty—as more complex task environments result in greater task uncertainty (Lawrence & Lorsch, 1967; Pfeffer & Salancik, 1978). This makes such environments more difficult to understand and to monitor (Anderson & Tushman, 2001). Overall, the information processing demands on executives increase as industry heterogeneity increases (Campbell, 1988). Therefore, we expect that industry complexity, as a main driver of a CEO's information processing demands, increases CEO compensation. Accordingly, we posit:

Hypothesis 2(a). Industry complexity moderates the inverted U-shaped relationship between CEO experience variety and CEO cash compensation. Under conditions of high industry complexity, the inverted U-shaped curve will shift upwards.

Hypothesis 2(b). Industry complexity moderates the inverted U-shaped relationship between CEO experience variety and CEO total compensation. Under conditions of high industry complexity, the inverted U-shaped curve will shift upwards.

Firm product diversification. On the other hand, previous research suggests that the degree of firm diversification profoundly impacts the information processing demands on CEOs (Chandler, 1962; Hambrick et al., 2005). Informational requirements increase when firm interdependencies "become more complex [and] coordination and mutual problem demands increase" (Tushman & Nadler, 1978: 616). This is driven by two factors. First, greater firm diversification entails a higher information quantity (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986). This is due to the sheer number of businesses (Kotter, 1982). Second, as firm diversification increases, so does information complexity (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986). This is due to progressively heterogeneous strategic decisions (Baysinger & Hoskisson, 1990). Researchers have argued that this holds true for both related and unrelated diversification (Henderson & Fredrickson, 1996; Khanna et al., 2014). In case of the former, information processing demands increase due to the need to understand different businesses and to manage their interdependencies (Hill & Hoskisson, 1987; Jones & Hill, 1988; Kerr, 1985; Michel & Hambrick, 1992). In case of the latter, information processing demands arise from the necessity to maintain efficient internal capital markets (Henderson & Fredrickson, 1996; Jones & Hill, 1988).Therefore, we suggest:

Hypothesis 3(a). Firm product diversification moderates the inverted U-shaped relationship between CEO experience variety and CEO cash compensation. Under conditions of high firm product diversification, the inverted U-shaped curve will shift upwards.

Hypothesis 3(b). Firm product diversification moderates the inverted U-shaped relationship between CEO experience variety and CEO total compensation. Under conditions of high firm product diversification, the inverted U-shaped curve will shift upwards.

4.3 Methods

4.3.1 Sample and data collection

Our sample is based on large listed firms headquartered in four European countries (Germany, the Netherlands, Switzerland, and the United Kingdom) as of December 31, 2007. To select our sample, we filtered all listed firms in these countries by market capitalization, and the largest 100 were selected given that they fulfilled the following criteria: (a) they were not small and medium-sized enterprises based on the European Union's (2016) definition (i.e., up to 250 employees, €50 million annual revenue, and €43 million total assets); (b) they were not pure holding entities or investment vehicles (i.e., companies with a primary two-digit SIC code of 67); (c) they were neither acquired by another firm nor nationalized over the study period (2007–2013); (d) they were not subsidiaries of another firm; (e) their operational headquarters were not outside the selected countries; (f) they were not family-controlled companies.[79]

This resulted in a final sample of 330 companies. We then identified all CEO successions (excluding interim CEOs, Co-CEOs, and CEOs with less than a one-year tenure) at these companies between January 1, 2007 and December 31, 2013. The total number of CEO successions was 305. Similar to the studies of Crossland et al. (2014) and Chen (2015), we focused on newly appointed CEOs, because the CEO succession context allows an undistorted study of the consequences of CEO experience variety.[80]

We hand-collected executive data primarily from the companies' annual reports, websites, and press releases (Harris & Helfat, 1997; Zhang & Rajagopalan, 2010). For

[79] A firm was categorized as family-controlled if a family was both a majority shareholder (i.e., voting rights above 50%) (Miller et al., 2013) and had operational control of the company (i.e., a family member was either the acting CEO or Chairman of the Board) (Minichilli et al., 2014).

[80] Past research has underlined that CEO tenure affects strategic decision-making (Hambrick & Fukutomi, 1991; Miller, 1991; Shen & Cannella, 2002a). In contrast, newly appointed CEOs "are about to take up the job and thus have no serious organizational entrenchment issues" (Chen, 2015: 1896). This allows enhancing within-sample comparability with regard to the CEO effect on firm outcomes (Crossland et al., 2014).

missing information, we used biographical databases (e.g., LexisNexis, Who is Who in Europe, Factiva, Munzinger Online), or triangulated web sources (e.g., LinkedIn or newspaper articles). Similar to previous strategic leadership studies using European samples, TMT members were identified by the self-reported definition included in annual reports (Boone et al., 2004a; Nielsen & Nielsen, 2013). Firm and industry data were retrieved from the Bloomberg and ThomsonONE databases.

Overall, we achieved a data completion rate of 67%, meaning that we had complete data for 205 out of 305 CEO successions.[81] To ensure that our final dataset of 205 CEO appointments did not differ from the 100 CEO successions with incomplete data, we ran several Kolmogorov-Smirnov tests in STATA 15, testing CEO compensation[82] and industry complexity. Results were non-significant for all tests, with combined p-values above 0.20 for all variables.

4.3.2 Measures

4.3.2.1 Dependent variable

CEO compensation. We tested our hypotheses with three types of CEO compensation: cash compensation, long-term compensation, and total compensation (Cho & Shen, 2007; Custodio et al., 2013; Henderson & Fredrickson, 1996; Ridge et al., 2015). Cash compensation was calculated as all remuneration in the form of salary or cash bonuses.[83] Long-term compensation was based on stock options, incentive plans, pension funds, etc. Finally, total compensation is the sum of cash compensation and long-term compensation (Henderson & Fredrickson, 1996).

We measured all types of CEO compensation at the first complete fiscal year of the new CEO (Datta & Iskandar-Datta, 2014). Choosing the first complete fiscal year after the year of succession solved the lack of comparability of first-year compensation figures, due to companies appointing CEOs at different points during the year (Harris & Helfat, 1997).[84] Following Henderson and Fredrickson (1996), we used the natural logarithm of the compensation figures, in order to reduce heteroscedasticity.

[81] This completion rate is determined primarily by the difficulty of finding information on a CEO's entire career history and on all TMT members. Nevertheless, the completion rate is comparable to similar studies building on data concerning executive's entire career backgrounds (Crossland et al., 2014; Rodenbach & Brettel, 2012).
[82] We tested CEO cash compensation, CEO long-term compensation, and CEO total compensation.
[83] In addition, cash compensation includes payments for the use of vehicles, insurance, club memberships, etc.
[84] On the one hand, an external successor's compensation for the year of succession is driven by the number of months the new CEO has held the new position during that year. In addition, the first year's compensation tends to include payment for retirement benefits or deferred compensation that the CEO could lose when leaving the old firm. On the other hand, for internal successors, year-of-succession compensation tends to include payment for the previous role within the firm (Harris & Helfat, 1997). Therefore, focusing on the first complete fiscal year of a new CEO enabled us to only include payments that could be clearly allocated to the new CEO's position. In addition, since new CEOs often

Compensation data were retrieved from Bloomberg, and missing values were hand-collected from the companies' annual reports. We converted currencies other than € using year-end exchange rates provided by the European Central Bank (2016).

4.3.2.2 Independent and moderator variables

CEO experience variety. This variable represents a continuum of the degree to which a new CEO has acquired diverse career experience from different firms and industries. It is a composite measure and calculated as the sum of a CEO's firm and industry experience diversity. First, firm and industry experience diversity were calculated using Blau's (1977) index formula, expressed as $1-\sum {p_i}^2$, where p_i is the exact proportion of a CEO's career (in years) spent in a firm i or industry i (Bunderson & Sutcliffe, 2002). Second, we summed firm and industry experience diversity to receive an overall measure of CEO experience variety (Crossland et al., 2014; Zajac & Westphal, 1996).[85] Following the recommendations of Haans et al. (2016), our independent variable was neither mean-centered nor standardized, as both transformations are unnecessary from a mathematical point of view and tend to confuse result interpretation.[86] High scores indicate generalism (i.e., experience breadth from various firms and industries), while low scores indicate career specialization (i.e., experience depth).

Our conceptualization of CEO experience variety allows a clear focus on the strategic human capital required at the helm of the organization (Datta & Iskandar-Datta, 2014; Finkelstein et al., 2009). Based on the established typology in the managerial career literature (Karaevli & Hall, 2006), we distinguish between 'institutional specialization' (i.e., firm and industry experience) and 'functional specialization' (i.e., experience in sales, finance, engineering, etc.) (Smith & White, 1987; White et al., 1994). The first type represents the *strategic, conceptual experience* needed to successfully fulfill the CEO's strategic responsibility (Bragaw & Misangyi, 2015; Hambrick & Quigley, 2014; Katz, 1974; Zajac, 1990). The second represents the *operational, technical knowledge* required by functional heads within the TMT (e.g.,

receive initial contracts with guaranteed salaries for two or more years (Harris & Helfat, 1997), our approach captured the initially negotiated compensation.

[85] As the elements had similar means (0.47 for firm experience and 0.36 for industry experience), we took the simple sum to calculate our aggregate measure of experience variety (Crossland et al., 2014).

[86] On the one hand, "the results obtained with centered data and raw data are mathematically equivalent and mean-centering does not increase the power to detect quadratic or interaction effects." On the other, "standardization does very much the same except that all coefficients and standard errors, not just those of X as in the case of mean-centering, will change predictably and systematically" (Haans et al., 2016: 1184).

the CFO).[87] Similarly, previous CEO research has emphasized the importance of 'general managerial skills' based on firm and industry experience (Custodio et al., 2013). It has also underlined the relevance of conceptual skills, which are transferable across firms and industries (Castanias & Helfat, 1991, 2001; Katz, 1974; Kotter, 1982).

Industry complexity. We calculated the focal firm's industry complexity as an inverse measure of industry concentration (Chen et al., 2015; Keats & Hitt, 1988; Palmer & Wiseman, 1999). This approach was based on the notion that concentrated industries are more homogenous and therefore less complex. Following previous research (Anderson & Tushman, 2001; Dess & Beard, 1984), industry complexity was operationalized using the Gibbs-Martin (1962) industry concentration ratio. This ratio—in its inversed form—was calculated as $1 - [\sum x^2/(\sum x)^2]$, where x was the market share of all companies from the same industry within the sample. Higher values indicate higher complexity (i.e., lower concentration).[88]

Following the extant literature, firm characteristics were measured at the year prior to the CEO succession, in order to circumvent potential endogeneity (Datta & Iskandar-Datta, 2014). This also applies to the other firm-level control variables.

Firm product diversification. This measure was calculated using Palepu's (1985) entropy measure for total diversification, expressed as $\sum_{i=1}^{N} P_i \ln(1/P_i)$, with P_i being the share of the ith segment of the firms total sales in the year of succession.[89] Low scores indicate low diversification, whereas high scores indicate high diversification. We used Palepu's entropy measure as it is an established measure of a firm's business portfolio diversification and reflects the relevance, relatedness, and number of the company's business units (e.g., Geletkanycz et al., 2001; Hambrick & Cannella, 2004; Menz & Scheef, 2014; Ridge et al., 2015; Westphal & Fredrickson, 2001).

[87] Previous literature has based the distinction between strategic and operational experience on the argument that conceptual skills are particularly important for CEOs, who mainly need to scan and interpret complex environments (Daft & Weick, 1984; Garg et al., 2003), as well as analyze and decide strategic issues (Karaevli & Hall, 2006; Katz, 1974). According to Katz (1974: 96), "at the top level of an organization, conceptual skill becomes the most important skill of all for successful administration. A chief executive may lack technical or human skills and still be effective if he has subordinates who have strong abilities in these directions. But if his conceptual skill is weak, the success of the whole organization is jeopardized."

[88] As a robustness check, we used the inversed Herfindahl-Hirschmann index as a measure of industry complexity. The Herfindahl-Hirschmann index is calculated as the sum of the squared market shares of each firm within the same industry (United States Department of Justice, 2016). The Herfindahl-Hirschmann index ranges from 0 to 10,000, with higher values indicating higher concentration. For example, in a monopoly with only one firm, that firm would have a market share of 100% and the Herfindahl-Hirschmann index would be 10,000. Since high concentration indicates low complexity, the Herfindahl-Hirschmann index needs to be inversed to obtain a measure of industry complexity. Compared to our model with the Gibbs-Martin (1962) industry concentration ratio, results were identical both in terms of correlations and of significance levels. We ran all robustness checks for both CEO cash compensation and CEO total compensation. Their results are available from the authors upon request.

[89] This means that diversification is calculated with a weighted average of the shares of each segment, with the weight being the logarithm of the inverse of its share.

4.3.2.3 Control variables

CEO MBA. To account for general CEO education, we controlled for CEO MBA, measured as a dummy variable taking the value of 1 for CEOs holding an MBA degree and 0 otherwise (Datta & Iskandar-Datta, 2014; Murphy & Zabojnik, 2007). MBAs have not only been used as valid indicators of generalist human capital (Ferreira & Sah, 2012; Georgakakis et al., 2016; Murphy & Zabojnik, 2004), but have also been shown to result in pay premiums for executives (Datta & Iskandar-Datta, 2014).[90]

CEO age. We included CEO age to control for the effects of a CEO's human capital acquired throughout his or her life. Naturally, older CEOs are more likely to acquire (diverse) experience. Correspondingly, prior research has shown that CEO age might impact CEO compensation (Custodio et al., 2013; Harris & Helfat, 1997). This measure was operationalized as the number of years since the CEO's birth, until and including the year of succession (Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010).

CEO functional diversity. This measure was calculated using Blau's (1977) index formula, expressed as $1 - \sum {p_i}^2$, where p_i is the relative proportion of a CEO's career spent in a function i (Bunderson & Sutcliffe, 2002). Similar to prior research, we coded a CEO's functional experience using the following ten categories: engineering, production, finance, research and development, marketing and sales, business administration, legal affairs, human resources, strategic development, others (Cannella et al., 2008). We controlled for CEO functional diversity because it is a frequently studied aspect of executives' career backgrounds (Cannella et al., 2008; Carpenter et al., 2004; Crossland et al., 2014; Finkelstein et al., 2009).

CEO outside succession origin. As a dichotomous variable, CEO outside succession origin takes the value of 1 for outsiders, and the value of 0 for insiders. In line with previous studies, outsiders were defined as CEOs with firm tenures of two years or less (Hambrick & Fukutomi, 1991; Zhang & Rajagopalan, 2004). Previous studies have shown that succession origin impacts CEO compensation. In particular, external CEO successors tend to receive higher remuneration as a compensation for the opportunity costs and risks associated with changing firms (Harris & Helfat, 1997; Shen & Cannella, 2002b; Zajac, 1990; Zhang, 2008).

CEO experience in same industry. As another measure of CEO background experience, this measure is a dummy variable, taking the value of 1 for CEOs who had

[90] As a robustness check, we also tested the hypotheses using CEO prestigious education. This was operationalized as a dummy variable taking the value of 1 for CEOs holding an MBA or a Ph.D. degree, and 0 otherwise. Such higher degrees might increase the CEO's negotiation power in compensation discussions. The results were identical in terms of direction and significance.

one or more years of prior work experience in the same industry as the respective firm, and 0 otherwise. Previous research has controlled for related work experience to reflect a leader's human capital (Chung & Luo, 2013; Simsek, 2007). Furthermore, authors have suggested that prior industry experience might impact the value that a CEO brings to the firm (Datta & Rajagopalan, 1998; Shen & Cannella, 2002a).

CEO gender. This control takes the value of 1 for female CEOs and the value of 0 for male CEOs. According to Pent et al. (2015), gender pay gaps might prevail due to gender stereotypes on leadership (Kulich, Trojanowski, Ryan, Alexander Haslam, & Renneboog, 2011). Evidence from previous research has shown that such gender pay gaps are particularly pronounced in top managerial positions (Kulich et al., 2011).

CEO-Chairman duality. We accounted for the potential power that a CEO might accumulate if he or she also chairs the board (Wiersema & Zhang, 2011). This dual role is relevant because it might strengthen a CEO's ability to influence the firm's compensation policy (Peng & Jiang, 2010). CEO duality was a dummy variable, coded 1 if the new CEO was also the board chair in the year before the succession ($t-1$) and 0 otherwise (Chen, 2015; Crossland et al., 2014; Zhang & Rajagopalan, 2010).

Board independence. Vigilant boards are expected to monitor executive compensation (Baysinger & Hoskisson, 1990; Carpenter & Sanders, 2002). In particular, outside directors (i.e., non-management members of the board) monitor and evaluate compensation practices (Peng et al., 2015). Therefore, we controlled for board independence, which was measured as the proportion of outside (non-employee) directors on the board (Weng & Lin, 2014; Zajac & Westphal, 1996; Zhang & Rajagopalan, 2010) during the year preceding the succession ($t-1$) (Chen, 2015).

Institutional constraints. This variable encompasses the institutional managerial constraints within each country. Following prior research, we use managerial discretion (Geletkanycz et al., 2001), as this has been shown to significantly and positively impact CEO compensation (Finkelstein & Boyd, 1998). This partly reflects the notion that the CEO's ability to influence the board has important implications for executive compensation (Pandher & Currie, 2013). We adopted the country managerial discretion scores provided by Crossland and Hambrick (2011: 806): United Kingdom: 6.0; the Netherlands: 5.2; Switzerland: 5.0; Germany: 4.1. Lower scores indicate lower managerial discretion (i.e., lower negotiation leeway for CEOs). Furthermore, this variable enables us to capture country-specific differences that would otherwise require the use of country dummies (which, in turn, would inflate the number of controls).

Predecessor CEO tenure. This variable was calculated as the number of years during which the predecessor served as CEO, i.e., until he or she was replaced by the new CEO. Previous research has suggested that long CEO tenures are associated with organizational inertia (Hambrick & Fukutomi, 1991). Thus, the value of a new CEO might be influenced by the predecessor's tenure as CEO.

Firm size. Firm size has been identified as an important determinant of CEO compensation (Chen, 2015; Datta & Iskandar-Datta, 2014; Peng et al., 2015). On the one hand, firm size is a driver of firm complexity, and thus impacts executive job demands and compensation (Finkelstein & Hambrick, 1988; Harris & Helfat, 1997; Sanders & Carpenter, 1998). On the other hand, larger firms are more likely to resist change (Cooper et al., 2014; Tihany et al., 2000), which further increases the task challenge and required compensation for a new CEO. We measured firm size as the natural logarithm of annual sales (of the year prior to the succession) (Quigley & Hambrick, 2012; Sanders & Carpenter, 1998).

Firm internationalization. This variable is measured as foreign sales divided by total sales, at the year before the succession (Tallman & Li, 1996). As a driver of organizational complexity, firm internationalization impacts the information processing demands of the CEO position, and thus CEO compensation (Henderson & Fredrickson, 1996). Correspondingly, previous research has shown that firm internationalization results in higher CEO compensation (Sanders & Carpenter, 1998).

Pre-succession firm performance. This measure was calculated using the average industry-adjusted return on assets (ROA) for the two years before the year of succession (Karaevli, 2007). On the one hand, lower pre-succession firm performance might require higher CEO compensation, as the firm needs to compensate for the higher risk that the new CEOs takes when joining the firm (Harris & Helfat, 1997). Indeed, previous research has shown that new CEOs are paid substantially more when prior firm performance has been poor (Chen, 2015). On the other hand, higher pre-succession firm performance might increase the firm's ability to offer higher compensation (Sanders & Carpenter, 1998).[91]

Year and industry dummies. Finally, the CEO successions reported here occurred in different years and in different industries. Therefore, to control for potentially

[91] As another measure of firm stability, we conducted a robustness test including the measure CEO succession frequency (Friedman & Saul, 1991; Kesner & Sebora, 1994; Shen & Cannella, 2002a; Zhang & Rajagopalan, 2004). This measure was calculated as a dummy variable, taking the value of 1 for companies with more than one succession event during the study period (2007 to 2013), and 0 for those with only one such event. Firms with frequent CEO changes might need to offer higher compensation packages to attract suitable CEO candidates. However, as this variable was neither significant, nor changed the R^2 of the model, it was omitted from the final model.

confounding macro-economic effects (Hambrick & Quigley, 2014), we included control variables for years and industries. For all of them, one category was omitted.

4.4 Results

4.4.1 Estimation methods

Similar to prior work in the area of CEO experience variety (e.g., Chen, 2015; Crossland et al., 2014), our sample is restricted to new CEO appointments. While this approach enhances comparability between CEOs in our sample, it might introduce sample selection bias. Therefore, following previous research, we used a Heckman two-stage model (e.g., Chen, 2015; Karaevli, 2007; Weng & Lin, 2014; Westphal & Fredrickson, 2001; Zajac & Westphal, 1996).[92]

Correct application of a two-stage model requires the use of at least one instrumental variable that is associated with the dependent variable in the first-stage model, but is unrelated to the dependent variable in the second-stage model (Certo et al., 2016; Larcker & Rusticus, 2010). Our instrumental variable was the industry rate of CEO turnover. To test the suitability of our instrument, we ran correlation analyses. Results show that the industry rate of CEO turnover is correlated with the likelihood of CEO replacement in the focal firm ($p = 0.0000$), but neither significantly related to CEO cash compensation, nor to CEO total compensation (with p-values > 0.1000). This substantiates the appropriateness of the selected instrument.

The first-stage model is a selection model that estimates the likelihood of CEO succession based on the full sample. Correspondingly, our model had a sample size of $N = 2{,}160$.[93] To predict the likelihood of CEO succession, we ran a Probit model with CEO succession as the dependent variable. Appendix 4.1 documents the operationalization of the variables and the Probit results.

We then calculated the inverse Mill's ratio based on the results of the first-stage model (Hamilton & Nickerson, 2003) and included this variable, named 'Likelihood of CEO succession', in our second-stage model. Results are presented in Appendix 4.2 (for CEO cash compensation as dependent variable) and Appendix 4.3 (for CEO total compensation as dependent variable). Since the results of the second-stage models are identical with the regression results presented here (i.e., Table 6 and Table 8), we can conclude that our results are not artifacts of sample selection bias.

[92] The Heckman (1979) two-stage model allows controlling for sample selection bias in cases where the dependent variable is only observed for a sub-sample of a larger population (Certo et al., 2016).
[93] Due to missing data, this number is slightly lower than the maximum possible number of 2,310 observations, which would correspond to all firm-year pairs (i.e., 330 firms multiplied by a study period of seven years).

4.4.2 Main analysis

We ran three complete analyses: one with CEO cash compensation as the dependent variable, one with CEO long-term compensation, and one with CEO total compensation. Following our theoretical predictions, we only discuss the results for CEO cash compensation and CEO total compensation. Nevertheless, the results for CEO long-term compensation are shown in Appendix 4.4 (correlations), Appendix 4.5 (regression results), and Appendix 4.6 (Heckman second-stage model).

4.4.2.1 CEO cash compensation

Table 5 presents the means, standard deviations, correlations, and reliabilities for the study variables. To check for multicollinearity, we first examined the correlations among the independent variables. Results show that CEO cash compensation was positively and significantly associated with firm size ($\beta = 0.61;\ p < 0.001$), firm product diversification ($\beta = 0.18;\ p < 0.01$), and pre-succession firm performance ($\beta = 0.17;\ p < 0.05$). Furthermore, CEO cash compensation was negatively and significantly correlated with board independence ($\beta =$ -0.19; $p < 0.01$). Second, we calculated the VIF scores, which quantify the degree of a regression's multicollinearity.[94] With an average VIF of 1.22 and a maximum of 1.51, results were below the recommended threshold of 10, indicating that our results are not significantly affected by multicollinearity (Cohen et al., 2003). Finally, we conducted regression diagnostics to consider potential violations of regression assumptions. Residuals do not appear to violate any assumptions concerning normality, linearity, and homoscedasticity.

We tested our hypotheses using an OLS hierarchical regression analysis. We ran several models, adding the independent variables in a pre-specified sequence. This approach is used to assess how the variables contribute individually and jointly to explaining variance in the dependent variable (Tabachnick & Fidell, 2014). Table 6 reports the results of our regressions for CEO cash compensation. All models were based on 205 observations (i.e., complete datasets). Also, all models were significant (p-values below 0.001), while the R^2 increased from model to model—indicating that the addition of variables increased the explanatory power of the models.[95]

[94] Detailed VIF results are shown in Appendix 4.7. We calculated the VIF scores based on Model 2 (in order to preclude the correlation induced by squared terms and interaction terms).

[95] The adjusted R^2 indicates the percentage of variation explained only by those independent variables that actually affect the dependent variable. In contrast to the R^2, the adjusted R^2 decreases if predictors are added that do not fit the model. As seen in Table 6, the adjusted R^2 does not decrease from Model 1 throughout Model 5, indicating that the additional variables add explanatory value to the models.

Table 5: CEO cash compensation: Descriptive statistics and correlation matrix

Variables[a]	Mean	S.D.	1 *CEO cash compensation* [b]	2 *CEO experience variety*	3 *CEO MBA*	4 *CEO age*	5 *CEO functional diversity*	6 *CEO outside succession origin*	7 *CEO experience in same industry*	8 *CEO gender*	9 *CEO-Chairman duality*	10 *Board independence*	11 *Institutional constraints*	12 *Predecessor CEO tenure*	13 *Firm size* [b]	14 *Firm internationalization*	15 *Firm product diversification*	16 *Pre-succession firm performance*
1 CEO cash compensation[b]	14.13	0.74																
2 CEO experience variety	0.79	0.48	-0.10															
3 CEO MBA	0.20	0.40	-0.01	-0.01														
4 CEO age	50.02	5.15	0.13	-0.01	-0.17 *													
5 CEO functional diversity	0.52	0.23	-0.11	0.04	0.14	-0.10												
6 CEO outside succession origin	0.43	0.50	-0.10	0.16 *	0.09	0.04	0.20 **											
7 CEO experience in same industry	0.86	0.34	0.05	0.06	-0.01	-0.03	0.08	-0.34 ***										
8 CEO gender	0.02	0.14	-0.07	-0.01	0.10	-0.08	-0.02	-0.05	0.06									
9 CEO-Chairman duality	0.04	0.19	0.00	0.01	-0.10	0.36 ***	-0.08	0.03	-0.07	-0.03								
10 Board independence	0.85	0.14	-0.19 **	-0.02	-0.05	0.04	0.12	0.05	-0.10	-0.04	-0.06							
11 Institutional constraints	5.07	0.67	0.01	-0.02	0.24 ***	-0.03	-0.10	-0.04	0.06	0.10	0.03	-0.51 ***						
12 Predecessor CEO tenure	7.80	5.00	-0.09	-0.06	-0.01	-0.06	0.08	-0.15 *	-0.02	0.05	-0.11	0.01	-0.01					
13 Firm size[b]	8.47	1.78	0.61 ***	-0.17 *	0.02	0.13	-0.09	-0.24 ***	0.05	0.04	0.03	-0.10	-0.01	-0.05				
14 Firm internationalization	0.55	0.31	0.13	-0.06	0.08	0.12	-0.09	-0.14 *	-0.04	-0.05	-0.07	0.07	0.03	0.04	0.15 *			
15 Firm product diversification	0.92	0.52	0.18 **	-0.02	0.10	0.09	-0.02	-0.04	0.03	0.05	0.00	0.14 *	-0.12	0.01	0.33 ***	0.07		
16 Pre-succession firm performance	-0.17	6.58	0.17 *	-0.13	0.12	-0.04	0.01	-0.10	0.04	0.04	-0.07	-0.06	0.12	0.08	0.03	0.09	-0.06	
17 Industry complexity	0.88	0.10	0.06	0.13	0.05	-0.14 *	0.14 *	0.04	0.09	-0.08	0.00	0.05	-0.01	-0.04	-0.02	-0.11	-0.03	-0.01

a $N = 205$

b Logarithm

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Authors

Table 6: Regression results with CEO cash compensation as dependent variable

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		9.77 *	(3.89)	9.78 *	(3.89)	9.13 *	(3.70)	9.40 *	(3.73)	9.07 *	(3.74)
Controls	CEO MBA		-0.04	(0.11)	-0.04	(0.11)	-0.03	(0.11)	-0.02	(0.11)	-0.01	(0.11)
	CEO age		0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
	CEO functional diversity		-0.19	(0.18)	-0.19	(0.18)	-0.21	(0.18)	-0.18	(0.17)	-0.22	(0.17)
	CEO outside succession origin		0.11	(0.09)	0.12	(0.09)	0.10	(0.09)	0.06	(0.09)	0.11	(0.09)
	CEO experience in same industry		0.06	(0.12)	0.07	(0.12)	0.08	(0.12)	0.07	(0.12)	0.06	(0.12)
	CEO gender		-0.47 *	(0.20)	-0.47 *	(0.19)	-0.48 *	(0.20)	-0.55 *	(0.22)	-0.48 *	(0.21)
	CEO-Chairman duality		-0.14	(0.27)	-0.15	(0.27)	-0.13	(0.26)	-0.13	(0.27)	-0.09	(0.25)
	Board independence		-0.96 **	(0.34)	-0.96 **	(0.35)	-0.99 **	(0.34)	-0.96 **	(0.34)	-1.05 **	(0.33)
	Institutional constraints		-0.07	(0.08)	-0.07	(0.08)	-0.06	(0.08)	-0.06	(0.07)	-0.07	(0.08)
	Predecessor CEO tenure		-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)
	Firm size[b]		0.26 ***	(0.03)	0.26 ***	(0.03)	0.25 ***	(0.03)	0.25 ***	(0.03)	0.25 ***	(0.03)
	Firm internationalization		0.08	(0.15)	0.08	(0.15)	0.10	(0.15)	0.04	(0.14)	0.14	(0.15)
	Firm product diversification		-0.01	(0.09)	-0.01	(0.09)	-0.03	(0.09)	0.00	(0.09)	0.28	(0.17)
	Pre-succession firm performance		0.02 *	(0.01)	0.02 *	(0.01)	0.02 *	(0.01)	0.02 *	(0.01)	0.01 *	(0.01)
	Industry complexity		3.63	(4.09)	3.64	(4.10)	4.35	(3.90)	3.96	(3.96)	4.42	(3.95)
Main effect	CEO experience variety	*H1*			-0.02	(0.09)	0.61 *	(0.29)	3.82	(2.35)	1.48 *	(0.57)
	CEO experience variety^2						-0.46 *	(0.19)	-3.55 *	(1.54)	-0.90 *	(0.38)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-3.70	(2.73)		
	CEO experience variety^2 x Industry complexity								3.57 *	(1.78)		
	CEO experience variety x Firm product diversification	*H3*									-0.86	(0.54)
	CEO experience variety^2 x Firm product diversification										0.43	(0.37)
Statistics	F-test		7.34 ***		7.02 ***		6.75 ***		8.43 ***		6.64 ***	
	R^2		0.50		0.50		0.51		0.53		0.52	
	Change in R^2				0.00		0.01		0.02		0.01	
	Adjusted R^2		0.42		0.42		0.43		0.45		0.44	
	Change in adjusted R^2				0.00		0.01		0.02		0.01	

a N = 205. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

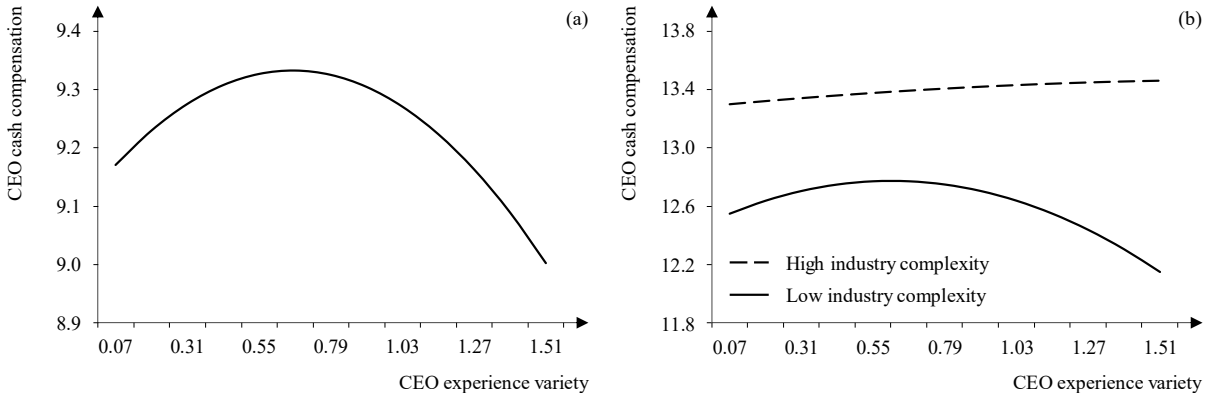
Source: Authors

Model 1 only includes the control variables. Multiple controls were statistically significant in the expected directions, with all of them holding across all models. Firm size ($\beta = 0.26$; $p < 0.001$) and pre-succession firm performance ($\beta = 0.02$; $p < 0.05$) were significantly and positively related to CEO cash compensation. CEO gender ($\beta =$ -0.47; $p < 0.05$) and board independence ($\beta =$ -0.96; $p < 0.01$) show significant and negative effects on CEO cash compensation.

Model 2 includes the non-squared independent variable, in order to test for a potential existence of a linear relationship. Results show that the linear relationship between CEO experience variety and CEO cash compensation is insignificant.

Hypothesis 1(a) predicts an inverted U-shaped relationship between CEO experience variety and CEO cash compensation. Therefore, in Model 3, we included the squared term of CEO experience variety. As seen in Model 3, the p-values for both CEO experience variety and CEO experience variety^2 are below 0.05, indicating a significant inverted U-shaped relationship, as the coefficients turn from positive (0.61) to negative (-0.46) when squaring the terms. This supports Hypothesis 1(a) and is visualized in Figure 13(a).

Figure 13: CEO experience variety and CEO cash compensation



Source: Authors

Hypothesis 2(a) posits a moderating impact of industry complexity on the relationship between CEO experience variety and CEO cash compensation. As proposed by Aiken and West (1991), we added interactions between the moderator and the independent variable as well as the squared independent variable. The significance and the type of moderating effects are determined by the direction and the p-value of the second interaction term (Haans et al., 2016). As seen in Model 4, CEO experience variety^2 x Industry complexity is positive and significant ($\beta = 3.57$; $p < 0.05$). This

indicates that industry complexity significantly moderates the relationship between CEO experience variety and CEO cash compensation. To interpret the results, we plotted the relationship in Figure 13(b).

The graph shows that the curve for CEO cash compensation shifts upwards under conditions of high industry complexity. Thus, the results for Model 4 support Hypothesis 2(a). This confirms the predictions of the executive job demands notion (Hambrick, 2007; Hambrick et al., 2005), which argues that CEOs are compensated for the level of complexity that they need to manage (Carpenter et al., 2001; Henderson & Fredrickson, 1996; Sanders & Carpenter, 1998). The graph also shows that under conditions of high industry complexity, CEOs with broad-generalist career backgrounds receive higher compensation compared to their narrow-specialized counterparts. While this resonates with the overall pay premium that previous authors have suggested for generalists (Custodio et al., 2013; Datta & Iskandar-Datta, 2014), we only find this premium for CEOs who are faced with high industry complexity. This could indicate that higher complexity surrounding the firm enhances the perceived strengths of a generalist CEO.

Hypothesis 3(a) suggests that firm product diversification moderates the relationship between CEO experience variety and CEO cash compensation. This hypothesis is tested in Model 5. However, the second interaction term (i.e., CEO experience variety^2 x Firm product diversification) is not significant ($p = 0.25$). Thus, Hypothesis 3(a) is not supported. Nevertheless, these results offer potentially important insights. On the one hand, when assessing the value of a CEO, boards might attribute less importance to the firm's internal complexity, as compared to the firm's external complexity. Indeed, boards might focus attention on the firm's external (competitive) environment, in order to identify strategic weaknesses, to provide relevant counsel to CEOs and TMT members, and to monitor the CEO's and TMT's subsequent actions (Haynes & Hillman, 2010; Oehmichen et al., 2016). As a result, boards might place less emphasis on the firm's internal complexity, as the internal aspects related to the implementation of strategic decisions might be considered the responsibility of the CEO, the TMT, the business unit heads, etc. (Finkelstein et al., 2009).[96] On the other hand, a possible explanation is that boards lack sufficient means to understand the firm's internal complexity. This supports authors who have argued that the context in which

[96] In addition, from a corporate governance point of view, these results might indicate that boards are not misled by the firm's internal complexity, which could be seen as resulting from the (former) CEO's 'empire-building' attempts (Mueller, 1969; Trautwein, 1990). This would point towards the notion that boards (and their remuneration committees) put in place CEO compensation policies that do not reward excessive conglomerate building.

CEO candidates are assessed requires more fine-grained attention (Fitzsimmons & Callan, 2016). As such, the results of Model 5 highlight the need for future research on the board's consideration of internal and external factors at the time of CEO compensation decisions.

Model 4 has an R^2 of 0.53, indicating that the combined variables in the model explain 53% of the variance in CEO cash compensation.[97] We also calculated Cohen's f^2, which indicates effect sizes. With values above 1.00, all models exceed the reference threshold of 0.35, which is considered to indicate large effect sizes (Cohen, 1988).

4.4.2.2 CEO total compensation

Table 7 presents the descriptive statistics and correlations for the analysis with CEO total compensation. To check for multicollinearity, we first examined the correlations among the independent variables. Results show that CEO total compensation was positively and significantly associated with CEO age ($\beta = 0.15; p < 0.05$), firm size ($\beta = 0.61; p < 0.001$), firm internationalization ($\beta = 0.24; p < 0.001$), firm product diversification ($\beta = 0.18; p < 0.05$), and pre-succession firm performance ($\beta = 0.20;\ p < 0.01$). Furthermore, CEO total compensation was negatively and significantly correlated with board independence ($\beta =$ -0.21; $p < 0.01$). Second, we calculated the VIF scores, which quantify the degree of a regression's multicollinearity. As in the case of CEO cash compensation, results do not indicate any issues with multicollinearity.[98] Finally, the regression diagnostics did not point towards any violations of assumptions concerning the normality, linearity, and homoscedasticity of the residuals.

Table 8 reports the results of our OLS regressions for CEO total compensation. All models were based on 205 observations (i.e., complete datasets). Also, all models were significant (p-values below 0.001), while the R^2 increased from model to model, indicating that the addition of variables increased the explanatory power of the models.[99]

[97] Model 5 has an R^2 of 0.52. However, as Hypothesis 3(a) is not supported, we consider Model 4 as the final model of this analysis.
[98] Detailed VIF results are shown in Appendix 4.7. These are identical to those for CEO cash compensation, as VIF analyses only consider the predictors (i.e., the independent variable and the control variables).
[99] Table 8 shows that the adjusted R^2 does not decrease from Model 1 throughout Model 5, indicating that the additional variables add explanatory value to the models.

Table 7: CEO total compensation: Descriptive statistics and correlation matrix

Variables[a]	Mean	S.D.	*CEO total compensation* [b] 1	*CEO experience variety* 2	*CEO MBA* 3	*CEO age* 4	*CEO functional diversity* 5	*CEO outside succession origin* 6	*CEO experience in same industry* 7	*CEO gender* 8	*CEO-Chairman duality* 9	*Board independence* 10	*Institutional constraints* 11	*Predecessor CEO tenure* 12	*Firm size* [b] 13	*Firm internationalization* 14	*Firm product diversification* 15	*Pre-succession firm performance* 16
1 CEO total compensation[b]	14.49	0.86																
2 CEO experience variety	0.79	0.48	-0.06															
3 CEO MBA	0.20	0.40	0.05	-0.01														
4 CEO age	50.02	5.15	0.15 *	-0.01	-0.17 *													
5 CEO functional diversity	0.52	0.23	-0.08	0.04	0.14	-0.10												
6 CEO outside succession origin	0.43	0.50	-0.13	0.16 *	0.09	0.04	0.20 **											
7 CEO experience in same industry	0.86	0.34	0.11	0.06	-0.01	-0.03	0.08	-0.34 ***										
8 CEO gender	0.02	0.14	0.00	-0.01	0.10	-0.08	-0.02	-0.05	0.06									
9 CEO-Chairman duality	0.04	0.19	-0.03	0.01	-0.10	0.36 ***	-0.08	0.03	-0.07	-0.03								
10 Board independence	0.85	0.14	-0.21 **	-0.02	-0.05	0.04	0.12	0.05	-0.10	-0.04	-0.06							
11 Institutional constraints	5.07	0.67	0.05	-0.02	0.24 ***	-0.03	-0.10	-0.04	0.06	0.10	0.03	-0.51 ***						
12 Predecessor CEO tenure	7.80	5.00	-0.10	-0.06	-0.01	-0.06	0.08	-0.15 *	-0.02	0.05	-0.11	0.01	-0.01					
13 Firm size[b]	8.47	1.78	0.61 ***	-0.17 *	0.02	0.13	-0.09	-0.24 ***	0.05	0.04	0.03	-0.10	-0.01	-0.05				
14 Firm internationalization	0.55	0.31	0.24 ***	-0.06	0.08	0.12	-0.09	-0.14 *	-0.04	-0.05	-0.07	0.07	0.03	0.04	0.15 *			
15 Firm product diversification	0.92	0.52	0.18 *	-0.02	0.10	0.09	-0.02	-0.04	0.03	0.05	0.00	0.14 *	-0.12	0.01	0.33 ***	0.07		
16 Pre-succession firm performance	-0.17	6.58	0.20 **	-0.13	0.12	-0.04	0.01	-0.10	0.04	0.04	-0.07	-0.06	0.12	0.08	0.03	0.09	-0.06	
17 Industry complexity	0.88	0.10	0.13	0.13	0.05	-0.14 *	0.14 *	0.04	0.09	-0.08	0.00	0.05	-0.01	-0.04	-0.02	-0.11	-0.03	-0.01

a $N = 205$

b Logarithm

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Authors

Table 8: Regression results with CEO total compensation as dependent variable

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		12.58 **	(3.63)	12.53 **	(3.67)	11.90 **	(3.61)	11.28 **	(3.61)	11.48 **	(3.59)
Controls	CEO MBA		0.03	(0.11)	0.03	(0.11)	0.04	(0.11)	0.04	(0.11)	0.04	(0.11)
	CEO age		0.02	(0.01)	0.02	(0.01)	0.02	(0.01)	0.02	(0.01)	0.01	(0.01)
	CEO functional diversity		-0.14	(0.20)	-0.14	(0.20)	-0.16	(0.20)	-0.14	(0.20)	-0.17	(0.18)
	CEO outside succession origin		0.09	(0.09)	0.08	(0.09)	0.06	(0.09)	0.04	(0.09)	0.07	(0.09)
	CEO experience in same industry		0.16	(0.13)	0.15	(0.14)	0.16	(0.13)	0.16	(0.13)	0.13	(0.13)
	CEO gender		0.03	(0.20)	0.03	(0.20)	0.02	(0.17)	-0.07	(0.17)	0.02	(0.17)
	CEO-Chairman duality		-0.23	(0.29)	-0.23	(0.29)	-0.21	(0.29)	-0.22	(0.29)	-0.15	(0.28)
	Board independence		-1.36 **	(0.41)	-1.34 **	(0.41)	-1.36 **	(0.40)	-1.35 **	(0.40)	-1.43 ***	(0.38)
	Institutional constraints		-0.12	(0.08)	-0.12	(0.08)	-0.11	(0.08)	-0.10	(0.08)	-0.13	(0.08)
	Predecessor CEO tenure		-0.01	(0.01)	-0.01	(0.01)	-0.02 †	(0.01)	-0.02 †	(0.01)	-0.02 †	(0.01)
	Firm size[b]		0.29 ***	(0.03)	0.30 ***	(0.04)	0.29 ***	(0.04)	0.29 ***	(0.04)	0.29 ***	(0.03)
	Firm internationalization		0.38 *	(0.18)	0.38 *	(0.18)	0.40 *	(0.18)	0.37 *	(0.18)	0.44 *	(0.17)
	Firm product diversification		-0.01	(0.10)	-0.01	(0.10)	-0.02	(0.10)	-0.01	(0.10)	0.44 *	(0.21)
	Pre-succession firm performance		0.02 ***	(0.01)	0.02 ***	(0.01)	0.02 **	(0.01)	0.02 ***	(0.01)	0.02 **	(0.01)
	Industry complexity		0.89	(4.01)	0.87	(4.05)	1.55	(4.05)	2.23	(4.06)	2.03	(4.04)
Main effect	CEO experience variety	*H1*			0.06	(0.09)	0.67 *	(0.33)	4.56 *	(2.07)	1.81 **	(0.66)
	CEO experience variety^2						-0.44 *	(0.22)	-3.38 **	(1.28)	-0.95 *	(0.44)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-4.48 †	(2.44)		
	CEO experience variety^2 x Industry complexity								3.38 *	(1.51)		
	CEO experience variety x Firm product diversification	*H3*									-1.11 †	(0.62)
	CEO experience variety^2 x Firm product diversification										0.46	(0.40)
Statistics	F-test		11.08 ***		11.69 ***		11.25 ***		11.68 ***		10.26 ***	
	R^2		0.56		0.56		0.57		0.58		0.59	
	Change in R^2				0.00		0.01		0.01		0.02	
	Adjusted R^2		0.49		0.48		0.49		0.50		0.51	
	Change in adjusted R^2				0.00		0.01		0.00		0.02	

a N = 205. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

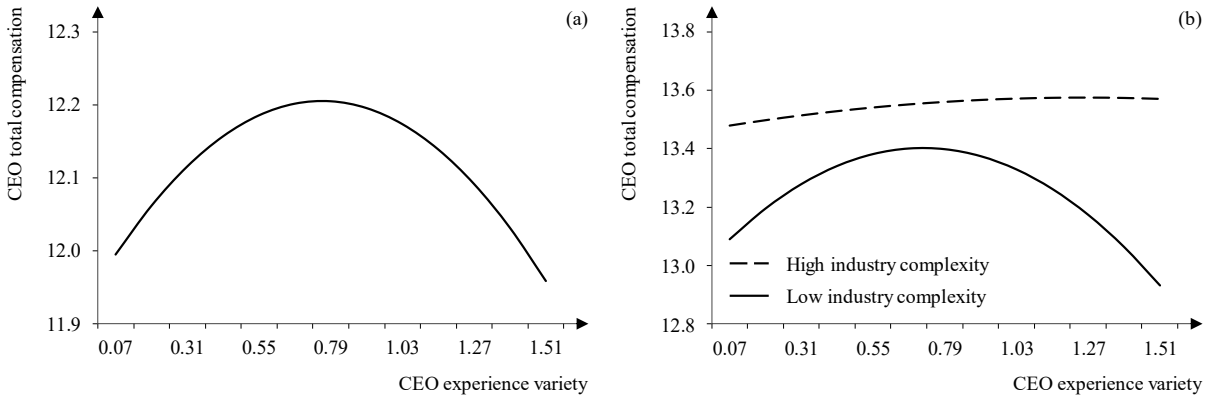
Source: Authors

Model 1 includes the control variables only. Multiple controls were statistically significant in the expected directions, with all of them holding across all models. Firm size ($\beta = 0.29;\ p < 0.001$), firm internationalization ($\beta = 0.38;\ p < 0.05$), and pre-succession firm performance ($\beta = 0.02;\ p < 0.001$) show significant and positive effects on CEO total compensation. Board independence ($\beta = $-1.36; $p < 0.01$) was significantly and negatively related to CEO total compensation.

Model 2 includes the non-squared independent variable, in order to test for a potential existence of a linear relationship. Results show that the linear relationship between CEO experience variety and CEO total compensation is insignificant.

Hypothesis 1(b) predicts an inverted U-shaped relationship between CEO experience variety and CEO total compensation. Therefore, in Model 3, we included the squared term of CEO experience variety. The results show that the p-values for both CEO experience variety and CEO experience variety^2 are below 0.05, indicating a significant inverted U-shaped relationship, as the coefficients turn from positive (0.67) to negative (-0.44) when squaring the terms. This supports Hypothesis 1(b) and is visualized in Figure 14(a).

Figure 14: CEO experience variety and CEO total compensation



Source: Authors

Hypothesis 2(b) posits a moderating impact of industry complexity on the relationship between CEO experience variety and CEO total compensation. The interaction term CEO experience variety^2 x Industry complexity is positive and significant ($\beta = 3.38;\ p < 0.05$), indicating that industry complexity significantly moderates the relationship between CEO experience variety and CEO total compensation. We plotted the outcome in Figure 14(b) to facilitate interpretation. Similar to CEO cash compensation, the graph shows that the curve for CEO total

compensation shifts upwards under conditions of high industry complexity. Correspondingly, the results for Model 4 support Hypothesis 2(b). Therefore, the results for CEO total compensation also support the executive job demands perspective (Hambrick, 2007; Hambrick et al., 2005). The graph also points towards a pay premium that generalist CEOs receive under conditions of high industry complexity.

Hypothesis 3(b) predicts that firm product diversification moderates the relationship between CEO experience variety and CEO total compensation. We tested this hypotheses in Model 5. However, given that the second interaction term (i.e., CEO experience variety^2 x Firm product diversification) is not significant ($p = 0.25$), Hypothesis 3(b) is not supported. Nevertheless, as described above in the context of CEO cash compensation (see Paragraph 4.4.2.1), these results offer important insights, as they might point towards factors that boards consider during the CEO selection and CEO compensation negotiation processes.

Model 4 has an R^2 of 0.58, indicating that the combined variables in the model explain 58% of the variance in CEO total compensation.[100] With values of 1.27 and higher, all models have a Cohen's f^2 that exceeds the reference threshold of 0.35, which is considered to indicate large effect sizes (Cohen, 1988).

4.4.3 Robustness checks

Composite tests. Our independent variable, CEO experience variety, was calculated as a composite of firm and industry experience. While our decision to focus on these two dimensions was driven by theoretical arguments, other studies have also considered functional experience (e.g., Crossland et al., 2014; Custodio et al., 2013). Therefore, we applied three tests to check whether aggregating the two components was the right choice (see Appendix 4.8 for an overview). First, we ran a factor analysis. The two components firm and industry experience loaded cleanly on a single underlying factor, with factor loadings of 0.834 and 0.832, while functional experience loaded on a different factor. Also, only Factor 1 fulfilled the criteria of an Eigenvalue greater than 1, having an Eigenvalue of 1.388. Second, we ran a correlation analysis. Results showed that firm and industry experience were strongly correlated at $R = 0.77$ ($p < 0.001$). In contrast, functional experience correlated neither with firm experience ($R = 0.05$; $p = 0.41$), nor with industry experience ($R = 0.01$; $p = 0.88$). Third, we calculated Cronbach's alpha for the two components firm experience and industry experience.

[100] Model 5 has an R^2 of 0.52. However, as Hypothesis 3(b) is not supported, we consider Model 4 as the final model of this analysis.

Results showed a scale reliability coefficient of 0.87, which exceeds the generally accepted limit of 0.70 for new constructs (Nunnally & Bernstein, 1994). Adding CEO functional variety lowered the scale reliability coefficient to 0.57. Taken together, all results supported our theoretical decision to operationalize CEO experience variety as a composite of CEO firm experience variety and CEO industry experience variety.

U-shape tests.[101] In addition, we conducted multiple tests to confirm the observed inverted U-shaped relationship, as recommended by Haans et al. (2016) and by Lind and Mehlum (2010). First, we assessed whether both slope tests were significant (Haans et al., 2016; Lind & Mehlum, 2010). For inverted U-shaped relationships, the slope at the lower bound needs to be positive and significant, while the slope at the upper bound needs to be negative and significant. The slope for the lower bound was 4.56 ($p < 0.05$), while the slope of the upper bound was -6.45 ($p < 0.01$). To further confirm this, we ran the Sasabuchi (1980) test for inverted U-shaped relationships, as suggested and provided by Lind and Mehlum (2010). With a p-value of 0.01, this overall test re-confirmed the presence of an inverted U-shaped relationship. Second, the curve's estimated turning point needs to be located within the relevant data range of the main predictor (Haans et al., 2016). Therefore, we calculated the curve's estimated turning point (0.67) and its confidence intervals (0.24, 0.85) using Fieller's standard error (Haans et al., 2016; Lind & Mehlum, 2010). These values are within the observed range of CEO experience variety (ranging from 0.00 to 1.63).[102] Finally, we added a cubic term (i.e., CEO experience variety^3) to Model 3, in order to exclude a potential S-shaped relationship. Results for the cubic term were neither significant at the 0.05 level, nor did adding the cubic term significantly improve model fit. Thus, all results suggest that the observed relationship is indeed quadratic. A summary is shown in Appendix 4.9.

Sample tests. Given the timeframe of our sample (i.e., 2007–2013), we conducted the analysis with a sub-sample limited to 2009 and later ($N = 146$). This approach was chosen to preclude any confounding influences of the 2008 financial crisis. While we reached higher R^2-levels (0.62 in Model 4), the observed relationships did not change in terms of significance and direction. Moreover, we took a sub-sample limited to firms with a DOI greater than zero. This test aimed at ensuring comparability among large MNCs and excluded a number of firms only operating within their domestic markets. The results—based on a sample with $N = 192$—were equivalent to those reported here,

[101] We ran this and the following test based on CEO total compensation, in order to ensure that the analyses reflect CEO compensation in its highest possible form.
[102] For further illustration: 35% of the observations have a value for the independent variable (i.e., for CEO experience variety) below the turning point.

with the exception that we found a partially significant moderating effect of industry complexity (with a p-value of 0.06).[103]

4.5 Discussion

We proposed and tested an inverted U-shaped relationship between CEO experience variety and CEO compensation as well as a moderating effect of industry and firm complexity on the aforementioned relationship. Our results provide evidence for all predictions, except for the moderating impact of firm complexity. First, we found that CEO experience variety is a mixed blessing. While increasing levels of CEO experience variety initially lead to higher CEO compensation, the drawbacks of extensive levels of CEO experience variety appear to result in detrimental compensation implications. Second, we found that the relationship between CEO experience variety and CEO compensation is contingent upon the level of industry complexity. High levels of industry complexity result in higher overall compensation levels. In what follows, we discuss the implications of our results.

4.5.1 Theoretical implications

Our primary contribution is to *human capital and social capital theory*. We add to previous research in the field, which has studied the impact of managerial capital on CEO compensation by drawing on either human capital (e.g., Carpenter et al., 2001; Harris & Helfat, 1997; Mackey et al., 2014; Peng et al., 2015) or on social capital theory (Belliveau et al., 1996; Geletkanycz et al., 2001). By reconciling human and social capital theory, we pay heed to the notion that human and social capital intersect, and hence require simultaneous consideration (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015). As described by Oldroyd and Morris (2012: 399), there are mechanisms in which "social capital and human capital are recursive, with each reinforcing and increasing the other." For example, previous studies have argued that human capital cannot be leveraged without the opportunities created by social capital (Burt, 1997a, 1997b). Similarly, the information received through social networks is an important source for building human capital (Coleman, 1988). Therefore, scholars have argued that it is conceptually and empirically difficult to disentangle human and social capital (Coleman, 1988; Lester et al., 2008; Nahapiet & Ghoshal, 1998).

[103] Detailed results are available from the authors upon request.

Our second contribution is to the emerging *CEO generalism literature*. On the one hand, we counter the prevalent 'the more the better' view (Khanna et al., 2014; Ployhart & Moliterno, 2011). To the best of our knowledge, this is the first study to empirically test and find potentially negative compensation implications of CEO experience variety. While our results are consistent with studies that suggest a pay premium for generalist CEOs (Custodio et al., 2013), we extend current literature by adding the notion that too much CEO generalism has detrimental effects. We thus contribute to the nascent literature on CEO experience variety (Buyl et al., 2011; Custodio et al., 2013; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007). Our findings suggest that CEO experience variety might indeed be a double-edged sword, one with positive and negative implications.

On the other hand, our results might have implications for the related notion of scarce human capital. Taking a resource-based perspective, this stream focuses on scarce and valuable human capital and builds on leadership and information processing abilities (Campbell, Coff, & Kryscynski, 2012; Finkelstein et al., 2009; Mackey et al., 2014). Top managers with scarce human capital are defined as those executives who manage firms most effectively (Castanias & Helfat, 1991, 2001; Holcomb, Holmes, & Connelly, 2009). Specifically, general managerial skills have been identified as scarce managerial resources, which are difficult to achieve, and are consequently rare and hard to imitate (Castanias & Helfat, 1991; Mackey et al., 2014). While previous studies have suggested that scarce human capital impacts firm performance (Bertrand & Schoar, 2003; Mackey, 2008), scarce social capital or the combination of scarce human and social capital has not been studied in detail. To this end, our study provides first insights, as our results indicate that average levels of generalism represent the most valuable combinations of human and social capital.

Finally, this study's third contribution extends to the *literature on executive job demands* (Chen, 2015; Hambrick et al., 2005; Janssen, 2001). Our results indicate that the value and compensation of generalist CEOs are contingent upon the degree of industry complexity. Although research on job demands has studied firm-level drivers such as company size (Ciscel & Carroll, 1980), product diversification (Henderson & Fredrickson, 1996), the level of internationalization (Carpenter et al., 2001), or turnarounds and acquisitions (Chen, 2015; Custodio et al., 2013), there is a lack of studies on industry-level drivers of job demands, such as industry complexity. In this regard, we show that industry complexity is a significant determinant of executive job demands and compensation. We thus support Chen (2015), who provided first empirical

evidence that job demands impact CEO compensation, as well as Custodio et al. (2013), who found that CEOs receive higher compensation when they are hired to perform complex tasks.

4.5.2 Limitations and directions for future research

Our study has several limitations, which may suggest possibilities for future research. First, we have taken the *rent creation perspective*, according to which firms compensate CEOs for their valuable managerial capital (Castanias & Helfat, 1991, 2001; Pandher & Currie, 2013; Peng et al., 2015). Moreover, our findings indicate that boards attempt and manage to compensate CEOs according to their value. In doing so, they are guided by their perception of the CEO's role and of the expected value of the CEO's contribution to firm performance (Finkelstein & Hambrick, 1988). We thus attribute a certain ability to act rationally to boards. To complement this rational view, future research could emphasize the role of CEO power by adding the *rent extraction perspective* (Bebchuk et al., 2002; Combs & Skill, 2003; Sauerwald, Zhiang, & Peng, 2016; Wade et al., 2006).

Second, our research framework is confined to the CEO. However, as organizational leadership is a shared responsibility (Carpenter et al., 2004; Hambrick, 2007), multiple authors have stressed the relevance of considering the CEO and the TMT in conjunction (Buyl et al., 2011; Klimoski & Koles, 2001; Ling et al., 2008). In this sense, we expect that the perceived value of a CEO also depends on the characteristics of the incumbent TMT. For example, human capital redundancies might impact CEO compensation, as suggested by Carpenter et al. (2001: 506): "the strategic value of human capital, in terms of individual bargaining power, may decline to the extent that there are readily accessible within-firm substitutes (Coff, 1999)." Similarly, future research could focus on the interaction between the CEO and the board, whose human and social capital might interact as well (Sundaramurthy et al., 2014).

Third, while we studied the impact of CEO experience variety on CEO compensation, future research could focus on the combined effect of CEO experience variety and CEO compensation on organizational outcomes. Previous research has shown that CEO compensation has implications for firm performance and other firm-level outcomes (e.g., Hoskisson, Hitt, & Hill, 1993; Kerr & Bettis, 1987; Sanders & Hambrick, 2007; Zajac, 1990). Research considering the interactive effect of CEO experience variety and CEO compensation on firm performance is a promising avenue for future research, as little is known about the motivations of executives with high

experience variety (Crossland et al., 2014). Such an undertaking would reflect Hambrick's (2007: 339-340) call for "theory and research considering the combined effects of executive characteristics and compensation systems," which was based on the observation that "almost no literature examines executive characteristics and compensation in tandem […]."

Finally, we have considered human and social capital in tandem. This reflects the intertwined nature of the two constructs and follows the call of extant authors (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015). Nevertheless, future research will undoubtedly provide fruitful insights by studying these constructs separately, in order to understand both their individual and their combined impacts (Sundaramurthy et al., 2014).

4.5.3 Practical implications and conclusion

Our study has relevant implications for practice as well. While broad-generalist career backgrounds are on the rise (Briscoe et al., 2006; Crossland et al., 2014), our results indicate that there might indeed be a 'dark side of contemporary careers' (Baruch & Vardi, 2016). Specifically, our results send a cautionary note to executives aspiring to become CEOs. These managers should bear in mind that generalism is not merely beneficial, because extensive levels of CEO experience may result in lower compensation. Moreover, the trend towards generalism has been accompanied by a general increase in executive compensation (Cremers & Grinstein, 2014; Murphy & Zabojnik, 2007). Therefore, firms could profit from a better understanding of the drivers of CEO compensation, in order to avoid inadequate compensation packages.

Overall, our results confirm the importance of CEO experience variety while highlighting the complex nature of CEO career backgrounds. We thus hope to provide a useful foundation for future research, which could continue to refine our understanding of the implications of CEO experience variety. Such research has the potential to provide a more nuanced understanding of the appropriate balance of CEO career backgrounds and would thus be of significant theoretical and practical relevance.

JACK OF ALL TRADES, MASTER OF NONE: CEO EXPERIENCE VARIETY AND FIRM PERFORMANCE

Abstract: Research on the effects of CEO experience variety is equivocal. Whereas some scholars take the g*eneralist view of human capital* to highlight the benefits of experience variety, others adopt the *specialist view of human capital* to underscore its costs. We integrate these opposing views and hypothesize an inverted U-shaped relationship between CEO experience variety and firm performance. Gaining diverse experience (i.e., experience *breadth*) initially enables CEOs to broaden their knowledge base, to become better information processors, and thus to achieve higher firm performance. After a certain threshold, however, extensive levels of experience variety cause a lack of specialization (i.e., experience *depth*), and thus lead to lower firm performance. Our results support the hypothesized relationship, shed light on its contingent nature, and thus contribute to human capital theory, upper echelons theory, and the strategic leadership literature.

Keywords: CEO experience variety; CEO generalism and specialization; firm performance; human capital theory; upper echelons theory

5.1 Introduction

The market demand for new CEOs with diverse career backgrounds has significantly increased (Brockman et al., 2016; Frydman & Saks, 2010; Murphy & Zabojnik, 2004). This phenomenon has been considered the "the most prominent trend identified by career scholars over the last several decades" (Crossland et al., 2014: 653). Indeed, various studies have shown that compared to their narrow-specialized counterparts, executives with broad-generalist career backgrounds are more likely to be valued by the executive labor market (Ferreira & Sah, 2012; Torres, 2016) and to receive higher compensation (Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Murphy & Zabojnik, 2004). However, while the market preference for CEOs with diverse career experience has been recognized, the performance implications of CEO experience variety are not clearly established in the literature.

On the one hand, some scholars adopt the *generalist view of human capital* to argue that CEOs with broad-generalist career backgrounds possess experience *breadth*. This makes them better able to process diverse information (Karaevli & Hall, 2006) and to make adequate strategic decisions (Dragoni et al., 2011; Hitt & Tyler, 1991). In this view, CEO experience variety is expected to positively impact organizational outcomes (Burke & Steensma, 1998; Buyl et al., 2011; Crossland et al., 2014). On the other hand, the *specialist view of human capital* argues that CEOs with narrow-specialized backgrounds possess greater experience *depth* (Anderson, 2012; Datta et al., 2002; Kang & Snell, 2009). This allows them to better manage complexity (Collins, 2001; Mishra, 2014) and to achieve high job performance (Dane, 2010; Dreyfus & Dreyfus, 2005; Salas, Rosen, & DiazGranados, 2010). According to this contrasting view, CEO experience variety comes at the cost of losing specialization, and hence implies negative organizational outcomes (Buyl et al., 2011). Such theoretical controversy has led scholars to argue that further research is required to examine whether, and under what conditions, CEO experience variety is beneficial—or detrimental—for organizations (Crossland et al., 2014).

In this study, we respond to this call. We conceptualize CEO experience variety as a continuum, ranging from low variety (i.e., specialization or experience *depth*) to high variety (i.e., generalism or experience *breadth*). This enables us to resolve the above debate between the *generalist view of human capital* and the *specialist view of human capital*. Integrating the opposing arguments of both views, our central argument is that the relationship between CEO experience variety and firm performance follows an inverted U-shaped form. Initially, the acquisition of experience *breadth* from various

firms and industries enables CEOs to broaden their knowledge-base (Karaevli & Hall, 2006), to enhance their information processing ability (Crossland et al., 2014), and thus to promote higher firm performance. After a certain threshold, however, extensive CEO experience variety comes at the cost of losing too much specialization, leading to a lack of experience *depth*. This lack of sufficient specialization reduces the CEOs' ability to make well-informed strategic decisions, and thereby leads to declining firm performance.

Analyzing data from 201 CEO appointments at large firms between 2007 and 2013, we find support for the hypothesized inverted U-shaped relationship. Our results also show that this relationship is influenced by the levels of firm and industry complexity.

Our study makes several contributions. First, while previous research has treated the *generalist* and *specialist views of human capital* as contradictory, we suggest that they are rather complementary. We theoretically argue and empirically demonstrate that CEOs who make the most valuable contribution to firm performance are those who simultaneously combine the *breadth* of experience from different firms and industries with the *depth* of specialized knowledge in each of them. In this regard, our work contributes to the nascent literature on the value of generalist versus specialist human capital (Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007). At the same time, it substantiates the central tenet of upper echelons theory—that CEOs' past experience matter for organizations (Geletkanycz & Black, 2001; Hambrick, 2007)—by unveiling the complex and non-linear nature of the CEO experience variety–firm performance relationship.

Second, our study contributes to the contingency perspective of strategic leadership (Gupta, 1984). Extant research on executive job demands suggests that the degree to which executives can impact organizations partly depends on their organizational fit (Datta et al., 2002; Guthrie & Datta, 1998; Hambrick et al., 2005). Our results support this line of argumentation by showing that two key imperatives related to environmental fit—industry (i.e., industry complexity) and strategy (i.e., firm diversification)—significantly influence the relationship between CEO experience variety and firm performance.

Third, scholars have urged the development of constructs and measurements that allow capturing the continuous and complex nature of executives' career backgrounds (Bunderson & Sutcliffe, 2002; Cannella et al., 2008; Finkelstein et al., 2009). Specifically, studies have recognized the need to assess both *depth* and *breadth* as two

equally important elements of an individual's career background (Bunderson & Sutcliffe, 2002). Following the recommendations of Bunderson and Sutcliffe (2002), we conceptualize and measure CEO experience variety in a way that allows the simultaneous consideration of *depth* and *breadth* in career experience.

Overall, to the best of our knowledge, this study is the first empirical attempt to examine the direct impact of CEO experience variety on firm performance. Our results reveal that CEOs with moderate levels of experience variety (i.e., those who optimally balance *depth* and *breadth* of career experience) outperform those at the extremes (i.e., those who lack diverse experience, or those with extensive levels of experience variety). Thus, we not only point towards a more nuanced understanding of CEO experience variety, but also provide a set of parameters that firms should consider when selecting CEOs.

5.2 Theory development

5.2.1 Literature review

CEOs take strategic decisions (Hambrick & Quigley, 2014; Lorsch & Khurana, 1999; Tian et al., 2011; Zajac, 1990). This requires constant information processing (Buyl et al., 2011), which is thus considered as one the most important tasks of a CEO (Haleblian & Finkelstein, 1993; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986).

The ability to process information, in turn, is expected to be influenced by CEO career backgrounds (Hambrick, 2007; Hambrick & Mason, 1984). Indeed, the notion that the variety of individual skills, knowledge, and experiences affects individual and organizational outcomes is central to strategic human capital and upper echelons theory (Becker, 1964; Hambrick & Mason, 1984; Ployhart & Moliterno, 2011). Several studies have established that career backgrounds significantly impact information processing and strategic choices, which, in turn, have performance consequences (Eisenhardt, 1989; Haleblian & Finkelstein, 1993; Prahalad & Bettis, 1986).

Building on the extant literature, an emerging research stream has begun focusing on CEO experience variety (e.g., Buyl et al., 2011; Crossland et al., 2014; Custodio et al., 2013; Fitzsimmons & Callan, 2016). These studies emphasize the structure of experience, meaning particularly the variety within an executive's career background. Although this emerging stream has made important inroads, only little is known about the exact nature of CEO experience variety and its organizational implications. First, most of the extant literature builds on 'the more the better' logic (Khanna et al., 2014;

Ployhart & Moliterno, 2011). This has recently been questioned by authors suggesting that CEO experience variety is not necessarily beneficial because CEOs with highly diverse career backgrounds (i.e., high experience *breadth*) might merely possess superficial knowledge. For example, Buyl et al. (2011: 170) suggested that such CEOs could "suffer from the 'jack of all trades but master of none' syndrome." That is, their ability to process information and to contribute positively to firm performance is reduced. Similarly, Crossland et al. (2014: 656) emphasized that "CEO career variety is not necessarily meritorious or beneficial," because "the cognitive outcome may be superficial breadth without mastery of anything in particular." Nevertheless, empirical research has yet to address the potentially negative implications of CEO experience variety.

Second, CEO experience variety has generally been operationalized as the sum of experiences (e.g., the number of firms or industries in which an executive has worked), divided by total career length (Crossland et al., 2014; Custodio et al., 2013). However, this measure does not adequately reflect experience *depth*, as the time spent in each of these firms or industries is not considered. Crossland et al. (2014: 668) therefore stressed the need to develop "more fine-grained measures of CEOs' prior experiences," which would help to better understand the complex nature of CEO experience variety.

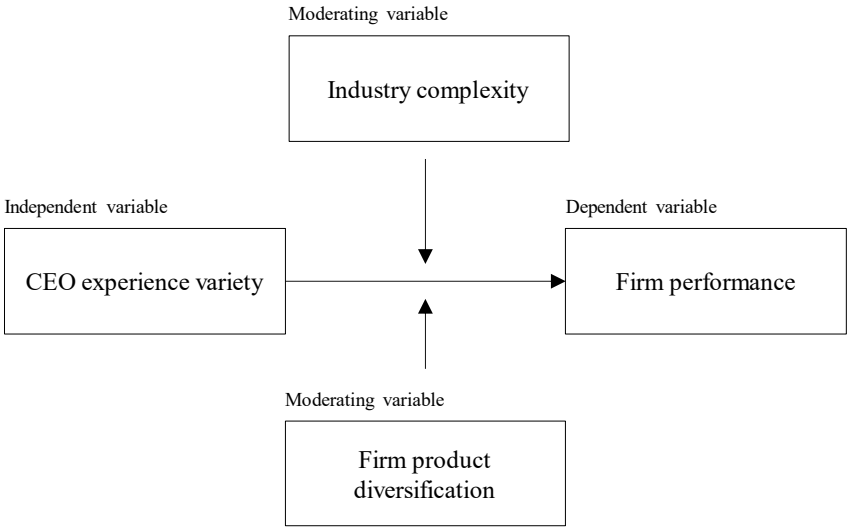
Third, prior research in this emerging stream has primarily examined the impact of CEO experience variety on individual-level outcomes such as career advancement and compensation (Custodio et al., 2013; Georgakakis et al., 2016; Wang & Murnighan, 2013) or on team-level outcomes such as TMT composition and processes (Buyl et al., 2011; Crossland et al., 2014; Georgakakis et al., 2017). However, except for Crossland et al.'s (2014) study on strategic change, research on firm-level outcomes has been noticeably absent.

5.2.2 Research framework and development of hypotheses

We begin to address these gaps in two ways. First, we develop a refined conceptualization and measurement of CEO experience variety. Contrary to previous literature, our theoretical model rests on the notion that CEO experience variety represents a continuum from specialization (i.e., experience *depth*) to generalism (i.e., experience *breadth*). The application of both dimensions (i.e., *depth* and *breadth*) allows us to understand not only whether a CEO has worked in many different institutional settings, but also whether he or she has spent sufficient time in each to adequately absorb relevant knowledge. Second, we study the performance implications

of CEO experience variety as well as the firm- and industry-level conditions that are likely to moderate the influence of CEO experience variety on firm performance. Figure 15 illustrates the corresponding research framework.

Figure 15: Research framework



Source: Authors

We next discuss the two opposing views on generalism versus specialization and develop our hypotheses.

5.2.2.1 The generalist view of human capital and the benefits of CEO experience variety

According to the *generalist view of human capital*, increasing CEO experience variety is beneficial. In this view, the benefits of greater CEO experience variety result from increasing experience *breadth*, i.e., growing generalism. The literature on human capital generalism has identified three main reasons why gaining generalism is beneficial.

First, generalists are expected to possess a *broader repertoire* of knowledge from different settings. This enhances their ability to effectively process diverse information at the time of strategic decision-making (Crossland et al., 2014). Studies have shown that CEO experience variety is associated with a broader set of cognitive and experiential stocks (McCall et al., 1988; Tesluk & Jacobs, 1998). The information processing advantages of such broad repertoires have been substantiated by several studies. For example, Dragoni et al. (2011) found that higher levels of variety in managerial experience pertain to more multifaceted diagnoses and solutions of business

problems. Similarly, Hitt and Tyler (1991) provided evidence that executives with varied experience use more criteria to assess strategic situations.

Second, generalism is associated with *higher awareness* of potential strategic options. Indeed, experience variety acquired through career mobility across different firms and industries is expected to impart an increasing range of paradigms when dealing with strategic complexity (Crossland & Hambrick, 2007). As a result, managers with diverse career experience recognize and evaluate a wider array of strategic options (Datta & Rajagopalan, 1998; Karaevli & Hall, 2006). Similarly, Crossland et al. (2014) argued that such CEOs will perceive a larger number of options as feasible, compared to their narrow-specialized counterparts.

Third, generalists possess *greater flexibility* in analyzing unfamiliar information and in deriving novel insights (Dane, 2010). High levels of experience variety provide individuals not only with a broader repertoire of knowledge to individuals, but also with greater aptitude for generating abstract principles from specific situations (Dalziel et al., 2011). Indeed, previous research shows that experience variety is a key prerequisite for developing general principles, as it enables CEOs to 'strategically conceptualize' and transfer existing knowledge to new situations (Karaevli & Hall, 2006; Neale & Northcraft, 1990). Norburn (1989) considered "the CEOs' exposures to a wider variety of situations [...] as particularly critical because they served as early training for complex multi-dimensional decision-making" (Karaevli & Hall, 2006: 364).

Taken together, generalist CEOs with high experience variety exhibit not only greater information processing and problem-solving capacities, but also a superior ability in promoting organizational adaptation and strategic novelty (Crossland et al., 2014; Dane, 2010; Karaevli & Hall, 2006).

Since increasing CEO experience variety implies a gain in generalism, the *generalist view of human capital* thus suggests that increasing CEO experience variety means building valuable human capital. Put differently, theory and evidence from this view suggest that CEOs with increasing levels of experience variety are better equipped to effectively process diverse information, to respond to the demands facing large firms, and thus to realize higher firm performance.

5.2.2.2 The specialist view of human capital and the costs of CEO experience variety

Contrary to the *generalist view of human capital*, the *specialist view of human capital* maintains that increasing levels of CEO experience are costly. In this view, the

costs of increasing CEO experience variety result from decreasing experience *depth*, i.e., diminishing specialization. The literature on human capital specialization has identified three main reasons why loss of specialization is costly.

First, specialists possess *in-depth, detailed, and accurate knowledge* and experience (Datta et al., 2002; Fiske & Taylor, 1991; Neale & Northcraft, 1990). Acquired through experience (Dane, 2010; Schmidt, Hunter, & Outerbridge, 1986), such knowledge is "deeper, localized, embedded, and invested within particular knowledge domains" (Kang & Snell, 2009: 68). Thus, previous studies have shown that more specialized executives better understand their industry's complexities, dynamics, and challenges (Bergh, 2001; Henderson et al., 2006). They have also found that in-depth understanding of competitors, suppliers, and other key stakeholders provides awareness of an industry's profitability drivers (Angriawan & Abebe, 2011).

Second, specialists exhibit a superior *ability to recall from specialized memory* in order to make informed strategic choices (Ericsson, Patel, & Kintsch, 2000; Vicente & Wang, 1998). According to Maitland and Sammartino (2015: 1557), "expertise is distinguished by the ability to recognize and retrieve from long-term memory large numbers of chunks or patterns that are relationally similar to a problem at hand." Unlike superficial characteristics, these patterns concern the underlying structural relationships among different aspects of an environment (Gentner et al., 2009; Gregoire et al., 2010). Such higher ability to draw on prior memory increases an executive's problem-solving capacity, thereby resulting in higher performance.

Third, specialization is associated with *more efficient knowledge acquisition and assimilation* within the respective domains of expertise (Brown & Duguid, 1991; Kang & Snell, 2009; Kelly et al., 2011). Indeed, through repeated application, decision-makers improve their domain-specific mental shortcuts and thus facilitate knowledge acquisition (Dane, 2010).

Consequently, specialist CEOs are expected to possess 'causal depth of knowledge' and 'coherent knowledge' (Nelson & Winter, 1982). Not only does this provide "a piercing insight that allows them to see through complexity," but it also enables specialist CEOs to recognize "what is essential, and ignore the rest" (Collins, 2001: 91). Moreover, specialization is considered to result in more accurate predictions (Ford & Baucus, 1987). Extant studies have shown that specialists have the ability to accurately and effectively recognize and respond to a narrow set of complicated issues. Due to their expertise, specialists excel at a small number of tasks (Wang & Murnighan,

2013) and possess the ability to solve problems astutely and forward-oriented (Gick, 1986).[104]

Since increasing CEO experience variety means losing specialization, the *specialist view of human capital* suggests that increasing CEO experience variety means sacrificing valuable human capital (Dane, 2010; Mumford, Scott, Gaddis, & Strange, 2002).[105] Thus, theory and evidence from this view propose that with increasing levels of experience variety, CEOs are less able to deal effectively with strategic complexity, to respond to the specific demands of the firm, and to realize high performance.

5.2.2.3 The integrated view of human capital and the implications of CEO experience variety

As outlined above, extant research takes either the *generalist view of human capital*, to highlight the benefits of increasing generalism (i.e., experience *breadth*), or the *specialist view of human capital*, to underscore the costs associated with losing specialization (i.e., experience *depth*). While these views have so far largely been treated as contradictory, we argue that they are complementary.

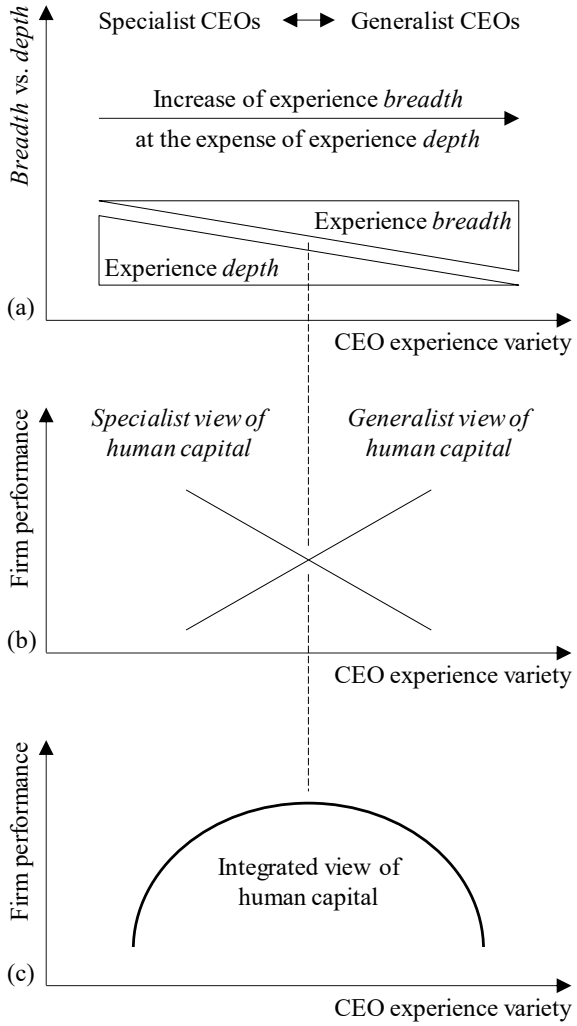
Our argument rests on the notion that specialization and generalism are two ends of one and the same continuum and thus need to be considered together. This continuum captures all potential levels of a CEO's experience variety, ranging from specialist CEOs with high experience *depth* (but low experience *breadth*) to generalist CEOs with high experience *breadth* (but low experience *depth*). As a continuum, CEO experience variety thus represents a crucial trade-off: a gain in generalism is only possible at the sacrifice of specialization.

CEOs who move from low to moderate levels of CEO experience variety acquire experience *breadth*. Thus, they strengthen the benefits described by the *generalist view of human capital*. However, at the same time, they inevitably sacrifice specialization. This is the cost of increasing CEO experience variety as described by the *specialist view of human capital*. We argue that, after a certain threshold, the additional loss of specialization is more detrimental than the benefits of further increasing generalism. Thus, an optimum exists at moderate levels of CEO experience variety, where the benefits of generalism balance the costs of sacrificing specialization.

[104] Extending beyond the scope of this study, a large body of research has highlighted that specialists are well-performing decision-makers (e.g., Dreyfus & Dreyfus, 2005; Ericsson & Charness, 1994; Ericsson & Lehmann, 1996; Kahneman & Klein, 2009; McCloy, Campbell, & Cudeck, 1994; Prietula & Simon, 1989; Salas et al., 2010; Sonnentag, 1998).
[105] On the value of specialization, see Dane (2010).

Figure 16(a) illustrates the trade-off between experience *depth* and experience *breadth* along the continuum of CEO experience variety. Figure 16(b) depicts the opposing predictions of the *specialist view of human capital* versus the *generalist view of human capital*. Figure 16(c) then shows the multiplicative combination of both views and the corresponding predicted inverted U-shaped relationship between CEO experience variety and firm performance.

Figure 16: Expected relationship between CEO experience variety and firm performance



Source: Authors

While the *generalist* and the *specialist views of human capital* provide a well-documented basis for the predicted mechanisms, our integrated model receives further support from research that underscores the detrimental implications of the extreme ends of the CEO experience variety continuum.

On the one hand, extreme specialization (i.e., very low CEO experience variety) has been associated with limited search for information. Karaevli and Hall (2006: 7) argued that "managers who have spent most of their careers in a single industry, for example, have a limited knowledge and skill base, and are more likely to engage in a limited search for information, compared to a person with more varied experience (Cyert & March, 1963)." Similarly, extant research indicates that specialists struggle to see problems with the eyes of others (Camerer, Loewenstein, & Weber, 1989; Dane, 2010; Hinds, 1999). Indeed, specialists tend to view situations from a narrow angle and to make choices consistent with their existing knowledge (Datta & Rajagopalan, 1998; Levinthal & March, 1993).[106] Such 'cognitive entrenchment' might result in a loss of creativity (Dane, 2010), as specialists lose the ability to flexibly re-combine their knowledge in radical manners that depart from the paradigms or patterns of thought established within their domains (Mumford, Blair, Dailey, Leritz, & Osburn, 2006).

Highly specialized CEOs are thus not only likely to be more predictable (Katz, 1982; Miller, 1991), but also subject to fundamental cognitive obstacles for organizational change (Bartunek & Moch, 1987; Labianca, Gray, & Brass, 2000). This entails the risk of remaining committed to actions that no longer meet the firm's requirements, which ultimately might harm firm performance (Henderson et al., 2006).

On the other hand, extreme generalism (i.e., very high CEO experience variety) has also been associated with limitations. First, such executives might not have enough time to sufficiently comprehend the industries and firms they have worked in. This is due to limited learning abilities and the inherent conflict between the number of fields that can be mastered and the *depth* of knowledge in each of them (Anderson, 2012).[107] As a 'common body of knowledge' exists within each industry (Hambrick, 1982), a certain tenure is needed to develop industry-specific competency (Henderson et al., 2006). The time available to build human capital is further shortened by 'adjustment costs'. Executives switching firms entail an 'adjustment period', during which existing human capital is tailored to the new environment (Hatch & Dyer, 2004; Mahoney, 1995; Mahoney & Pandian, 1992; Teece et al., 1997). During adjustment, the accumulation of new human capital is reduced while the executive focuses on adapting and integrating (Denis et al., 2000), rather than on acquiring new knowledge. Net progress is therefore minimal: as when constantly swimming upstream, potential progress is limited

[106] This phenomenon has been described as the psychological 'adherence to known recipes' (Finkelstein & Hambrick, 1996) and as the risk of being trapped in 'core rigidities' (Leonard-Barton, 1992) or 'career routines' (Hall, 1986).
[107] In the words of Anderson (2012: 464): "Each of us has a limited capacity for learning new things—by focusing on a narrow field of study, specialists are able to concentrate their efforts and maximize the use of that limited capacity, while generalists are forced to spread themselves more thinly in the pursuit of a wider range knowledge."

(Henderson et al., 2006). Second, frequent career moves are expected to increase uncertainty, which, in turn, increases the need to process information (O'Reilly, 1980). However, an individual's ability to effectively process information is limited and declines once cognitive limits are reached (O'Reilly, 1980; Tushman & Nadler, 1978).[108]

In sum, we have argued that CEOs with moderate levels of experience variety will combine broad-generalist experience from different domains and narrow-specialized experience in these domains (i.e., firms and industries). Possessing both experience *depth* and *breadth*, such individuals will be more likely to effectively process diverse information, to enhance strategic decision-making quality, and consequently to increase firm performance. In addition, both extreme specialization and extreme generalism are associated with negative performance implications. Thus, we suggest:

Hypothesis 1. There is an inverted U-shaped relationship between CEO experience variety and firm performance.

We next turn to potential contingencies that might impact the curvilinear relationship between CEO experience variety and firm performance.

5.2.2.4 Moderating effects

CEO succession research commonly adopts a contingency perspective to examine the interaction between new CEOs' background characteristics and organizational contexts (Herrmann & Datta, 2002). Following the notion of executive job demands (Finkelstein et al., 2009; Geletkanycz & Boyd, 2011; Hambrick et al., 2005), we suggest that the relationship between CEO experience variety and firm performance significantly varies based on the information processing demands driven by the firm's external and internal complexity. Specifically, we expect that the relationship between CEO experience variety and firm performance is moderated by two key contextual factors: environmental complexity (i.e., industry complexity) and organizational complexity (i.e., firm product diversification).

Industry complexity. Prior research has recognized industry complexity as a key contextual factor that is related to the job demands facing executives (Finkelstein et al., 2009; Hambrick et al., 2005). Such demands determine the fit between the CEO's career

[108] Finally, executives might attempt to offset these limits with counterproductive cognitive tactics. Among these are 'simplification processes' (Schwenk, 1984; Staw et al., 1981). Tactics also include the temptation to react to 'low validity cues' (Manis et al., 1978; O'Reilly, 1980). However, these tactics might reduce decision-making quality and accuracy (Manis et al., 1978).

background and the organization's environmental imperatives (Geletkanycz & Boyd, 2011).[109] We thus suggest that industry complexity will play a key role in determining the fit between career background and environmental demands. Specifically, we propose that the downward side of the inverted U-shaped relationship will become less steep under conditions of high industry complexity. Various reasons support this argument.

First, firms in complex industries face heterogeneous competition and volatile stakeholder demands. Thus, organizations need executives capable of drawing on diverse career experiences (Datta et al., 2002). Given that generalists possess a broader set of cognitive and experiential stocks (Smith & White, 1987), they are likely to recognize a wider variety of strategic options when dealing with environmental complexity (Dragoni et al., 2011). They will also be better equipped to recognize and respond to the diverse needs of different stakeholders (Fitzsimmons & Callan, 2016). While a balance of experience *depth* and *breadth* remains key under such conditions, CEOs with extensive experience variety are likely to promote less disadvantageous performance effects. They will do so owing to their ability to draw on a wider range of information, being better able to respond to environmental complexity.

Second, scholars have argued that more complex industry environments are associated with greater task uncertainty (Lawrence & Lorsch, 1967; Pfeffer & Salancik, 1978). To deal with uncertainty, firms need strategic leaders able to draw on a variety of experience (Georgakakis et al., 2017). Extensive CEO experience variety may serve as a means for dealing with the uncertain tasks and demands arising from industry complexity (Hambrick et al., 2005). Such anticipated benefits, which firms in complex industries can gain from hiring executives with diverse career experience, are likely to reduce the negative impact of moderate to extensive levels of experience variety, resulting in a flattening effect on the downward side of the inverted U-shaped relationship. Hence, we hypothesize the following:

> *Hypothesis 2. Industry complexity moderates the inverted U-shaped relationship between CEO experience variety and firm performance. Under conditions of high industry complexity, the inverted U-shaped relationship flattens (i.e., becomes less pronounced than under conditions of low industry complexity).*

[109] Hambrick et al. (2005: 476) give the following example: "An industry composed of many direct and indirect competitors, in which the product is sold through a large number of channels to heterogeneous customers and where technology changes rapidly, is complex and poses considerable demands on the executive, compared to a more simple and homogeneous environment (Eisenhardt, 1989)."

Firm product diversification. Previous research suggests that the degree of firm diversification profoundly impacts the information processing demands on CEOs (Chandler, 1962; Hambrick et al., 2005). Informational requirements increase when firm interdependencies "become more complex [and] coordination and mutual problem demands increase" (Tushman & Nadler, 1978: 616). This is driven by two factors. First, greater firm diversification entails a higher *information quantity* (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986). This is due to the sheer number of businesses (Kotter, 1982). Second, as firm diversification increases, so does *information complexity* (Finkelstein & Hambrick, 1989; Henderson & Fredrickson, 1996; Prahalad & Bettis, 1986). This is due to progressively heterogeneous strategic decisions (Baysinger & Hoskisson, 1990).[110]

We posit that under conditions of high firm complexity, the negative implications of extreme levels of CEO experience variety become less pronounced. This argument is based on the notion that executives facing high information processing demands tend to rely more strongly on their specific experiences. As suggested by Hambrick (2007: 336), "executives who are under heavy job demands will be forced to […] fall back on what they have tried or seen work in the past; thus, their choices will reflect their backgrounds and dispositions." Thus, in light of high job demands, CEOs are expected to economize the search for and interpretation of information by relying on their experiences (Hambrick et al., 2005). Thus, both specialist and generalist CEOs are expected to prove increasingly valuable, as they might be able to more distinctively leverage the specific benefits of being either a specialist or a generalist. Therefore, we suggest:

> *Hypothesis 3. Firm product diversification moderates the inverted U-shaped relationship between CEO experience variety and firm performance. Under conditions of high firm product diversification, the inverted U-shaped relationship flattens (i.e., becomes less pronounced than under conditions of low firm product diversification).*

[110] Researchers have argued that this holds true for both related and unrelated diversification (Henderson & Fredrickson, 1996; Khanna et al., 2014). In case of the former, information processing demands increase due to the need to understand different businesses and to manage their interdependencies (Hill & Hoskisson, 1987; Jones & Hill, 1988; Kerr, 1985; Michel & Hambrick, 1992). In case of the latter, information processing demands arise from the necessity to maintain efficient internal capital markets (Henderson & Fredrickson, 1996; Jones & Hill, 1988).

5.3 Methods

5.3.1 Sample and data collection

Our sample is based on large listed firms headquartered in four European countries (Germany, the Netherlands, Switzerland, and the United Kingdom) as of December 31, 2007. To select our sample, we filtered all listed firms in these countries by market capitalization, and the largest 100 were selected given that they fulfilled the following criteria: (a) they were not small and medium-sized enterprises based on the European Union's (2016) definition (i.e., up to 250 employees, €50 million annual revenue, and €43 million total assets); (b) they were not pure holding entities or investment vehicles (i.e., companies with a primary two-digit SIC code of 67); (c) they were neither acquired by another firm nor nationalized over the study period (2007–2013); (d) they were not subsidiaries of another firm; (e) their operational headquarters were not outside the selected countries; (f) they were not family-controlled companies.[111]

This resulted in a final sample of 330 companies. We then identified all CEO successions (excluding interim CEOs, Co-CEOs, and CEOs with less than a one-year tenure) at these companies between January 1, 2007 and December 31, 2013. The total number of CEO successions was 305. Similar to the studies of Crossland et al. (2014) and Chen (2015), we focused on newly appointed CEOs, because the CEO succession context allows an undistorted study of the consequences of CEO experience variety.[112]

We hand-collected executive data primarily from the companies' annual reports, websites, and press releases (Harris & Helfat, 1997; Zhang & Rajagopalan, 2010). For missing information, we used biographical databases (e.g., LexisNexis, Who is Who in Europe, Factiva, Munzinger Online), or triangulated web sources (e.g., LinkedIn or newspaper articles). Similar to previous strategic leadership studies using European samples, TMT members were identified by the self-reported definition included in annual reports (Boone et al., 2004a; Nielsen & Nielsen, 2013). Firm and industry data were retrieved from the Bloomberg and ThomsonONE databases.

Overall, we achieved a data completion rate of 66%, meaning that we had complete data for 201 out of 305 CEO successions.[113] To ensure that our final dataset

[111] A firm was categorized as family-controlled if a family was both a majority shareholder (i.e., voting rights above 50%) (Miller et al., 2013) and had operational control of the company (i.e., a family member was either the acting CEO or Chairman of the Board) (Minichilli et al., 2014).

[112] Past research has underlined that CEO tenure affects strategic decision-making (Hambrick & Fukutomi, 1991; Miller, 1991; Shen & Cannella, 2002a). In contrast, newly appointed CEOs "are about to take up the job and thus have no serious organizational entrenchment issues" (Chen, 2015: 1896). This allows enhancing within-sample comparability with regard to the CEO effect on firm outcomes (Crossland et al., 2014).

[113] This completion rate is determined primarily by the difficulty of finding information on a CEO's entire career history and on all TMT members. Nevertheless, the completion rate is comparable to similar studies building on data concerning executive's entire career backgrounds (Crossland et al., 2014; Rodenbach & Brettel, 2012).

of 201 CEO appointments did not differ from the 104 CEO successions with incomplete data, we ran several Kolmogorov-Smirnov tests in STATA 15, testing firm performance and industry complexity. Results were non-significant for both cases, with a combined *p*-value of 0.73 for firm performance and 0.99 for industry complexity.

5.3.2 Measures

5.3.2.1 Dependent variable

Firm performance. Performance was measured as the firm's average industry-adjusted ROA for the first three years after CEO succession (including the year of appointment).[114] A three-year time frame has been widely applied in previous research (e.g., Datta & Rajagopalan, 1998; Karaevli, 2007; Shen & Cannella, 2002a). We used an average value to establish a more accurate picture of firm performance, compared to using ROA from a single year (Zajac, 1990), and to avoid the effects of single-year outliers (Shen & Cannella, 2002a). Following previous research, industry-adjusted ROA was calculated by subtracting the median industry value (excluding the focal firm) from the firm's annual ROA (Huson et al., 2004; Quigley & Hambrick, 2012; Zhang & Rajagopalan, 2010).

We chose ROA over other internal accounting (e.g., return on sales) or market measures of firm performance (e.g., market valuation) for two reasons. First, ROA has proven to be one of the best understood accounting measures (Chung & Luo, 2013; Shen & Cannella, 2002a; Zajac, 1990). Second, compared to market measures of performance, ROA has been regarded as more suitable when considering the effect of CEOs or top managers. This is because ROA reflects a "firm's actual operational performance, not investor reactions or market valuation" (Shen & Cannella, 2002a: 719), whereas market measures are "often subject to forces beyond management control" (Chung & Luo, 2013: 345).

5.3.2.2 Independent and moderator variables

CEO experience variety. This variable represents a continuum of the degree to which a new CEO has acquired diverse career experience from different firms and industries. It is a composite measure and calculated as the sum of a CEO's firm and industry experience diversity. First, firm and industry experience diversity were

[114] As a robustness check, we used average *non*-industry-adjusted ROA (for both prior and post-succession firm performance). For all hypotheses, results were consistent with those reported here. This was the first of an array of alternative measures that we used as robustness checks. While none led to substantially different findings, their results are available upon request from the authors.

calculated using Blau's (1977) index formula, expressed as $1-\sum {p_i}^2$, where p_i is the exact proportion of a CEO's career (in years) spent in a firm i or industry i (Bunderson & Sutcliffe, 2002).[115] Second, we summed firm and industry experience diversity to obtain an overall measure of CEO experience variety (Crossland et al., 2014; Zajac & Westphal, 1996).[116] Following the recommendations of Haans et al. (2016), our independent variable was neither mean-centered nor standardized, as both transformations are unnecessary from a mathematical point of view and tend to confuse result interpretation.[117] High scores indicate experience *breadth* from various firms and industries, while low scores indicate high levels of career specialization, i.e., experience *depth*.

Our conceptualization of CEO experience variety allows a clear focus on the strategic human capital required at the helm of the organization (Datta & Iskandar-Datta, 2014; Finkelstein et al., 2009). Based on the established typology in the managerial career literature (Karaevli & Hall, 2006), we distinguish between 'institutional experience' (i.e., firm and industry experience) and 'functional experience' (i.e., experience in sales, finance, engineering, etc.) (Smith & White, 1987; White et al., 1994). The first type represents the *strategic, conceptual experience* needed to successfully fulfill the CEO's strategic responsibility (Bragaw & Misangyi, 2015; Hambrick & Quigley, 2014; Katz, 1974; Zajac, 1990). The second represents the *operational, technical knowledge* required by functional heads within the TMT (e.g., the CFO).[118] Similarly, previous CEO research has emphasized the importance of 'general managerial skills' based on firm and industry experience (Custodio et al., 2013). It has also underlined the relevance of conceptual skills, which are transferable across firms and industries (Castanias & Helfat, 1991, 2001; Katz, 1974; Kotter, 1982).

[115] The advantages of the Blau (1977) index as a measure of career variety have repeatedly been acknowledged in the extant strategic leadership literature (Bunderson & Sutcliffe, 2002; Cannella et al., 2008). It has also been recognized as an appropriate measure of variety in the broader team diversity literature (Harrison & Klein, 2007).

[116] As the elements had similar means (0.47 for firm experience and 0.36 for industry experience), we took the simple sum to calculate our aggregate measure of experience variety (Crossland et al., 2014).

[117] On the one hand, "the results obtained with centered data and raw data are mathematically equivalent and mean-centering does not increase the power to detect quadratic or interaction effects". On the other hand, "standardization does very much the same except that all coefficients and standard errors, not just those of X as in the case of mean-centering, will change predictably and systematically" (Haans et al., 2016: 1184).

[118] Previous literature has based the distinction between strategic and operational experience on the argument that conceptual skills are particularly important for CEOs, who mainly need to scan and interpret complex environments (Daft & Weick, 1984; Garg et al., 2003), as well as analyze and decide strategic issues (Karaevli & Hall, 2006; Katz, 1974). According to Katz (1974: 96), "at the top level of an organization, conceptual skill becomes the most important skill of all for successful administration. A chief executive may lack technical or human skills and still be effective if he has subordinates who have strong abilities in these directions. But if his conceptual skill is weak, the success of the whole organization is jeopardized."

Industry complexity. We calculated the focal firm's industry complexity as an inverse measure of industry concentration (Chen et al., 2015; Keats & Hitt, 1988; Palmer & Wiseman, 1999). This approach was based on the notion that concentrated industries are more homogenous and therefore less complex. Following previous research (Anderson & Tushman, 2001; Dess & Beard, 1984), industry complexity was operationalized using the Gibbs-Martin (1962) industry concentration ratio. This ratio—in its inversed form—was calculated as $1 - [\sum x^2/(\sum x)^2]$, where x was the market share of all companies from the same industry within the sample. Higher values indicate higher complexity (i.e., lower concentration).[119]

Firm product diversification. This measure was calculated using Palepu's (1985) entropy measure for total diversification, expressed as $\sum_{i=1}^{N} P_i \ln(1/P_i)$, with P_i being the share of the ith segment of the firms total sales in the year of succession.[120] Low scores indicate low diversification, whereas high scores indicate high diversification. We used Palepu's entropy measure as it is an established measure of a firm's business portfolio diversification and reflects the relevance, relatedness, and number of the company's business units (e.g., Geletkanycz et al., 2001; Hambrick & Cannella, 2004; Menz & Scheef, 2014; Ridge et al., 2015; Westphal & Fredrickson, 2001; Wiersema & Bantel, 1992; Zajac & Westphal, 1996).

5.3.2.3 Control variables

CEO MBA. To account for general CEO education, we controlled for CEO MBA, measured as a dummy variable taking the value of 1 for CEOs holding an MBA degree and 0 otherwise (Datta & Iskandar-Datta, 2014; Murphy & Zabojnik, 2007). MBA programs have not only been used as valid indicators of generalist human capital, but have also been shown to influence strategic decision-making and firm value (Bertrand & Schoar, 2003; Miller, Xu, & Mehrotra, 2015).

CEO career length. This variable was measured as the CEO's total career length in years (beginning with the first position). Where information on the first position was unavailable, we calculated CEO career length using the year of graduation with the most recent degree as a starting point (while excluding MBAs or other executive education

[119] As a robustness check, we used the inverse four-firm concentration ratio (Datta & Rajagopalan, 1998; Nadkarni & Barr, 2008) as a measure of industry complexity. This ratio is calculated as the combined market share of the industry's top four companies. We inversed the ratio, so that high values represent high industry complexity. Results were similar both in terms of correlations and of significance levels. Furthermore, as another robustness check, we used a three-year average for both moderators, in order to capture the same period as measured for the dependent variable (i.e., the first three years after CEO succession). The results were also identical in terms of direction and significance.

[120] This means that diversification is calculated with a weighted average of the shares of each segment, with the weight being the logarithm of the inverse of its share.

degrees, which are typically acquired after an individual's career start). We included career length to control for the effects of a CEO's human capital. Naturally, CEOs with longer careers are more likely to acquire diverse experience (Hamori, 2006).[121]

CEO firm tenure. To consider the CEO's firm specific experience, we controlled for the CEO's tenure within the new firm (measured in years). This allows to capture the CEO's stock of firm experience more accurately compared to a simple dummy variable for CEO succession origin which has been shown to impact firm performance (Karaevli, 2007; Shen & Cannella, 2002a; Zajac, 1990).[122]

CEO functional diversity. This measure was calculated using Blau's (1977) index formula, expressed as $1 - \sum {p_i}^2$, where p_i is the relative proportion of a CEO's career spent in a function i (Bunderson & Sutcliffe, 2002). Similar to prior research, we coded a CEO's functional experience using the following ten categories: engineering, production, finance, research and development, marketing and sales, business administration, legal affairs, human resources, strategic development, others (Cannella et al., 2008). We controlled for CEO functional background diversity because it is a frequently studied aspect of executives' career backgrounds (Cannella et al., 2008; Carpenter et al., 2004; Crossland et al., 2014; Finkelstein et al., 2009).[123]

Predecessor CEO tenure. This variable was calculated as the number of years during which the predecessor served as CEO (i.e., until replacement by the new CEO). Past research has suggested that long CEO tenures are associated with organizational inertia and might impact organizational outcomes (Hambrick & Fukutomi, 1991).

Post-succession TMT turnover. This variable was calculated as the average of TMT exits and entries. We considered TMT changes during a two-year timespan, to capture the full effect of CEO succession on TMT composition (Shen & Cannella, 2002a). Various studies have shown that TMT change impacts post-succession firm performance (Karaevli, 2007; Shen & Cannella, 2002a; Tushman & Rosenkopf, 1996).

[121] As a robustness check, we also tested the hypotheses using CEO age instead of CEO career length (Karaevli, 2007; Weng & Lin, 2014). This measure was operationalized as the number of years since the CEO's birth, until and including the year of succession (Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010). The results were identical in terms of direction and significance.

[122] We also ran our models using CEO outside succession (instead of CEO firm tenure). CEO outside succession was measured as a dichotomous variable, taking the value of 1 for outsiders, and the value of 0 for insiders. In line with previous studies, outsiders were defined as CEOs with firm tenures of two years or less (Hambrick & Fukutomi, 1991; Zhang & Rajagopalan, 2004). The results did not change compared to those reported here.

[123] As another measure of CEO career background, we added CEO experience in the same industry as an additional control variable. Same-industry CEO experience was a dummy variable, which takes the value of 1 for CEOs with one or more years of prior work experience in the same industry as the respective firm, and 0 otherwise. The direction and significance of our results remained unchanged. However, as this variable was neither significant ($p = 0.79$) nor changed the R^2 of the model, it was omitted from the final model.

Firm size. Firm size determines the complexity and information processing demands as well as the inertia facing executives (Carpenter & Sanders, 2002; Henderson & Fredrickson, 1996; Quigley & Hambrick, 2012). Following previous research, we measured firm size as the natural logarithm of annual sales (of the year of succession) (Carpenter & Sanders, 2002; Chung & Luo, 2013; Henderson et al., 2006; Karaevli, 2007; Rajagopalan & Spreitzer, 1997; Ridge et al., 2015; Westphal & Fredrickson, 2001).[124] Previous research has indicated that firm size might impact firm performance through different mechanisms. On the one hand, larger firms, having more resources at their disposal, are more likely to increase performance through either growth or efficiency initiatives. On the other hand, they are also likely to more strongly resist change (Cooper et al., 2014; Tihany et al., 2000).

Firm internationalization. As a driver of organizational complexity (Sanders & Carpenter, 1998), firm internationalization may impact a CEO's information processing demands (Henderson & Fredrickson, 1996). Furthermore, it has been shown to impact firm performance (Nielsen, 2010a). Thus, we controlled for firm internationalization, measured as the ratio of foreign sales to total sales (Tallman & Li, 1996).[125]

Frequent CEO replacements. This was calculated as a dummy variable, taking the value of 1 for companies with more than one succession event during the study period (2007–2013), and 0 for those with only one such event. As CEO successions are considered disruptive, this variable allows controlling for the potential performance effects of serial succession events (Friedman & Saul, 1991; Kesner & Sebora, 1994; Shen & Cannella, 2002a; Zhang & Rajagopalan, 2004).

Pre-succession firm performance. This measure was calculated using the average industry-adjusted ROA for the two years before the year of succession (Karaevli, 2007). Previous research has shown that subsequent firm performance is related to prior performance (Brown, 1982). Thus, this control variable is widely used in CEO succession research (Quigley & Hambrick, 2012; Zhang & Rajagopalan, 2010).

Industry munificence. This measure was calculated as the regression coefficient of time on the annual average sales of companies in the same industry over the sample

[124] As a robustness check, we used the natural logarithm of the number of employees in the year of succession (Karaevli, 2007; Zhang & Rajagopalan, 2010). Results remained unchanged.

[125] We used Palepu's (1985) entropy measure for diversification as an additional robustness check (instead of the ratio of foreign sales to total sales). This is expressed as $\sum_{i=1}^{N} P_i \ln(1 / P_i)$, with P_i being the share of the ith segment of the firm's total sales in the year of succession. As it reflects the number of segments in which a firm operates, and weights each segment according to its contribution to total sales, Palepu's entropy measure is an established measure of diversification (e.g., Geletkanycz et al., 2001; Hambrick & Cannella, 2004; Menz & Scheef, 2014; Ridge et al., 2015; Westphal & Fredrickson, 2001; Wiersema & Bantel, 1992; Zajac & Westphal, 1996). The results were identical compared to those reported in the results section.

period (2007–2013), divided by the mean value of sales for the same firms during the same period (Dess & Beard, 1984; Nielsen, 2009). Past studies have shown that industry munificence significantly impacts firm outcomes (Cannella et al., 2008; Nielsen, 2009). Therefore, we considered the potential impact of the degree of industry-level sustained growth (Cooper et al., 2014).

Industry dynamism. To capture the industry's volatility and unpredictability, we added industry dynamism as an additional environmental control variable (Dess & Beard, 1984), operationalized as the fluctuation of industry sales (Weng & Lin, 2014). We divided the standard error of the slope coefficient of industry sales (i.e., the total sales of all firms within the same industry) over the study period (2007–2013) by the mean value of industry sales for the same period (Nielsen & Nielsen, 2013; Zhang & Rajagopalan, 2004).

Year and country dummies. Finally, we included dummy variables for years (i.e., 2007–2013) and countries (i.e., Germany, the Netherlands, Switzerland, and the United Kingdom) to capture potentially confounding macro-economic effects (Hambrick & Quigley, 2014).

5.4 Results

5.4.1 Estimation methods

Similar to prior work in the area of CEO experience variety (e.g., Chen, 2015; Crossland et al., 2014), our sample is restricted to new CEO appointments. While this approach enhances comparability between CEOs in our sample, it might introduce sample selection bias. Therefore, following previous research, we used a Heckman two-stage model (e.g., Chen, 2015; Karaevli, 2007; Weng & Lin, 2014; Westphal & Fredrickson, 2001; Zajac & Westphal, 1996).[126]

Correct application of a two-stage approach requires the use of instrumental variables that are associated with the dependent variable in the first-stage model, but are unrelated to the dependent variable in the second-stage model (Certo et al., 2016; Larcker & Rusticus, 2010). Similar to prior studies, our instrumental variables were (a) the industry rate of CEO turnover (Karaevli & Zajac, 2013) and (b) CEO age (Chen, 2015). While industry patterns of CEO turnover are likely to affect firm-level CEO replacement, they are unlikely to impact firm outcomes (Karaevli & Zajac, 2013). In addition, although CEO age positively relates to CEO replacement in the focal firm

[126] The Heckman (1979) two-stage model allows controlling for sample selection bias in cases where the dependent variable is only observed for a sub-sample of a larger population (Certo et al., 2016).

(Huson et al., 2004; Wagner et al., 1984), it does not seem to significantly impact firm performance (e.g., Ballinger & Marcel, 2010; Karaevli, 2007; Miller et al., 2015; Simsek, 2007). To test the suitability of our instruments, we ran correlation analyses. Results show that the industry rate of CEO turnover and CEO age are both correlated with the likelihood of CEO replacement in the focal firm ($p = 0.0000$ and $p = 0.0000$ respectively), but unrelated to firm performance ($p = 0.9203$ and $p = 0.3165$ respectively). This substantiates the appropriateness of the selected instruments.

The first-stage model is a selection model that estimates the likelihood of CEO succession based on the full sample. Correspondingly, our model had a sample size of $N = 2{,}160$.[127] To predict the likelihood of CEO succession, we ran a Probit model with CEO succession as the dependent variable. Appendix 5.1 documents the operationalization of the variables and the Probit results.

We then calculated the inverse Mill's ratio based on the results of the first-stage model (Hamilton & Nickerson, 2003) and included this variable, named 'Likelihood of CEO succession', in our second-stage model. Results are presented in Appendix 5.2. Since the results of the second-stage model are identical with the regression results presented in this paper (i.e., Table 10), we can conclude that our results are not artifacts of sample selection bias.

5.4.2 Main analysis

Table 9 presents the means, standard deviations, correlations, and reliabilities for the study variables. To check for multicollinearity, we first examined the correlations among the independent variables. Results show that firm performance was positively and significantly associated with pre-succession firm performance ($\beta = 0.54$; $p < 0.001$). Furthermore, firm performance was negatively and significantly correlated with post-succession TMT turnover ($\beta = -0.24$; $p < 0.001$) and frequent CEO replacements ($\beta = -0.16$; $p < 0.05$). Second, we calculated the VIF scores, which quantify the degree of a regression's multicollinearity.[128] With an average VIF of 1.50 and a maximum of 3.23, results were below the recommended threshold of 10, indicating that our results are not significantly affected by multicollinearity (Cohen et al., 2003).[129]

[127] Due to missing data, this number is slightly lower than the maximum possible number of 2,310 observations, which would correspond to all firm-year pairs (i.e., 330 firms multiplied by a study period of seven years).
[128] Detailed VIF results are shown in Appendix 5.3. We calculated the VIF scores based on Model 2 (in order to preclude the correlation induced by squared terms and interaction terms).
[129] In addition, we conducted regression diagnostics to consider potential violations of regression assumptions. Residuals do not appear to violate any assumptions concerning normality, linearity, and homoscedasticity.

Table 9: Descriptive statistics and correlation matrix

Variables[a]	Mean	S.D.	1 Firm performance[b]	2 CEO experience variety	3 CEO MBA	4 CEO career length	5 CEO firm tenure	6 CEO functional diversity	7 Predecessor CEO tenure	8 Post-succession TMT turnover	9 Firm size[c]	10 Firm internationalization	11 Firm product diversification	12 Frequent CEO replacements	13 Pre-succession firm performance[b]	14 Industry munificence	15 Industry dynamism
1 Firm performance[b]	-0.41	5.80															
2 CEO experience variety	0.78	0.48	-0.02														
3 CEO MBA	0.20	0.40	0.02	0.02													
4 CEO career length	26.05	6.06	-0.01	-0.01	-0.11												
5 CEO firm tenure	9.02	10.12	0.11	-0.53 ***	-0.11	0.19 **											
6 CEO functional diversity	0.51	0.23	0.05	0.03	0.12	-0.04	-0.05										
7 Predecessor CEO tenure	7.67	4.41	0.03	-0.07	0.01	-0.15 *	0.09	0.05									
8 Post-succession TMT turnover	0.46	0.27	-0.24 ***	0.13	0.03	0.00	-0.12	-0.10	-0.14 *								
9 Firm size[c]	8.53	1.69	0.07	-0.15 *	0.04	0.16 *	0.21 **	-0.02	-0.04	0.08							
10 Firm internationalization	0.56	0.31	0.08	-0.08	0.08	0.10	0.20 **	-0.10	0.08	0.04	0.15 *						
11 Firm product diversification	0.94	0.52	-0.09	0.00	0.10	0.03	0.03	-0.02	0.06	0.04	0.31 ***	0.07					
12 Frequent CEO replacements	0.40	0.49	-0.16 *	0.01	-0.13	0.12	-0.07	-0.10	-0.44 ***	0.21 **	0.11	-0.10	0.05				
13 Pre-succession firm performance[b]	-0.08	6.47	0.54 ***	-0.04	0.16 *	0.02	0.10	0.03	0.06	-0.05	0.00	0.11	-0.07	-0.10			
14 Industry munificence	0.04	0.03	0.02	-0.01	0.00	-0.01	0.08	-0.13	0.11	-0.07	-0.17 *	0.42 ***	-0.01	-0.13	0.01		
15 Industry dynamism	0.08	0.04	-0.01	-0.11	0.01	0.09	0.07	0.00	-0.16 *	0.02	0.06	-0.13	0.04	0.14 *	0.02	-0.54 ***	
16 Industry complexity	0.88	0.10	0.03	0.09	0.04	-0.10	-0.06	0.15 *	-0.05	-0.05	0.01	-0.11	-0.02	-0.05	0.00	-0.43 ***	-0.16 *

a N = 201

b Industry-adjusted

c Logarithm

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Authors

Table 10: Regression results with firm performance as dependent variable

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		1.78	(6.87)	1.29	(7.04)	1.64	(6.88)	-7.76	(6.79)	-0.04	(6.39)	-8.77	(5.92)
Controls	CEO MBA		-1.18	(0.80)	-1.15	(0.81)	-1.02	(0.80)	-1.32 †	(0.79)	-0.62	(0.82)	-0.88	(0.82)
	CEO career length		-0.04	(0.10)	-0.05	(0.10)	-0.04	(0.10)	-0.08	(0.10)	-0.04	(0.10)	-0.07	(0.10)
	CEO firm tenure		0.00	(0.04)	0.02	(0.04)	0.05	(0.05)	0.05	(0.05)	0.04	(0.05)	0.05	(0.04)
	CEO functional diversity		0.26	(1.50)	0.25	(1.50)	0.02	(1.48)	0.17	(1.43)	0.11	(1.41)	0.30	(1.37)
	Predecessor CEO tenure		-0.11	(0.07)	-0.11	(0.07)	-0.13 †	(0.08)	-0.16 *	(0.08)	-0.14 †	(0.08)	-0.16 *	(0.08)
	Post-succession TMT turnover		-4.20 **	(1.23)	-4.30 **	(1.25)	-4.24 **	(1.28)	-4.28 **	(1.25)	-4.15 **	(1.21)	-4.21 **	(1.20)
	Firm size[b]		0.42 †	(0.24)	0.44 †	(0.24)	0.38	(0.24)	0.39	(0.24)	0.34	(0.24)	0.35	(0.24)
	Firm internationalization		0.56	(1.52)	0.53	(1.51)	0.74	(1.47)	0.90	(1.42)	1.11	(1.39)	1.21	(1.37)
	Firm product diversification		-0.73	(0.79)	-0.75	(0.78)	-0.81	(0.77)	-0.94	(0.75)	1.88	(1.48)	1.66	(1.23)
	Frequent CEO replacements		-1.59 *	(0.75)	-1.55 *	(0.74)	-1.48 *	(0.74)	-1.35 †	(0.74)	-1.33 †	(0.76)	-1.17	(0.75)
	Pre-succession firm performance[b]		0.47 ***	(0.09)	0.47 ***	(0.09)	0.46 ***	(0.09)	0.47 ***	(0.09)	0.44 ***	(0.09)	0.45 ***	(0.09)
	Industry munificence		-3.93	(22.85)	-3.44	(22.77)	-6.80	(22.64)	-7.77	(22.76)	-9.49	(21.48)	-10.23	(21.47)
	Industry dynamism		-1.13	(11.94)	-0.52	(11.82)	-3.08	(11.91)	-2.63	(11.88)	-3.94	(11.38)	-3.42	(11.35)
	Industry complexity		-0.72	(5.04)	-0.81	(4.94)	-1.72	(4.81)	10.23	(6.26)	-2.69	(4.55)	8.40	(5.55)
Main effect	CEO experience variety	*H1*			0.56	(0.84)	6.35 *	(2.82)	49.21 **	(17.93)	18.64 **	(6.45)	62.50 ***	(16.82)
	CEO experience variety^2						-3.98 *	(1.80)	-28.53 *	(12.16)	-11.97 **	(4.18)	-38.78 **	(11.44)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-49.35 *	(19.78)			-50.63 **	(17.17)
	CEO experience variety^2 x Industry complexity								28.33 *	(13.51)			30.90 **	(11.58)
	CEO experience variety x Firm product diversification	*H3*									-12.54 *	(4.93)	-12.43 **	(4.57)
	CEO experience variety^2 x Firm product diversification										8.11 *	(3.29)	8.16 *	(3.21)
Statistics	F-test		6.72 ***		6.44 ***		5.71 ***		5.50 ***		5.35 ***		5.33 ***	
	R^2		0.39		0.39		0.40		0.42		0.43		0.45	
	Change in R^2				0.00		0.01		0.02		0.03		0.05	
	Adjusted R^2		0.30		0.30		0.32		0.33		0.34		0.35	
	Change in adjusted R^2				0.00		0.02		0.01		0.02		0.03	

a N = 201. Standard errors are indicated in brackets. Country and year dummies are included, but not shown.

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

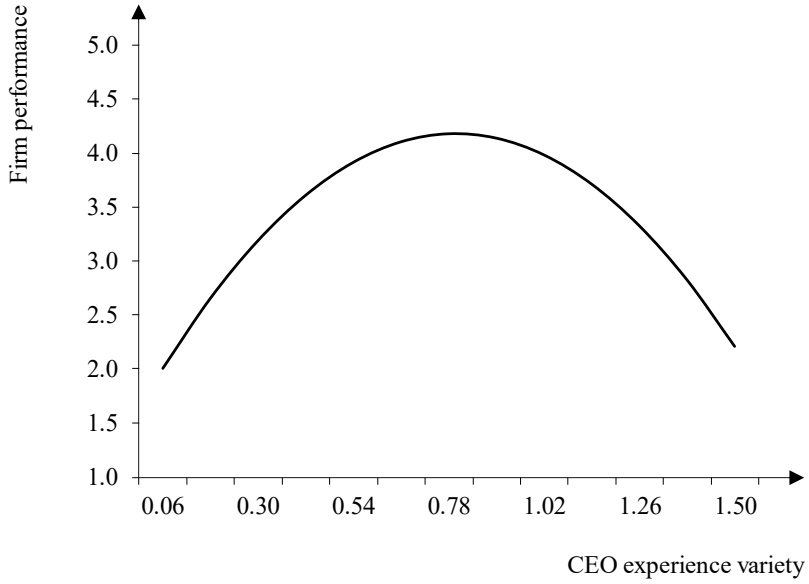
Source: Authors

We tested our hypotheses using an OLS hierarchical regression analysis. We ran several models, adding the independent variables in a pre-specified sequence. This approach is used to assess how the variables contribute individually and jointly to explaining variance in the dependent variable (Tabachnick & Fidell, 2014). Table 10 reports the results of our regressions. All models were based on 201 observations (i.e., complete datasets).

Model 1 only includes the control variables. Multiple controls were statistically significant in the expected directions. Pre-succession firm performance ($\beta = 0.47$; $p < 0.001$) shows a significant and positive effect on firm performance. Post-succession TMT turnover ($\beta =$ -4.20; $p < 0.01$) and frequent CEO replacements ($\beta =$ -1.59; $p < 0.05$) were significantly and negatively related to firm performance. The coefficient for firm size was partially significant ($\beta = 0.42$; $p < 0.10$). Model 2 includes the non-squared independent variable, in order to test for a potential existence of a linear relationship. Results show that the linear relationship between CEO experience variety and firm performance is insignificant.

Hypothesis 1 predicts an inverted U-shaped relationship between CEO experience variety and firm performance. As seen in Model 3 of Table 10, our results support this hypothesis with a significant negative squared effect ($\beta =$ -3.98; $p < 0.05$). We plotted the relationship in Figure 17 to visualize the results.

Figure 17: CEO experience variety and firm performance

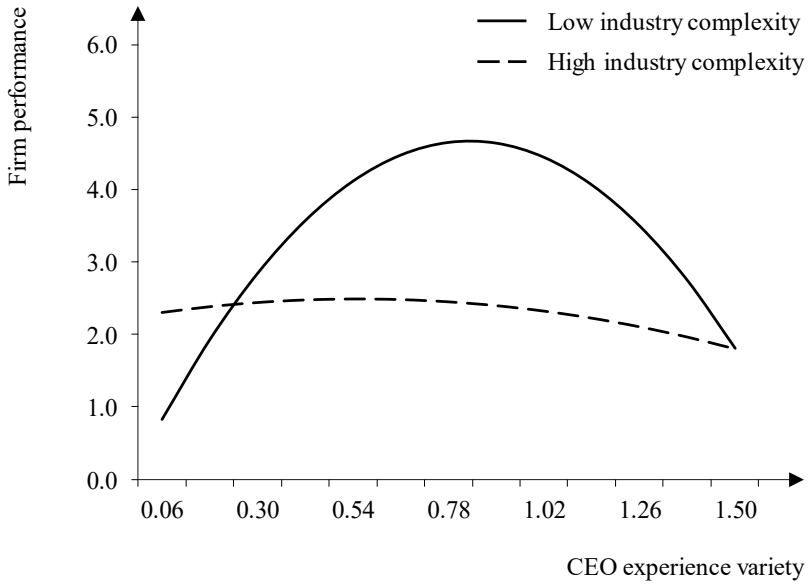


Source: Authors

These results are also of practical significance. When CEO experience variety moves two standard deviations above the mean, ROA decreases by 3.5 percentage points, resulting in a decrease of EUR 573 million in profit for the average firm in the sample. At two standard deviations below the mean, ROA declines by 3.8 percentage points, reducing average profit by EUR 617 million.[130]

Hypothesis 2 posits a moderating impact of industry complexity on the relationship between CEO experience variety and firm performance. As proposed by Aiken and West (1991), we added interactions between the moderator and the independent variable as well as the squared independent variable. The significance and the type of moderating effects are determined by the direction and the p-value of the second interaction term (Haans et al., 2016). As seen in Model 4, CEO experience variety^2 x Industry complexity is positive and significant ($\beta = 28.33;\ p < 0.05$). Correspondingly, the results for Model 4 support Hypothesis 2; our data indicate that industry complexity flattens the relationship between CEO experience variety and firm performance.[131] This outcome is shown in Figure 18 to facilitate interpretation.

Figure 18: Moderating effect of industry complexity



Source: Authors

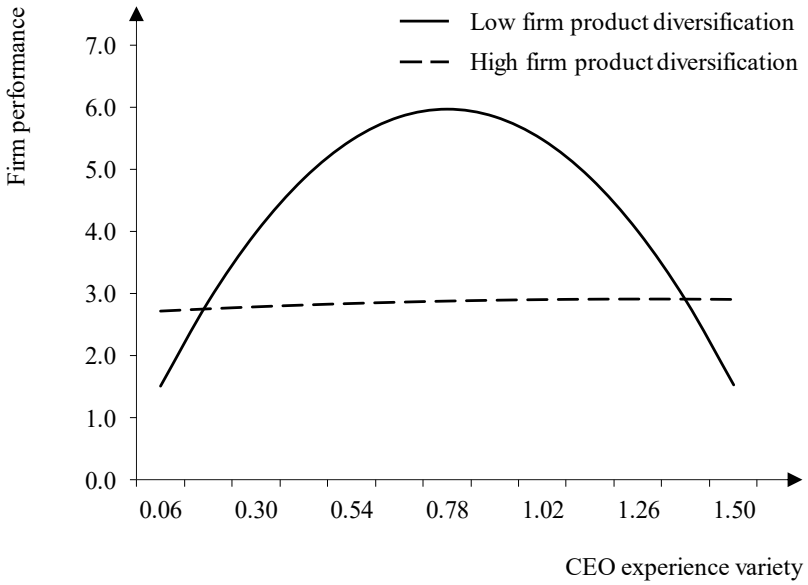
[130] The average total assets of the firms in the sample was EUR 16.2 billion. For this calculation, we took a conservative approach. As 94% of the firms had total assets in the lowest 10% range of the histogram (i.e., between EUR 41.8 million and EUR 191.8 billion), we used the average total assets of these firms. For each firm, we considered the average total assets over the study period (2007–2013). Detailed results are available from the authors upon request.

[131] According to Haans et al. (2016: 1187), "testing for flattening or steepening is equivalent to testing whether β_4 [i.e., the interaction term between the squared independent variable and the moderator] is significant. A flattening occurs for inverted U-shaped relationships when β_4 is positive."

The graph shows that, under conditions of high industry complexity, the inverted U-shaped relationship becomes less steep. Interestingly, the graph also illustrates that—under conditions of high industry complexity—CEOs with specialized career experience are likely to achieve higher firm performance compared to their generalist counterparts.

Model 5 includes the second moderator, firm product diversification. The second interaction term (i.e., CEO experience variety^2 x Firm product diversification) is positive and significant ($\beta = 8.11;\ p < 0.05$), thus supporting Hypothesis 3. The moderating effect is depicted in Figure 19. The graph illustrates that, under conditions of high firm product diversification, the curve is significantly flattened. Generally speaking, this means that under conditions of high industry complexity, both the negative implications of extreme CEO experience variety and the positive implications of average levels of CEO experience variety tend to disappear. Meanwhile, under conditions of low firm complexity, the curve remains unchanged compared to the shape of the main effect. We interpret the results of Model 4 and Model 5 in the discussion section.

Figure 19: Moderating effect of firm product diversification



Source: Authors

Finally, Model 6 includes the main effect and both moderating effects. The model is significant at $p < 0.001$ and has an R^2 of 0.45. This indicates that the combined variables in the model explain 45% of the variance in post-succession firm performance. The main effect and the interaction terms of both moderating effects remain significant.

This highlights the robustness of our findings when considering all interaction effects simultaneously.

As seen in Table 10, all models were significant (p-values below 0.001), while the R^2 increased from model to model—indicating that the addition of variables increased the explanatory power of the models.[132] We also calculated Cohen's f^2, which indicates effect sizes in multiple regressions. With values of 0.64 and higher, all models exceed the reference threshold of 0.35, which is considered to indicate large effect sizes (Cohen, 1988).

5.4.3 Robustness checks

Composite tests. Our independent variable, CEO experience variety, was calculated as a composite of firm and industry experience. While our decision to focus on these two dimensions was driven by theoretical arguments, other studies have also considered functional experience (e.g., Crossland et al., 2014; Custodio et al., 2013). Therefore, we applied three tests to check whether aggregating the two components was the right choice (see Appendix 5.4 for an overview). First, we ran a factor analysis. The two components firm and industry experience loaded cleanly on a single underlying factor, with factor loadings of 0.834 and 0.832, while functional experience loaded on a different factor. Also, only Factor 1 fulfilled the criteria of an Eigenvalue greater than 1, having an Eigenvalue of 1.388. Second, we ran a correlation analysis. Results showed that firm and industry experience were strongly correlated at $R = 0.77$ ($p < 0.001$). In contrast, functional experience correlated neither with firm experience ($R = 0.05$; $p = 0.41$), nor with industry experience ($R = 0.01$; $p = 0.88$). Third, we calculated Cronbach's alpha for the two components firm experience and industry experience. Results showed a scale reliability coefficient of 0.87, which exceeds the generally accepted limit of 0.70 for new constructs (Nunnally & Bernstein, 1994). Adding CEO functional variety lowered the scale reliability coefficient to 0.57. Taken together, all results supported our theoretical decision to operationalize CEO experience variety as a composite of CEO firm experience variety and CEO industry experience variety.

U-shape tests. In addition, we conducted multiple tests to confirm the observed inverted U-shaped relationship, as recommended by Haans et al. (2016) and by Lind and Mehlum (2010). First, we assessed whether both slope tests were significant (Haans

[132] The adjusted R^2 indicates the percentage of variation explained only by those independent variables that actually affect the dependent variable. In contrast to the R^2, the adjusted R^2 decreases if predictors are added that do not fit the model. As seen in Table 10, the adjusted R^2 does not decrease from Model 1 throughout Model 6, indicating that the additional variables add explanatory value to the models.

et al., 2016; Lind & Mehlum, 2010). For inverted U-shaped relationships, the slope at the lower bound needs to be positive and significant, while the slope at the upper bound needs to be negative and significant. The slope for the lower bound was 6.35 ($p < 0.05$), while the slope of the upper bound was -6.63 ($p < 0.05$). To further confirm this, we ran the Sasabuchi (1980) test for inverted U-shaped relationships, as suggested and provided by Lind and Mehlum (2010). With a p-value of 0.02, this overall test re-confirmed the presence of an inverted U-shaped relationship. Second, the curve's estimated turning point needs to be located within the relevant data range of the main predictor (Haans et al., 2016). Therefore, we calculated the curve's estimated turning point (0.80) and its confidence intervals (0.49, 1.49) using Fieller's standard error (Haans et al., 2016; Lind & Mehlum, 2010). These values are within the observed range of CEO experience variety (ranging from 0.00 to 1.63).[133] Finally, we added a cubic term (i.e., CEO experience variety^3) to Model 3, in order to exclude a potential S-shaped relationship. Results for the cubic term were neither significant at the 0.05 level, nor did adding the cubic term significantly improve model fit. Thus, all results suggest that the observed relationship is indeed quadratic. A summary is shown in Appendix 5.5.

Sample tests. Given the timeframe of our sample (i.e., 2007–2013), we conducted the analysis with a sub-sample limited to 2009 and later ($N = 140$). This approach was chosen to preclude any confounding influences of the 2008 financial crisis. While we reached higher R^2-levels (0.52 in Model 6), the observed relationships did not change in terms of significance and direction. Moreover, we took a sub-sample limited to firms with a DOI greater than zero. This test aimed at ensuring comparability among large MNCs and excluded a number of firms only operating within their domestic markets. The results—based on a sample with $N = 191$—were again equivalent to those reported here.[134]

TMT tests. As leadership of a complex organization is a shared activity (DeChurch et al., 2010; Ensley et al., 2006), we also tested our models including different TMT control variables. First, we added average TMT firm tenure, measured as the average number of years that TMT members (who are part of the TMT at the year of succession) have been working for the respective firm. Second, we controlled for overall TMT diversity (Carpenter et al., 2004; Hambrick, 2007).[135] This allowed us to account for the

[133] For further illustration: 39% of the observations have a value for the independent variable (i.e., for CEO experience variety) below the turning point.
[134] Detailed results of these sample tests and the following TMT tests are available from the authors upon request.
[135] Our measure of TMT diversity is an aggregate of age, gender, nationality, and functional diversity. First, as age is a continuous variable, we calculated age diversity as the standard deviation of the incumbent TMT's age divided by the mean (Murray, 1989). For gender, nationality, and functional diversity, we used the Blau (1977) index, calculated as

overall stock of information possessed at the team level when examining the effects of CEO experience variety on firm performance. In both cases, results for all hypotheses were identical in terms of significance and direction. However, as the additional control variables were neither significant nor improved model fit, they were dropped to limit the number of control variables.

5.5 Discussion

We reconciled two opposing views in the human capital literature—the *generalist view of human capital* and the *specialist view of human capital*—to investigate the performance implications of CEO experience variety. Acknowledging both the benefits of generalism and the costs of losing specialization, we proposed and found that the relationship between CEO experience variety and firm performance follows an inverted U-shaped form. Moreover, our results suggest that this relationship is moderated by firm and industry complexity. Below, we discuss the implications of these findings.

5.5.1 Theoretical implications

First, we add to human capital theory by clarifying the theoretical discussion on the organizational-level implications of CEO broad-generalist versus narrow-specialized human capital. We theoretically argue and empirically demonstrate that CEOs who possess both *breadth* of experience (from different firms and industries) and *depth* of experience (in each firm and industry) make the most valuable contribution to firm performance. While previous human capital studies on experience diversity have generally adopted a 'the more the better' notion of the value of an individual's experience diversity (Khanna et al., 2014; Ployhart & Moliterno, 2011), the status of human capital as a source of economic value has remained unclear (Coff & Kryscynski, 2011; Crook et al., 2011; Miller et al., 2015). To this end, our work contributes to the nascent human capital literature on the value of generalist versus specialist CEOs (Custodio et al., 2013; Datta & Iskandar-Datta, 2014; Ferreira & Sah, 2012; Murphy & Zabojnik, 2007). We show that both views should be considered in tandem, to adequately understand the nature and effects of individual career backgrounds.

While our results confirm that CEO experience variety is indeed a strong indicator of human capital (Custodio et al., 2013), they also show that a more refined

$1-\sum {p_i}^2$, with p_i being the relative share of TMT members in a given category i (i.e., gender, nationality, or dominant function). Following previous research, we calculated an overall degree of TMT diversity by first rescaling age diversity to vary from 0 to 1, and then by summing the four components into a composite measure (Westphal & Zajac, 1995).

measurement of experience variety is appropriate. Previous studies have argued that, in order to capture the effects of CEO experience diversity, research should consider two factors: (a) the *breadth* of experience related to the number of areas in which an individual has worked, and (b) the *depth* of experience that this individual has gained in each of these areas (Cannella et al., 2008). Following the insights of Bunderson and Sutcliffe (2002), our conceptualization and measurement of CEO experience variety allows us to observe the trade-off between the *depth* and *breadth* of career experience. On this basis, our work can be seen as a response to Crossland et al.'s (2014) call to adopt more finely-grained approaches that enable a more nuanced consideration of the CEO experience variety construct and its complex firm-level effects.

Second, this study provides further evidence for the central tenets of upper echelon theory: Executives are bound by the past (Geletkanycz & Black, 2001) and differences in executives' experience backgrounds matter for organizations (Hambrick & Mason, 1984). Indeed, previous research has shown that CEO career backgrounds impact firm-level outcomes such as strategic novelty (Crossland et al., 2014), entrepreneurial decision-making (Engel, Burg, Kleijn, & Khapova, 2017; Lazear, 2004), and TMT behavioral integration (Buyl et al., 2011). But whereas research in this area has recently gained momentum, the status of diverse career experience as a source of economic value and performance has remained unclear (Crossland et al., 2014; Miller et al., 2015). Contributing to this nascent stream, our study shows that there is, indeed, a 'dark side' of CEO general ability (Mishra, 2014) at extensive levels of career variety. Therewith, our results confirm those authors who have suggested, yet not tested, that CEOs with extensive levels of generalism might be associated with negative implications (Buyl et al., 2011; Crossland et al., 2014; Mishra, 2014).

Third, our study contributes to the contingency perspective on strategic leadership (Gupta, 1984; Guthrie & Datta, 1998). Our theory and results show that two key dimensions related to environmental fit—industry (i.e., industry complexity) and strategy (i.e., firm diversification)—significantly influence the relationship between CEO experience variety and firm performance. We find that under conditions of high industry and firm complexity, the inverted U-shaped relationship between CEO experience variety and firm performance is significantly flattened (see Figure 18). This indicates that in highly complex industries, CEOs with extensively specialized experience are likely to outperform those with high levels of career variety. This is congruent with prior studies arguing that, in order to deal with the demands of diverse stakeholders and competitors in highly complex industries (Keats & Hitt, 1988),

executives need to possess *depth* of knowledge about the firm's industry-specific context (Chen, 2015; Collins, 2001). In addition, our results suggest that under conditions of high firm product diversification, the negative implications of extensive levels of either specialization or generalism become less distinctively noticeable (see Figure 19). This is in line with the argument that CEOs facing high job demands economize their search for and interpretation of information by relying on their specific experiences (Hambrick et al., 2005), regardless of whether they belong to the broad-generalist or narrow-specialized type.

5.5.2 Limitations and avenues for future research

Like all studies, ours is not without limitations. One of these is that we focus solely on CEO characteristics, and thus disregard the potential effects that other executives might have together with the CEO (Arendt, Priem, & Ndofor, 2005). Indeed, extant upper echelons (Hambrick & Mason, 1984) and CEO succession research (Shen & Cannella, 2002a) suggests that the CEO does not impact firm performance alone, but rather together with the entire TMT.[136] To the extent that CEOs are boundedly rational actors, they will require advice and resources from the entire TMT to deal with complexity (Buyl et al., 2011; Cannella & Holcomb, 2005; Heyden et al., 2013). While our study controls for important attributes at the TMT level, future studies could expand our research by examining the influence of the CEO-TMT interface on the performance implications of CEO experience variety. This would help us not only to further understand CEO impact on organizations, but also to appreciate the interactive role of top managers.

Further, our study focuses on two key moderators: industry complexity and firm product diversification. These describe the degree of complexity at the firm- and industry-level. We have focused on these two factors following the notion of executive job demands (Hambrick et al., 2005), which implies that the role of executives' backgrounds is likely to be affected by the complexity surrounding the organization. Undoubtedly, however, these are not the only factors that affect the relationship between CEO experience variety and firm performance. For example, internal factors such as organizational culture (Pettigrew, 1987, 2012), organizational structure (Ginsberg & Buchholtz, 1990; Meyer et al., 1990), and organizational governance

[136] To the extent that CEOs are boundedly rational actors (Cyert & March, 1963), they will require advice and resources from the entire TMT in order to deal with complexity. In that sense, recent studies have shown that the effects of top managers tend to be determined by the interface between the CEO and his or her direct reports (Buyl et al., 2011; Cannella & Holcomb, 2005; Ling et al., 2008).

mechanisms (Miller & Friesen, 1980; Simons, 1994) might influence a CEO's ability to impact firm performance. Future research could capture such dimensions and complement our knowledge of the contingencies surrounding the impact of CEO experience variety.

5.5.3 Practical implications and conclusion

Apart from its academic relevance, this study has important practical implications. On the one hand, our study shows that CEOs should possess not only (a) *breadth* of experience from different firms and industries but also (b) *depth* of experience in each of these. Thus, our analysis offers a 'cautionary note' on recent press coverage, which one-sidedly advocates either generalism or specialization as a remedy for today's organizational challenges. For example, while some articles stress that "in today's uncertain environment, breadth of perspective trumps depth of knowledge" (Mansharamani, 2012: 1), others argue in favor of specialization. For example, Malone, Laubacher, and Johns (2011: 6) suggested that "we are entering an era of hyperspecialization," in which managers need depth of knowledge to effectively tackle complexity. Our results contrast both views and suggest that neither generalists, nor specialists, but rather CEOs optimally balancing CEO experience variety, are best-equipped to promote high firm performance.

On the other hand, our work provides implications about the conditions that may impact a firm's ability to benefit from a CEO's diverse experience background. Firms with high levels of complexity—both in terms of firm and industry complexity—tend to realize higher performance outcomes with either specialists or generalists. While CEO generalism is increasing (Briscoe et al., 2006; Crossland et al., 2014) and CEO replacement is becoming more and more frequent (Chen & Hambrick, 2012; Wowak et al., 2011; Zhang, 2008), our insights might help boards of directors, executive search consultants, and others involved in CEO selection to take well-informed and firm-appropriate decisions.

We conclude in the hope that this study will inspire further research, in order to advance our understanding of CEO experience variety and to enable scholars and firms to more adequately capture and manage the complex nature of CEO experience variety and its organizational implications.

6 Conclusion

6.1 Summary of key findings

This dissertation has examined the complex nature and the consequences of CEO experience variety. A comprehensive literature review and the three empirical studies have shed light on this construct's implications and contingencies. Overall, the studies have provided four main insights. First, the literature review has suggested that while the field of CEO experience variety has emerged as an important area of interest, it is still unfolding its potential. Most notably, simplistic notions of CEO experience variety need to be discarded, as the construct is more complex than previously assumed. In particular, future research should move beyond the predominant 'the more the better' view and advance through theoretical integration and methodological refinement.

Second, the empirical study on the strategic change implications of CEO experience variety has suggested a U-shaped relationship between CEO experience variety and strategic change. As shown, high levels of strategic change are evident around either meaningfully low or meaningfully high levels of CEO experience variety. This indicates that either specialist CEOs or generalist CEOs are able to act as catalysts for major strategic change within their organizations. However, it is important to note that while these insights relate to the *degree* of strategic change (i.e., the level of strategic change), they do not convey predictions about the *quality* of strategic change (i.e., the corresponding performance implications).

Third, this dissertation has illuminated the implications of CEO experience variety for CEO compensation and firm performance. These two outcomes represent 'two sides of the same coin', as a CEO's value—and hence compensation—reflects his or her ability to impact firm performance. Using complementary theoretical lenses, both studies have provided significant evidence for inverted U-shaped relationships. This indicates that CEOs who possess both *depth* and *breadth* of experience make the most valuable contribution to firm performance and receive the highest remuneration.[137]

Fourth, all three empirical studies have found significant contingencies at the firm and industry levels, suggesting that the consequences of CEO experience variety depend on the respective context.

[137] A cautionary note is required because the findings on strategic change (i.e., a U-shaped relationship) and firm performance (i.e., an inverted U-shaped relationship) might seem contradictory at first glance. However, previous research has suggested that the performance implications of strategic change might not always be positive (Kelly & Amburgey, 1991; Oehmichen et al., 2016; Weng & Lin, 2014). Moreover, a time lag might exist between the implementation of strategic change and the corresponding performance implications. Therefore, CEO experience variety might have a U-shaped relationship with the level of strategic change and an inverted U-shaped relationship with firm performance.

6.2 Contributions

6.2.1 Contributions to academia

The above findings make important contributions to theory. On the one hand, they contribute to upper echelons theory by *confirming the relevance of CEO experience variety* as an antecedent of important organizational outcomes such as strategic change and firm performance. Previous authors have called for a better understanding of the role of CEO career backgrounds, stating that "CEO prior career experience needs more attention" (Wang et al., 2016: 824). This dissertation echoes this call, fosters CEO experience variety as a key construct, and thus further substantiates the central tenet of upper echelons theory that CEOs' past experience matter for organizations (Geletkanycz & Black, 2001; Hambrick, 2007).

On the other hand, this dissertation's theory and supporting results *reveal the complex nature of CEO experience variety* and its non-linear implications. While the majority of scholars have taken a 'the more the better' view (Khanna et al., 2014; Ployhart & Moliterno, 2011), some authors have suggested—though not empirically substantiated—that high levels of CEO experience variety are not necessarily beneficial (Buyl et al., 2011; Crossland et al., 2014; Mishra, 2014). The non-linear findings of this dissertation thus respond to the call issued by Hambrick (2007: 341), who concluded that "we still have much to learn about the effects—both positive and negative—of top executives on organizations."

This thesis also *highlights the contingent nature of CEO experience variety*, as TMT turnover, firm complexity, and industry complexity have been shown to be significant moderators. This insight responds to Hambrick and Quigley (2014: 473), who concluded that "having an accurate grasp of whether—or how much, when, and where—top executives matter is centrally important for advancing theory and research […]." To this end, this dissertation re-confirms the importance of contingency factors in determining the impact of top managers' career backgrounds on organizations (Dess, Ireland, & Hitt, 1990; Hambrick, 2007).

Contributing to human capital theory and social capital theory, this dissertation *advocates the combined use of theoretical lenses* to adequately capture the above complexities and contingencies. Especially the compensation study has proposed and found that the logic of human capital theory and that of social capital theory are complementary. In a stricter sense, by reconciling these theories, this study heeds the notion that human and social capital intersect, and hence require simultaneous consideration (Haynes & Hillman, 2010; Lester et al., 2008; Peng et al., 2015). In a

broader sense, this is in line with authors stressing the need to integrate different perspectives of strategic decision-making (Hitt & Tyler, 1991).

Another main contribution of this dissertation is that its empirical studies *provide a refined measurement of the CEO experience variety* construct. Previous studies have mainly relied on measures of CEO experience that understand CEO experience as an absolute stock, such as the number of firms, industries, or functions. Thereby, these approaches have emphasized experience *breadth*, but not experience *depth* (i.e., how many years an executive has spent in each industry or firm). Moreover, previous approaches distinguishing sharply between specialist and generalist CEOs have been criticized as being too rigid, and thus unable to capture the whole spectrum of an individual's career path (Kelly et al., 2011). Following the insights of Bunderson and Sutcliffe (2002), the empirical studies in this dissertation have conceptualized and measured CEO experience variety as a trade-off between the *depth* and *breadth* of career experience, using Blau (1977) indices. While the *breadth* aspect of CEO experience variety conceptually captures—and empirically measures—heterogeneity within a CEO's career background, the *depth* aspect reflects career focus and specialized expertise. On this basis, the present approach can be seen as a response to Crossland et al.'s (2014) call to adopt more finely-grained approaches that enable a more nuanced consideration of the CEO experience variety construct and its complex firm-level effects.

Finally, this thesis and its sample add to the strategic management literature by *expanding the research scope beyond the USA*. The dominance of empirical studies based on US-samples[138] has been referred to as the 'overwhelming geographical bias' in the field of strategic management (Elbanna & Child, 2007). With a sample based on four economically important European countries, this dissertation thus complements extant research, given the possibility of validating findings in other macrosocial contexts (Hambrick, 2007). In a related vein, previous researchers have advocated the use of multi-country samples, as this "enables us to take into account cross-country differences in CEOs' latitude of action—something that prior research has regarded as key to enhancing the generalizability of the upper echelons perspective beyond the frequently assessed US context (Crossland and Hambrick, 2011; Hambrick, 2007)" (Georgakakis et al., 2017: 7).

[138] According to Hambrick (2007: 339), "the overwhelming majority of empirical upper echelons studies have used samples of American firms."

6.2.2 Contributions to practice

CEOs are presumed to be the most important top executives because of their decisive influence on their firm's strategy and performance (Cannella & Holcomb, 2005; Crossland et al., 2014; Herrmann & Nadkarni, 2014).[139] Therefore, "the choice of a CEO is a key organizational decision, with important ramifications for organizational strategies and performance" (Datta et al., 2003: 101). In selecting a CEO, boards thus attempt to identify that candidate whose experience and competencies best align with the conditions facing the firm (Henderson et al., 2006). Nevertheless, past research has questioned the ability of boards to choose adequate candidates (Khurana, 2001; Wiersema, 2002).

In this light, this dissertation's insights might help boards of directors, executive search consultants, and others involved in CEO selection to take well-informed and firm-appropriate decisions. In sum, this thesis makes three main contributions to practice. First, practitioners should *consider the non-linear consequences of CEO experience variety*. On the one hand, firms ought to account for the fact that CEO experience variety might indeed be a double-edged sword, with both positive and negative implications for strategic change and firm performance. On the other hand, this dissertation sends a cautionary note to executives aspiring to become CEOs. Such managers should bear in mind that increasing levels of CEO experience variety are not merely beneficial, but might entail lower compensation. In this sense, the results of this thesis indicate that there might indeed be a 'dark side of contemporary careers' (Baruch & Vardi, 2016).

Second, those involved in the CEO selection process should *take into account the important contingencies* surrounding the CEO experience variety relationships. This dissertation has shed light on those conditions that may enhance a firm's ability to benefit from a CEO's experience variety. The empirical studies have identified three important moderators—TMT turnover (for strategic change), as well as firm and industry complexity (for firm performance)—that significantly influence the impact of CEO experience variety on favorable organizational outcomes.

Third, firms are encouraged to *overcome the 'generalist bias'* during the CEO selection process. This bias refers to the tendency to select and reward general skills even when specialized knowledge is required and when general skills might lead to inferior outcomes (Wang & Murnighan, 2013). Regarding firm performance, the

[139] In addition, recent research has shown that the 'CEO effect'—the proportion of variance in firm performance explained by individual CEOs—has significantly increased (Quigley & Hambrick, 2015).

empirical results of this thesis suggest that such a 'generalist bias' might be harmful, as high levels of generalism are associated with decreasing firm performance. Thus, practitioners are encouraged to closely heed the right balance between specialization and generalism, paying special attention to the inherent trade-off between experience *depth* and experience *breadth*, and to its associated costs and benefits.

These contributions are important because capital markets have high expectations about the successful outcome of CEO selections (Bligh, Kohles, & Pillai, 2011; Fitzsimmons & Callan, 2016). Indeed, previous research has not only shown strong stakeholder disapproval of disruptive CEO transitions (e.g., appointment of interim CEOs), but also increased board turnover after such less successful CEO transitions (Marcel, Cowen, & Ballinger, 2017).[140]

6.3 Limitations and avenues for future research

The worthiness of this dissertation needs to be considered in light of its potential limitations that, if addressed, might provide fruitful avenues for future research. On the one hand, this thesis has neglected the role of TMT or board member experience variety. Although the empirical studies presented here use a comprehensive number of control variables for the TMT and the board, the experience variety of their members has remained unaddressed. Considering such characteristics and their interaction with CEO experience variety might further deepen our understanding of the strategic decision-making processes in the firm's upper echelons. Several authors have stressed the relevance of considering the CEO and the TMT in conjunction (Buyl et al., 2011; Klimoski & Koles, 2001; Ling et al., 2008). For example, the characteristics of certain TMT members might compensate for a CEO's limitations (Hsu et al., 2013; Roth, 1995). Similarly, boards—and their individual career backgrounds—might significantly impact strategic decision-making (Herrmann & Datta, 2006; Westphal & Fredrickson, 2001). Research in this direction would provide a promising response to Westphal and Fredrickson (2001: 1130), who concluded "that upper echelons research should devote greater attention to how boards of directors may determine relationships between top management characteristics and organizational outcomes."

On the other hand, this dissertation is based on secondary data on CEO career backgrounds. As such, it has not directly measured the underlying mechanisms of CEO

[140] At the same time, the increasing frequency of CEO successions (Chen & Hambrick, 2012; Wowak et al., 2011; Zhang, 2008; Zhu & Shen, 2016) and a trend towards shorter average CEO tenures (Favaro, Karlsson, & Neilson, 2013) further increase the pressure on boards.

experience variety. Some researchers have raised concerns about the inherent shortcomings of such demographic proxies (Buyl et al., 2011; Priem et al., 1999), as "the extent to which a CEO's perspective is affected by his or her prior experience may remain a 'black box problem' (Lawrence, 1997)" (Weng & Lin, 2014: 2028).[141] Several authors (e.g., Carpenter et al., 2001; Georgakakis et al., 2016; Herrmann & Datta, 2002) have suggested approaches that would be useful not only to understand the underlying behavioral and cognitive dynamics but also to assess the validity of research based on demographic data, such as case studies, surveys, and field experiments.

In addition, the present sample is limited to large public organizations headquartered in Western European countries. Thus, the results cannot necessarily be generalized to smaller or private companies (Bigley & Wiersema, 2002; Herrmann & Datta, 2006; Westphal & Fredrickson, 2001), to family businesses (Smith & White, 1987), or to firms in emerging economies. First, the effects of CEO experience variety might be more pronounced at small firms (Roth, 1995), because of flatter hierarchies, less organizational inertia, and a more direct influence of CEOs (Hsu et al., 2013). Second, this thesis has followed the assumption of upper echelons theory that the CEO and the TMT are the organization's 'information processing and decision-making center' (Carpenter et al., 2001). While this assumption is expected to hold true in the US and Europe, it might not be valid for other economies such as Japan or Korea (Wiersema & Bird, 1993).

Finally, the empirical studies of this dissertation are limited to the early tenures of new CEOs. These post-succession settings have theoretical and practical advantages. From a theoretical point of view, they allow an unbiased study of the role of CEO experience variety, prior to any organizational entrenchment (Chen, 2015; Crossland et al., 2014). Practically speaking, the post-succession process has been established as a critical phase in an organization's lifecycle (Ma et al., 2014). Regardless of these arguments, future researchers are encouraged to study the longer-term implications of CEOs with different levels of CEO experience variety. Overall, exploring the relationships identified in this study in different settings seems to present a theoretically and empirically promising direction for future research.

[141] However, according to Buyl et al. (2011), such criticism might apply to more 'distal' proxies such as age, but less to others such as firm and industry experience, which are more 'proximal' indicators of a CEO's experience (Bunderson & Sutcliffe, 2002).

6.4 Closing remarks

Limitations aside, this dissertation is among the first comprehensive attempts to address—both theoretically and empirically—the complex nature of CEO experience variety and its strategic, remunerative, and performance implications.

The literature review concluded that research on CEO experience variety is still unfolding its potential and called for scholarly attention to important theoretical and methodological issues. In response, three empirical studies were undertaken to address the main research opportunities. In summary, they show that CEO experience variety has significant individual-level and firm-level implications and that these relationships are non-linear. Moreover, the empirical results underline the contingent nature of these relationships.

Theoretically, these findings imply that scholars need to rethink conventional wisdom regarding CEO experience variety, and thus to move beyond the conventional 'the more the better' understanding of CEO experience variety. In addition, this thesis illustrates that integrating theoretical lenses and making methodological advancements are important steps for further developing the field. For practitioners (i.e., firms and individual executives), the insights of this dissertation expose the 'double-edged' character of CEO experience variety and provide a set of parameters that might be important at the time of CEO selections.

On balance, this dissertation makes a number of modest contributions that support the promising developments in one of the most important fields of strategic leadership. However, more importantly, it concludes in the hope that its findings will elicit critical reflection and future research.

References[142]

Adler, P. S. 2001. Market, Hierarchy, And Trust: The Knowledge Economy And The Future Of Capitalism. ***Organization Science***, 12: 215-234.

Adler, P. S. & Kwon, S.-W. 2002. Social Capital: Prospects For A New Concept. ***Academy of Management Review***, 27: 17-40.

Aguirre, D. M., Karlsson, P.-O., & Neilson, G. L. 2016. Strategy& 2015 CEO Success Study; http://www.strategyand.pwc.com/media/file/2015-CEO-Success-Study-Outsider-CEOs.pdf; Accessed on May 17, 2016.

Ahuja, G. 2000. The Duality Of Collaboration: Inducements And Opportunities In The Formation Of Interfirm Linkages. ***Strategic Management Journal***, 21: 317-343.

Aiken, L. S. & West, S. G. 1991. ***Multiple Regression: Testing And Interpreting Interactions***. Thousand Oaks: Sage Publications.

Anderson, K. A. 2012. Specialists And Generalists: Equilibrium Skill Acquisition Decisions In Problem-Solving Populations. ***Journal of Economic Behavior & Organization***, 84: 463-473.

Anderson, P. & Tushman, M. L. 2001. Organizational Environments And Industry Exit: The Effects Of Uncertainty, Munificence And Complexity. ***Industrial & Corporate Change***, 10: 675-711.

Angriawan, A. & Abebe, M. 2011. Chief Executive Background Characteristics And Environmental Scanning Emphasis: An Empirical Investigation. ***Journal of Business Strategies***, 28: 75-96.

Antel, J. J. 1986. Human Capital Investment Specialization And The Wage Effects Of Voluntary Labor Mobility. ***Review of Economics & Statistics***, 68: 477-483.

Arendt, L. A., Priem, R. L., & Ndofor, H. A. 2005. A CEO-Adviser Model Of Strategic Decision Making. ***Journal of Management***, 31: 680-699.

Audia, P. G., Locke, E. A., & Smith, K. G. 2000. The Paradox Of Success: An Archival And A Laboratory Study Of Strategic Persistence Following Radical Environmental Change. ***Academy of Management Journal***, 43: 837-853.

Baker, W. E. 1990. Market Networks And Corporate Behavior. ***American Journal of Sociology***, 96: 589-625.

Baldwin, T. T., Bedell, M. D., & Johnson, J. L. 1997. The Social Fabric Of A Team-Based M.B.A. Program: Network Effects On Student Satisfaction And Performance. ***Academy of Management Journal***, 40: 1369-1397.

[142] An asterisk (*) indicates that the article has been among the fifty articles that were reviewed in the literature review (i.e., in Chapter 2). Appendix 2.5 provides an overview of the same fifty articles, in alphabetical order, and including the main details.

Ballinger, G. A. & Marcel, J. J. 2010. The Use Of An Interim CEO During Succession Episodes And Firm Performance. ***Strategic Management Journal***, 31: 262-283.

Bantel, K. A. & Jackson, S. E. 1989. Top Management And Innovations In Banking: Does The Composition Of The Top Team Make A Difference? ***Strategic Management Journal***, 10: 107-124.

*Barker, V. L. & Mueller, G. C. 2002. CEO Characteristics And Firm R&D Spending. ***Management Science***, 48: 782-801.

Baron, R. A. & Ensley, M. D. 2006. Opportunity Recognition As The Detection Of Meaningful Patterns: Evidence From Comparisons Of Novice And Experienced Entrepreneurs. ***Management Science***, 52: 1331-1344.

Bartunek, J. M. & Moch, M. K. 1987. First-Order, Second-Order, And Third-Order Change And Organization Development Interventions: A Cognitive Approach. ***The Journal of Applied Behavioral Science***, 23: 483-500.

Baruch, Y. & Vardi, Y. 2016. A Fresh Look At The Dark Side Of Contemporary Careers: Toward A Realistic Discourse. ***British Journal of Management***, 27: 355-372.

Baysinger, B. & Hoskisson, R. E. 1990. The Composition Of Boards Of Directors And Strategic Control: Effects On Corporate Strategy. ***Academy of Management Review***, 15: 72-87.

*Beal, R. M. & Yasai-Ardekani, M. 2000. Performance Implications Of Aligning CEO Functional Experiences With Competitive Strategies. ***Journal of Management***, 26: 733-762.

Bebchuk, L. A., Fried, J. M., & Walker, D. I. 2002. Managerial Power And Rent Extraction In The Design Of Executive Compensation. ***University of Chicago Law Review***, 69: 751-846.

Becker, G. S. 1964. ***Human Capital: A Theoretical And Empirical Analysis, With Special Reference To Education***. New York: Columbia University Press.

Beckman, C. M. & Haunschild, P. R. 2002. Network Learning: The Effects Of Partners' Heterogeneity Of Experience On Corporate Acquisitions. ***Administrative Science Quarterly***, 47: 92-124.

Belliveau, M. A., O'Reilly, C. A., & Wade, J. B. 1996. Social Capital At The Top: Effects Of Social Similarity And Status On CEO Compensation. ***Academy of Management Journal***, 39: 1568-1593.

Bergh, D. D. 2001. Executive Retention And Acquisition Outcomes: A Test Of Opposing Views On The Influence Of Organizational Tenure. ***Journal of Management***, 27: 603-622.

*Bernile, G., Bhagwat, V., & Rau, P. R. 2017. What Doesn't Kill You Will Only Make You More Risk-Loving: Early-Life Disasters And CEO Behavior. ***Journal of Finance***, 72: 167-206.

Bertrand, M. & Schoar, A. 2003. Managing With Style: The Effect Of Managers On Firm Policies. ***Quarterly Journal of Economics***, 118: 1169-1208.

Beyer, J. M., Chattopadhyay, P., George, E., Glick, W. H., Ogilvie, D., & Pugliese, D. 1997. The Selective Perception Of Managers Revisited. ***Academy of Management Journal***, 40: 716-737.

*Bigley, G. A. & Wiersema, M. F. 2002. New CEOs And Corporate Strategic Refocusing: How Experience As Heir Apparent Influences The Use Of Power. ***Administrative Science Quarterly***, 47: 707-727.

Blau, P. 1977. ***Inequality And Heteroeneity: A Primitive Theory Of Social Structure***. New York: Free Press.

Bligh, M. C., Kohles, J. C., & Pillai, R. 2011. Romancing Leadership: Past, Present, And Future. ***The Leadership Quarterly***, 22: 1058-1077.

Boeker, W. 1997. Strategic Change: The Influence Of Managerial Characteristics And Organizational Growth. ***Academy of Management Journal***, 40: 152-170.

Boone, C., Van Olffen, W., Van Witteloostuijn, A., & De Brabander, B. 2004a. The Genesis Of Top Management Team Diversity: Selective Turnover Among Top Management Team In Dutch Newspaper Publishing, 1970-94. ***Academy of Management Journal***, 47: 633-656.

Boone, C., Van Olffen, W., Van Witteloostuijn, A., & De Brabander, B. 2004b. The Genesis Of Top Management Team Diversity: Selective Turnover Among Top Management Teams In Dutch Newspaper Publishing, 1970-94. ***Academy of Management Journal***, 47: 633-656.

Boone, C., Van Olffen, W., & Van Witteloostuijn, A. 2005. Team Locus-Of-Control Composition, Leadership Structure, Information Acquisition, And Financial Performance: A Business Simulation Study. ***Academy of Management Journal***, 48: 889-909.

Boyd, B. K. 1994. Board Control And CEO Compensation. ***Strategic Management Journal***, 15: 335-335.

Boyd, B. K., Gove, S., & Hitt, M. A. 2005. Consequences Of Measurement Problems In Strategic Management Research: The Case Of Amihud And Lev. ***Strategic Management Journal***, 26: 367-375.

Bragaw, N. A. & Misangyi, V. F. 2015. The Value Of CEO Mobility: Contextual Factors That Shape The Impact Of Prior CEO Experience On Market Performance And CEO Compensation. ***Human Resource Management***, 56: 243-265.

Brass, D. J. & Burkhardt, M. E. 1993. Potential Power And Power Use: An Investigation Of Structure And Behavior. ***Academy of Management Journal***, 36: 441-470.

Briscoe, J. P., Hall, D. T., & Frautschy DeMuth, R. L. 2006. Protean And Boundaryless Careers: An Empirical Exploration. ***Journal of Vocational Behavior***, 69: 30-47.

Brockman, P., Lee, H. S., & Salas, J. M. 2016. Determinants Of CEO Compensation: Generalist–Specialist Versus Insider–Outsider Attributes. ***Journal of Corporate Finance***, 39: 53-77.

Brown, J. S. & Duguid, P. 1991. Organizational Learning And Communities-Of-Practice: Toward A Unified View Of Working, Learning, And Innovating. ***Organization Science***, 2: 40-57.

Brown, M. C. 1982. Administrative Succession And Organizational Performance: The Succession Effect. ***Administrative Science Quarterly***, 27: 1-16.

Brown, R., Gao, N., Lee, E., & Stathopoulos, K. 2012. What Are Friends For? CEO Networks, Pay And Corporate Governance. In S. Boubaker, B. D. Nguyen, & D. K. Nguyen (Eds.), ***Corporate Governance: Recent Developments and New Trends***: 287-307. Heidelberg: Springer.

Bunderson, J. S. & Sutcliffe, K. M. 2002. Comparing Alternative Conceptualizations Of Functional Diversity In Management Teams: Process And Performance Effects. ***Academy of Management Journal***, 45: 875-893.

Bunderson, J. S. 2003. Team Member Functional Background And Involvement In Management Teams: Direct Effects And The Moderating Role Of Power Centralization. ***Academy of Management Journal***, 46: 458-474.

Burke, L. A. & Steensma, H. K. 1998. Toward A Model For Relating Executive Career Experiences And Firm Performance. ***Journal of Managerial Issues***, 10: 86-102.

Burt, R. S. 1992. ***Structural Holes. The Social Structure Of Competition***. Cambridge: Harvard University Press.

Burt, R. S. 1997a. The Contingent Value Of Social Capital. ***Administrative Science Quarterly***, 42: 339-365.

Burt, R. S. 1997b. A Note On Social Capital And Network Content. ***Social Networks***, 19: 355-373.

Burt, R. S. 2005. ***Brokerage And Closure. An Introduction To Social Capital***. Oxford: Oxford University Press.

Buskens, V. & Van De Rijt, A. 2008. Dynamics Of Networks If Everyone Strives For Structural Holes. ***American Journal of Sociology***, 114: 371-407.

*Buyl, T., Boone, C., Hendriks, W., & Matthyssens, P. 2011. Top Management Team Functional Diversity And Firm Performance: The Moderating Role Of CEO Characteristics. ***Journal of Management Studies***, 48: 151-177.

Calori, R., Johnson, G., & Sarnin, P. 1994. CEOs' Cognitive Maps And The Scope Of The Organization. ***Strategic Management Journal***, 15: 437-457.

Camerer, C., Loewenstein, G., & Weber, M. 1989. The Curse Of Knowledge In Economic Settings: An Experimental Analysis. ***Journal of Political Economy***, 97: 1232-1254.

Campbell, B. A., Coff, R., & Kryscynski, D. 2012. Rethinking Sustained Competitive Advantage From Human Capital. ***The Academy of Management Review***, 37: 376-395.

Campbell, D. J. 1988. Task Complexity: A Review And Analysis. ***Academy of Management Review***, 13: 40-52.

Campion, M. A., Cheraskin, L., & Stevens, M. J. 1994. Career-Related Antecedents And Outcomes Of Job Rotation. ***Academy of Management Journal***, 37: 1518-1542.

Cannella, A. A. & Lubatkin, M. 1993. Succession As A Sociopolitical Process: Internal Impediments To Outsider Selection. ***Academy of Management Journal***, 36: 763-793.

Cannella, A. A. & Holcomb, T. R. 2005. A Multi-Level Analysis Of The Upper-Echelons Model. In F. Dansereau & F. J. Yammarino (Eds.), ***Multi-Level Issues in Strategy and Methods***, Vol. 4: 195-237. Boston: Elsevier.

Cannella, A. A., Park, J.-H., & Lee, H.-U. 2008. Top Management Team Functional Background Diversity And Firm Performance: Examining The Roles Of Team Member Colocation And Environmental Uncertainty. ***Academy of Management Journal***, 51: 768-784.

Cao, Q., Maruping, L. M., & Takeuchi, R. 2006. Disentangling The Effects Of CEO Turnover And Succession On Organizational Capabilities: A Social Network Perspective. ***Organization Science***, 17: 563-576.

Carpenter, M. A. 2000. The Price Of Change: The Role Of CEO Compensation In Strategic Variation And Deviation From Industry Strategy Norms. ***Journal of Management***, 26: 1179-1198.

Carpenter, M. A. & Fredrickson, J. W. 2001. Top Management Teams, Global Strategic Posture, And The Moderating Role Of Uncertainty. ***Academy of Management Journal***, 44: 533-545.

*Carpenter, M. A., Sanders, W. G., & Gregersen, H. B. 2001. Bundling Human Capital With Organizational Context: The Impact Of International Assignment Experience On Multinational Firm-Performance And CEO Pay. ***Academy of Management Journal***, 44: 493-511.

Carpenter, M. A. & Sanders, W. M. G. 2002. Top Management Team Compensation: The Missing Link Between CEO Pay And Firm Performance. ***Strategic Management Journal***, 23: 367-375.

Carpenter, M. A. & Wade, J. B. 2002. Microlevel Opportunity Structures As Determinants Of Non-CEO Executive Pay. ***Academy of Management Journal***, 45: 1085-1103.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. 2004. Upper Echelons Research Revisited: Antecedents, Elements, And Consequences Of Top Management Team Composition. ***Journal of Management***, 30: 749-778.

Carpenter, M. A., Li, M., & Jiang, H. 2012. Social Network Research In Organizational Contexts: A Systematic Review Of Methodological Issues And Choices. ***Journal of Management***, 38: 1328-1361.

Castanias, R. P. & Helfat, C. E. 1991. Managerial Resources And Rents. ***Journal of Management***, 17: 155-171.

Castanias, R. P. & Helfat, C. E. 2001. The Managerial Rents Model: Theory And Empirical Analysis. ***Journal of Management***, 27: 661-678.

Certo, S. T., Lester, R. H., Dalton, C. M., & Dalton, D. R. 2006. Top Management Teams, Strategy And Financial Performance: A Meta-Analytic Examination. ***Journal of Management Studies***, 43: 813-839.

Certo, T., Busenbark, J. R., Hyun-Soo, W., & Semadi, M. 2016. Sample Selection Bias And Heckman Models In Strategic Management Research. ***Strategic Management Journal***, 37: 2639-2657.

*Chakravarty, A. & Grewal, R. 2016. Analyst Earning Forecasts And Advertising And R&D Budgets: Role Of Agency Theoretic Monitoring And Bonding Costs. ***Journal of Marketing Research***, 53: 580-596.

Chandler, A. D. 1962. ***Strategy And Structure: Chapters In The History Of The Industrial Enterprise***. Cambridge: MIT Press.

Chatterjee, A. & Hambrick, D. C. 2007. It's All About Me: Narcissistic Chief Executive Officers And Their Effects On Company Strategy And Performance. ***Administrative Science Quarterly***, 52: 351-386.

Chen, C. C. & Meindl, J. R. 1991. The Construction Of Leadership Images In The Popular Press: The Case Of Donald Burr And People Express. ***Administrative Science Quarterly***, 36: 521-551.

Chen, G. & Hambrick, D. C. 2012. CEO Replacement In Turnaround Situations: Executive (Mis)Fit And Its Performance Implications. ***Organization Science***, 23: 225-243.

Chen, G. 2015. Initial Compensation Of New CEOs Hired In Turnaround Situations. ***Strategic Management Journal***, 36: 1895-1917.

Chen, H., Zeng, S., Lin, H., & Ma, H. 2015. Munificence, Dynamism, And Complexity: How Industry Context Drives Corporate Sustainability. ***Business Strategy and the Environment***, 26: 125-141.

Cho, T. S. & Shen, W. 2007. Changes In Executive Compensation Following An Environmental Shift: The Role Of Top Management Team Turnover. ***Strategic Management Journal***, 28: 747-754.

Chung, C.-N. & Luo, X. R. 2013. Leadership Succession And Firm Performance In An Emerging Economy: Successor Origin, Relational Embeddedness, And Legitimacy. ***Strategic Management Journal***, 34: 338-357.

Ciscel, D. H. & Carroll, T. M. 1980. The Determinants Of Executive Salaries: An Econometric Survey. ***Review of Economics & Statistics***, 62: 7-13.

Coff, R. & Kryscynski, D. 2011. Drilling For Micro-Foundations Of Human Capital–Based Competitive Advantages. ***Journal of Management***, 37: 1429-1443.

Coff, R. W. 1997. Human Assets And Management Dilemmas: Coping With Hazards On The Road To Resource-Based Theory, ***Academy of Management Review***, 22: 374-402.

Coff, R. W. 1999. When Competitive Advantage Doesn't Lead To Performance: The Resource-Based View And Stakeholder Bargaining Power. ***Organization Science***, 10: 119-133.

Cohen, J. 1988. ***Statistical Power Analysis For The Behavioral Sciences***. Hillsdale: L. Erlbaum Associates.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2003. ***Applied Multiple Regression/Correlation Analysis For The Behavioral Sciences***. Hillsdale: L. Erlbaum Associates.

Coleman, J. S. 1988. Social Capital In The Creation Of Human Capital. ***American Journal of Sociology***, 94: 95-120.

Collins, C. J. & Clark, K. D. 2003. Strategic Human Resource Practices, Top Management Team Social Networks, And Firm Performance: The Role Of Human Resource Practices In Creating Organizational Competitive Advantage. ***Academy of Management Journal***, 46: 740-751.

Collins, J. 2001. ***Good To Great: Why Some Companies Make The Leap... And Others Don't***. New York: Harper Business.

Combs, J. G. & Skill, M. S. 2003. Managerialist And Human Capital Explanations For Key Executive Pay Premiums: A Contingency Perspective. ***Academy of Management Journal***, 46: 63-73.

Cooper, D., Patel, P. C., & Thatcher, S. M. B. 2014. It Depends: Environmental Context And The Effects Of Faultlines On Top Management Team Performance. ***Organization Science***, 25: 633-652.

Cremers, K. J. M. & Grinstein, Y. 2014. Does The Market For CEO Talent Explain Controversial CEO Pay Practices? ***Review of Finance***, 18: 921-960.

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J., Jr. 2011. Does Human Capital Matter? A Meta-Analysis Of The Relationship Between Human Capital And Firm Performance. ***Journal of Applied Psychology***, 96: 443-456.

Crossland, C. & Hambrick, D. C. 2007. How National Systems Differ In Their Constraints On Corporate Executives: A Study Of CEO Effects In Three Countries. ***Strategic Management Journal***, 28: 767-789.

Crossland, C. & Hambrick, D. C. 2011. Differences In Managerial Discretion Across Countries: How Nation-Level Institutions Affect The Degree To Which CEOs Matter. ***Strategic Management Journal***, 32: 797-819.

*Crossland, C., Jinyong, Z., Hiller, N. J., & Hambrick, D. C. 2014. CEO Career Variety: Effects On Firm-Level Strategic And Social Novelty. ***Academy of Management Journal***, 57: 652-674.

*Custodio, C., Ferreira, M. A., & Matos, P. 2013. Generalists Versus Specialists: Lifetime Work Experience And Chief Executive Officer Pay. ***Journal of Financial Economics***, 108: 471-492.

*Custodio, C. & Metzger, D. 2013. How Do CEOs Matter? The Effect Of Industry Expertise On Acquisition Returns. ***Review of Financial Studies***, 26: 2008-2047.

*Custodio, C. & Metzger, D. 2014. Financial Expert CEOs: CEO′S Work Experience And Firm′S Financial Policies. ***Journal of Financial Economics***, 114: 125-154.

Cyert, R. M. & March, J. G. 1963. ***A Behavioral Theory Of The Firm***. Engelwood Cliffs: Prentice-Hall.

Daft, R. L. & Weick, K. E. 1984. Toward A Model Of Organizations As Interpretation Systems. ***Academy of Management Review***, 9: 284-295.

Daft, R. L. & Lengel, R. H. 1986. Organizational Information Requirements, Media Richness And Structural Design. ***Management Science***, 32: 554-571.

*Daily, C. M., Certo, S. T., & Dalton, D. R. 2000. International Experience In The Executive Suite: The Path To Prosperity? ***Strategic Management Journal***, 21: 515-523.

Dalziel, T., Gentry, R. J., & Bowerman, M. 2011. An Integrated Agency-Resource Dependence View Of The Influence Of Directors' Human And Relational Capital On Firms' R&D Spending. ***Journal of Management Studies***, 48: 1217-1242.

Dane, E. 2010. Reconsidering The Trade-Off Between Expertise And Flexibility: A Cognitive Entrenchment Perspective. ***Academy of Management Review***, 35: 579-603.

Datta, D. K. & Rajagopalan, N. 1998. Industry Structure And CEO Characteristics: An Empirical Study Of Succession Events. ***Strategic Management Journal***, 19: 833-852.

Datta, D. K., Guthrie, J. P., & Rajagopalan, N. 2002. Different Industries, Different CEOs? A Study Of CEO Career Specialization. ***Human Resource Planning***, 25: 14-25.

Datta, D. K., Rajagopalan, N., & Yan, Z. 2003. New CEO Openness To Change And Strategic Persistence: The Moderating Role Of Industry Characteristics. ***British Journal of Management***, 14: 101-114.

Datta, S. & Iskandar-Datta, M. 2014. Upper-Echelon Executive Human Capital And Compensation: Generalist Vs Specialist Skills. ***Strategic Management Journal***, 35: 1853-1866.

David, P., Kochhar, R., & Levitas, E. 1998. Research Notes. The Effect Of Institutional Investors On The Level And Mix Of CEO Compensation. ***Academy of Management Journal***, 41: 200-208.

Dean, J. J. W. & Sharfman, M. P. 1993. Procedural Rationality In The Strategic Decision-Making Process. ***Journal of Management Studies***, 30: 587-610.

Dean, J. W. & Sharfman, M. P. 1996. Does Decision Process Matter? A Study Of Strategic Decision-Making Effectiveness. ***Academy of Management Journal***, 39: 368-396.

DeChurch, L. A., Hiller, N. J., Murase, T., Doty, D., & Salas, E. 2010. Leadership Across Levels: Levels Of Leaders And Their Levels Of Impact. ***The Leadership Quarterly***, 21: 1069-1085.

Denis, J.-L., Langley, A., & Pineault, M. 2000. Becoming A Leader In A Complex Organization. ***Journal of Management Studies***, 37: 1063-1100.

Dess, G. G. & Beard, D. W. 1984. Dimensions Of Organizational Task Environments. ***Administrative Science Quarterly***, 29: 52-73.

Dess, G. G., Ireland, R. D., & Hitt, M. A. 1990. Industry Effects And Strategic Management Research. ***Journal of Management***, 16: 7-27.

Devers, C. E., Cannella, A. A., Reilly, G. P., & Yoder, M. E. 2007. Executive Compensation: A Multidisciplinary Review Of Recent Developments. ***Journal of Management***, 33: 1016-1072.

*Dittmar, A. & Duchin, R. 2016. Looking In The Rearview Mirror: The Effect Of Managers' Professional Experience On Corporate Financial Policy. ***Review of Financial Studies***, 29: 565-602.

Dragoni, L., Oh, I.-S., Vankatwyk, P., & Tesluk, P. E. 2011. Developing Executive Leaders: The Relative Contribution Of Cognitive Ability, Personality, And The

Accumulation Of Work Experience In Predicting Strategic Thinking Competency. ***Personnel Psychology***, 64: 829-864.

Dreyfus, H. L. & Dreyfus, S. E. 2005. Expertise In Real World Contexts. ***Organization Studies***, 26: 779-792.

Durlauf, S. N. & Fafchamps, M. 2005. Social Capital. In A. Philippe & N. D. Steven (Eds.), ***Handbook of Economic Growth***, Vol. 1, Part B: 1639-1699. Boston: Elsevier.

Dutton, J. E. & Duncan, R. B. 1987. The Creation Of Momentum For Change Through The Process Of Strategic Issue Diagnosis. ***Strategic Management Journal***, 8: 279-295.

Eggers, J. P. & Kaplan, S. 2013. Cognition And Capabilities: A Multi-Level Perspective. ***The Academy of Management Annals***, 7: 295-340.

Eisenhardt, K. M. 1989. Making Fast Strategic Decisions In High-Velocity Environments. ***Academy of Management Journal***, 32: 543-576.

Eisenhardt, K. M. & Schoonhoven, C. B. 1990. Organizational Growth: Linking Founding Team, Strategy, Environment, And Growth Among U.S. Semiconductor Ventures, 1978-1988. ***Administrative Science Quarterly***, 35: 504-529.

Eisenhardt, K. M. & Schoonhoven, C. B. 1996. Resource-Based View Of Strategic Alliance Formation: Strategic And Social Effects In Entrepreneurial Firms. ***Organization Science***, 7: 136-150.

Eisenhardt, K. M. & Martin, J. A. 2000. Dynamic Capabilities: What Are They? ***Strategic Management Journal***, 21: 1105-1121.

Elbanna, S. & Child, J. 2007. Influences On Strategic Decision Effectiveness: Development And Test Of An Integrative Model. ***Strategic Management Journal***, 28: 431-453.

Engel, Y., Burg, E. v., Kleijn, E., & Khapova, S. N. 2017. Past Career In Future Thinking: How Career Management Practices Shape Entrepreneurial Decision Making. ***Strategic Entrepreneurship Journal***, 11: 122-144.

Ensley, M. D., Hmieleski, K. M., & Pearce, C. L. 2006. The Importance Of Vertical And Shared Leadership Within New Venture Top Management Teams: Implications For The Performance Of Startups. ***The Leadership Quarterly***, 17: 217-231.

Ericsson, K. A. & Charness, N. 1994. Expert Performance: Its Structure And Acquisition. ***American Psychologist***, 49: 725-747.

Ericsson, K. A. & Lehmann, A. C. 1996. Expert And Exceptional Performance: Evidence And Maximal Adaptation To Task Constraints. ***Annual Review of Psychology***, 47: 273-305.

Ericsson, K. A., Patel, V., & Kintsch, W. 2000. How Experts' Adaptations To Representative Task Demands Account For The Expertise Effect In Memory Recall: Comment On Vicente And Wang (1998). ***Psychological Review***, 107: 578-592.

Eriksson, G. 1991. Human Capital Investments And Labor Mobility. ***Journal of Labor Economics***, 9: 236-254.

European Central Bank. 2016. Statistical Data Warehouse - Exchange Rates; http://sdw.ecb.europa.eu/browse.do?node=2018794; Accessed on March 20, 2016.

European Union. 2016. What Is An SME?; http://ec.europa.eu/growth/ SMEs/business-friendly-environment/SME-definition/index_en.htm; Accessed on April 25, 2016.

Favaro, K., Karlsson, P.-O., & Neilson, G. L. 2013. It's Time For A Change: Booz & Company.

Ferreira, D. & Sah, R. K. 2012. Who Gets To The Top? Generalists Versus Specialists In Managerial Organizations. ***RAND Journal of Economics***, 43: 577-601.

Finkelstein, S. & Hambrick, D. C. 1988. Chief Executive Compensation: A Synthesis And Reconciliation. ***Strategic Management Journal***, 9: 543-558.

Finkelstein, S. & Hambrick, D. C. 1989. Chief Executive Compensation: A Study Of The Intersection Of Markets And Political Processes. ***Strategic Management Journal***, 10: 121-134.

Finkelstein, S. & Hambrick, D. C. 1990. Top-Management-Team Tenure And Organizational Outcomes: The Moderating Role Of Managerial Discretion. ***Administrative Science Quarterly***, 35: 484-503.

Finkelstein, S. 1992. Power In Top Management Teams: Dimensions, Measurement, And Validation. ***Academy of Management Journal***, 35: 505-538.

Finkelstein, S. & Hambrick, D. C. 1996. ***Strategic Leadership. Top Executives And Their Effect On Organizations***. St. Paul: West Publishing.

Finkelstein, S. & Boyd, B. K. 1998. How Much Does The CEO Matter? The Role Of Managerial Discretion In The Setting Of CEO Compensation. ***The Academy of Management Journal***, 41: 179-199.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. ***Strategic Leadership: Theory And Research On Executives, Top Management Teams, And Boards***. New York: Oxford University Press.

Fiol, C. M. & O'Connor, E. J. 2003. Waking Up! Mindfulness In The Face Of Bandwagons. ***Academy of Management Review***, 28: 54-70.

Fischer, H. M. & Pollock, T. G. 2004. Effects Of Social Capital And Power On Surviving Transformational Change: The Case Of Initial Public Offerings. ***Academy of Management Journal***, 47: 463-481.

Fisher, J. & Govindarajan, V. 1992. Profit Center Manager Compensation: An Examination Of Market, Political And Human Capital Factors. ***Strategic Management Journal***, 13: 205-217.

Fiske, S. T. & Taylor, S. E. 1991. ***Social Cognition***. New York: McGraw-Hill.

Fiss, P. C. & Zajac, E. J. 2006. The Symbolic Management Of Strategic Change: Sensegiving Via Framing And Decoupling. ***Academy of Management Journal***, 49: 1173-1193.

*Fitzsimmons, T. W., Callan, V. J., & Paulsen, N. 2014. Gender Disparity In The C-Suite: Do Male And Female CEOs Differ In How They Reached The Top? ***Leadership Quarterly***, 25: 245-266.

*Fitzsimmons, T. W. & Callan, V. J. 2016. CEO Selection: A Capital Perspective. ***Leadership Quarterly***, 27: 765-787.

*Fondas, N. & Wiersema, M. 1997. Changing Of The Guard: The Influence Of CEO Socializaiton On Strategic Change. ***Journal of Management Studies***, 34: 561-584.

Fonti, F. & Maoret, M. 2016. The Direct And Indirect Effects Of Core And Peripheral Social Capital On Organizational Performance. ***Strategic Management Journal***, 37: 1765-1786.

*Forbes, D. P., Korsgaard, M. A., & Sapienza, H. J. 2010. Financing Decisions As A Source Of Conflict In Venture Boards. ***Journal of Business Venturing***, 25: 579-592.

Ford, J. D. & Baucus, D. A. 1987. Organizational Adaptation To Performance Downturns: An Interpretation-Based Perspective. ***Academy of Management Review***, 12: 366-380.

Friedman, S. D. & Saul, K. 1991. A Leader's Wake: Organization Member Reactions To CEO Succession. ***Journal of Management***, 17: 619-642.

Frydman, C. & Saks, R. E. 2010. Executive Compensation: A New View From A Long-Term Perspective, 1936–2005. ***Review of Financial Studies***, 23: 2099-2138.

*Fulmer, I. S. 2009. The Elephant In The Room: Labor Market Influences On CEO Compensation. ***Personnel Psychology***, 62: 659-695.

Garbuio, M., King, A. W., & Lovallo, D. 2011. Looking Inside: Psychological Influences On Structuring A Firm's Portfolio Of Resources. ***Journal of Management***, 37: 1444-1463.

Garg, V. K., Walters, B. A., & Priem, R. L. 2003. Chief Executive Scanning Emphases, Environmental Dynamism, And Manufacturing Firm Performance. ***Strategic Management Journal***, 24: 725-744.

Gargiulo, M. & Benassi, M. 2000. Trapped In Your Own Net? Network Cohesion, Structural Holes, And The Adaptations Of Social Capital. ***Organization Science***, 11: 183-196.

Gavetti, G. & Levinthal, D. 2000. Looking Forward And Looking Backward: Cognitive And Experiential Search. ***Administrative Science Quarterly***, 45: 113-137.

Geletkanycz, M. A. & Hambrick, D. C. 1997. The External Ties Of Top Executives: Implications For Strategic Choice And Performance. ***Administrative Science Quarterly***, 42: 654-681.

Geletkanycz, M. A. & Black, S. S. 2001. Bound By The Past? Experience-Based Effects On Commitment To The Strategic Status Quo. ***Journal of Management***, 27: 3-21.

Geletkanycz, M. A., Boyd, B. K., & Finkelstein, S. 2001. The Strategic Value Of CEO External Directorate Networks: Implications For CEO Compensation. ***Strategic Management Journal***, 22: 889-898.

Geletkanycz, M. A. & Boyd, B. K. 2011. CEO Outside Directorships And Firm Performance: A Reconciliation Of Agency And Embeddedness Views. ***Academy of Management Journal***, 54: 335-352.

Gentner, D., Loewenstein, J., Thompson, L., & Forbus, K. D. 2009. Reviving Inert Knowledge: Analogical Abstraction Supports Relational Retrieval Of Past Events. ***Cognitive Science***, 33: 1343-1382.

Georgakakis, D. 2014. Antecedents And Consequences Of Top Management Team Diversity: Expanding The Upper Echelons Research Stream. ***Dissertation***. St.Gallen: University of St.Gallen.

*Georgakakis, D., Dauth, T., & Ruigrok, W. 2016. Too Much Of A Good Thing: Does International Experience Variety Accelerate Or Delay Executives' Career Advancement? ***Journal of World Business***, 51: 425-437.

*Georgakakis, D., Greve, P., & Ruigrok, W. 2017. Top Management Team Faultlines And Firm Performance: Examining The CEO-TMT Interface. ***The Leadership Quarterly***, 28: 741-758.

George, J. M. & Jing, Z. 2001. When Openness To Experience And Conscientiousness Are Related To Creative Behavior: An International Approach. ***Journal of Applied Psychology***, 86: 513-524.

Gerhart, B. & Milkovich, G. T. 1990. Organizational Differences In Managerial Compensation And Financial Performance. ***Academy of Management Journal***, 33: 663-691.

Ghoshal, S. 2005. Bad Management Theories Are Destroying Good Management Practices. ***Academy of Management Learning & Education***, 4: 75-91.

Giambatista, R. C. 2004. Jumping Through Hoops: A Longitudinal Study Of Leader Life Cycles In The NBA. ***Leadership Quarterly***, 15: 607-624.

Giambatista, R. C., Rowe, W. G., & Riaz, S. 2005. Nothing Succeeds Like Succession: A Critical Review Of Leader Succession Literature Since 1994. ***Leadership Quarterly***, 16: 963-991.

Gibbs, J. P. & Martin, W. T. 1962. Urbanization, Technology, And The Division Of Labor: International Patterns. ***American Sociological Review***, 27: 667-677.

Gick, M. L. 1986. Problem-Solving Strategies. ***Educational Psychologist***, 21: 99-120.

Ginsberg, A. & Venkatraman, N. 1985. Contingency Perspectives If Organizational Strategy: A Critical Review Of The Empirical Research. ***Academy of Management Review***, 10: 421-434.

Ginsberg, A. & Buchholtz, A. 1990. Converting To For-Profit Status: Corporate Responsiveness To Radical Change. ***Academy of Management Journal***, 33: 445-477.

Gioia, D. A. & Chittipeddi, K. 1991. Sensemaking And Sensegiving In Strategic Change Initiation. ***Strategic Management Journal***, 12: 433-448.

Gomez-Mejia, L. & Wiseman, R. M. 1997. Reframing Executive Compensation: An Assessment And Outlook. ***Journal of Management***, 23: 291-374.

Gomez-Mejia, L. R. 1994. Executive Compensation: A Reassessment And A Future Research Agenda. In G. R. Ferris (Ed.), ***Research in personnel and human resources management***, Vol. 12: 161-222. Greenwich: JAI Press.

*Gomulya, D. & Boeker, W. 2014. How Firms Respond To Financial Restatement: CEO Successors And External Reactions. ***Academy of Management Journal***, 57: 1579-1785.

Goodstein, J. & Boeker, W. 1991. Turbulence At The Top: A New Perspective On Governance Structure Changes And Strategic Change. ***Academy of Management Journal***, 34: 306-330.

*Gore, A. K., Matsunaga, S., & Yeung, P. E. 2011. The Role Of Technical Expertise In Firm Governance Structure: Evidence From Chief Financial Officer Contractual Incentives. ***Strategic Management Journal***, 32: 771-786.

Govindarajan, V. 1989. Implementing Competitive Strategies At The Business Unit Level: Implications Of Matching Managers To Strategies. ***Strategic Management Journal***, 10: 251-269.

*Graffin, S. D., Carpenter, M. A., & Boivie, S. 2011. What's All That (Strategic) Noise? Anticipatory Impression Management In CEO Succession. ***Strategic Management Journal***, 32: 748-770.

Granovetter, M. 1983. The Strength Of Weak Ties: A Network Theory Revisited. ***Sociological Theory***: 201-233.

Granovetter, M. 1985. Economic Action And Social Structure: The Problem Of Embeddedness. ***American Journal of Sociology***, 91: 481-510.

Gregoire, D. A., Barr, P. S., & Shepherd, D. A. 2010. Cognitive Processes Of Opportunity Recognition: The Role Of Structural Alignment. ***Organization Science***, 21: 413-431.

Greiner, L. E. & Bhambri, A. 1989. New CEO Intervention And Dynamics Of Deliberate Strategic Change. ***Strategic Management Journal***, 10: 67-86.

Greve, P., Nielsen, S., & Ruigrok, W. 2009. Transcending Borders With International Top Management Teams: A Study Of European Financial Multinational Corporations. ***European Management Journal***, 27: 213-224.

Greve, P. M. 2009. International Mobility In Executive Labour Markets. ***Dissertation***. St.Gallen: University of St.Gallen.

Grimm, C. M. & Smith, K. G. 1991. Management And Organizational Change: A Note On The Railroad Industry. ***Strategic Management Journal***, 12: 557-562.

Gupta, A. K. 1984. Contingency Linkages Between Strategy And General Manager Characteristics: A Conceptual Examination. ***Academy of Management Review***, 9: 399-412.

Gupta, A. K. & Govindarajan, V. 1984. Business Unit Strategy, Managerial Characteristics, And Business Unit Effectiveness At Strategy Implementation. ***Academy of Management Journal***, 27: 25-41.

Gupta, A. K. 1988. Contingency Perspectives On Strategic Leadership: Current Knowledge And Future Research Directions. In D. C. Hambrick (Ed.), ***The executive effect: Concepts and methods for studying top managers***, Vol. 2: 147-178. Greenwich: JAI Press.

*Guthrie, J. P. & Datta, D. K. 1997. Contextual Influences On Executive Selection: Firm Characteristics And CEO Experience. ***Journal of Management Studies***, 34: 537-560.

Guthrie, J. P. & Datta, D. K. 1998. Corporate Strategy, Executive Selection, And Firm Performance. ***Human Resource Management***, 37: 101-115.

Haans, R. F. J., Pieters, C., & He, Z.-L. 2016. Thinking About U: Theorizing And Testing U- And Inverted U-Shaped Relationships In Strategy Research. ***Strategic Management Journal***, 37: 1177-1195.

Haleblian, J. & Finkelstein, S. 1993. Top Management Team Size, CEO Dominance, And Firm Performance: The Moderating Roles Of Environmental Turbulence And Discretion. ***Academy of Management Journal***, 36: 844-863.

Hall, D. T. 1986. Dilemmas In Linking Succession Planning To Individual Executive Learning. ***Human Resource Management***, 25: 235-265.

Hambrick, D. C. 1982. Environmental Scanning And Organizational Strategy. ***Strategic Management Journal***, 3: 159-174.

Hambrick, D. C. & Mason, P. A. 1984. Upper Echelons: The Organization As A Reflection Of Its Top Managers. ***Academy of Management Review***, 9: 193-206.

Hambrick, D. C. & Fukutomi, G. D. S. 1991. The Seasons Of A CEO's Tenure. ***Academy of Management Review***, 16: 719-742.

*Hambrick, D. C. & Cannella, A. A. 2004. CEOs Who Have COOs: Contingency Analysis Of An Unexplored Structural Form. ***Strategic Management Journal***, 25: 959-979.

Hambrick, D. C., Finkelstein, S., & Mooney, A. C. 2005. Executive Job Demands: New Insights For Explaining Strategic Decisions And Leader Behaviors. ***Academy of Management Review***, 30: 472-491.

Hambrick, D. C. 2007. Upper Echelons Theory: An Update. ***Academy of Management Review***, 32: 334-343.

Hambrick, D. C. & Quigley, T. J. 2014. Toward More Accurate Contextualization Of The CEO Effect On Firm Performance. ***Strategic Management Journal***, 35: 473-491.

Hambrick, D. C., Humphrey, S. E., & Gupta, A. 2015. Structural Interdependence Within Top Management Teams: A Key Moderator Of Upper Echelons Predictions. ***Strategic Management Journal***, 36: 449-461.

Hambrick, R. C., Geletkanycz, M. A., & Fredrickson, J. W. 1993. Top Executive Commitment To The Status Quo: Some Tests Of Its Determinants. ***Strategic Management Journal***, 14: 401-418.

Hamilton, B. H. & Nickerson, J. A. 2003. Correcting For Endogeneity In Strategic Management Research. ***Strategic Organization***, 1: 51-78.

Hamori, M. 2006. Executive Career Advancement In Career Moves Across Employers: The Role Of Organization-Level Predictors. ***International Journal of Human Resource Management***, 17: 1129-1151.

Hamori, M. 2010. Job-Hopping To The Top And Other Career Fallacies. ***Harvard Business Review***, 88: 154-157.

*Harris, D. & Helfat, C. 1997. Specificity Of CEO Human Capital And Compensation. ***Strategic Management Journal***, 18: 895-920.

Harrison, D. A. & Klein, K. J. 2007. What's The Difference? Diversity Constructs As Separation, Variety, Or Disparity In Organizations. ***Academy of Management Review***, 32: 1199-1228.

Hatch, N. W. & Dyer, J. H. 2004. Human Capital And Learning As A Source Of Sustainable Competitive Advantage. ***Strategic Management Journal***, 25: 1155-1178.

Haveman, H. A. 1993. Ghosts Of Managers Past: Managerial Succession And Organizational Mortality. ***Academy of Management Journal***, 36: 864-881.

Haynes, K. T. & Hillman, A. 2010. The Effect Of Board Capital And CEO Power On Strategic Change. ***Strategic Management Journal***, 31: 1145-1163.

Heckman, J. J. 1979. Sample Selection Bias As A Specification Error. ***Econometrica***, 47: 153-162.

Helfat, C. E. & Martin, J. A. 2015. Dynamic Managerial Capabilities: Review And Assessment Of Managerial Impact On Strategic Change. ***Journal of Management***, 41: 1281-1312.

Helmich, D. L. & Brown, W. B. 1972. Successor Type And Organizational Change In The Corporate Enterprise. ***Administrative Science Quarterly***, 17: 371-381.

Henderson, A. D. & Fredrickson, J. W. 1996. Information-Processing Demands As A Determinant Of CEO Compensation. ***Academy of Management Journal***, 39: 575-606.

Henderson, A. D., Miller, D., & Hambrick, D. C. 2006. How Quickly Do CEOs Become Obsolete? Industry Dynamism, CEO Tenure, And Company Performance. ***Strategic Management Journal***, 27: 447-460.

*Herrmann, P. & Datta, D. K. 2002. CEO Successor Characteristics And The Choice Of Foreign Market Entry Mode: An Empirical Study. ***Journal of International Business Studies***, 33: 551-569.

*Herrmann, P. & Datta, D. K. 2006. CEO Experiences: Effects On The Choice Of Fdi Entry Mode. ***Journal of Management Studies***, 43: 755-778.

Herrmann, P. & Nadkarni, S. 2014. Managing Strategic Change: The Duality Of CEO Personality. ***Strategic Management Journal***, 35: 1318-1342.

Heyden, M. L. M., Van Doorn, S., Reimer, M., Van Den Bosch, F. A. J., & Volberda, H. W. 2013. Perceived Environmental Dynamism, Relative Competitive Performance, And Top Management Team Heterogeneity: Examining Correlates Of Upper Echelons' Advice-Seeking. ***Organization Studies***, 34: 1327-1356.

Hill, C. W. L. & Hoskisson, R. E. 1987. Strategy And Structure In The Multiproduct Firm. ***Academy of Management Review***, 12: 331-341.

Hiller, N. J. & Hambrick, D. C. 2005. Conceptualizing Executive Hubris: The Role Of (Hyper-)Core Self-Evaluations In Strategic Decision-Making. ***Strategic Management Journal***, 26: 297-319.

Hillman, A. J. & Dalziel, T. 2003. Boards Of Directors And Firm Performance: Integrating Agency And Resource Dependence Perspectives. ***Academy of Management Review***, 28: 383-396.

Hinds, P. J. 1999. The Curse Of Expertise: The Effects Of Expertise And Debiasing Methods On Prediction Of Novice Performance. ***Journal of Experimental Psychology: Applied***, 5: 205-221.

*Hitt, M. A. & Tyler, B. B. 1991. Strategic Decision Models: Integrating Different Perspectives. ***Strategic Management Journal***, 12: 327-351.

Hitt, M. A., Biermant, L., Shimizu, K., & Kochhar, R. 2001. Direct And Moderating Effects Of Human Capital On Strategy And Performance In Professional Service Firms: A Resource-Based Perspective. ***Academy of Management Journal***, 44: 13-28.

Hodgkinson, G. P. 1997. The Cognitive Analysis Of Competitive Structures: A Review And Critique. ***Human Relations***, 50: 625-654.

Hodgkinson, G. P. & Healey, M. P. 2008. Cognition In Organizations. ***Annual Review of Psychology***, 59: 387-417.

Holcomb, T. R., Holmes, R. M., & Connelly, B. L. 2009. Making The Most Of What You Have: Managerial Ability As A Source Of Resource Value Creation. ***Strategic Management Journal***, 30: 457-485.

Hoskisson, R. E. & Hitt, M. A. 1990. Antecedents And Performance Outcomes Of Diversification: A Review And Critique Of Theoretical Perspectives. ***Journal of Management***, 16: 461-509.

Hoskisson, R. E., Hitt, M. A., & Hill, C. W. L. 1993. Managerial Incentives And Investment In R&D In Large Multiproduct Firms. ***Organization Science***, 4: 325-341.

*Hsu, W.-T., Chen, H.-L., & Cheng, C.-Y. 2013. Internationalization And Firm Performance Of SMEs: The Moderating Effects Of CEO Attributes. ***Journal of World Business***, 48: 1-12.

Hu, C. & Liu, Y.-J. 2015. Valuing Diversity: CEOs' Career Experiences And Corporate Investment. ***Journal of Corporate Finance***, 30: 11-31.

Huff, A. S. 1982. Industry Influences On Strategy Reformulation. ***Strategic Management Journal***, 3: 119-131.

Huselid, M. A. 1995. The Impact Of Human Resource Management Practices On Turnover, Productivity, And Corporate Financial Performance. ***Academy of Management Journal***, 38: 635-672.

Huson, M. R., Malatesta, P. H., & Parrino, R. 2004. Managerial Succession And Firm Performance. ***Journal of Financial Economics***, 74: 237-275.

Hutzschenreuter, T., Kleindienst, I., & Greger, C. 2012. How New Leaders Affect Strategic Change Following A Succession Event: A Critical Review Of The Literature. ***Leadership Quarterly***, 23: 729-755.

Ibarra, H. 1995. Race, Opportunity, And Diversity Of Social Circles In Managerial Networks. ***Academy of Management Journal***, 38: 673-703.

Jackson, S. E. & Dutton, J. E. 1988. Discerning Threats And Opportunities. ***Administrative Science Quarterly***, 33: 370-387.

Jackson, S. E. 1992. Consequences Of Group Composition For The Interpersonal Dynamics Of Strategic Issue Processing. In P. Shrivastava, A. Huff, & J. Dutton (Eds.), ***Advances in Strategic Management***, Vol. 8: 345-382. Greenwich: JAI Press.

James, E. H. 2000. Race-Related Differences In Promotions And Support: Underlying Effects Of Human And Social Capital. ***Organization Science***, 11: 493-508.

Janssen, O. 2001. Fairness Perceptions As A Moderator In The Curvilinear Relationships Between Job Demands, And Job Performance And Job Satisfaction. ***Academy of Management Journal***, 44: 1039-1050.

Jensen, M. & Zajac, E. J. 2004. Corporate Elites And Corporate Strategy: How Demographic Preferences And Structural Position Shape The Scope Of The Firm. ***Strategic Management Journal***, 25: 507-524.

Johnson, J. L. 2006. Brokerage And Closure: An Introduction To Social Capital. ***Academy of Management Review***, 31: 757-759.

Jones, G. R. & Hill, C. W. L. 1988. Transaction Cost Analysis Of Strategy-Structure Choice. ***Strategic Management Journal***, 9: 159-172.

Kahneman, D. & Klein, G. 2009. Conditions For Intuitive Expertise: A Failure To Disagree. ***American Psychologist***, 64: 515-526.

Kang, S.-C. & Snell, S. A. 2009. Intellectual Capital Architectures And Ambidextrous Learning: A Framework For Human Resource Management. ***Journal of Management Studies***, 46: 65-92.

Kaplan, S. N., Klebanov, M. M., & Sorensen, M. 2012. Which CEO Characteristics And Abilities Matter? ***Journal of Finance***, 67: 973-1007.

Karaevli, A. & Hall, D. T. T. 2006. How Career Variety Promotes The Adaptability Of Managers: A Theoretical Model. ***Journal of Vocational Behavior***, 69: 359-373.

*Karaevli, A. 2007. Performance Consequences Of New CEO 'Outsiderness': Moderating Effects Of Pre- And Post-Succession Contexts. ***Strategic Management Journal***, 28: 681-706.

Karaevli, A. & Zajac, E. J. 2013. When Do Outsider CEOs Generate Strategic Change? The Enabling Role Of Corporate Stability. ***Journal of Management Studies***, 50: 1267-1294.

Katz, R. 1982. The Effects Of Group Longevity On Project Communication And Performance. ***Administrative Science Quarterly***, 27: 81-104.

Katz, R. L. 1974. Skills Of An Effective Administrator. ***Harvard Business Review***, 52: 90-102.

Keats, B. W. & Hitt, M. A. 1988. A Causal Model Of Linkages Among Environmental Dimensions, Macro Organizational Characteristics, And Performance. ***Academy of Management Journal***, 31: 570-598.

Keck, S. L. & Tushman, M. L. 1993. Environmental And Organizational Context And Executive Team Structure. ***Academy of Management Journal***, 36: 1314-1344.

Kelly, D. & Amburgey, T. L. 1991. Organizational Inertia And Momentum: A Dynamic Model Of Strategic Change. ***The Academy of Management Journal***, 34: 591-612.

Kelly, G., Mastroeni, M., Conway, E., Monks, K., Truss, K., Flood, P., & Hannon, E. 2011. Combining Diverse Knowledge: Knowledge Workers' Experience Of Specialist And Generalist Roles. ***Personnel Review***, 40: 607-624.

Kerr, J. & Bettis, R. A. 1987. Boards Of Directors, Top Management Compensation, And Shareholder Returns. ***Academy of Management Journal***, 30: 645-664.

Kerr, J. L. 1985. Diversification Strategies And Managerial Rewards: An Empirical Study. ***Academy of Management Journal***, 28: 155-179.

Kesner, I. F. & Dalton, D. R. 1994. Top Management Turnover And CEO Succession: An Investigation Of The Effects Of Turnover On Performance. ***Journal of Management Studies***, 31: 701-713.

Kesner, I. F. & Sebora, T. C. 1994. Executive Succession: Past, Present & Future. ***Journal of Management***, 20: 327-372.

Khanna, P., Jones, C. D., & Boivie, S. 2014. Director Human Capital, Information Processing Demands, And Board Effectiveness. ***Journal of Management***, 40: 557-585.

Khatri, N. & Ng, H. A. 2000. The Role Of Intuition In Strategic Decision Making. ***Human Relations***, 53: 57-86.

Khurana, R. 2001. Finding The Right CEO: Why Boards Often Make Poor Choices. ***MIT Sloan Management Review***, 43: 91-95.

*Kish-Gephart, J. J. & Tochman-Campbell, J. 2015. You Don't Forget Your Roots: The Influence Of CEO Social Class Background On Strategic Risk Taking. ***Academy of Management Journal***, 58: 1614-1636.

Klimoski, R. J. & Koles, K. L. K. 2001. The Chief Executive Officer And Top Management Team Interface. In S. J. Zaccaro & R. J. Klimoski (Eds.), ***The Nature of Organizational Leadership: Understanding the Performance Imperatives Confronting Today's Leaders***: 219-269. San Francisco: Jossey-Bass.

Koberg, C. S. 1987. Resource, Environmental Uncertainty, And Adaptive Organizational Behavior. ***Academy of Management Journal***, 30: 798-807.

Kor, Y. Y. & Sundaramurthy, C. 2009. Experience-Based Human Capital And Social Capital Of Outside Directors. ***Journal of Management***, 35: 981-1006.

Kotter, J. P. 1982. ***The General Managers***. New York: Free Press.

Kraatz, M. S. & Zajac, E. J. 2001. How Organizational Resources Affect Strategic Change And Performance In Turbulent Environments: Theory And Evidence. ***Organization Science***, 12: 632-657.

Kulich, C., Trojanowski, G., Ryan, M. K., Alexander Haslam, S., & Renneboog, L. D. R. 2011. Who Gets The Carrot And Who Gets The Stick? Evidence Of Gender Disparities In Executive Remuneration. ***Strategic Management Journal***, 32: 301-321.

Kwon, S.-W. & Adler, P. S. 2014. Social Capital: Maturation Of A Field Of Research. ***Academy of Management Review***, 39: 412-422.

Labianca, G., Gray, B., & Brass, D. J. 2000. A Grounded Model Of Organizational Schema Change During Empowerment. ***Organization Science***, 11: 235-257.

Lant, T. K. & Mezias, S. J. 1992. An Organizational Learning Model Of Convergence And Reorientation. ***Organization Science***, 3: 47-71.

Lant, T. K., Milliken, F. J., & Batra, B. 1992. The Role Of Managerial Learning And Interpretation In Strategic Persistence And Reorientation: An Empirical Exploration. ***Strategic Management Journal***, 13: 585-608.

Larcker, D. F. & Rusticus, T. O. 2010. On The Use Of Instrumental Variables In Accounting Research. ***Journal of Accounting and Economics***, 49: 186-205.

Lawrence, B. S. 1997. The Black Box Of Organizational Demography. ***Organization Science***, 8: 1-22.

Lawrence, P. R. & Lorsch, J. W. 1967. Differentiation And Integration In Complex Organizations. ***Administrative Science Quarterly***, 12: 1-47.

Lazear, E. P. 2004. Balanced Skills And Entrepreneurship. ***American Economic Review***, 94: 208-211.

Leana, C. R. & Van Buren, H. J. 1999. Organizational Social Capital And Employment Practices. ***Academy of Management Review***, 24: 538-555.

Lee, C. 2011. New Evidence On What Happens To CEOs After They Retire. ***Journal of Corporate Finance***, 17: 474-482.

Leonard-Barton, D. 1992. Core Capabilities And Core Rigidities: A Paradox In Managing New Product Development. ***Strategic Management Journal***, 13: 111-125.

Lester, R. H., Hillman, A. M. Y., Zardkoohi, A., & Cannella, A. A. 2008. Former Government Officials As Outside Directors: The Role Of Human And Social Capital. ***Academy of Management Journal***, 51: 999-1013.

Levin, D. Z. & Cross, R. 2004. The Strength Of Weak Ties You Can Trust: The Mediating Role Of Trust In Effective Knowledge Transfer. ***Management Science***, 50: 1477-1490.

Levinthal, D. A. & March, J. G. 1993. The Myopia Of Learning. ***Strategic Management Journal***, 14: 95-112.

Lind, J. T. & Mehlum, H. 2010. With Or Without U? The Appropriate Test For A U-Shaped Relationship. ***Oxford Bulletin of Economics & Statistics***, 72: 109-118.

Ling, Y., Simsek, Z., Lubatkin, M. H., & Veiga, J. F. 2008. Transformational Leadership's Role In Promoting Corporate Entrepreneurship: Examining The CEO-TMT Interface. ***Academy of Management Journal***, 51: 557-576.

Lorsch, J. W. & Khurana, R. 1999. Changing Leaders. ***Harvard Business Review***, 77: 96-105.

Lyles, M. A. & Schwenk, C. R. 1992. Top Management, Strategy And Organizational Knowledge Structures. ***Journal of Management Studies***, 29: 155-174.

Ma, S., Seidl, D., & Guérard, S. 2014. The New CEO And The Post-Succession Process: An Integration Of Past Research And Future Directions. ***International Journal of Management Reviews***, 17: 460-482.

Mackey, A. 2008. The Effect Of CEOs On Firm Performance. ***Strategic Management Journal***, 29: 1357-1367.

Mackey, A., Molloy, J. C., & Morris, S. S. 2014. Scarce Human Capital In Managerial Labor Markets. ***Journal of Management***, 40: 399-421.

Maddux, W. W. & Galinsky, A. D. 2009. Cultural Borders And Mental Barriers: The Relationship Between Living Abroad And Creativity. ***Journal of Personality and Social Psychology***, 96: 1047-1061.

Maddux, W. W., Adam, H., & Galinsky, A. D. 2010. When In Rome ... Learn Why The Romans Do What They Do: How Multicultural Learning Experiences Facilitate Creativity. ***Personality and Social Psychology Bulletin***, 36: 731-741.

Mahoney, J. T. & Pandian, J. R. 1992. The Resource-Based View Within The Conversation Of Strategic Management. ***Strategic Management Journal***, 13: 363-380.

Mahoney, J. T. 1995. The Management Of Resources And The Resource Of Management. ***Journal of Business Research***, 33: 91-101.

Maitland, E. & Sammartino, A. 2015. Decision Making And Uncertainty: The Role Of Heuristics And Experience In Assessing A Politically Hazardous Environment. ***Strategic Management Journal***, 36: 1554-1578.

Malhotra, N. K. 1984. Reflections On The Information Overload Paradigm In Consumer Decision Making, ***Journal of Consumer Research***, 10: 436-440.

*Malmendier, U., Tate, G., & Yan, J. O. N. 2011. Overconfidence And Early-Life Experiences: The Effect Of Managerial Traits On Corporate Financial Policies. ***Journal of Finance***, 66: 1687-1733.

Malone, T. W., Laubacher, R., & Johns, T. 2011. The Big Idea: The Age Of Hyperspecialization. ***Harvard Business Review***, 89: 6-65.

Manis, M., Fichman, M., & Platt, M. B. 1978. Cognitive Integration And Referential Communication: Effects Of Information Quality And Quantity In Message Decoding. ***Organizational Behavior & Human Performance***, 22: 417-430.

Mansharamani, V. 2012. All Hail The Generalist. ***Harvard Business Review***, Online publication; https://hbr.org/2012/06/all-hail-the-generalist; Accessed on December 4, 2016.

Marcel, J. J., Cowen, A. P., & Ballinger, G. A. 2017. Are Disruptive CEO Successions Viewed As A Governance Lapse? Evidence From Board Turnover. ***Journal of Management***, 43: 1313-1334.

*May, D. O. 1995. Do Managerial Motives Influence Firm Risk Reduction Strategies? ***Journal of Finance***, 50: 1291-1308.

McCall, M. W., Lombardo, M. M., & Morrison, A. M. 1988. ***The Lessons Of Experience: How Successful Executives Develop On The Job***. New York: Free Press.

McClelland, P., Xin, L., & Barker, V. 2010. CEO Commitment To The Status Quo: Replication And Extension Using Content Analysis. ***Journal of Management***, 36: 1251-1277.

McCloy, R. A., Campbell, J. P., & Cudeck, R. 1994. A Confirmatory Test Of A Model Of Performance Determinants. ***Journal of Applied Psychology***, 79: 493-505.

McDonald, M. L. & Westphal, J. D. 2003. Getting By With The Advice Of Their Friends: CEOs' Advice Networks And Firms' Strategic Responses To Poor Performance. ***Administrative Science Quarterly***, 48: 1-32.

McDonald, M. L., Khanna, P., & Westphal, J. D. 2008. Getting Them To Think Outside The Circle: Corporate Governance, CEOs' External Advice Networks, And Firm Performance. ***Academy of Management Journal***, 51: 453-475.

McFadyen, M. A. & Cannella, A. A. 2004. Social Capital And Knowledge Creation: Diminishing Returns Of The Number And Strength Of Exchange Relationships. ***Academy of Management Journal***, 47: 735-746.

Meier, R. L. 1963. Communications Overload: Proposals From The Study Of A University Library. ***Administrative Science Quarterly***, 7: 521-544.

Menz, M. & Scheef, C. 2014. Chief Strategy Officers: Contingency Analysis Of Their Presence In Top Management Teams. ***Strategic Management Journal***, 35: 461-471.

Meyer, A. D., Brooks, G. R., & Goes, J. B. 1990. Environmental Jolts And Industry Revolutions: Organizational Responses To Discontinuous Change. ***Strategic Management Journal***, 11: 93-110.

Michel, J. G. & Hambrick, D. C. 1992. Diversificationposture And Top Management Team Characteristics. ***Academy of Management Journal***, 35: 9-37.

Miller, D. & Friesen, P. 1980. Archetypes Of Organizational Transition. ***Administrative Science Quarterly***, 25: 268-299.

Miller, D., Kets De Vries, M. F. R., & Toulouse, J.-M. 1982. Top Executive Locus Of Control And Its Relationship To Strategy-Making, Structure, And Environment. ***Academy of Management Journal***, 25: 237-253.

Miller, D. & Toulouse, J.-M. 1986. Chief Executive Personality And Corporate Strategy And Structure In Small Firms. ***Management Science***, 32: 1389-1409.

Miller, D. 1991. Stale In The Saddle: CEO Tenure And The Match Between Organization And Environment. ***Management Science***, 37: 34-52.

Miller, D. 1993. Some Organizational Consequences Of CEO Succession. ***Academy of Management Journal***, 36: 644-659.

Miller, D. & Shamsie, J. 2001. Learning Across The Life Cycle: Experimentation And Performance Among The Hollywood Studio Heads. ***Strategic Management Journal***, 22: 725-745.

Miller, D., Minichilli, A., & Corbetta, G. 2013. Is Family Leadership Always Beneficial? ***Strategic Management Journal***, 34: 553-571.

Miller, D., Xu, X., & Mehrotra, V. 2015. When Is Human Capital A Valuable Resource? The Performance Effects Of Ivy League Selection Among Celebrated CEOs. ***Strategic Management Journal***, 36: 930-944.

Mincer, J. 1997. The Production Of Human Capital And The Life Cycle Of Earnings: Variations On A Theme. ***Journal of Labor Economics***, 15: 26-47.

Minichilli, A., Nordqvist, M., Corbetta, G., & Amore, M. D. 2014. CEO Succession Mechanisms, Organizational Context, And Performance: A Socio-Emotional

Wealth Perspective On Family-Controlled Firms. ***Journal of Management Studies***, 51: 1153-1179.

Mintzberg, H. 1973. ***The Nature Of Managerial Work***. New York: Harper & Row.

Mintzberg, H., Raisinghani, D., & Theoret, A. 1976. The Structure Of 'Unstructured' Decision Processes. ***Administrative Science Quarterly***, 21: 246-275.

Mintzberg, H. 1990. The Design School: Reconsidering The Basic Premises Of Strategic Management. ***Strategic Management Journal***, 11: 171-195.

Mishra, D. R. 2014. The Dark Side Of CEO Ability: CEO General Managerial Skills And Cost Of Equity Capital. ***Journal of Corporate Finance***, 29: 390-409.

Mowday, R. T. & Spencer, D. G. 1981. The Influence Of Task And Personality Characteristics On Employee Turnover And Absenteeism Incidents. ***Academy of Management Journal***, 24: 634-642.

Mueller, D. C. 1969. A Theory Of Conglomerate Mergers. ***The Quarterly Journal of Economics***, 83: 643-659.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. 2002. Leading Creative People: Orchestrating Expertise And Relationships. ***Leadership Quarterly***, 13: 705-750.

Mumford, M. D., Blair, C., Dailey, L., Leritz, L. E., & Osburn, H. K. 2006. Errors In Creative Thought? Cognitive Biases In A Complex Processing Activity. ***The Journal of Creative Behavior***, 40: 75-109.

Murphy, K. J. & Zabojnik, J. 2004. CEO Pay And Appointments: A Market-Based Explanation For Recent Trends. ***American Economic Review***, 94: 192-196.

Murphy, K. J. & Zabojnik, J. 2007. Managerial Capital And The Market For CEOs. ***Working Papers: 1110***. Kingston: Queen's University.

Murray, A. I. 1989. Top Management Group Heterogeneity And Firm Performance. ***Strategic Management Journal***, 10: 125-141.

Nadkarni, S. & Narayanan, V. K. 2007. Strategic Schemas, Strategic Flexibility, And Firm Performance: The Moderating Role Of Industry Clockspeed. ***Strategic Management Journal***, 28: 243-270.

Nadkarni, S. & Barr, P. S. 2008. Environmental Context, Managerial Cognition, And Strategic Action: An Integrated View. ***Strategic Management Journal***, 29: 1395-1427.

Nadkarni, S. & Herrmann, P. O. L. 2010. CEO Personality, Strategic Flexibility, And Firm Performance: The Case Of The Indian Business Process Outsourcing Industry. ***Academy of Management Journal***, 53: 1050-1073.

Nahapiet, J. & Ghoshal, S. 1998. Social Capital, Intellectual Capital, And The Organizational Advantage. ***Academy of Management Review***, 23: 242-266.

Naranjo-Gil, D., Hartmann, F., & Maas, V. S. 2008. Top Management Team Heterogeneity, Strategic Change And Operational Performance. ***British Journal of Management***, 19: 222-234.

Narayanan, V. K., Zane, L. J., & Kemmerer, B. 2011. The Cognitive Perspective In Strategy: An Integrative Review. ***Journal of Management***, 37: 305-351.

Neale, M. A. & Northcraft, G. B. 1990. Experience, Expertise, And Decision Bias In Negotiation: The Role Of Strategic Conceptualization. In B. Shepard, M. Bazerman, & R. Lewicki (Eds.), ***Research on negotiation in organizations***, Vol. 2: 55-75. Greenwich: JAI Press.

Nelson, R. R. & Winter, S. G. 1982. ***An Evolutionary Theory Of Economic Change***. Cambridge: Harvard University Press.

Nielsen, B. B. & Nielsen, S. 2013. Top Management Team Nationality Diversity And Firm Performance: A Multilevel Study. ***Strategic Management Journal***, 34: 373-382.

Nielsen, S. 2009. Why Do Top Management Teams Look The Way They Do? A Multilevel Exploration Of The Antecedents Of TMT Heterogeneity. ***Strategic Organization***, 7: 277-305.

Nielsen, S. 2010a. Top Management Team Internationalization And Firm Performance. ***Management International Review***, 50: 185-206.

Nielsen, S. 2010b. Top Management Team Diversity: A Review Of Theories And Methodologies. ***International Journal of Management Reviews***, 12: 301-316.

*Norburn, D. 1989. The Chief Executive: A Breed Apart. ***Strategic Management Journal***, 10: 1-15.

Nunnally, J. C. & Bernstein, I. H. 1994. ***Psychometric Theory*** (3rd ed.). New York: McGraw-Hill.

O'Reilly, C. A. 1980. Individuals And Information Overload In Organizations: Is More Necessarily Better? ***Academy of Management Journal***, 23: 684-696.

Ocasio, W. 1994. Political Dynamics And The Circulation Of Power: CEO Succession In U.S. Industrial Corporations, 1960-1990. ***Administrative Science Quarterly***, 39: 285-312.

Oehmichen, J., Schrapp, S., & Wolff, M. 2016. Who Needs Experts Most? Board Industry Expertise And Strategic Change—A Contingency Perspective. ***Strategic Management Journal***, 38: 645-656.

Oldroyd, J. B. & Morris, S. S. 2012. Catching Falling Stars: A Human Resource Response To Social Capital's Detrimental Effect Of Information Overload On Star Employees. ***Academy of Management Review***, 37: 396-418.

Palepu, K. 1985. Diversification Strategy, Profit Performance And The Entropy Measure. ***Strategic Management Journal***, 6: 239-255.

Palmer, T. B. & Wiseman, R. M. 1999. Decoupling Risk Taking From Income Stream Uncertainty: A Holistic Model Of Risk. ***Strategic Management Journal***, 20: 1037-1062.

Pandher, G. & Currie, R. 2013. CEO Compensation: A Resource Advantage And Stakeholder-Bargaining Perspective. ***Strategic Management Journal***, 34: 22-41.

Payne, G. T., Moore, C. B., Griffis, S. E., & Autry, C. W. 2011. Multilevel Challenges And Opportunities In Social Capital Research. ***Journal of Management***, 37: 491-520.

Pegels, C. C., Song, Y. I., & Baik, Y. 2000. Management Heterogeneity, Competitive Interaction Groups, And Firm Performance. ***Strategic Management Journal***, 21: 911-923.

Peng, M. W. & Luo, Y. 2000. Managerial Ties And Firm Performance In A Transition Economy: The Nature Of A Micro-Macro Link. ***Academy of Management Journal***, 43: 486-501.

Peng, M. W. & Jiang, Y. 2010. Institutions Behind Family Ownership And Control In Large Firms. ***Journal of Management Studies***, 47: 253-273.

*Peng, M. W., Sun, S. L., & Markoczy, L. 2015. Human Capital And CEO Compensation During Institutional Transitions. ***Journal of Management Studies***, 52: 117-147.

Pennings, J. M., Lee, K., & Van Witteloostuijn, A. 1998. Human Capital, Social Capital, And Firm Dissolution. ***Academy of Management Journal***, 41: 425-440.

Perry-Smith, J. E. & Shalley, C. E. 2003. The Social Side Of Creativity: A Static And Dynamic Social Network Perspective. ***Academy of Management Review***, 28: 89-106.

Peterson, R. S., Martorana, P. V., Smith, D. B., & Owens, P. D. 2003. The Impact Of Chief Executive Officer Personality On Top Management Team Dynamics: One Mechanism By Which Leadership Affects Organizational Performance. ***Journal of Applied Psychology***, 88: 795-808.

Pettigrew, A. M. 1987. Context And Action In The Transformation Of The Firm. ***Journal of Management Studies***, 24: 649-670.

Pettigrew, A. M. 2012. Context And Action In The Transformation Of The Firm: A Reprise. ***Journal of Management Studies***, 49: 1304-1328.

Pfeffer, J. & Salancik, G. 1978. ***The External Control Of Organizations: A Resource-Dependence Perspective***. New York: Harper and Row.

Pfeffer, J. & Davis-Blake, A. 1987. Understanding Organizational Wage Structures: A Resource Dependence Approach. ***Academy of Management Journal***, 30: 437-455.

Plambeck, N. & Weber, K. 2010. When The Glass Is Half Full And Half Empty: CEOs' Ambivalent Interpretations Of Strategic Issues. ***Strategic Management Journal***, 31: 689-710.

Ployhart, R. E. & Moliterno, T. P. 2011. Emergence Of The Human Capital Resource: A Multilevel Model. ***Academy of Management Review***, 36: 127-150.

Podolny, J. M. & Baron, J. N. 1997. Resources And Relationships: Social Networks And Mobility In The Workplace. ***American Sociological Review***, 62: 673-693.

Prahalad, C. K. & Bettis, R. A. 1986. The Dominant Logic: A New Linkage Between Diversity And Performance. ***Strategic Management Journal***, 7: 485-501.

Priem, R. L., Lyon, D. W., & Dess, G. G. 1999. Inherent Limitations Of Demographic Proxies In Top Management Team Heterogeneity Research. ***Journal of Management***, 25: 935-953.

Prietula, M. J. & Simon, H. A. 1989. The Experts In Your Midst. ***Harvard Business Review***, 67: 120-124.

Quigley, T. J. & Hambrick, D. C. 2012. When The Former CEO Stays On As Board Chair: Effects On Successor Discretion, Strategic Change, And Performance. ***Strategic Management Journal***, 33: 834-859.

Quigley, T. J. & Hambrick, D. C. 2015. Has The 'CEO Effect' Increased In Recent Decades? A New Explanation For The Great Rise In America's Attention To Corporate Leaders. ***Strategic Management Journal***, 36: 821-830.

Rajagopalan, N., Rasheed, A. M. A., & Datta, D. K. 1993. Strategic Decision Processes: Critical Review And Future Directions. ***Journal of Management***, 19: 349-384.

Rajagopalan, N. & Spreitzer, G. M. 1997. Toward A Theory Of Strategic Change: A Multi-Lens Perspective And Intregrative Framework. ***Academy of Management Review***, 22: 48-79.

Rajan, R. G. & Wulf, J. 2006. The Flattening Firm: Evidence From Panel Data On The Changing Nature Of Corporate Hierarchies. ***Review of Economics & Statistics***, 88: 759-773.

Reagans, R. & Zuckerman, E. W. 2001. Networks, Diversity, And Productivity: The Social Capital Of Corporate R&D Teams. ***Organization Science***, 12: 502-517.

Reagans, R. & Zuckerman, E. W. 2008. Why Knowledge Does Not Equal Power: The Network Redundancy Trade-Off. ***Industrial & Corporate Change***, 17: 903-944.

*Reed, R. & Reed, M. 1989. CEO Experience And Diversification Strategy Fit. ***Journal of Management Studies***, 26: 251-270.

Ridge, J. W., Aime, F., & White, M. A. 2015. When Much More Of A Difference Makes A Difference: Social Comparison And Tournaments In The CEO's Top Team. ***Strategic Management Journal***, 36: 618-636.

Rodan, S. & Galunic, C. 2004. More Than Network Structure: How Knowledge Heterogeneity Influences Managerial Performance And Innovativeness. ***Strategic Management Journal***, 25: 541-562.

Rodenbach, M. & Brettel, M. 2012. CEO Experience As Micro-Level Origin Of Dynamic Capabilities. ***Management Decision***, 50: 611-634.

Romanelli, E. & Tushman, M. L. 1994. Organizational Transformation As Punctuated Equilibrium: An Empirical Test. ***Academy of Management Journal***, 37: 1141-1666.

*Roth, K. 1995. Managing International Interdependence: CEO Characteristics In Resource-Based Framework. ***Academy of Management Journal***, 38: 200-231.

Rowe, W. G., Cannella, A. A., Rankin, D., & Gorman, D. 2005. Leader Succession And Organizational Performance: Integrating The Common-Sense, Ritual Scapegoating, And Vicious-Circle Succession Theories. ***The Leadership Quarterly***, 16: 197-219.

Ruigrok, W., Georgakakis, D., & Greve, P. 2013. Regionalization Strategy And Performancethe Moderating Role Of Industry Dynamism And Top Management Team Diversity. ***Multinational Business Review***, 21: 6-24.

Ryall, M. D. & Sorenson, O. 2007. Brokers And Competitive Advantage. ***Management Science***, 53: 566-583.

*Saboo, A. R., Sharma, A., Chakravarty, A., & Kumar, V. 2017. Influencing Acquisition Performance In High-Technology Industries: The Role Of Innovation And Relational Overlap. ***Journal of Marketing Research***, 54: 219-238.

Salas, E., Rosen, M. A., & DiazGranados, D. 2010. Expertise-Based Intuition And Decision Making In Organizations. ***Journal of Management***, 36: 941-973.

Sanders, W. M. G. & Carpenter, M. A. 1998. Internationalization And Firm Governance: The Roles Of CEO Compensation, Top Team Composition, And Board Structure. ***Academy of Management Journal***, 41: 158-178.

Sanders, W. M. G. & Hambrick, D. C. 2007. Swinging For The Fences: The Effects Of CEO Stock Options On Company Risk Taking And Performance. ***Academy of Management Journal***, 50: 1055-1078.

Sauerwald, S., Zhiang, L., & Peng, M. W. 2016. Board Social Capital And Excess CEO Returns. ***Strategic Management Journal***, 37: 498-520.

Schein, E. H. 1988. Organizational Socialization And The Profession Of Management. ***Sloan Management Review***, 30: 53-65.

Schick, A. G., Gordon, L. A., & Haka, S. 1990. Information Overload: A Temporal Approach. ***Accounting, Organizations & Society***, 15: 199-220.

Schmidt, F. L., Hunter, J. E., & Outerbridge, A. N. 1986. Impact Of Job Experience And Ability On Job Knowledge, Work Sample Performance, And Supervisory Ratings Of Job Performance. ***Journal of Applied Psychology***, 71: 432-439.

Schwenk, C. R. 1984. Cognitive Simplification Processes In Strategic Decision-Making. ***Strategic Management Journal***, 5: 111-128.

Seibert, S. E., Kraimer, M. L., & Liden, R. C. 2001. A Social Capital Theory Of Career Success. ***Academy of Management Journal***, 44: 219-237.

Shen, W. & Cannella, A. A. 2002a. Revisiting The Performance Consequences Of CEO Succession: The Impacts Of Successor Type, Postsuccession Senior Executive Turnover, And Departing CEO Tenure. ***Academy of Management Journal***, 45: 717-733.

Shen, W. & Cannella, A. A. 2002b. Power Dynamics Within Top Management And Their Impacts On CEO Dismissal Followed By Inside Succession. ***Academy of Management Journal***, 45: 1195-1206.

Shimizu, K. & Hitt, M. A. 2004. Strategic Flexibility: Organizational Preparedness To Reverse Ineffective Strategic Decisions. ***Academy of Management Executive***, 18: 44-59.

Short, J. 2009. The Art Of Writing A Review. ***Journal of Management***, 35: 1312-1317.

Simons, R. 1994. How New Top Managers Use Control Systems As Levers Of Strategic Renewal. ***Strategic Management Journal***, 15: 169-189.

Simsek, Z. 2007. CEO Tenure And Organizational Performance: An Intervening Model. ***Strategic Management Journal***, 28: 653-662.

Slater, D. J. & Dixon-Fowler, H. R. 2010. The Future Of The Planet In The Hands Of Mbas: An Examination Of CEO Mba Education And Corporate Environmental Performance. ***Academy of Management Learning & Education***, 9: 429-441.

Smith, K. G., Collins, C. J., & Clark, K. D. 2005. Existing Knowledge, Knowledge Creation Capability, And The Rate Of New Product Introduction In High-Technology Firms. ***Academy of Management Journal***, 48: 346-357.

*Smith, M. & White, M. C. 1987. Strategy, CEO Specialization, And Succession. ***Administrative Science Quarterly***, 32: 263-280.

Somaya, D., Williamson, I. O., & Lorinkova, N. 2008. Gone But Not Lost: The Different Performance Impacts Of Employee Mobility Between COOperators Versus Competitors. ***Academy of Management Journal***, 51: 936-953.

*Song, J. H. 1982. Diversification Strategies And The Experience Of Top Executives Of Large Firms. ***Strategic Management Journal***, 3: 377-380.

Sonnentag, S. 1998. Expertise In Professional Software Design: A Process Study. ***Journal of Applied Psychology***, 83: 703-715.

Spence, M. 1973. Job Market Signaling. ***Quarterly Journal of Economics***, 87: 355-374.

Stam, W. & Elfring, T. 2008. Entrepreneurial Orientation And New Venture Performance: The Moderating Role Of Intra- And Extraindustry Social Capital. ***Academy of Management Journal***, 51: 97-111.

Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat-Rigidity Effects In Organizational Behavior: A Multilevel Analysis. ***Administrative Science Quarterly***, 26: 501-524.

*Stuart, R. W. & Abetti, P. A. 1990. Impact Of Entrepreneurial And Management Experience On Early Performance. ***Journal of Business Venturing***, 5: 151-162.

*Sundaramurthy, C., Pukthuanthong, K., & Kor, Y. 2014. Positive And Negative Synergies Between The CEO's And The Corporate Board's Human And Social Capital: A Study Of Biotechnology Firms. ***Strategic Management Journal***, 35: 845-868.

Tabachnick, B. G. & Fidell, L. S. 2014. ***Using Multivariate Statistics***. Harlow: Pearson Education.

Tallman, S. & Li, J. 1996. Effects Of International Diversity And Product Diversity On The Performance Of Multinational Firms. ***Academy of Management Journal***, 39: 179-196.

Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic Capabilities And Strategic Management. ***Strategic Management Journal***, 18: 509-533.

Tesluk, P. E. & Jacobs, R. R. 1998. Toward An Integrated Model Of Work Experience. ***Personnel Psychology***, 51: 321-355.

Thomas, A. S., Litschert, R. J., & Ramaswamy, K. 1991. The Performance Impact Of Strategy - Manager Coalignment: An Empirical Examination. ***Strategic Management Journal***, 12: 509-522.

Thomas, J. A. & McDaniel, J. R. R. 1990. Interpreting Strategic Issues: Effects Of Strategy And The Information-Processing Structure Of Top Management Teams. ***Academy of Management Journal***, 33: 286-306.

Thomas, J. B., Clark, S. M., & Gioia, D. A. 1993. Strategic Sensemaking And Organizational Performance: Linkages Among Scanning, Interpretation, Action, And Outcomes. ***Academy of Management Journal***, 36: 239-270.

Tian, J., Haleblian, J., & Rajagopalan, N. 2011. The Effects Of Board Human And Social Capital On Investor Reactions To New CEO Selection. ***Strategic Management Journal***, 32: 731-747.

Tihany, L., Ellstrand, A. E., Daily, C. M., & Dalton, D. R. 2000. Composition Of The Top Management Team And Firm International Diversification. ***Journal of Management***, 26: 1157-1177.

Torres, N. 2016. Generalists Get Better Job Offers Than Specialists. ***Harvard Business Review***, 94: 30-31.

Trautwein, F. 1990. Merger Motives And Prescriptions. ***Strategic Management Journal***, 11: 283-295.

Tsai, W. & Ghoshal, S. 1998. Social Capital And Value Creation: The Role Of Intrafirm Networks. ***Academy of Management Journal***, 41: 464-476.

Tukey, J. W. 1960. Simplified Estimation From Censored Normal Samples. ***Annals of Mathematical Statistics***, 31: 385-391.

Tushman, M. L. & Nadler, D. A. 1978. Information Processing As An Integrating Concept In Organizational Design. ***Academy of Management Review***, 3: 613-624.

Tushman, M. L. & Romanelli, E. 1985. Organizational Evolution: A Metamorphosis Model Of Convergence And Reorientation. ***Research in Organizational Behavior***, 7: 171-222.

Tushman, M. L. & Rosenkopf, L. 1996. Executive Succession, Strategic Reorientation And Performance Growth: A Longitudinal Study In The U.S. Cement Industry. ***Management Science***, 42: 939-953.

United States Department of Justice. 2016. Herfindahl-Hirschman Index; https://www.justice.gov/atr/herfindahl-hirschman-index; Accessed on December 1, 2016.

Uzzi, B. 1997. Social Structure And Competition In Interfirm Networks: The Paradox Of Embeddedness. ***Administrative Science Quarterly***, 42: 35-67.

*Van Der Merwe, A. & Van Der Merwe, S. 1985. Strategic Leadership And The Chief Executive. ***Long Range Planning***, 18: 100-111.

Van Essen, M., Otten, J., & Carberry, E. J. 2015. Assessing Managerial Power Theory: A Meta-Analytic Approach To Understanding The Determinants Of CEO Compensation. ***Journal of Management***, 41: 164-202.

Van Maanen, J. & Schein, E. H. 1979. Toward A Theory Of Organizational Socialization. ***Research in Organizational Behavior***, 1: 209-265.

Vancil, R. 1987. ***Passing The Baton: Managing The Process Of CEO Succession***. Cambridge: Harvard University Press.

Vicente, K. J. & Wang, J. H. 1998. An Ecological Theory Of Expertise Effects In Memory Recall. ***Psychological Review***, 105: 33-57.

Virany, B., Tushman, M. L., & Romanelli, E. 1992. Executive Succession And Organization Outcomes In Turbulent Environments: An Organization Learning Approach. ***Organization Science***, 3: 72-91.

Wade, J. B., O'Reilly, C. A., & Pollock, T. G. 2006. Overpaid CEOs And Underpaid Managers: Fairness And Executive Compensation. ***Organization Science***, 17: 527-544.

Wadhwa, A. & Kotha, S. 2006. Knowledge Creation Through External Venturing: Evidence From The Telecommunications Equipment Manufacturing Industry. ***Academy of Management Journal***, 49: 819-835.

Wagner, W. G., Pfeffer, J., & O'Reilly, C. A. 1984. Organizational Demography And Turnover In Top-Management Group. ***Administrative Science Quarterly***, 29: 74-92.

Walsh, J. P. 1995. Managerial And Organizational Cognition: Notes From A Trip Down Memory Lane. ***Organization Science***, 6: 280-321.

*Wang, G., Holmes, R. M., Oh, I.-S., & Zhu, W. 2016. Do CEOs Matter To Firm Strategic Actions And Firm Performance? A Meta-Analytic Investigation Based On Upper Echelons Theory. ***Personnel Psychology***, 69: 775-862.

Wang, L. & Murnighan, J. K. 2013. The Generalist Bias. ***Organizational Behavior & Human Decision Processes***, 120: 47-61.

Wanous, J. P. & Youtz, M. A. 1986. Solution Diversity And The Quality Of Groups Decisions. ***Academy of Management Journal***, 29: 149-159.

*Weng, D. H. & Lin, Z. 2014. Beyond CEO Tenure: The Effect Of CEO Newness On Strategic Changes. ***Journal of Management***, 40: 2009-2032.

Westphal, J. D. & Zajac, E. J. 1995. Who Shall Govern? CEO/Board Power, Demographic Similarity, And New Director Selection. ***Administrative Science Quarterly***, 40: 60-83.

*Westphal, J. D. & Fredrickson, J. W. 2001. Who Directs Strategic Change? Director Experience, The Selection Of New CEOs, And Change In Corporate Strategy. ***Strategic Management Journal***, 22: 1113-1137.

White, M. C., Smith, M., & Barnett, T. 1994. A Typology Of Executive Career Specialization. ***Human Relations***, 47: 473-486.

White, M. C., Smith, M., & Barnett, T. 1997. CEO Succession: Overcoming Forces Of Inertia. ***Human Relations***, 50: 805-829.

Wiersema, M. 2002. Holes At The Top: Why CEO Firings Backfire. ***Harvard Business Review***, 80: 70-78.

Wiersema, M. F. 1992. Strategic Consequences Of Executive Succession Within Diversified Firms. ***Journal of Management Studies***, 29: 73-94.

Wiersema, M. F. & Bantel, K. A. 1992. Top Management Team Demography And Corporate Strategic Change. ***Academy of Management Journal***, 35: 91-121.

Wiersema, M. F. & Bird, A. 1993. Organizational Demography In Japanese Firms: Group Heterogeneity, Individual Dissimilarity, And Top Management Team Turnover. ***Academy of Management Journal***, 36: 996-1025.

Wiersema, M. F. 1995. Executive Succession As An Antecedent To Corporate Restructuring. ***Human Resource Management***, 34: 185-202.

Wiersema, M. F. & Zhang, Y. 2011. CEO Dismissal: The Role Of Investment Analysts. ***Strategic Management Journal***, 32: 1161-1182.

World Federation of Exchanges. 2016. Monthly Report - December 2007; http://www.world-exchanges.org/home/index.php/statistics/monthly-reports; Accessed on April 25, 2016.

Wowak, A. J., Hambrick, D. C., & Henderson, A. D. 2011. Do CEOs Enconter Within-Tenure Settling Up? A Multiperiod Perspective On Executive Pay And Dismissal. ***Academy of Management Journal***, 54: 719-739.

Wright, P. M., McMahan, G. C., & McWilliams, A. 1994. Human Resources And Sustained Competitive Advantage: A Resource-Based Perspective. ***International Journal of Human Resource Management***, 5: 301-326.

Wright, P. M., Smart, D. L., & McMahan, G. C. 1995. Matches Between Human Resources And Strategy Among Ncaa Basketball Teams. ***Academy of Management Journal***, 38: 1052-1074.

Wright, P. M. & Boswell, W. R. 2002. Desegregating Hrm: A Review And Synthesis Of Micro And Macro Human Resource Management Research. ***Journal of Management***, 28: 247-276.

Wu, W.-p. 2008. Dimensions Of Social Capital And Firm Competitiveness Improvement: The Mediating Role Of Information Sharing. ***Journal of Management Studies***, 45: 122-146.

*Xuan, Y. 2009. Empire-Building Or Bridge-Building? Evidence From New CEOs' Internal Capital Allocation Decisions. ***Review of Financial Studies***, 22: 4919-4948.

Zajac, E. J. & Shortell, S. M. 1989. Changing Generic Strategies: Likelihood, Direction, And Performance Implications. ***Strategic Management Journal***, 10: 413-430.

Zajac, E. J. 1990. CEO Selection, Succession, Compensation And Firm Performance: A Theoretical Integration And Empirical Analysis. ***Strategic Management Journal***, 11: 217-230.

Zajac, E. J. & Kraatz, M. S. 1993. A Diametric Forces Model Of Strategic Change: Assessing The Antecedents And Consequences Of Restructuring In The Higher Education Industry. ***Strategic Management Journal***, 14: 83-102.

Zajac, E. J. & Westphal, J. D. 1995. Accounting For The Explanations Of CEO Compensation: Substance And Symbolism. ***Administrative Science Quarterly***, 40: 283-308.

Zajac, E. J. & Westphal, J. D. 1996. Who Shall Succeed? How CEO/Board Preferences And Power Affect The Choice Of New CEOs. ***Academy of Management Journal***, 39: 64-90.

Zajac, E. J., Kraatz, M. S., & Bresser, R. K. F. 2000. Modeling The Dynamics Of Strategic Fit: A Normative Approach To Strategic Change. ***Strategic Management Journal***, 21: 429-453.

Zhang, Y. & Rajagopalan, N. 2004. When The Known Devil Is Better Than An Unknown God: An Empirical Study Of The Antecedents And Consequences Of Relay CEO Successions. ***Academy of Management Journal***, 47: 483-500.

Zhang, Y. 2008. Information Asymmetry And The Dismissal Of Newly Appointed CEOs: An Empirical Investigation. ***Strategic Management Journal***, 29: 859-872.

Zhang, Y. & Rajagopalan, N. 2010. Once An Outsider, Always An Outsider? CEO Origin, Strategic Change, And Firm Performance. ***Strategic Management Journal***, 31: 334-346.

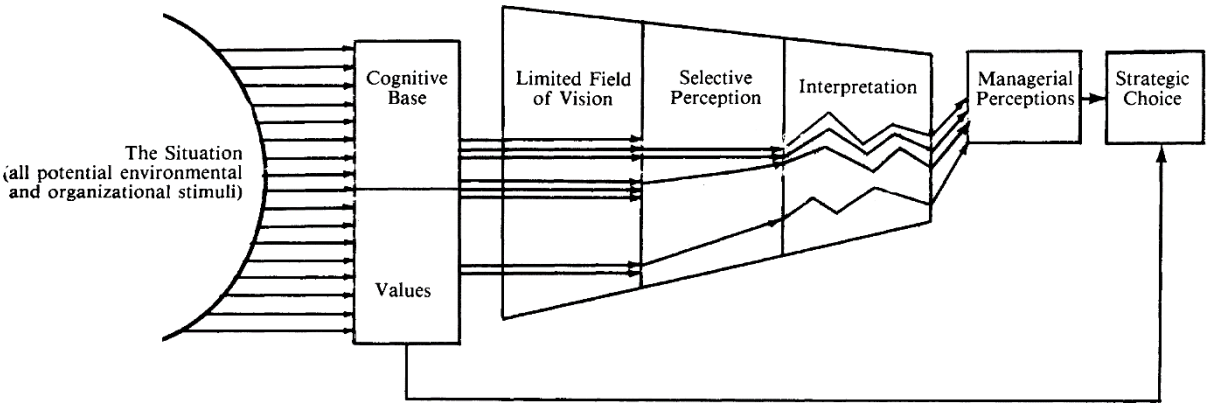
*Zhu, D. H. & Chen, G. 2015. CEO Narcissism And The Impact Of Prior Board Experience On Corporate Strategy. ***Administrative Science Quarterly***, 60: 31-65.

*Zhu, D. H. & Shen, W. 2016. Why Do Some Outside Successions Fare Better Than Others? The Role Of Outside CEOs' Prior Experience With Board Diversity. ***Strategic Management Journal***, 37: 2695-2708.

Appendices

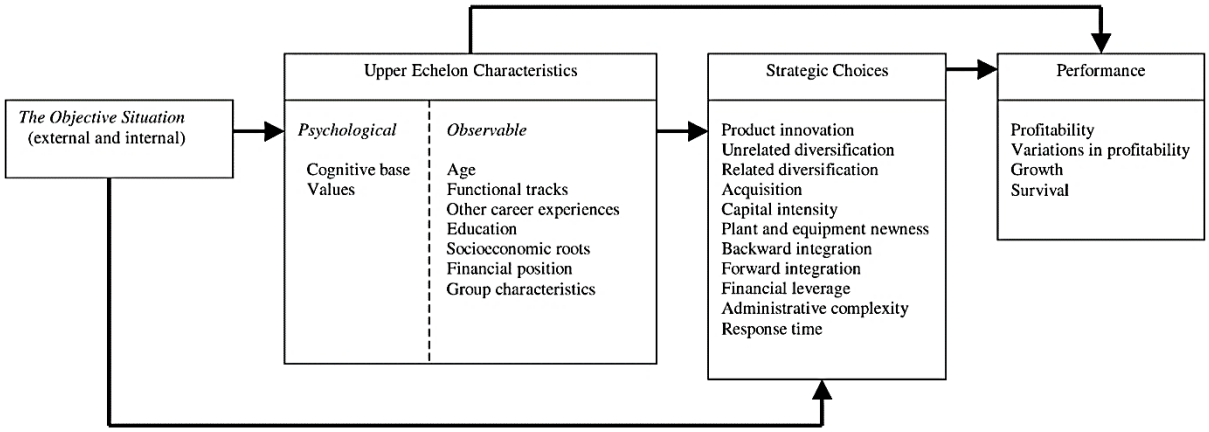
1 Appendices for first chapter: “Introduction”

Appendix 1.1: Strategic choice under conditions of bounded rationality



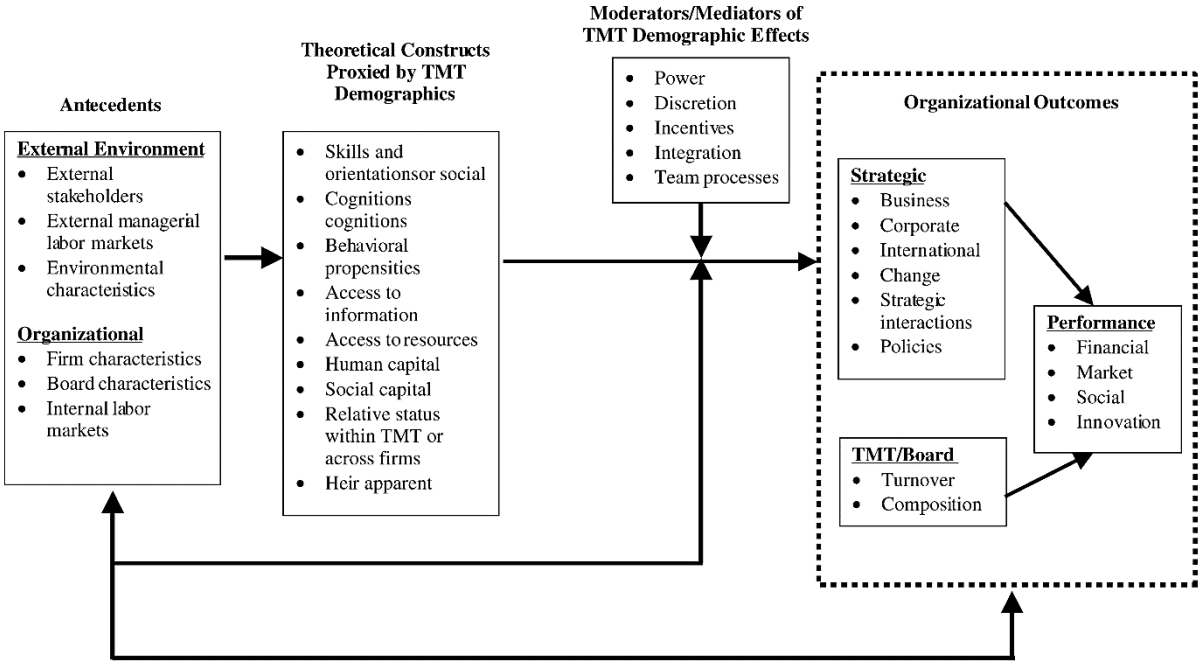
Source: Hambrick and Mason (1984: 195)

Appendix 1.2: An upper echelons perspective of organizations



Source: Hambrick and Mason (1984: 198)

Appendix 1.3: Stylized model of the upper echelons perspective



Source: Carpenter, Geletkanycz, and Sanders (2004: 760)

Appendix 1.4: List of companies in full sample

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
CHE	1	ABB LTD	CH0012221716	ABBN VX Equity	ABBN-VX	36	45,275
CHE	2	ACTELION AG	CH0010532478	ATLN VX Equity	ATLN-VX	87	3,714
CHE	3	ADECCO SA	CH0012138605	ADEN VX Equity	ADEN-VX	73	6,759
CHE	4	AFG ARBONIA FORSTER HOLDING AG	CH0110240600	AFGN SW Equity	AFGN-EB	34	471
CHE	5	ALLREAL HOLDING AG	CH0008837566	ALLN EB Equity	ALLN-EB	65	895
CHE	6	APG SGA SA	CH0019107025	APGN EB Equity	APGN-EB	73	445
CHE	7	BACHEM HOLDING AG	CH0012530207	BANB EB Equity	BANB-EB	87	771
CHE	8	BALOISE-HOLDING AG	CH0012410517	BALN VX Equity	BALN-VX	63	3,368
CHE	9	BANK COOP AG	CH0018116472	BC EB Equity	BC-EB	60	785
CHE	10	BANQUE CANTONALE DE GENEVE	CH0001642682	BCGE EB Equity	BCGE-EB	60	598
CHE	11	BANQUE CANTONALE VAUDOISE	CH0015251710	BCVN EB Equity	BCVN-EB	60	2,599
CHE	12	BARRY CALLEBAUT AG	CH0009002962	BARN EB Equity	BARN-EB	20	2,728
CHE	13	BASELLANDSCHAFTLICHE KANTONALBANK	CH0001473559	BLKB EB Equity	BLKB-EB	60	452
CHE	14	BASLER KANTONALBANK	CH0009236461	BSKP EB Equity	BSKP-EB	60	2,036
CHE	15	BELIMO HOLDING AG	CH0001503199	BEAN EB Equity	BEAN-EB	35	474
CHE	16	BELL AG	CH0004410418	BELL EB Equity	BELL-EB	20	463
CHE	17	BERNER KANTONALBANK AG	CH0009691608	BEKN EB Equity	BEKN-EB	60	1,152
CHE	18	BKW	CH0130293662	BKW EB Equity	BKW-EB	49	4,509
CHE	19	BOBST GROUP SA	CH0012684657	BOBNN EB Equity	BOBNN-EB	50	887
CHE	20	BUCHER INDUSTRIES AG	CH0002432174	BUCN EB Equity	BUCN-EB	35	1,567
CHE	21	BURCKHARDT COMPRESSION HOLDING AG	CH0025536027	BCHN EB Equity	BCHN-EB	35	417
CHE	22	CENTRALSCHWEIZERISCHE KRAFTWERKE AG	CH0020603475	CKWN SW Equity	CKWN-EB	49	1,646
CHE	23	CHARLES VOEGELE HOLDING AG	CH0006937772	VCH SW Equity	VCH-EB	56	473
CHE	24	CHOCOLADEFABRIKEN LINDT & SPRUENGLI AG	CH0010570759	LISN SW Equity	LISN-EB	20	5,389
CHE	25	CLARIANT AG	CH0012142631	CLN VX Equity	CLN-VX	28	1,440
CHE	26	CONZZETA HOLDING AG	CH0244017502	CZH EB Equity	CZH-EB	35	772
CHE	27	CPH CHEMIE + PAPIER HOLDING	CH0001624714	CPHN EB Equity	CPHN-EB	26	598
CHE	28	CREDIT SUISSE GROUP AG	CH0012138530	CSGN VX Equity	CSGN-VX	60	41,992
CHE	29	DAETWYLER HOLDING AG	CH0030486770	DAE EB Equity	DAE-EB	50	710
CHE	30	DORMA KABA HOLDING AG	CH0011795959	KABN EB Equity	KABN-EB	36	824
CHE	31	DUFRY AG	CH0023405456	DUFN SW Equity	DUFN-VX	53	1,063
CHE	32	EFG INTERNATIONAL AG	CH0022268228	EFGN EB Equity	EFGN-EB	60	4,313

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
CHE	33	EMMI AG	CH0012829898	EMMN EB Equity	EMMN-EB	20	485
CHE	34	FLUGHAFEN ZURICH AG	CH0010567961	FHZN EB Equity	FHZN-EB	45	1,705
CHE	35	FORBO HOLDING AG	CH0003541510	FORN EB Equity	FORN-EB	30	1,038
CHE	36	GALENICA AG	CH0015536466	GALN EB Equity	GALN-EB	51	1,936
CHE	37	GEBERIT AG	CH0030170408	GEBN VX Equity	GEBN-VX	30	3,732
CHE	38	GEORG FISCHER AG	CH0001752309	FI/N SW Equity	FIN-EB	34	1,695
CHE	39	GIVAUDAN SA	CH0010645932	GIVN VX Equity	GIVN-VX	28	4,679
CHE	40	GRAUBUNDNER KANTONALBANK	CH0001340204	GRKP EB Equity	GRKP-EB	60	1,492
CHE	41	HELVETIA HOLDING AG	CH0012271687	HELN EB Equity	HELN-EB	63	2,110
CHE	42	HIGHLIGHT COMMUNICATIONS AG	CH0006539198	HLG SW Equity	HLG-FF	78	396
CHE	43	HUBER + SUHNER AG	CH0030380734	HUBN EB Equity	HUBN-EB	33	892
CHE	44	IMPLENIA AG	CH0023868554	IMPN EB Equity	IMPN-EB	16	385
CHE	45	KOMAX HOLDING AG	CH0010702154	KOMN SW Equity	KOMN-EB	35	361
CHE	46	KUEHNE + NAGEL INTERNATIONAL AG	CH0025238863	KNIN VX Equity	KNIN-VX	44	7,736
CHE	47	KUONI REISEN HOLDING AG	CH0003504856	KUNN EB Equity	KUNN-EB	47	1,056
CHE	48	LAFARGEHOLCIM LTD (HOLCIM)	CH0012214059	HOLN VX Equity	HOLN-VX	32	19,267
CHE	49	LOGITECH INTERNATIONAL SA	CH0025751329	LOGN EB Equity	LOGN-EB	35	3,785
CHE	50	LONZA GROUP AG	CH0013841017	LONN VX Equity	LONN-VX	28	3,949
CHE	51	LUZERNER KANTONALBANK AG	CH0011693600	LUKN EB Equity	LUKN-EB	60	1,319
CHE	52	METALL ZUG AG	CH0039821084	METN EB Equity	METN-EB	36	997
CHE	53	MEYER BURGER TECHNOLOGY AG	CH0108503795	MBTN EB Equity	MBTN-EB	36	748
CHE	54	NESTLE AG	CH0038863350	NESN VX Equity	NESN-VX	20	118,213
CHE	55	NOBEL BIOCARE HOLDING AG	CH0037851646	NOBN EB Equity	NOBN-EB	38	4,458
CHE	56	NOVARTIS AG	CH0012005267	NOVN VX Equity	NOVN-VX	28	84,960
CHE	57	OC OERLIKON	CH0000816824	OERL EB Equity	OERL-EB	35	4,044
CHE	58	PANALPINA WELTTRANSPORT	CH0002168083	PWTN EB Equity	PWTN-EB	45	2,901
CHE	59	PETROPLUS HOLDINGS AG	CH0027752242	PPHN SW Equity	PEPFF-5	29	3,637
CHE	60	REPOWER AG	CH0016405844	REPI EB Equity	REPI-EB	49	1,026
CHE	61	RICHEMONT SA	CH0210483332	CFR VX Equity	CFR-VX	39	23,472
CHE	62	RIETER HOLDING AG	CH0003671440	RIEN SW Equity	RIEN-EB	35	1,266
CHE	63	ROCHE HOLDING AG	CH0012032048	ROG VX Equity	ROG-VX	28	101,934
CHE	64	ROMANDE ENERGIE HOLDING SA	CH0025607331	HREN EB Equity	HREN-EB	49	1,387
CHE	65	SCHINDLER HOLDING AG	CH0024638196	SCHN EB Equity	SCHN-EB	35	5,340
CHE	66	SCHMOLZ + BICKENBACH AG	CH0005795668	STLN EB Equity	STLN-EB	33	1,658

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
CHE	67	SGS SA	CH0002497458	SGSN VX Equity	SGSN-VX	87	6,218
CHE	68	SIKA AG	CH0000587979	SIK VX Equity	SIK-VX	28	3,234
CHE	69	SONOVA HOLDING AG	CH0012549785	SOON VX Equity	SOON-VX	38	3,839
CHE	70	ST.GALLER KANTONALBANK AG	CH0011484067	SGKN EB Equity	SGKN-EB	60	1,668
CHE	71	STRAUMANN HOLDING AG	CH0012280076	STMN EB Equity	STMN-EB	38	2,939
CHE	72	SULZER AG	CH0038388911	SUN EB Equity	SUN-EB	35	3,384
CHE	73	SWISS LIFE HOLDING AG	CH0014852781	SLHN VX Equity	SLHN-VX	63	5,609
CHE	74	SWISS RE AG	CH0126881561	SREN VX Equity	SREN-VX	63	17,403
CHE	75	SWISSCOM	CH0008742519	SCMN VX Equity	SCMN-VX	48	13,833
CHE	76	SYNGENTA AG	CH0011037469	SYNN VX Equity	SYNN-VX	28	16,509
CHE	77	TAMEDIA AG	CH0011178255	TAMN EB Equity	TAMN-EB	27	940
CHE	78	TECAN GROUP AG	CH0012100191	TECN EB Equity	TECN-EB	38	464
CHE	79	TEMENOS GROUP AG	CH0012453913	TEMN EB Equity	TEMN-EB	73	985
CHE	80	THE SWATCH GROUP AG	CH0012255151	UHR VX Equity	UHR-VX	38	11,075
CHE	81	UBS AG	CH0024899483	UBSN VX Equity	UBSN-VX	60	60,640
CHE	82	VALIANT HOLDING AG	CH0014786500	VATN EB Equity	VATN-EB	60	1,733
CHE	83	VALORA HOLDING AG	CH0002088976	VALN EB Equity	VALN-EB	59	530
CHE	84	VETROPACK HOLDING AG	CH0006227612	VET EB Equity	VET-EB	32	537
CHE	85	VON ROLL HOLDING AG	CH0003245351	ROL EB Equity	ROL-EB	36	943
CHE	86	VONTOBEL HOLDING AG	CH0012335540	VONN EB Equity	VONN-EB	62	2,089
CHE	87	WALLISER KANTONALBANK	CH0305951201	WKB EB Equity	WKB-EB	60	434
CHE	88	ZUGER KANTONALBANK AG	CH0001308904	ZG EB Equity	ZG-EB	60	574
CHE	89	ZURICH INSURANCE GROUP AG	CH0011075394	ZURN VX Equity	ZURN-VX	63	28,066
DEU	90	AAREAL BANK AG	DE0005408116	ARL GR Equity	ARL-FF	60	1,313
DEU	91	ADIDAS AG	DE000A1EWWW0	ADS GR Equity	ADS-FF	30	10,438
DEU	92	ALLIANZ SE	DE0008404005	ALV GR Equity	ALV-FF	63	66,475
DEU	93	ARCANDOR AG	DE0006275001	ARO GR Equity	ARO-FF	59	5,188
DEU	94	AUDI AG	DE0006757008	NSU GR Equity	NSU-FF	37	26,660
DEU	95	AURUBIS AG	DE0006766504	NDA GR Equity	NDA-FF	10	1,144
DEU	96	AXEL SPRINGER AG	DE0005501357	SPR GR Equity	SPR-FF	73	2,968
DEU	97	BASF SE	DE000BASF111	BAS GR Equity	BAS-FF	28	48,421
DEU	98	BAYER AG	DE000BAY0017	BAYN GR Equity	BAYN-FF	28	47,672
DEU	99	BAYWA REGISTERED AG	DE0005194062	BYW6 GR Equity	BYW6-FF	01	1,152
DEU	100	BEIERSDORF AG	DE0005200000	BEI GR Equity	BEI-FF	28	12,021

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
DEU	101	BILFINGER BERGER SE	DE0005909006	GBF GR Equity	GBF-FF	16	1,933
DEU	102	BMW AG	DE0005190003	BMW GR Equity	BMW-FF	37	27,954
DEU	103	CELESIO AG	DE000CLS1001	CLS1 GR Equity	CLS1-FF	51	7,229
DEU	104	CENTROTHERM PHOTOVOLTAICS AG	DE000A1TNMM9	CTNK GR Equity	CTNK-FF	35	1,153
DEU	105	COMDIRECT BANK AG	DE0005428007	COM GR Equity	COM-FF	60	1,189
DEU	106	COMMERZBANK AG	DE000CBK1001	CBK GR Equity	CBK-FF	60	17,271
DEU	107	CONTINENTAL AG	DE0005439004	CON GR Equity	CON-FF	30	14,350
DEU	108	DAIMLER AG	DE0007100000	DAI GR Equity	DAI-FF	37	67,128
DEU	109	DEUTSCHE BANK AG	DE0005140008	DBK GR Equity	DBK-FF	60	44,835
DEU	110	DEUTSCHE BOERSE AG	DE0005810055	DB1 GR Equity	DB1-FF	62	25,905
DEU	111	DEUTSCHE LUFTHANSA AG	DE0008232125	LHA GR Equity	LHA-FF	45	8,330
DEU	112	DEUTSCHE POST AG	DE0005552004	DPW GR Equity	DPW-FF	42	28,146
DEU	113	DEUTSCHE POSTBANK AG	DE0008001009	DPB GR Equity	DPB-FF	60	9,963
DEU	114	DEUTSCHE TELEKOM AG	DE0005557508	DTE GR Equity	DTE-FF	48	65,521
DEU	115	E.ON SE	DE000ENAG999	EOAN GR Equity	EOAN-FF	49	91,971
DEU	116	ELRINGKLINGER AG	DE0007856023	ZIL2 GR Equity	ZIL2-FF	37	1,633
DEU	117	ENBW ENERGIE BADEN-WURTTEMBERG AG	DE0005220008	EBK GR Equity	EBK-FF	49	14,699
DEU	118	FRAPORT AG	DE0005773303	FRA GR Equity	FRA-FF	45	4,927
DEU	119	FREENET AG	DE000A0Z2ZZ5	FNTN GR Equity	FNTN-FF	48	1,533
DEU	120	FRESENIUS	DE0005785604	FRE GR Equity	FRE-FF	80	8,689
DEU	121	FRESENIUS MEDICAL CARE AG	DE0005785802	FME GR Equity	FME-FF	80	10,881
DEU	122	FUCHS PETROLUB AG	DE0005790430	FPE GR Equity	FPE-FF	29	1,500
DEU	123	GEA GROUP AG	DE0006602006	G1A GR Equity	G1A-FF	35	4,303
DEU	124	GELSENWASSER AG	DE0007760001	WWG GR Equity	WWG-FF	49	1,719
DEU	125	GERRESHEIMER AG	DE000A0LD6E6	GXI GR Equity	GXI-FF	32	1,162
DEU	126	GLOBAL PVQ	DE0005558662	QCE GR Equity	QCE-HA	36	10,887
DEU	127	HAMBURGER HAFEN UND LOGISTIK AG	DE000A0S8488	HHFA GR Equity	HHFA-FF	44	4,395
DEU	128	HANNOVER RUECKVERSICHERUNG AG	DE0008402215	HNR1 GR Equity	HNR1-FF	63	3,824
DEU	129	HEIDELBERGCEMENT AG	DE0006047004	HEI GR Equity	HEI-FF	32	12,715
DEU	130	HEIDELBERGER DRUCKMASCHINEN	DE0007314007	HDD GR Equity	HDD-FF	35	2,721
DEU	131	HENKEL AG & COMPANY KGAA	DE0006048432	HEN GR Equity	HEN-FF	28	16,603
DEU	132	HOCHTIEF AG	DE0006070006	HOT GR Equity	HOT-FF	16	5,960
DEU	133	HSBC TRINKAUS & BURKHARDT AG	DE0008115106	TUB GR Equity	TUB-DU	60	2,975
DEU	134	HUGO BOSS AG	DE000A1PHFF7	BOSS GR Equity	BOSS-FF	23	2,733

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
DEU	135	IKB DEUTSCHE INDUSTRIEBANK AG	DE0008063306	IKB GR Equity	IKB-FF	60	2,626
DEU	136	INFINEON TECHNOLOGIES AG	DE0006231004	IFX GR Equity	IFX-FF	36	9,064
DEU	137	IVG IMMOBILIEN AG	DE0006205701	IVG GR Equity	IVG-FF	65	2,641
DEU	138	K + S AG	DE000KSAG888	SDF GR Equity	SDF-FF	14	6,770
DEU	139	KLOECKNER & CO SE	DE000KC01000	KCO GR Equity	KCO-FF	50	1,279
DEU	140	LANXESS AG	DE0005470405	LXS GR Equity	LXS-FF	28	2,796
DEU	141	LECHWERKE AG	DE0006458003	LEC GR Equity	LEC-FF	49	2,251
DEU	142	LINDE AG	DE0006483001	LIN GR Equity	LIN-FF	28	15,053
DEU	143	MAINOVA AG	DE0006553464	MNV6 GR Equity	MNV6-FF	49	2,057
DEU	144	MERCK KGAA	DE0006599905	MRK GR Equity	MRK-FF	28	19,384
DEU	145	METRO AG	DE0007257503	MEO GR Equity	MEO-FF	54	18,702
DEU	146	MTU AERO ENGINES HOLDING AG	DE000A0D9PT0	MTX GR Equity	MTX-FF	37	1,986
DEU	147	MUNCHENER RUECKVERSICHERUNG GESELLSCHAFT	DE0008430026	MUV2 GR Equity	MUV2-FF	63	27,609
DEU	148	MVV ENERGIE AG	DE000A0H52F5	MVV1 GR Equity	MVV1-FF	49	1,612
DEU	149	NORDEX SA	DE000A0D6554	NDX1 GR Equity	NDX1-FF	35	2,109
DEU	150	OLDENBURGISCHE LANDESBANK AG	DE0008086000	OLB GR Equity	OLB-FF	60	1,130
DEU	151	PORSCHE AUTOMOBIL HOLDING SE	DE000PAH0038	PAH3 GR Equity	PAH3-FF	37	23,421
DEU	152	PRAKTIKER AG	DE000A0F6MD5	PRA GR Equity	PRA-FF	52	1,160
DEU	153	PROSIEBENSAT.1 MEDIA SE	DE000PSM7770	PSM GR Equity	PSM-FF	48	3,547
DEU	154	PUMA SE	DE0006969603	PUM GR Equity	PUM-FF	30	4,294
DEU	155	RATIONAL AG	DE0007010803	RAA GR Equity	RAA-FF	50	1,592
DEU	156	RHEINMETALL AG	DE0007030009	RHM GR Equity	RHM-FF	35	1,916
DEU	157	RHOEN-KLINIKUM AG	DE0007042301	RHK GR Equity	RHK-FF	80	2,237
DEU	158	RWE AG	DE0007037129	RWE GR Equity	RWE-FF	49	53,991
DEU	159	SALZGITTER AG	DE0006202005	SZG GR Equity	SZG-FF	33	5,761
DEU	160	SAP AG	DE0007164600	SAP GR Equity	SAP-FF	73	42,680
DEU	161	SGL CARBON SE	DE0007235301	SGL GR Equity	SGL-FF	36	2,366
DEU	162	SIEMENS AG	DE0007236101	SIE GR Equity	SIE-FF	35	87,992
DEU	163	SKY DEUTSCHLAND AG	DE000SKYD000	SKYV GR Equity	SKYV-FF	48	1,451
DEU	164	SOFTWARE AG	DE0003304002	SOW GR Equity	SOW-FF	73	1,713
DEU	165	SOLARWORLD AG	DE000A1YCMM2	SWV GR Equity	SWV-FF	36	4,664
DEU	166	STADA ARZNEIMITTEL AG	DE0007251803	SAZ GR Equity	SAZ-FF	28	2,464
DEU	167	SUEDZUCKER AG	DE0007297004	SZU GR Equity	SZU-FF	20	3,024
DEU	168	SYMRISE AG	DE000SYM9999	SY1 GR Equity	SY1-FF	28	2,245

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
DEU	169	THYSSENKRUPP AG	DE0007500001	TKA GR Equity	TKA-FF	50	22,946
DEU	170	TUI AG	DE000TUAG000	TUI1 GR Equity	TUI1-FF	47	4,806
DEU	171	UNITED INTERNET AG	DE0005089031	UTDI GR Equity	UTDI-FF	73	3,887
DEU	172	VOLKSWAGEN AG	DE0007664039	VOW GR Equity	VOW-FF	37	39,658
DEU	173	VOSSLOH AG	DE0007667107	VOS GR Equity	VOS-FF	37	1,194
DEU	174	WINCOR NIXDORF AG	DE000A0CAYB2	WIN GR Equity	WIN-FF	35	1,878
DEU	175	WUESTENROT & WUERTTEMBERGISCHE AG	DE0008051004	WUW GR Equity	WUW-FF	63	1,703
GBR	176	ADMIRAL GROUP PLC	GB00B02J6398	ADM LN Equity	ADM-LN	63	3,913
GBR	177	ANGLO AMERICAN PLC	GB00B1XZS820	AAL LN Equity	AAL-LN	10	55,067
GBR	178	ANTOFAGASTA PLC	GB0000456144	ANTO LN Equity	ANTO-LN	10	9,624
GBR	179	ASSOCIATED BRITISH FOODS PLC	GB0006731235	ABF LN Equity	ABF-LN	20	9,289
GBR	180	ASTRAZENECA PLC	GB0009895292	AZN LN Equity	AZN-LN	28	42,929
GBR	181	AVIVA PLC	GB0002162385	AV/ LN Equity	AV.-LN	63	24,010
GBR	182	BAE SYSTEMS PLC	GB0002634946	BA/ LN Equity	BA.-LN	37	23,807
GBR	183	BARCLAYS PLC	GB0031348658	BARC LN Equity	BARC-LN	60	43,842
GBR	184	BARRATT DEVELOPMENTS PLC	GB0000811801	BDEV LN Equity	BDEV-LN	15	5,086
GBR	185	BG GROUP PLC	GB0008762899	BG/ LN Equity	BG.-LN	13	52,628
GBR	186	BP PLC	GB0007980591	BP/ LN Equity	BP.-LN	29	158,398
GBR	187	BRITISH AMERICAN TOBACCO PLC	GB0002875804	BATS LN Equity	BATS-LN	21	53,606
GBR	188	BRITISH LAND COMPANY PLC	GB0001367019	BLND LN Equity	BLND-LN	65	11,679
GBR	189	BT GROUP PLC	GB0030913577	BT/A LN Equity	BT.A-LN	48	36,941
GBR	190	BURBERRY GROUP PLC	GB0031743007	BRBY LN Equity	BRBY-LN	23	4,184
GBR	191	CABLE & WIRELESS COMMUNICATIONS PLC	GB00B5KKT968	CWC LN Equity	CWC-LN	48	5,949
GBR	192	CAIRN ENERGY PLC	GB00B74CDH82	CNE LN Equity	CNE-LN	13	5,474
GBR	193	CAPITA PLC	GB00B23K0M20	CPI LN Equity	CPI-LN	73	5,788
GBR	194	CARNIVAL PLC	GB0031215220	CCL LN Equity	CCL-LN	44	23,417
GBR	195	CENTRICA PLC	GB00B033F229	CNA LN Equity	CNA-LN	49	17,975
GBR	196	COBHAM PLC	GB00B07KD360	COB LN Equity	COB-LN	37	3,231
GBR	197	COMPASS GROUP PLC	GB00BLNN3L44	CPG LN Equity	CPG-LN	58	8,336
GBR	198	DAILY MAIL & GENERAL TRUST PLC	GB0009457366	DMGT LN Equity	DMGT-LN	27	3,571
GBR	199	DIAGEO PLC	GB0002374006	DGE LN Equity	DGE-LN	20	40,824
GBR	200	DIXONS RETAIL PLC	GB0000472455	DXNS LN Equity	DXNS-LN	57	4,342
GBR	201	ENSCO PLC	GB00B4VLR192	ESV US Equity	ESV-N	13	5,887
GBR	202	ENTERPRISE INNS PLC	GB00B1L8B624	ETI LN Equity	ETI-LN	58	4,341

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
GBR	203	FIRST GROUP PLC	GB0003452173	FGP LN Equity	FGP-LN	41	4,249
GBR	204	G4S PLC	GB00B01FLG62	GFS LN Equity	GFS-LN	73	4,255
GBR	205	GLAXOSMITHKLINE PLC	GB0009252882	GSK LN Equity	GSK-LN	28	93,583
GBR	206	HAMMERSON PLC	GB0004065016	HMSO LN Equity	HMSO-LN	65	4,011
GBR	207	HAYS PLC	GB0004161021	HAS LN Equity	HAS-LN	73	3,678
GBR	208	HIBU PLC	GB0031718066	HIBU LN Equity	HIBU-LN	27	6,866
GBR	209	HOME RETAIL GROUP PLC	GB00B19NKB76	HOME LN Equity	HOME-LN	57	5,411
GBR	210	HSBC HOLDINGS PLC	GB0005405286	HSBA LN Equity	HSBA-LN	60	135,613
GBR	211	ICAP PLC	GB0033872168	IAP LN Equity	IAP-LN	62	4,977
GBR	212	IMPERIAL TOBACCO GROUP PLC	GB0004544929	IMT LN Equity	IMT-LN	21	21,599
GBR	213	INMARSAT PLC	GB00B09LSH68	ISAT LN Equity	ISAT-LN	48	3,376
GBR	214	INTERCONTINENTAL HOTELS GROUP PLC	GB00BN33FD40	IHG LN Equity	IHG-LN	70	3,544
GBR	215	INTU PROPERTIES PLC	GB0006834344	INTU LN Equity	INTU-LN	65	5,311
GBR	216	INVESTEC PLC	GB00B17BBQ50	INVP LN Equity	INVP-LN	62	5,611
GBR	217	ITV PLC	GB0033986497	ITV LN Equity	ITV-LN	48	4,522
GBR	218	JOHNSON MATTHEY PLC	GB00BZ4BQC70	JMAT LN Equity	JMAT-LN	33	4,894
GBR	219	KAZ MINERALS PLC	GB00B0HZPV38	KAZ LN Equity	KAZ-LN	10	8,577
GBR	220	KINGFISHER PLC	GB0033195214	KGF LN Equity	KGF-LN	52	8,893
GBR	221	LAND SECURITIES GROUP PLC	GB0031809436	LAND LN Equity	LAND-LN	65	14,792
GBR	222	LEGAL & GENERAL GROUP PLC	GB0005603997	LGEN LN Equity	LGEN-LN	62	11,128
GBR	223	LLOYDS BANKING GROUP PLC	GB0008706128	LLOY LN Equity	LLOY-LN	60	36,295
GBR	224	LONDON STOCK EXCHANGE GROUP PLC	GB00B0SWJX34	LSE LN Equity	LSE-LN	62	3,820
GBR	225	LONMIN PLC	GB00BYSRJ698	LMI LN Equity	LMI-LN	10	8,163
GBR	226	MARKS & SPENCER GROUP PLC	GB0031274896	MKS LN Equity	MKS-LN	53	16,895
GBR	227	MITCHELLS & BUTLERS PLC	GB00B1FP6H53	MAB LN Equity	MAB-LN	58	3,531
GBR	228	MORRISON SUPERMARKETS PLC	GB0006043169	MRW LN Equity	MRW-LN	54	12,127
GBR	229	NATIONAL GRID PLC	GB00B08SNH34	NG/ LN Equity	NG.-LN	49	31,738
GBR	230	NEXT PLC	GB0032089863	NXT LN Equity	NXT-LN	56	6,467
GBR	231	OLD MUTUAL PLC	GB00B77J0862	OML LN Equity	OML-LN	63	12,574
GBR	232	PEARSON PLC	GB0006776081	PSON LN Equity	PSON-LN	27	7,864
GBR	233	PERSIMMON PLC	GB0006825383	PSN LN Equity	PSN-LN	15	3,296
GBR	234	PRUDENTIAL PLC	GB0007099541	PRU LN Equity	PRU-LN	63	23,881
GBR	235	PUNCH TAVERNS PLC	GB00BPXRVT80	PUB LN Equity	PUB-LN	58	3,898
GBR	236	RECKITT BENCKISER GROUP PLC	GB00B24CGK77	RB/ LN Equity	RB.-LN	28	28,621

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
GBR	237	RELX PLC	GB00B2B0DG97	REL LN Equity	REL-LN	27	11,750
GBR	238	REXAM PLC	GB00BMHTPY25	REX LN Equity	REX-LN	34	3,662
GBR	239	RIO TINTO PLC	GB0007188757	RIO LN Equity	RIO-LN	10	92,882
GBR	240	ROLLS-ROYCE HOLDINGS PLC	GB00B63H8491	RR/ LN Equity	RR.-LN	37	13,530
GBR	241	ROYAL BANK OF SCOTLAND GROUP PLC	GB00B7T77214	RBS LN Equity	RBS-LN	60	60,428
GBR	242	RSA INSURANCE GROUP PLC	GB00BKKMKR23	RSA LN Equity	RSA-LN	63	6,528
GBR	243	SABMILLER PLC	GB0004835483	SAB LN Equity	SAB-LN	20	25,950
GBR	244	SAINSBURY PLC	GB00B019KW72	SBRY LN Equity	SBRY-LN	54	13,850
GBR	245	SCHRODERS PLC	GB0002405495	SDR LN Equity	SDR-LN	62	5,033
GBR	246	SEVERN TRENT PLC	GB00B1FH8J72	SVT LN Equity	SVT-LN	49	4,926
GBR	247	SKY PLC	GB0001411924	BSY LN Equity	BSY-LN	48	16,665
GBR	248	SMITH & NEPHEW PLC	GB0009223206	SN/ LN Equity	SN.-LN	38	7,072
GBR	249	SMITHS GROUP PLC	GB00B1WY2338	SMIN LN Equity	SMIN-LN	35	5,982
GBR	250	SSE PLC	GB0007908733	SSE LN Equity	SSE-LN	49	19,570
GBR	251	STANDARD CHARTERED PLC	GB0004082847	STAN LN Equity	STAN-LN	60	35,385
GBR	252	STANDARD LIFE PLC	GB00BVFD7Q58	SL/ LN Equity	SL.-LN	63	7,482
GBR	253	TATE & LYLE PLC	GB0008754136	TATE LN Equity	TATE-LN	20	4,150
GBR	254	TESCO PLC	GB0008847096	TSCO LN Equity	TSCO-LN	54	52,208
GBR	255	THE SAGE GROUP PLC	GB00B8C3BL03	SGE LN Equity	SGE-LN	73	4,661
GBR	256	TULLOW OIL PLC	GB0001500809	TLW LN Equity	TLW-LN	13	6,366
GBR	257	UNITED UTILITIES GROUP PLC	GB00B39J2M42	UU/ LN Equity	UU.-LN	49	9,794
GBR	258	VEDANTA RESOURCES PLC	GB0033277061	VED LN Equity	VED-LN	10	5,638
GBR	259	VODAFONE GROUP PLC	GB00BH4HKS39	VOD LN Equity	VOD-LN	48	105,483
GBR	260	WHITBREAD PLC	GB00B1KJJ408	WTB LN Equity	WTB-LN	58	4,771
GBR	261	WOLSELEY PLC	JE00BFNWV485	WOS LN Equity	WOS-LN	52	10,530
GBR	262	WPP PLC	JE00B8KF9B49	WPP LN Equity	WPP-LN	73	10,092
NLD	263	AALBERTS INDUSTRIES NV	NL0000852564	AALB NA Equity	AALB-AE	34	1,388
NLD	264	ACCELL GROUP NV	NL0009767532	ACCEL NA Equity	ACCEL-AE	37	235
NLD	265	AEGON NV	NL0000303709	AGN NA Equity	AGN-AE	63	18,138
NLD	266	AERCAP HOLDINGS NV	NL0000687663	AER US Equity	AER-N	73	1,216
NLD	267	AFC AJAX NV	NL0000018034	AJAX NA Equity	AJAX-AE	79	154
NLD	268	AKZO NOBEL NV	NL0000009132	AKZA NA Equity	AKZA-AE	28	14,373
NLD	269	AMG ADVANCED METALLURGICAL GROUP	NL0000888691	AMG NA Equity	AMG-AE	10	1,376
NLD	270	ARCADIS NV	NL0006237562	ARCAD NA Equity	ARCAD-AE	87	954

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
NLD	271	ASM INTERNATIONAL NV	NL0000334118	ASM NA Equity	ASM-AE	35	901
NLD	272	ASML HOLDING NV	NL0010273215	ASML NA Equity	ASML-AE	35	9,436
NLD	273	BALLAST NEDAM NV	NL0000336543	BALNE NA Equity	BALNE-AE	16	280
NLD	274	BATENBURG TECHNIEK	NL0006292906	BATEN NA Equity	BATEN-AE	17	69
NLD	275	BE SEMICONDUCTOR INDUSTRIES	NL0000339760	BESI NA Equity	BESI-AE	36	116
NLD	276	BETER BED HOLDING NV	NL0000339703	BBED NA Equity	BBED-AE	57	383
NLD	277	BRUNEL INTERNATIONAL NV	NL0010776944	BRNL NA Equity	BRNL-AE	73	372
NLD	278	CHICAGO BRIDGE & IRON NV	US1672501095	CBI US Equity	CBI-N	17	4,004
NLD	279	CORBION	NL0010583399	CRBN NA Equity	CSM-AE	28	1,428
NLD	280	CORIO NV	NL0000288967	CORA NA Equity	CORA-AE	65	3,670
NLD	281	CROWN VAN GELDER NV	NL0000345452	CVG NA Equity	CVG-AE	26	66
NLD	282	DPA GROUP NV	NL0009197771	DPA NA Equity	DPA-AE	73	76
NLD	283	EXACT HOLDING NV	NL0000350361	EXACT NA Equity	EXACT-AE	73	595
NLD	284	FUGRO NV	NL0000352565	FUR NA Equity	FUR-AE	87	3,690
NLD	285	GEMALTO	NL0000400653	GTO NA Equity	GTO-AE	73	1,795
NLD	286	GRONTMIJ NV	NL0010200358	GRONT NA Equity	GRONT-AE	15	430
NLD	287	HEIJMANS NV	NL0009269109	HEIJM NA Equity	HEIJM-AE	16	622
NLD	288	HEINEKEN NV	NL0000009165	HEIA NA Equity	HEIA-AE	20	21,631
NLD	289	HOLLAND COLOURS NV	NL0000440311	HOLCO NA Equity	HOLCO-AE	28	39
NLD	290	ICT AUTOMATISERING NV	NL0000359537	ICT NA Equity	ICT-AE	73	88
NLD	291	ING GROEP NV	NL0000303600	INGA NA Equity	INGA-AE	60	56,166
NLD	292	JUBII EUROPE NV	NL0000233195	LCY GR Equity	LCY-FF	73	153
NLD	293	KARDAN NV	NL0000113652	KARD NA Equity	KARD-AE	65	930
NLD	294	KAS BANK NV	NL0000362648	KA NA Equity	KA-AE	62	374
NLD	295	KENDRION NV	NL0000852531	KENDR NA Equity	KENDR-AE	36	185
NLD	296	KONINKLIJKE AHOLD NV	NL0010672325	AH NA Equity	AH-AE	54	11,098
NLD	297	KONINKLIJKE BAM GROEP NV	NL0000337319	BAMNB NA Equity	BAMNB-AE	16	2,091
NLD	298	KONINKLIJKE DSM	NL0000009827	DSM NA Equity	DSM-AE	28	5,396
NLD	299	KONINKLIJKE KPN NV	NL0000009082	KPN NA Equity	KPN-AE	48	22,775
NLD	300	KONINKLIJKE PHILIPS ELECTRONICS NV	NL0000009538	PHIA NA Equity	PHIA-AE	38	31,436
NLD	301	KONINKLIJKE TEN CATE NV	NL0000375749	KTC NA Equity	KTC-AE	28	489
NLD	302	KONINKLIJKE VOPAK NV	NL0009432491	VPK NA Equity	VPK-AE	44	2,421
NLD	303	LMA INTERNATIONAL	ANN2879J1070	LMA SP Equity	n/a	50	128
NLD	304	MACINTOSH RETAIL GROUP NV	NL0000367993	MACIN NA Equity	MACIN-AE	56	497

Country	Number	Company name	ISIN	Bloomberg ticker	ThomsonONE ticker	SIC code	Market cap. (EUR M)[1]
NLD	305	NEDERLANDS APPARATENFABRIEK NV (NEDAP)	NL0000371243	NEDAP NA Equity	NEDAP-AE	38	213
NLD	306	NEDFIELD	NL0006327322	NEDFI NA Equity	n/a	35	87
NLD	307	NEWAYS ELECTRIC INTERNATIONAL	NL0000440618	NEWAY NA Equity	NEWAY-AE	36	118
NLD	308	NUTRECO NV	NL0010395208	NUO NA Equity	NUO-AE	20	1,379
NLD	309	ORDINA NV	NL0000440584	ORDI NA Equity	ORDI-AE	73	503
NLD	310	POSTNL NV	NL0009739416	PNL NA Equity	PNL-AE	45	10,468
NLD	311	RANDSTAD HOLDING NV	NL0000379121	RAND NA Equity	RAND-AE	73	3,151
NLD	312	ROTO SMEETS GROUP NV	NL0009169515	ROTO NA Equity	ROTO-AE	27	104
NLD	313	ROYAL BOSKALIS WESTMINSTER NV	NL0000852580	BOKA NA Equity	BOKA-AE	16	3,574
NLD	314	ROYAL DUTCH SHELL PLC	GB00B03MLX29	RDSB LN Equity	RDSB-LN	13	178,545
NLD	315	ROYAL IMTECH	NL0010886891	IM NA Equity	IM-AE	87	1,328
NLD	316	ROYAL REESINK	NL0000379303	ALRRE NA Equity	ALRRE-AE	50	61
NLD	317	SAMAS NV	NL0000381507	SAMNP NA Equity	n/a	25	189
NLD	318	SBM OFFSHORE NV	NL0000360618	SBMO NA Equity	SBMO-AE	35	3,096
NLD	319	SIMAC TECHNIEK	NL0000441616	SIMAC NA Equity	SIMAC-AE	73	35
NLD	320	SLIGRO FOOD GROUP NV	NL0000817179	SLIGR NA Equity	SLIGR-AE	51	1,121
NLD	321	STERN GROEP NV	NL0000336303	STRN NA Equity	STRN-AE	55	196
NLD	322	TELEGRAAF MEDIA GROEP	NL0000386605	TMG NA Equity	TMG-AE	27	1,244
NLD	323	TKH GROUP NV	NL0000852523	TWEKA NA Equity	TWEKA-AE	33	518
NLD	324	TOM TOM NV	NL0000387058	TOM2 NA Equity	TOM2-AE	36	6,272
NLD	325	UNILEVER NV	NL0000009355	UNA NA Equity	UNA-AE	28	71,755
NLD	326	USG PEOPLE NV	NL0000354488	USG NA Equity	USG-AE	73	1,182
NLD	327	VAN DER MOOLEN NV	NL0000370179	VDMN NA Equity	VDMEF-5	62	132
NLD	328	VAN LANSCHOT NV	NL0000302636	LANS NA Equity	LANS-AE	60	2,534
NLD	329	WESSANEN NV	NL0000395317	WES NA Equity	WES-AE	20	735
NLD	330	WOLTERS KLUWER NV	NL0000395903	WKL NA Equity	WKL-AE	27	6,320

1 Year-end market capitalization on December 31, 2017

Source: Authors

Appendix 1.5: Data availability

(a)

Number of CEO successions			
Year	Number	Country	Number
2007	44	CHE	89
2008	48	DEU	78
2009	44	GBR	83
2010	34	NLD	55
2011	51		
2012	46		
2013	38		
Total	305	Total	305

(b)

Number of firms within sample	
Description	Number
Total number of firms in sample	330
Number of firms that experience CEO successions	232
Number of firms that experience more than one succession	62

(c)

Number of observations with complete data		
Paper	Dependent variable	Number
First paper	Strategic change	115
Second paper	CEO compensation[a]	205
Third paper	Firm performance	201

a Measured as fixed, long-term, and total compensation

Source: Authors

2 Appendices for second chapter: “CEO experience variety: A review and guide for future research”

Appendix 2.1: Complete list of journals considered for literature review

Journal	ThomsonReuters five-year average impact factor			
	Rank	Total cites	Impact factor	Eigenfactor
Academy of Management Annals	1	1,530	9.741	0.00834
Academy of Management Review	2	22,261	7.288	0.01319
Academy of Management Journal	3	25,339	6.233	0.02785
Journal of Management	4	12,419	6.051	0.02145
MIS Quarterly	5	11,320	5.384	0.01136
Administrative Science Quarterly	6	13,725	5.316	0.00780
Journal of Finance	7	24,013	5.290	0.05299
International Journal of Management Reviews	8	1,890	4.854	0.00387
Journal of Information Technology	9	1,695	4.775	0.00268
Organizational Research Methods	10	3,508	4.727	0.00740
Journal of Supply Chain Management	11	1,475	4.571	0.00223
Annual Review of Organizational Psychology and Organizational Behavior	12	113	4.478	0.00105
Journal of Business Venturing	13	5,628	4.204	0.00705
Family Business Review	14	1,936	4.147	0.00219
Journal of Management Studies	15	7,525	4.131	0.01239
Personnel Psychology	16	5,360	4.057	0.00651
Journal of Operations Management	17	6,807	4.000	0.00722
Omega-International Journal of Management Science	18	4,990	3.962	0.00737
Academy of Management Perspectives	19	1,313	3.940	0.00447
Journal of Marketing	20	17,131	3.885	0.01137
Journal of Applied Psychology	21	26,895	3.810	0.02096
Journal of The Academy of Marketing Science	22	6,558	3.744	0.00622
Journal of International Business Studies	23	8,566	3.620	0.00860
Journal of Financial Economics	24	18,347	3.541	0.05959
Journal of Accounting & Economics	25	5,373	3.535	0.01182
Business Strategy and the Environment	26	2,359	3.479	0.00231
Research Policy	27	13,078	3.470	0.01651
Entrepreneurship Theory and Practice	28	4,939	3.414	0.00770
Strategic Management Journal	29	21,139	3.380	0.01927
Organization Science	30	13,837	3.360	0.02422
Journal of Interactive Marketing	31	1,660	3.256	0.00200
Journal of International Marketing	32	1,351	3.250	0.00098
Journal of Consumer Research	33	14,148	3.187	0.01455
Tourism Management	34	8,910	3.140	0.00905
Review of Financial Studies	35	9,405	3.119	0.05304
Journal of Marketing Research	36	13,697	3.109	0.01874
Information Systems Research	37	5,175	3.047	0.00751
Journal of Management Information Systems	38	3,818	3.025	0.00352
Internet Research	39	1,154	3.017	0.00110
Journal of Organizational Behavior	40	7,252	2.986	0.00942
Leadership Quarterly	41	5,167	2.938	0.00782
Long Range Planning	42	2,244	2.936	0.00353
International Journal of Project Management	43	5,018	2.885	0.00376
Journal of World Business	44	2,284	2.811	0.00407
Organizational Behavior and Human Decision Processes	45	9,186	2.805	0.01009
Organization Studies	46	5,173	2.798	0.00782
Management Science	47	22,776	2.741	0.03442
Management and Organization Review	48	810	2.738	0.00220
Supply Chain Management	49	2,691	2.731	0.00337
Technological Forecasting and Social Change	50	4,653	2.678	0.00755

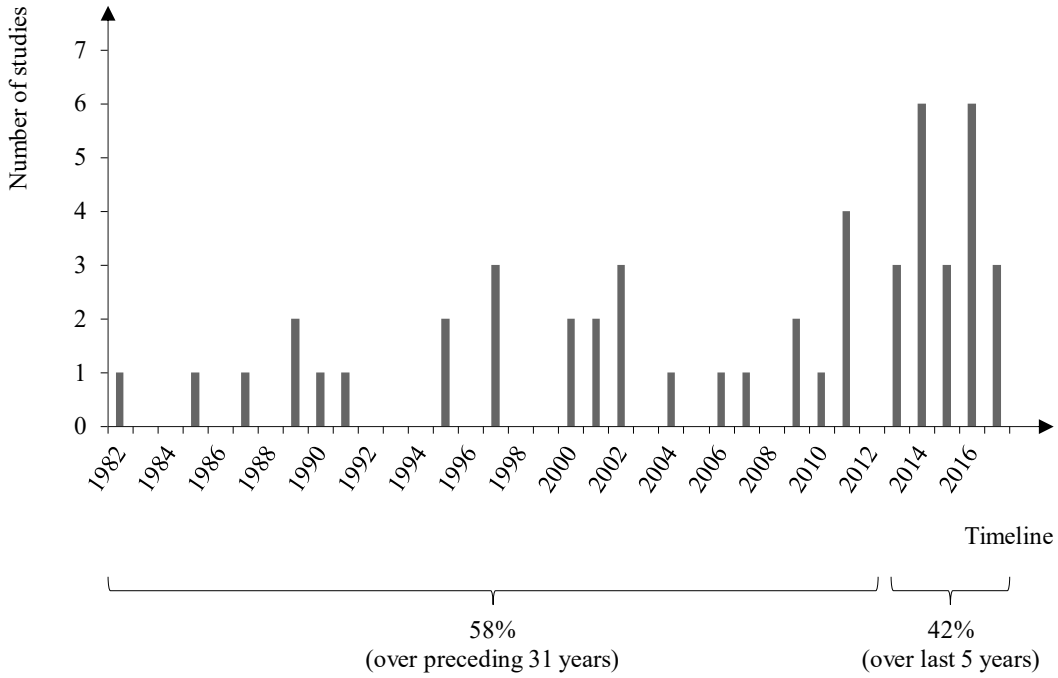
Source: Authors

Appendix 2.2: Final list of journals of studies included in the literature review

Journal		ThomsonReuters five-year average impact factor				Literature review	
		Rank	Total cites	Impact factor	Eigenfactor	Number of studies	Percentage of studies
1	Academy of Management Journal	3	25,339	6.233	0.02785	5	10%
2	Journal of Management	4	12,419	6.051	0.02145	2	4%
3	Administrative Science Quarterly	6	13,725	5.316	0.00780	3	6%
4	Journal of Finance	7	24,013	5.290	0.05299	3	6%
5	Journal of Business Venturing	13	5,628	4.204	0.00705	2	4%
6	Journal of Management Studies	15	7,525	4.131	0.01239	6	12%
7	Personnel Psychology	16	5,360	4.057	0.00651	2	4%
8	Journal of International Business Studies	23	8,566	3.620	0.00860	1	2%
9	Journal of Financial Economics	24	18,347	3.541	0.05959	2	4%
10	Strategic Management Journal	29	21,139	3.380	0.01927	12	24%
11	Review of Financial Studies	35	9,405	3.119	0.05304	3	6%
12	Journal of Marketing Research	36	13,697	3.109	0.01874	2	4%
13	Leadership Quarterly	41	5,167	2.938	0.00782	3	6%
14	Long Range Planning	42	2,244	2.936	0.00353	1	2%
15	Journal of World Business	44	2,284	2.811	0.00407	2	4%
16	Management Science	47	22,776	2.741	0.03442	1	2%
						50	100%

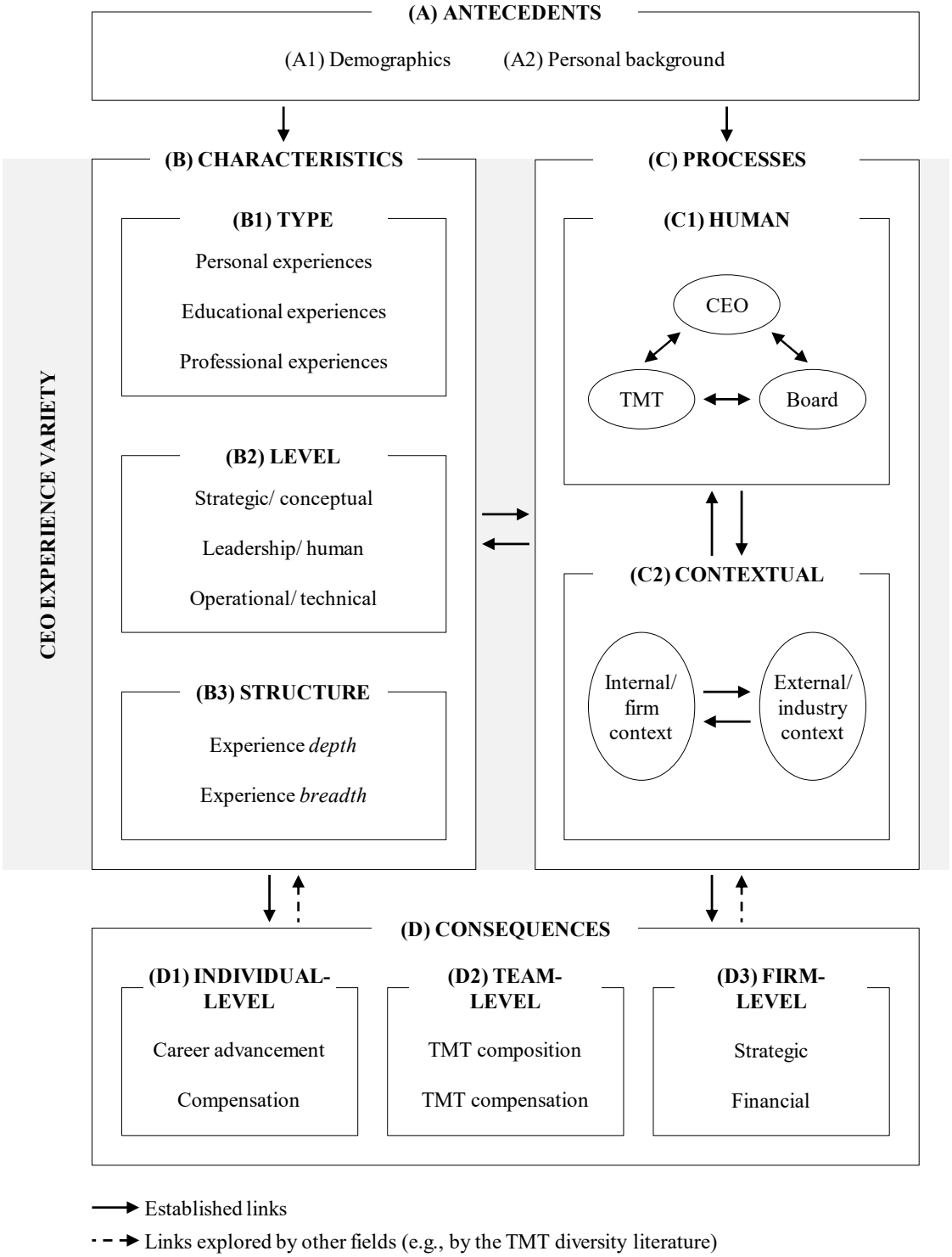
Source: Authors

Appendix 2.3: Publication timeline of studies included in review



Source: Authors

Appendix 2.4: Detailed review framework



Source: Authors

Appendix 2.5: Summary table of research on CEO experience variety

Author(s)	Journal	Sample	Research design	Analytical technique(s)	Theoretical perspective(s)	Main findings regarding 'CEO experience'
Barker & Mueller, 2002	Management Science	172 public US firms from the Business Week 1000 list (1989-1990)	Longitudinal archival data	OLS regression	Upper echelons theory	CEO career experience in marketing or engineering positively impacts firm R&D spending
Beal & Yasai-Ardekani, 2000	Journal of Management	101 CEOs of small US manufacturing firms	Cross-sectional questionnaire data	Regression	Upper echelons theory; Resource-based view	Congruence between specific CEO functional experiences and specific competitive strategies increases firm performance
Bernile, Bhagwat, & Rau, 2017	Journal of Finance	1,508 CEOs of US firms from the S&P 1500 list (1992-2012)	Longitudinal archival data	OLS regression	No specific theory	The relationship between CEO fatal disaster experience and corporate risk-taking has an inversed U-shaped form
Bigley & Wiersema, 2002	Administrative Science Quarterly	61 US firms from the Forbes 500 list (1990-1994)	Longitudinal archival data	Hierarchical moderated regression	Upper echelons theory	CEO heir apparent experience negatively moderates the relationship between CEO power and strategic change
Buyl, Boone, Hendriks, & Matthyssens, 2011	Journal of Management Studies	32 medium-sized Belgium and Dutch IT firms	Cross-sectional combined data	OLS regression	Upper echelons theory; Information processing theory	Specialist CEOs have a positive moderating effect on the relationship between TMT functional diversity and firm performance
Carpenter, Sanders, & Gregersen, 2001	Academy of Management Journal	245 multinational US firms from the S&P 500 list (1994)	Cross-sectional archival data	OLS regression	Resource-based view; Dynamic capabilities theory	CEO international assignment experience positively impacts firm performance. Moreover, a positive relationship with CEO compensation exists under conditions of extensive global strategic postures
Chakravarty & Grewal, 2016	Journal of Marketing Research	515 US manufacturing firms (2001-2009)	Longitudinal archival data	Markov chain Monte Carlo simulation	Agency theory	CEO functional experience decreases the influence of analyst forecasts on unanticipated decreases in advertising and R&D budgets
Crossland, Jinyong, Hiller, & Hambrick, 2014	Academy of Management Journal	183 CEOs of US firms from the Fortune 250 list (1999-2005)	Longitudinal archival data	Generalized estimating equations	Upper echelons theory	CEO career variety is positively related to strategic change and TMT change
Custodio, Ferreira, & Matos, 2013	Journal of Financial Economics	4,451 CEOs of firms from the S&P 1500 list (1993-2007)	Longitudinal archival data	OLS regression	No specific theory	CEOs with general managerial skills receive a pay premium. This premium increases when (a) firms hire outsiders and switch to generalists and (b) when CEOs are hired to perform complex tasks
Custodio & Metzger, 2014	Journal of Financial Economics	4,277 CEOs of US firms from the S&P 1500 list (1993-2007)	Longitudinal archival data	OLS regression	No specific theory	Firms headed by financial expert CEOs tend to hold less cash, have more debt, and engage in more share repurchases. Also, financial expert CEOs tend to replace incumbent CFOs more often

Author(s)	Journal	Sample	Research design	Analytical technique(s)	Theoretical perspective(s)	Main findings regarding 'CEO experience'
Custodio & Metzger, 2013	Review of Financial Studies	4,844 M&As of US firms from the S&P 1500 list (1990-2008)	Longitudinal archival data	Regression	No specific theory	When the acquirer's CEO has previous experience in the target industry, M&A returns are higher
Daily, Certo, & Dalton, 2000	Strategic Management Journal	367 US firms from the Fortune 500 list	Cross-sectional combined data	Hierarchical multiple regression	Resource-based view	CEO international experience increases firm performance. This relationship is moderated by firm internationalization and outside CEO succession origin
Dittmar & Duchin, 2016	Review of Financial Studies	9,133 CEOs/ CFOs of US industrial firms (1980-2011)	Longitudinal archival data	Regression	No specific theory	CEOs who experienced distress at previous firms take more conservative financial decisions
Fitzsimmons & Callan, 2016	Leadership Quarterly	120 top executives of large Australian firms (2009-2011)	Cross-sectional questionnaire data	Case study	Upper echelons theory; Human capital theory; Social capital theory	CEO social capital plays a determinative role in all CEO appointments; *Depth* and *breadth* of CEO human capital is important
Fitzsimmons, Callan, & Paulsen, 2014	Leadership Quarterly	30 female CEOs and 30 male CEOs of large Australian firms (2009-2010)	Cross-sectional questionnaire data	Case study	No specific theory	Since childhood, women have limited access to career relevant experiences, reducing their access to CEO roles
Fondas & Wiersema, 1997	Journal of Management Studies	n/a	n/a	n/a	Upper echelons theory; Socialization theory	The differential outcomes of CEO succession may be better understood by examining the underlying process of socialization
Forbes, Korsgaard, & Sapienza, 2010	Journal of Business Venturing	161 CEOs of US firms which received venture capital (2002)	Cross-sectional questionnaire data	Hierarchical regression	Upper echelons theory	CEO founder experience moderates the relationship between devaluation and venture board conflicts
Fulmer, 2009	Personnel Psychology	300 US firms from the S&P 1500 list (1995 & 2000)	Cross-sectional archival data	Hierarchical linear regression	Agency theory; Human capital theory	CEO management experience is positively related to CEO compensation
Georgakakis, Dauth, & Ruigrok, 2016	Journal of World Business	163 CEOs of large public European firms (2008)	Cross-sectional archival data	Poisson regression	Upper echelons theory; Human capital theory; Social network theory	The relationship between CEO international experience and time to top follows a U-shaped form
Georgakakis, Greve, & Ruigrok, 2017	Leadership Quarterly	97 large European firms (2005-2009)	Longitudinal archival data	OLS regression	Upper echelons theory	The negative performance implications of TMT faultlines are likely to be overcome when the CEO has a diverse career background

Author(s)	Journal	Sample	Research design	Analytical technique(s)	Theoretical perspective(s)	Main findings regarding 'CEO experience'
Gomulya & Boeker, 2014	Academy of Management Journal	352 US firms which announced restatements (2003-2006)	Longitudinal archival data	Regression	Market signaling theory	After reputation-damaging events, the appointment of CEOs with prior CEO or turnaround experience as well as elitist education result in more positive stakeholder reactions
Gore, Matsunaga, & Eric Yeung, 2011	Strategic Management Journal	1,221 CFO-CEO pairs of US firms (1993-2001)	Longitudinal archival data	OLS regression	Agency theory	CEOs with finance career backgrounds use less incentive-based compensation for their CFOs
Graffin, Carpenter, & Boivie, 2011	Strategic Management Journal	601 US firms from the Fortune 1000 list (1999-2004)	Longitudinal combined data	Logistic regression	Impression management theory	Firms are less likely to inject strategic noise when the newly appointed CEO had prior experience as CEO
Guthrie & Datta, 1997	Journal of Management Studies	214 CEOs of US firms from the Business Week 1000 list (1977-1989)	Longitudinal archival data	OLS regression	Upper echelons theory	Multiple firm characteristics are associated with the new CEO's organizational tenure, age, and functional background experience
Hambrick & Cannella, 2004	Strategic Management Journal	404 medium to large US firms (1987-1996)	Longitudinal archival data	Regression	Contingency theory	CEOs who lack operational experience and experience in managing the focal firm are more likely to appoint COOs
Harris & Helfat, 1997	Strategic Management Journal	305 CEOs of US firms from the Forbes list (1978-1987)	Longitudinal archival data	Regression	Agency theory; Stewardship theory	Outside CEO successors receive higher compensation than inside successors. This is positively moderated by CEO outside industry experience
Herrmann & Datta, 2006	Journal of Management Studies	380 foreign market entries of 78 public US manufacturing firms (1989-1997)	Cross-sectional archival data	MNL regression	Upper echelons theory	CEO experience impacts the choice of foreign direct investments entry modes
Herrmann & Datta, 2002	Journal of International Business Studies	126 CEO successions and 271 foreign market entries at public US manufacturing firms (1989-1997)	Longitudinal archival data	Logistic regression	Upper echelons theory; Human capital theory	CEO functional and international experience are associated with full-control foreign market entry modes
Hitt & Tyler, 1991	Strategic Management Journal	65 top executives of US firms	Cross-sectional questionnaire data	Moderated regression	Upper echelons theory	CEO functional experience impacts target firm evaluations
Hsu, Chen, & Cheng, 2013	Journal of World Business	187 Taiwanese SMEs (2000-2006)	Longitudinal archival data	OLS regression	Upper echelons theory; Information processing theory	CEO education and CEO international experience positively moderate the relationship between firm internationalization and firm performance

Author(s)	Journal	Sample	Research design	Analytical technique(s)	Theoretical perspective(s)	Main findings regarding 'CEO experience'
Karaevli, 2007	Strategic Management Journal	140 CEO successions at medium to large public US airline and chemical firms (1972-2002)	Longitudinal archival data	OLS regression	Upper echelons theory; Resource dependence theory	There is no main effect between 'CEO outsiderness' and firm performance. However, contextual factors significantly impact this relationship
Kish-Gephart & Tochman Campbell, 2015	Academy of Management Journal	265 CEOs of US firms from the S&P 1500 list (2012)	Cross-sectional questionnaire data	Regression	Upper echelons theory	CEOs of lower and upper social class origins take greater risks than their middle class counterparts
Malmendier, Tate, & Yan, 2011	Journal of Finance	CEOs of 477 public US firms from the Forbes list (1980-1994)	Longitudinal archival data	OLS regression	No specific theory	CEO childhood experiences and CEO military experience impact the CEO's financial decisions
May, 1995	Journal of Finance	184 acquisitions of US firms (1979-1990)	Longitudinal archival data	Multivariate regression	Agency theory	CEOs who are specialists at existing technologies tend to buy similar technologies
Norburn, 1989	Strategic Management Journal	108 CEOs of British firms from the Times 500 list	Cross-sectional questionnaire data	Discriminant analysis	No specific theory	CEOs differ from their TMTs with regard to *breadth* of functional and firm experience
Peng, Sun, & Markoczy, 2015	Journal of Management Studies	Public Chinese firms (2001-2008)	Longitudinal archival data	Regression	Resource dependence theory; Human capital theory	CEO international experience and political ties increase CEO compensation
Reed & Reed, 1989	Journal of Management Studies	52 large US firms from the Ward's Directory list (1984)	Cross-sectional archival data	MANOVA	Upper echelons theory	A fit between CEO experience and diversification strategy results in higher firm performance
Roth, 1995	Academy of Management Journal	74 CEOs of medium-sized US firms	Cross-sectional combined data	Regression	Resource-based view; Information processing theory	CEOs with international experience have a greater impact on firm performance in case of high firm international interdependence
Saboo, Sharma, Chakravarty, & Kumar, 2017	Journal of Marketing Research	319 acquisitions of US biopharmaceutical firms (1995-2013)	Longitudinal archival data	Random-effect regression	Upper echelons theory	CEO throughput functional background positively impacts the relationship between innovation overlap and acquisition performance
Smith & White, 1987	Administrative Science Quarterly	544 CEOs of US firms from the Fortune 1000 list (25 years)	Longitudinal archival data	Log-linear modeling	No specific theory	The former CEO's career specialization and the previous strategy simultaneously, but independently, predict the successor's career specialization
Song, 1982	Strategic Management Journal	53 US firms from the Fortune 500 list (1965-1980)	Longitudinal archival data	Relative proportions of CEO characteristics	No specific theory	CEO functional experience is associated with the firm's diversification strategy

Author(s)	Journal	Sample	Research design	Analytical technique(s)	Theoretical perspective(s)	Main findings regarding 'CEO experience'
Stuart & Abetti, 1990	Journal of Business Venturing	52 CEOs of new US technical ventures	Cross-sectional questionnaire data	General linear modeling	Contingency theory	CEOs with prior senior management experience in entrepreneurial ventures positively impact firm performance
Sundaramurthy, Pukthuanthong, & Kor, 2014	Strategic Management Journal	360 US biotechnology firms (1995-2010)	Longitudinal archival data	OLS regression	Human capital theory; Social capital theory	Experience as board members of public companies of both the CEO and the board members has positive synergistic effects on IPO performance
Van Der Merwe & Van Der Merwe, 1985	Long Range Planning	50 CEOs of public South African industrial firms	Cross-sectional questionnaire data	Relative proportions of CEO characteristics	No specific theory	The majority of CEOs had a functional background in general administration and an educational background in finance
Wang, Holmes, Oh, & Zhu, 2016	Personnel Psychology	308 studies (until March 2015)	n/a	Meta-analysis	Upper echelons theory	CEO education and CEO prior career experience are associated with (a) firm strategy and (b) firm performance
Weng & Lin, 2014	Journal of Management	281 CEO successions at US computer firms (1994-2007)	Longitudinal archival data	Regression	Upper echelons theory; Socialization theory	CEO top executive experience within the focal firm positively impacts strategic change
Westphal & Fredrickson, 2001	Strategic Management Journal	406 medium and large US industrial and service firms from the Forbes and Fortune 500 lists (1984-1996)	Longitudinal archival data	Regression	Upper echelons theory	Boards appoint CEOs who have strategy experience that is (a) consistent with their own experience and (b) consistent with their preferred strategy
Xuan, 2009	Review of Financial Studies	265 CEO successions at 230 US multi-segment firms (1993-2002)	Longitudinal archival data	Regression	No specific theory	New CEOs allocate significantly more capital to divisions to which they were not previously affiliated
Zhu & Chen, 2015	Administrative Science Quarterly	196 US firms from the Fortune 500 list (1997-2006)	Longitudinal archival data	GLS regression	Upper echelons theory; Organization theory	Narcistic CEOs rely more on their prior experiences when deciding the focal firm's corporate strategies
Zhu & Shen, 2016	Strategic Management Journal	118 outside CEO successions at US firms from the Fortune 500 firms (1994-2007)	Longitudinal archival data	GLS regression	Upper echelons theory	New outside CEO prior experience with more diverse boards increases firm performance and reduces post-succession CEO and director turnover

Source: Authors

Appendix 2.6: Studies per research stream

Study		Stream I		Stream II	Stream III		Stream IV	Stream V
		Individual-level implications			Firm-level implications			
		(a) CEO career advancement	(b) CEO compensation	Team-level implications	(a) Strategic change	(b) Firm performance	Upper echelon processes	*Depth* vs. *breadth*
1	Barker & Mueller, 2002				X			
2	Beal & Yasai-Ardekani, 2000					X		
3	Bernile, Bhagwat, & Rau, 2017				X			
4	Bigley & Wiersema, 2002				X			
5	Buyl, Boone, Hendriks, & Matthyssens, 2011					X	X	X
6	Carpenter, Sanders, & Gregersen, 2001		X			X		
7	Chakravarty & Grewal, 2016				X			
8	Crossland, Jinyong, Hiller, & Hambrick, 2014			X	X			X
9	Custodio, Ferreira, & Matos, 2013		X					X
10	Custodio & Metzger, 2014			X	X			
11	Custodio & Metzger, 2013					X		
12	Daily, Certo, & Dalton, 2000					X		
13	Dittmar & Duchin, 2016				X			
14	Fitzsimmons & Callan, 2016	X						X
15	Fitzsimmons, Callan, & Paulsen, 2014	X						
16	Fondas & Wiersema, 1997				X			
17	Forbes, Korsgaard, & Sapienza, 2010						X	
18	Fulmer, 2009		X					
19	Georgakakis, Dauth, & Ruigrok, 2016	X						X
20	Georgakakis, Greve, & Ruigrok, 2017					X	X	X
21	Gomulya & Boeker, 2014	X				X		
22	Gore, Matsunaga, & Eric Yeung, 2011			X				
23	Graffin, Carpenter, & Boivie, 2011				X			
24	Guthrie & Datta, 1997	X						
25	Hambrick & Cannella, 2004			X				
26	Harris & Helfat, 1997		X					
27	Herrmann & Datta, 2006				X			
28	Herrmann & Datta, 2002				X			
29	Hitt & Tyler, 1991				X			
30	Hsu, Chen, & Cheng, 2013					X		
31	Karaevli, 2007					X		
32	Kish-Gephart & Tochman Campbell, 2015				X			
33	Malmendier, Tate, & Yan, 2011				X			
34	May, 1995				X			
35	Norburn, 1989	X						
36	Peng, Sun, & Markoczy, 2015		X					
37	Reed & Reed, 1989				X	X		
38	Roth, 1995					X		
39	Saboo, Sharma, Chakravarty, & Kumar, 2017					X		
40	Smith & White, 1987	X						
41	Song, 1982				X			
42	Stuart & Abetti, 1990					X		
43	Sundaramurthy, Pukthuanthong, & Kor, 2014						X	
44	Van Der Merwe & Van Der Merwe, 1985	X						
45	Wang, Holmes, Oh, & Zhu, 2016				X	X		
46	Weng & Lin, 2014				X			
47	Westphal & Fredrickson, 2001	X						
48	Xuan, 2009				X			
49	Zhu & Chen, 2015				X			
50	Zhu & Shen, 2016	X		X		X	X	
Total number of studies per reserach stream		10	5	5	21	15	5	6

Source: Authors

3 Appendices for third chapter: “In extremis stat virtus: CEO experience variety and strategic change”

Appendix 3.1: Probit model with CEO replacement as dependent variable (Heckman first-stage model)

Variables[a]		Dependent variable: Dummy for CEO replacement		
		β	S.E.	Operationalization
Predictors	Firm size	0.03	(0.02)	Natural logarithm of total sales
	Firm performance	-0.02 **	(0.00)	ROA
	Decline in market share	1.65	(1.49)	Change in market share
	CEO age	0.05 ***	(0.01)	Number of years
	CEO firm tenure	0.00	(0.00)	Number of years
	CEO-Chairman duality	0.04	(0.17)	Dummy
	Recent CEO succession	-0.39 **	(0.13)	Dummy
	Industry rate of CEO turnover	4.94 ***	(0.68)	Proportion
Statistics	Log likelihood	-763.23 ***		
	Pseudo R^2	0.10		

N = 2,160 † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

a Standard errors are indicated in brackets.

Country and year dummies are included, but not shown.

Source: Authors

Appendix 3.2: Regression results with strategic change as dependent variable (Heckman second-stage model)

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		3.92	(2.77)	5.03 †	(2.80)	4.77 †	(2.72)	7.43 *	(3.10)
Controls	CEO MBA		0.32	(0.55)	0.20	(0.54)	0.23	(0.53)	0.09	(0.54)
	CEO career length		-0.03	(0.04)	-0.02	(0.04)	-0.03	(0.04)	-0.03	(0.04)
	CEO outside succession origin		0.57	(0.37)	0.62 †	(0.37)	0.73 *	(0.35)	0.64 †	(0.34)
	CEO functional diversity		-1.69 *	(0.71)	-1.45 *	(0.69)	-1.32 †	(0.69)	-1.36 *	(0.68)
	CEO-Chairman duality		-0.53	(1.24)	-0.73	(1.03)	-0.77	(0.99)	-0.76	(1.05)
	CEO incentive compensation		0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
	Board independence		-1.17	(2.64)	-1.33	(2.57)	-1.28	(2.55)	-1.64	(2.68)
	Predecessor CEO tenure		0.01	(0.04)	0.00	(0.04)	0.01	(0.04)	0.03	(0.04)
	TMT tenure		-0.07	(0.08)	-0.09	(0.08)	-0.09	(0.08)	-0.09	(0.08)
	TMT diversity		-0.77	(0.48)	-0.75	(0.47)	-0.73	(0.47)	-0.72	(0.47)
	TMT turnover		0.86	(0.87)	1.01	(0.87)	1.05	(0.85)	-3.31	(1.99)
	Pre-succession firm performance		-0.02	(0.03)	-0.03	(0.03)	-0.02	(0.03)	-0.03	(0.03)
	Frequent CEO replacements		-0.17	(0.36)	-0.32	(0.37)	-0.31	(0.38)	-0.45	(0.36)
	Firm size[b]		-0.25 †	(0.15)	-0.31 *	(0.15)	-0.26 †	(0.15)	-0.30 *	(0.15)
	Firm overall diversification		-0.02	(0.27)	0.08	(0.26)	0.07	(0.25)	-0.04	(0.24)
	Industry munificence		-5.36	(14.30)	-8.52	(14.01)	-8.84	(13.91)	-4.25	(13.69)
	Industry dynamism		13.53	(9.15)	13.55	(9.09)	14.25	(8.66)	16.69 †	(8.85)
	Likelihood of CEO succession[c]		-0.32	(0.80)	-0.31	(0.78)	-0.20	(0.80)	-0.28	(0.76)
Main effect	CEO strategic experience variety	*H1*			-0.88 *	(0.33)	-3.17 **	(1.01)	-8.76 **	(2.59)
	CEO strategic experience variety^2						1.61 *	(0.71)	4.84 *	(1.85)
Moderating effect	CEO strategic experience variety x TMT turnover	*H2*							13.49 *	(5.46)
	CEO strategic experience variety^2 x TMT turnover								-7.61 *	(3.58)
Statistics	F-test		2.01 **		2.49 ***		3.23 ***		3.74 ***	
	R^2		0.41		0.44		0.47		0.51	
	Change in R^2				0.03		0.03		0.04	
	Adjusted R^2		0.23		0.26		0.29		0.33	
	Change in adjusted R^2				0.04		0.02		0.04	

a N = 115. Standard errors are indicated in brackets. Country and year dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

c Inversed Mill's ratio from first-stage Probit model

Source: Authors

Appendix 3.3: Variance inflation factor analysis

Variables	VIF	1 / VIF
TMT diversity	1.58	0.63
Firm size[a]	1.58	0.63
Firm overall diversification	1.56	0.64
Frequent CEO replacements	1.51	0.66
Predecessor CEO tenure	1.47	0.68
CEO incentive compensation	1.41	0.71
TMT tenure	1.39	0.72
Board independence	1.29	0.78
Pre-succession firm performance	1.28	0.78
CEO career length	1.25	0.80
TMT turnover	1.25	0.80
CEO-Chairman duality	1.24	0.81
Industry dynamism	1.21	0.83
Industry munificence	1.19	0.84
CEO functional diversity	1.17	0.86
CEO MBA	1.16	0.86
CEO experience variety	1.15	0.87
CEO outside succession origin	1.15	0.87
Mean VIF	1.32	

a Logarithm

Source: Authors

Appendix 3.4: CEO experience variety: Factor analysis, correlation analysis, and Cronbach's alpha

(a)	Factor analysis			
		Variables	Factor 1	Factor 2
	Factor loadings	Firm experience	0.834	0.009
		Industry experience	0.832	-0.014
		Functional experience	0.038	0.095
	Eigenvalues		1.388	0.009

(b)	Correlation analysis			
	Variables	Firm experience	Industry experience	Functional experience
	Firm experience	-		
	Industry experience	0.77 ***	-	
	Functional experience	0.05	0.01	-

(c)	Crombach's alpha			
	Combination 1	Combination 2	Combination 3	Combination 4
Variables	Firm experience		Firm experience	Firm experience
	Industry experience	Industry experience		Industry experience
		Functional experience	Functional experience	Functional experience
Number of items in the scale	2	2	2	3
Scale reliability coefficient	0.872	0.019	0.100	0.573

N = 240

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Authors

Appendix 3.5: Supplementary tests of a U-shaped relationship between CEO experience variety and strategic change

	Strategic change
Sasabuchi-test of U-shape of CEO career variety (*p* -value)	0.02
Lower slope	-8.79 ***
Upper slope	7.10 *
Estimated turning point	0.90
95% confidence interval (Fieller method)	(0.73, 1.56)
Observed data range for CEO career variety	(0.00, 1.63)
CEO career variety[3]	-4.43 †

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

N = 115

Source: Authors

4 Appendices for fourth chapter: “Rethinking ‘the more the better’: CEO experience variety and CEO compensation”

Appendix 4.1: Probit model with CEO replacement as dependent variable (Heckman first-stage model)

Variables[a]		Dependent variable: Dummy for CEO replacement		
		β	S.E.	Operationalization
Predictors	Firm size	0.03	(0.02)	Natural logarithm of total sales
	Firm performance	-0.02 **	(0.00)	ROA
	Decline in market share	1.65	(1.49)	Change in market share
	CEO age	0.05 ***	(0.01)	Number of years
	CEO firm tenure	0.00	(0.00)	Number of years
	CEO-Chairman duality	0.04	(0.17)	Dummy
	Recent CEO succession	-0.39 **	(0.13)	Dummy
	Industry rate of CEO turnover	4.94 ***	(0.68)	Proportion
Statistics	Log likelihood	-763.23 ***		
	Pseudo R^2	0.10		

N = 2,160 † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

a Standard errors are indicated in brackets.

Country and year dummies are included, but not shown.

Source: Authors

Appendix 4.2: Regression results with CEO cash compensation as dependent variable (Heckman second-stage model)

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		10.12 *	(3.92)	10.06 *	(3.89)	9.40 *	(3.70)	9.62 *	(3.73)	9.19 *	(3.80)
Controls	CEO MBA		-0.05	(0.11)	-0.05	(0.11)	-0.03	(0.11)	-0.02	(0.11)	-0.02	(0.11)
	CEO age		0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
	CEO functional diversity		-0.17	(0.18)	-0.17	(0.18)	-0.19	(0.18)	-0.16	(0.17)	-0.20	(0.17)
	CEO outside succession origin		0.12	(0.09)	0.12	(0.09)	0.10	(0.09)	0.06	(0.09)	0.11	(0.09)
	CEO experience in same industry		0.08	(0.12)	0.08	(0.12)	0.09	(0.12)	0.08	(0.12)	0.07	(0.12)
	CEO gender		-0.46 *	(0.18)	-0.46 *	(0.18)	-0.47 *	(0.19)	-0.54 **	(0.21)	-0.47 *	(0.19)
	CEO-Chairman duality		-0.17	(0.27)	-0.17	(0.27)	-0.15	(0.27)	-0.15	(0.27)	-0.11	(0.26)
	Board independence		-0.97 **	(0.35)	-0.98 **	(0.35)	-1.00 **	(0.34)	-0.97 **	(0.34)	-1.06 **	(0.33)
	Institutional constraints		-0.07	(0.08)	-0.07	(0.08)	-0.06	(0.08)	-0.06	(0.07)	-0.07	(0.08)
	Predecessor CEO tenure		0.00	(0.01)	0.00	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)
	Firm size[b]		0.26 ***	(0.03)	0.26 ***	(0.03)	0.25 ***	(0.03)	0.25 ***	(0.03)	0.25 ***	(0.03)
	Firm internationalization		0.13	(0.15)	0.13	(0.15)	0.15	(0.15)	0.09	(0.15)	0.19	(0.15)
	Firm product diversification		-0.01	(0.09)	-0.01	(0.09)	-0.03	(0.09)	0.00	(0.09)	0.29 †	(0.17)
	Pre-succession firm performance		0.01 *	(0.01)	0.01 *	(0.01)	0.01 *	(0.01)	0.01 *	(0.01)	0.01 †	(0.01)
	Industry complexity		2.89	(4.07)	2.90	(4.09)	3.66	(3.89)	3.34	(3.94)	3.65	(3.97)
	Likelihood of CEO succession[c]		0.17	(0.14)	0.17	(0.14)	0.15	(0.13)	0.15	(0.14)	0.18	(0.13)
Main effect	CEO experience variety	*H1*			-0.01	(0.09)	0.60 *	(0.29)	3.85	(2.37)	1.50 *	(0.58)
	CEO experience variety^2						-0.44 *	(0.20)	-3.55 *	(1.55)	-0.90 *	(0.38)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-3.74	(2.75)		
	CEO experience variety^2 x Industry complexity								3.58 *	(1.79)		
	CEO experience variety x Firm product diversification	*H3*									-0.90	(0.55)
	CEO experience variety^2 x Firm product diversification										0.44	(0.37)
Statistics	F-test		7.34 ***		7.04 ***		6.65 ***		8.17 ***		6.74 ***	
	R^2		0.50		0.50		0.52		0.54		0.53	
	Change in R^2				0.00		0.02		0.02		0.01	
	Adjusted R^2		0.42		0.42		0.43		0.45		0.44	
	Change in adjusted R^2				0.00		0.01		0.02		0.01	

a N = 205. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

c Inversed Mill's ratio from first-stage Probit model

Source: Authors

Appendix 4.3: Regression results with CEO total compensation as dependent variable (Heckman second-stage model)

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		12.53 **	(3.59)	12.69 **	(3.62)	12.05 **	(3.57)	11.41 **	(3.57)	11.25 **	(3.58)
Controls	CEO MBA		0.03	(0.11)	0.03	(0.11)	0.04	(0.11)	0.04	(0.11)	0.04	(0.11)
	CEO age		0.02	(0.01)	0.02	(0.01)	0.02	(0.01)	0.02	(0.01)	0.01	(0.01)
	CEO functional diversity		-0.13	(0.20)	-0.13	(0.20)	-0.16	(0.20)	-0.13	(0.20)	-0.16	(0.18)
	CEO outside succession origin		0.09	(0.09)	0.08	(0.09)	0.06	(0.09)	0.04	(0.09)	0.07	(0.09)
	CEO experience in same industry		0.17	(0.13)	0.16	(0.14)	0.17	(0.13)	0.17	(0.14)	0.14	(0.13)
	CEO gender		0.04	(0.21)	0.04	(0.21)	0.03	(0.17)	-0.06	(0.17)	0.03	(0.18)
	CEO-Chairman duality		-0.24	(0.29)	-0.24	(0.30)	-0.22	(0.30)	-0.24	(0.29)	-0.17	(0.29)
	Board independence		-1.36 **	(0.41)	-1.35 **	(0.41)	-1.37 **	(0.40)	-1.36 **	(0.40)	-1.44 ***	(0.38)
	Institutional constraints		-0.12	(0.08)	-0.12	(0.08)	-0.11	(0.08)	-0.10	(0.08)	-0.13	(0.08)
	Predecessor CEO tenure		-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.02	(0.01)	-0.01	(0.01)
	Firm size[b]		0.30 ***	(0.03)	0.30 ***	(0.04)	0.30 ***	(0.04)	0.29 ***	(0.04)	0.29 ***	(0.03)
	Firm internationalization		0.41 *	(0.19)	0.41 *	(0.19)	0.42 *	(0.18)	0.40 *	(0.19)	0.48 **	(0.18)
	Firm product diversification		-0.01	(0.10)	-0.01	(0.10)	-0.02	(0.10)	-0.01	(0.10)	0.46 *	(0.21)
	Pre-succession firm performance		0.02 **	(0.01)	0.02 ***	(0.01)	0.02 **	(0.01)	0.02 **	(0.01)	0.02 **	(0.01)
	Industry complexity		0.50	(3.89)	0.43	(3.93)	1.17	(3.93)	1.87	(3.94)	1.51	(3.93)
	Likelihood of CEO succession[c]		0.09	(0.12)	0.10	(0.13)	0.09	(0.12)	0.08	(0.12)	0.12	(0.12)
Main effect	CEO experience variety	*H1*			0.07	(0.09)	0.67 *	(0.33)	4.57 *	(2.08)	1.83 **	(0.67)
	CEO experience variety^2						-0.43 *	(0.22)	-3.37 *	(1.30)	-0.95 *	(0.44)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-4.50 †	(2.46)		
	CEO experience variety^2 x Industry complexity								3.39 *	(1.52)		
	CEO experience variety x Firm product diversification	*H3*									-1.13 †	(0.63)
	CEO experience variety^2 x Firm product diversification										0.47	(0.41)
Statistics	F-test		10.99 ***		11.71 ***		10.96 ***		11.23 ***		10.22 ***	
	R^2		0.56		0.56		0.57		0.58		0.59	
	Change in R^2				0.00		0.01		0.01		0.02	
	Adjusted R^2		0.48		0.48		0.49		0.49		0.51	
	Change in adjusted R^2				0.00		0.01		0.00		0.02	

a N = 205. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown.

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

c Inversed Mill's ratio from first-stage Probit model

Source: Authors

Appendix 4.4: Descriptive statistics and correlation matrix for CEO long-term compensation analysis

Variables[a]	Mean	S.D.	*CEO long-term compensation* [b]	*CEO experience variety*	*CEO MBA*	*CEO age*	*CEO functional diversity*	*CEO outside succession origin*	*CEO experience in same industry*	*CEO gender*	*CEO-Chairman duality*	*Board independence*	*Institutional constraints*	*Predecessor CEO tenure*	*Firm size* [b]	*Firm internationalization*	*Firm product diversification*	*Pre-succession firm performance*
1 CEO long-term compensation[b]	12.66	1.80																
2 CEO experience variety	0.79	0.48	-0.12															
3 CEO MBA	0.22	0.41	0.01	0.00														
4 CEO age	49.91	4.96	0.20 **	-0.02	-0.18 *													
5 CEO functional diversity	0.52	0.23	-0.04	0.08	0.14	-0.05												
6 CEO outside succession origin	0.43	0.50	-0.04	0.14	0.09	0.04	0.21 **											
7 CEO experience in same industry	0.86	0.35	0.06	0.07	-0.01	0.00	0.07	-0.35 ***										
8 CEO gender	0.02	0.14	-0.01	0.00	0.10	-0.09	-0.02	-0.05	0.06									
9 CEO-Chairman duality	0.03	0.18	0.03	-0.04	-0.10	0.34 ***	-0.02	-0.03	-0.01	-0.03								
10 Board independence	0.85	0.14	-0.01	-0.02	-0.04	0.04	0.11	0.06	-0.11	-0.04	-0.05							
11 Institutional constraints	5.10	0.66	-0.03	-0.01	0.23 **	-0.06	-0.10	-0.04	0.09	0.10	-0.02	-0.52 ***						
12 Predecessor CEO tenure	7.98	5.09	-0.09	-0.06	-0.03	-0.03	0.05	-0.16 *	-0.02	0.04	-0.09	0.02	-0.04					
13 Firm size[b]	8.49	1.76	0.29 ***	-0.16 *	-0.01	0.13	-0.09	-0.26 ***	0.09	0.04	0.02	-0.10	-0.02	-0.05				
14 Firm internationalization	0.56	0.31	0.28 ***	-0.03	0.05	0.13	-0.08	-0.12	-0.01	-0.06	-0.07	0.10	-0.01	0.02	0.15 *			
15 Firm product diversification	0.93	0.53	0.11	-0.02	0.09	0.07	0.00	-0.07	0.05	0.05	-0.01	0.15 *	-0.12	0.01	0.33 ***	0.08		
16 Pre-succession firm performance	0.06	6.67	0.14	-0.14	0.10	-0.05	0.01	-0.11	0.05	0.04	-0.04	-0.07	0.12	0.07	-0.01	0.08	-0.08	
17 Industry complexity	0.87	0.11	0.11	0.11	0.05	-0.13	0.16 *	0.03	0.10	-0.08	-0.02	0.04	0.01	-0.03	-0.01	-0.09	-0.02	-0.01

a N = 189

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

Source: Authors

Appendix 4.5: Regression results with CEO long-term compensation as dependent variable

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		3.46	(11.89)	2.72	(11.89)	1.94	(12.26)	2.67	(12.56)	1.11	(12.37)
Controls	CEO MBA		-0.04	(0.49)	-0.03	(0.48)	-0.02	(0.47)	0.00	(0.49)	0.02	(0.44)
	CEO age		0.05 †	(0.03)	0.05 †	(0.03)	0.05 †	(0.03)	0.05 †	(0.03)	0.04	(0.03)
	CEO functional diversity		-0.15	(0.53)	-0.11	(0.53)	-0.15	(0.54)	-0.15	(0.55)	-0.15	(0.55)
	CEO outside succession origin		0.13	(0.24)	0.16	(0.25)	0.13	(0.24)	0.14	(0.26)	0.16	(0.24)
	CEO experience in same industry		0.16	(0.27)	0.21	(0.29)	0.23	(0.29)	0.22	(0.29)	0.21	(0.30)
	CEO gender		0.16	(0.29)	0.16	(0.27)	0.15	(0.27)	0.22	(0.33)	0.14	(0.26)
	CEO-Chairman duality		0.30	(0.54)	0.23	(0.58)	0.27	(0.55)	0.29	(0.56)	0.36	(0.56)
	Board independence		-0.35	(0.94)	-0.40	(0.97)	-0.40	(0.95)	-0.40	(0.96)	-0.57	(0.95)
	Institutional constraints		-0.21	(0.19)	-0.22	(0.19)	-0.20	(0.20)	-0.21	(0.20)	-0.22	(0.20)
	Predecessor CEO tenure		-0.03	(0.02)	-0.03	(0.02)	-0.03 †	(0.02)	-0.03 †	(0.02)	-0.03 †	(0.02)
	Firm size[b]		0.33 ***	(0.07)	0.31 ***	(0.08)	0.31 ***	(0.08)	0.31 ***	(0.08)	0.31 ***	(0.08)
	Firm internationalization		1.10 **	(0.41)	1.12 **	(0.41)	1.14 **	(0.41)	1.12 *	(0.43)	1.21 **	(0.41)
	Firm product diversification		0.03	(0.31)	0.04	(0.32)	0.02	(0.31)	0.02	(0.30)	0.65	(0.47)
	Pre-succession firm performance		0.05 *	(0.02)	0.04 *	(0.02)	0.04 *	(0.02)	0.04 *	(0.02)	0.04 *	(0.02)
	Industry complexity		6.74	(13.72)	7.91	(13.75)	8.62	(14.15)	7.75	(14.55)	9.55	(14.29)
Main effect	CEO experience variety	*H1*			-0.27	(0.30)	0.69	(0.80)	-2.10	(4.75)	2.56	(1.63)
	CEO experience variety^2						-0.69	(0.61)	0.92	(3.06)	-1.68	(1.14)
Moderating effects	CEO experience variety x Industry complexity	*H2*							3.21	(5.67)		
	CEO experience variety^2 x Industry complexity								-1.86	(3.79)		
	CEO experience variety x Firm product diversification	*H3*									-1.88	(1.32)
	CEO experience variety^2 x Firm product diversification										0.97	(0.84)
Statistics	F-test		7.02 ***		7.04 ***		6.51 ***		6.54 ***		6.14 ***	
	R^2		0.31		0.32		0.32		0.32		0.33	
	Change in R^2				0.01		0.00		0.00		0.01	
	Adjusted R^2		0.19		0.19		0.19		0.18		0.19	
	Change in adjusted R^2				0.00		0.00		-0.01		0.00	

a N = 189. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

Source: Authors

Appendix 4.6: Regression results with CEO long-term compensation as dependent variable (Heckman second-stage model)

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		3.76	(12.11)	2.84	(12.20)	1.91	(12.65)	2.62	(12.95)	1.20	(12.66)
Controls	CEO MBA		-0.04	(0.49)	-0.04	(0.48)	-0.02	(0.47)	0.00	(0.49)	0.02	(0.44)
	CEO age		0.05 †	(0.03)	0.05 †	(0.03)	0.05 †	(0.03)	0.05 †	(0.03)	0.04	(0.03)
	CEO functional diversity		-0.14	(0.53)	-0.11	(0.53)	-0.15	(0.54)	-0.15	(0.56)	-0.15	(0.55)
	CEO outside succession origin		0.13	(0.24)	0.16	(0.25)	0.13	(0.24)	0.14	(0.26)	0.16	(0.24)
	CEO experience in same industry		0.17	(0.27)	0.21	(0.28)	0.23	(0.28)	0.22	(0.29)	0.21	(0.30)
	CEO gender		0.17	(0.29)	0.17	(0.27)	0.15	(0.27)	0.22	(0.33)	0.14	(0.26)
	CEO-Chairman duality		0.30	(0.54)	0.23	(0.58)	0.27	(0.55)	0.29	(0.56)	0.36	(0.56)
	Board independence		-0.36	(0.94)	-0.40	(0.97)	-0.40	(0.95)	-0.40	(0.96)	-0.57	(0.94)
	Institutional constraints		-0.22	(0.19)	-0.22	(0.19)	-0.20	(0.20)	-0.21	(0.21)	-0.23	(0.20)
	Predecessor CEO tenure		-0.03	(0.02)	-0.03	(0.02)	-0.03 †	(0.02)	-0.03	(0.02)	-0.03	(0.02)
	Firm size[b]		0.33 ***	(0.07)	0.31 ***	(0.08)	0.31 ***	(0.08)	0.31 ***	(0.08)	0.31 ***	(0.08)
	Firm internationalization		1.13 **	(0.43)	1.13 **	(0.42)	1.14 **	(0.42)	1.12 *	(0.44)	1.22 **	(0.42)
	Firm product diversification		0.03	(0.31)	0.04	(0.32)	0.02	(0.31)	0.03	(0.30)	0.65	(0.47)
	Pre-succession firm performance		0.05 *	(0.02)	0.04 *	(0.02)	0.04 *	(0.02)	0.04 *	(0.02)	0.04 †	(0.02)
	Industry complexity		6.21	(14.14)	7.70	(14.32)	8.67	(14.86)	7.83	(15.27)	9.40	(14.85)
	Likelihood of CEO succession[c]		0.09	(0.29)	0.03	(0.31)	-0.01	(0.33)	-0.01	(0.33)	0.03	(0.33)
Main effect	CEO experience variety	*H1*			-0.27	(0.31)	0.69	(0.81)	-2.10	(4.77)	2.56	(1.63)
	CEO experience variety^2						-0.70	(0.63)	0.92	(3.07)	-1.68	(1.15)
Moderating effects	CEO experience variety x Industry complexity	*H2*							3.22	(5.70)		
	CEO experience variety^2 x Industry complexity								-1.86	(3.82)		
	CEO experience variety x Firm product diversification	*H3*									-1.89	(1.32)
	CEO experience variety^2 x Firm product diversification										0.97	(0.84)
Statistics	F-test		6.82 ***		6.81 ***		6.26 ***		6.31 ***		5.97 ***	
	R^2		0.31		0.32		0.32		0.32		0.33	
	Change in R^2				0.01		0.00		0.00		0.01	
	Adjusted R^2		0.19		0.19		0.19		0.18		0.19	
	Change in adjusted R^2				0.00		0.00		-0.01		0.00	

a N = 189. Standard errors are indicated in brackets. Year and industry dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

c Inversed Mill's ratio from first-stage Probit model

Source: Authors

Appendix 4.7: Variance inflation factor analysis

Variables	VIF	1 / VIF
Institutional constraints	1.51	0.66
Board independence	1.48	0.68
CEO outside succession origin	1.40	0.71
Firm size[a]	1.30	0.77
CEO age	1.29	0.78
CEO experience in same industry	1.24	0.81
CEO-Chairman duality	1.20	0.83
Firm product diversification	1.20	0.83
CEO MBA	1.20	0.84
CEO functional diversity	1.16	0.86
Firm internationalization	1.12	0.89
CEO experience variety	1.10	0.91
Industry complexity	1.09	0.91
Predecessor CEO tenure	1.08	0.93
Pre-succession firm performance	1.07	0.94
CEO gender	1.05	0.95
Mean VIF	1.22	

a Logarithm

Source: Authors

Appendix 4.8: CEO experience variety: Factor analysis, correlation analysis, and Cronbach's alpha

(a)	Factor analysis			
		Variables	Factor 1	Factor 2
	Factor loadings	Firm experience	0.834	0.009
		Industry experience	0.832	-0.014
		Functional experience	0.038	0.095
	Eigenvalues		1.388	0.009

(b)	Correlation analysis			
	Variables	Firm experience	Industry experience	Functional experience
	Firm experience	-		
	Industry experience	0.77 ***	-	
	Functional experience	0.05	0.01	-

(c)	Crombach's alpha			
	Combination 1	Combination 2	Combination 3	Combination 4
Variables	Firm experience		Firm experience	Firm experience
	Industry experience	Industry experience		Industry experience
		Functional experience	Functional experience	Functional experience
Number of items in the scale	2	2	2	3
Scale reliability coefficient	0.872	0.019	0.100	0.573

N = 240 † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Authors

Appendix 4.9: Supplementary tests of an inverted U-shaped relationship between CEO experience variety and CEO total compensation

	CEO total compensation
Sasabuchi-test of inverse U-shape of CEO career variety (*p* -value)	0.01
Lower slope	4.56 *
Upper slope	-6.45 **
Estimated turning point	0.67
95% confidence interval (Fieller method)	(0.24, 0.85)
Observed data range for CEO career variety	(0.00, 1.63)
CEO career variety[3] (*p* -value)	0.70

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

N = 205

Source: Authors

5 Appendices for fifth chapter: “Jack of all trades, master of none: CEO experience variety and firm performance”

Appendix 5.1: Probit model with CEO replacement as dependent variable (Heckman first-stage model)

Variables[a]		Dependent variable: Dummy for CEO replacement		
		β	S.E.	Operationalization
Predictors	Firm size	0.03	(0.02)	Natural logarithm of total sales
	Firm performance	-0.02 **	(0.00)	ROA
	Decline in market share	1.65	(1.49)	Change in market share
	CEO age	0.05 ***	(0.01)	Number of years
	CEO firm tenure	0.00	(0.00)	Number of years
	CEO-Chairman duality	0.04	(0.17)	Dummy
	Recent CEO succession	-0.39 **	(0.13)	Dummy
	Industry rate of CEO turnover	4.94 ***	(0.68)	Proportion
Statistics	Log likelihood	-763.23 ***		
	Pseudo R^2	0.10		

N = 2,160 † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

a Standard errors are indicated in brackets.

Country and year dummies are included, but not shown.

Source: Authors

Appendix 5.2: Regression results with firm performance as dependent variable (Heckman second-stage model)

Variables[a]		Hypotheses	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
			β	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.	*β*	S.E.
Intercept	Intercept		2.57	(6.81)	2.04	(7.05)	2.48	(6.89)	-6.95	(6.72)	0.64	(6.42)	-8.15	(5.89)
Controls	CEO MBA		-1.19	(0.80)	-1.16	(0.81)	-1.03	(0.80)	-1.33 †	(0.79)	-0.63	(0.83)	-0.88	(0.82)
	CEO career length		-0.04	(0.10)	-0.05	(0.10)	-0.04	(0.10)	-0.08	(0.10)	-0.04	(0.10)	-0.07	(0.10)
	CEO firm tenure		0.00	(0.04)	0.02	(0.04)	0.04	(0.05)	0.05	(0.05)	0.04	(0.05)	0.05	(0.04)
	CEO functional diversity		0.18	(1.51)	0.18	(1.51)	-0.07	(1.48)	0.09	(1.43)	0.05	(1.42)	0.24	(1.37)
	Predecessor CEO tenure		-0.12	(0.08)	-0.12	(0.08)	-0.15 †	(0.08)	-0.17 *	(0.08)	-0.15 †	(0.08)	-0.17 *	(0.08)
	Post-succession TMT turnover		-4.22 **	(1.24)	-4.30 **	(1.25)	-4.25 **	(1.28)	-4.29 **	(1.25)	-4.16 **	(1.22)	-4.21 **	(1.21)
	Firm size[b]		0.41 †	(0.24)	0.42 †	(0.25)	0.36	(0.24)	0.37	(0.25)	0.33	(0.24)	0.34	(0.24)
	Firm internationalization		0.50	(1.53)	0.48	(1.52)	0.68	(1.48)	0.86	(1.43)	1.07	(1.40)	1.18	(1.38)
	Firm product diversification		-0.70	(0.80)	-0.72	(0.79)	-0.77	(0.78)	-0.91	(0.76)	1.86	(1.48)	1.64	(1.23)
	Frequent CEO replacements		-1.51 *	(0.74)	-1.48 *	(0.74)	-1.40 †	(0.74)	-1.28 †	(0.74)	-1.27 †	(0.76)	-1.12	(0.76)
	Pre-succession firm performanceb		0.48 ***	(0.09)	0.48 ***	(0.09)	0.47 ***	(0.09)	0.48 ***	(0.09)	0.45 ***	(0.09)	0.46 ***	(0.09)
	Industry munificence		-1.70	(24.17)	-1.49	(24.15)	-4.63	(23.83)	-5.83	(23.87)	-7.90	(22.64)	-8.86	(22.60)
	Industry dynamism		-0.92	(12.00)	-0.39	(11.87)	-2.95	(11.95)	-2.54	(11.93)	-3.88	(11.41)	-3.38	(11.38)
	Industry complexity		-0.30	(5.15)	-0.42	(5.05)	-1.30	(4.90)	10.59 †	(6.38)	-2.35	(4.65)	8.69	(5.71)
	Likelihood of CEO succession[c]		0.80	(0.83)	0.79	(0.84)	0.83	(0.85)	0.90	(0.86)	0.63	(0.84)	0.72	(0.84)
Main effect	CEO experience variety	*H1*			0.51	(0.86)	6.34 *	(2.82)	48.83 **	(17.67)	18.52 **	(6.43)	62.14 ***	(16.64)
	CEO experience variety^2						-4.02 *	(1.81)	-28.24 *	(11.95)	-11.95 **	(4.19)	-38.53 **	(11.25)
Moderating effects	CEO experience variety x Industry complexity	*H2*							-48.93 *	(19.52)			-50.35 **	(17.04)
	CEO experience variety^2 x Industry complexity								27.97 *	(13.29)			30.65 **	(11.41)
	CEO experience variety x Firm product diversification	*H3*									-12.42 *	(4.90)	-12.32 **	(4.54)
	CEO experience variety^2 x Firm product diversification										8.06 *	(3.29)	8.11 *	(3.20)
Statistics	F-test		6.44 ***		6.18 ***		5.46 ***		5.30 ***		5.12 ***		5.13 ***	
	R^2		0.39		0.39		0.40		0.42		0.43		0.45	
	Change in R^2				0.00		0.01		0.02		0.01		0.02	
	Adjusted R^2		0.30		0.30		0.32		0.33		0.33		0.35	
	Change in adjusted R^2				0.00		0.01		0.01		0.00		0.01	

a N = 201. Standard errors are indicated in brackets. Country and year dummies are included, but not shown. † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

b Logarithm

c Inversed Mill's ratio from first-stage Probit model

Source: Authors

Appendix 5.3: Variance inflation factor analysis

Variables	VIF	1 / VIF
Industry munificence	3.23	0.31
Industry dynamism	2.18	0.46
Industry complexity	1.84	0.54
CEO firm tenure	1.62	0.62
CEO experience variety	1.47	0.68
Firm internationalization	1.45	0.69
Frequent CEO replacements	1.37	0.73
Firm size[a]	1.34	0.74
Predecessor CEO tenure	1.33	0.75
Firm product diversification	1.15	0.87
CEO career length	1.13	0.88
CEO MBA	1.12	0.89
Post-succession TMT turnover	1.12	0.90
CEO functional diversity	1.07	0.94
Pre-succession firm performance	1.07	0.94
Mean VIF	1.50	

a Logarithm

Source: Authors

Appendix 5.4: CEO experience variety: Factor analysis, correlation analysis, and Cronbach's alpha

(a)	Factor analysis			
		Variables	Factor 1	Factor 2
	Factor loadings	Firm experience	0.834	0.009
		Industry experience	0.832	-0.014
		Functional experience	0.038	0.095
	Eigenvalues		1.388	0.009

(b)	Correlation analysis			
	Variables	Firm experience	Industry experience	Functional experience
	Firm experience	-		
	Industry experience	0.77 ***	-	
	Functional experience	0.05	0.01	-

(c)	Crombach's alpha			
	Combination 1	Combination 2	Combination 3	Combination 4
Variables	Firm experience		Firm experience	Firm experience
	Industry experience	Industry experience		Industry experience
		Functional experience	Functional experience	Functional experience
Number of items in the scale	2	2	2	3
Scale reliability coefficient	0.872	0.019	0.100	0.573

N = 240 † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Authors

Appendix 5.5: Supplementary tests of an inverted U-shaped relationship between CEO experience variety and firm performance

	Firm performance
Sasabuchi-test of inverse U-shape of CEO career variety (*p* -value)	0.02
Lower slope	6.35*
Upper slope	-6.63*
Estimated turning point	0.80
95% confidence interval (Fieller method)	(0.49, 1.49)
Observed data range for CEO career variety	(0.00, 1.63)
CEO career variety^3 (*p* -value)	0.42

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

N = 201

Source: Authors

Curriculum vitae

Philipp E.M. Mueller

Date of birth:	June 7, 1985
Place of birth:	Basel (Switzerland)

WORK EXPERIENCE

Since 01/2017	Chief Executive Officer, Max Mueller AG, Allschwil (CH)
07/2012 – 12/2016	Consultant, Bain & Company, Zurich (CH)
08/2011 – 12/2011	Intern, Bayer Business Consulting, Leverkusen (DE)
05/2011 – 08/2011	Intern, Arthur D. Little, Munich (DE)
03/2009 – 07/2009	Intern, Simon-Kucher & Partners, Zurich (CH)
11/2006 – 03/2007	Intern, PricewaterhouseCoopers, Zurich and St. Gallen (CH)

EDUCATION

02/2015 – 12/2017	Ph.D. in Strategic Management, University of St. Gallen (CH)
09/2009 – 02/2011	M.A. HSG in Strategy and International Management, University of St. Gallen (CH) CEMS Master in International Management (CEMS MIM) Double degree with exchange semester at the Graduate School of Management of the St. Petersburg State University (RU)
10/2005 – 02/2009	B.A. HSG in Business Administration, University of St. Gallen (CH)

LANGUAGES

German (native), English (fluent), French (fluent), Italian (good), Spanish (basic)