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Top managers' career variety and time to the top

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The present paper brings novel insights to career literature, in particular to the field of top managers' careers: first, by relying on the boundaryless career approach, we investigate how those managers who reach the top differ in terms of career variety before being appointed to the board. Second, by combining the boundaryless career approach with human capital theory, we analyze the association between top managers' career variety and the time it takes them to reach a board level position. For our empirical study, we use a sample of top managers from German DAX-30 firms. Our results reveal four distinct clusters of top managers, indicating that, before reaching the management board, no uniform career path exists. We also demonstrate that more career variety does not shorten an individual's way up to upper echelons; rather, it extends the time it takes to ascend to the top.

KEYWORDS

Boundaryless career, career pattern, career variety, executive careers, time to the top, top managers

INTRODUCTION

Over the last decade, career variety has been increasingly discussed in management research (Chen et al., 2011; Crossland et al., 2014; Dries et al., 2012; Guan et al., 2016). The concept of career variety has received interest from academia, as scholars have observed that a growing number of employees have frequent changes and transitions in their career. Throughout their professional life, these employees work in a variety of industries, or for a variety of organizations, they have different functional responsibilities and work in several countries (Georgakakis et al., 2016; Karaevli & Hall, 2006). During their career, employees with such changes and transitions cross (multiple) boundaries.

In this paper, we focus on the careers of top managers. Managers' career variety has already been investigated as a predictor of individual-level outcomes, such as agility, adaptability or cognitive breadth (Dries et al., 2012; Guan et al., 2016). While agility, adaptability or cognitive breadth may be considered important characteristics of those managers who aspire to reach firms' upper echelons, they are not necessarily indicators of

objective career success. According to Spurk et al. (2019), objective career success is directly observable by others, and it is measurable in a standardized way – at least to some extent. Previous literature has argued that typical indicators for objective career success are salaries, promotion histories or job levels (Gunz & Heslin, 2005; Dries et al., 2009).

In our paper, we study the link between career variety and “time to the top”. Time to the top can be interpreted as one of the most important measures of objective career success—in particular for those individuals who strive to reach upper echelons (Hamori & Koyuncu, 2011; Koyuncu et al., 2017). A manager who reaches the C-suite quickly, can be considered successful, as the following quote by James Callander, managing director of the recruitment consultancy FreshMinds Talent, illustrates. “Overall, the candidates who reach board level successfully and at a young age are those men and women who have made a concerted and conscious effort to do so” (The Guardian, 2011). In her recent book *Crack the C-suite code: How successful leaders make it to the top*, Cassandra Frangos, a consultant at executive search firm Spencer Stuart, writes “People want to succeed at an earlier age” (Frangos, 2018, p. 4), thereby confirming that a

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fast ascent to the top is often an aspiration for C-suite candidates.

Nonetheless, to date, there is scant empirical evidence on career variety and its impact on time to the top. While existing studies already considered the links between the number of employers (Hamori & Kakarika, 2009), or the breadth of international work experience (Georgakakis et al., 2016; Hamori & Koyuncu, 2011; Schmid & Wurster, 2017) and top managers' career advancement, other dimensions of career variety, such as industry variety, have been neglected. This seems somewhat surprising, especially given the need to understand better careers of those who reach firms' top ranks and to explain how career variety influences the speed at which managers reach those top ranks (Blanco & Sastre Castillo, 2020; Koyuncu et al., 2017). In light of the important role that top managers and their careers have for firms, their strategies, success and failure (Gunz & Jalland, 1996; Liu et al., 2018; see, with a critical note, Fitza, 2014, 2017), more insights into the career paths of top managers who make it to the C-suite are highly warranted. Through our paper, we seek to address existing gaps in career literature and to answer the following two research questions:

Research question 1: What types of career variety can be identified for those managers who reach the top?

Research question 2: What association exists between career variety and top managers' time to the top?

For our first research question, we build on literature about the boundaryless career (Arthur & Rousseau, 1996). This allows us to illustrate that career variety comprises several dimensions, such as industry variety, employer variety, functional variety and country variety; it also helps us explore why career variety exists (Inkson et al., 2012; Kattenbach et al., 2014; Kornblum et al., 2018; Sullivan & Baruch, 2009). For our second research question, we link the boundaryless career approach with human capital theory. We theorize that higher career variety leads to higher human capital, since individuals acquire a broad range of knowledge and skills when employed in different settings (Converse et al., 2012). Hence, human capital theory is an approach which explains why career variety is beneficial for the individual by increasing one's knowledge and skill base.

We aim to respond to our research questions via an empirical study that draws on a sample of German DAX-30 firms. We analyze in detail the careers of 256 top managers – from the start of their career until the first appointment to a management board position. It is important to note that Germany has a two-tier corporate governance system, whereby management board members are similar to executive directors or inside directors in one-tier corporate governance systems (Thomsen & Conyon, 2012). Hence, we are interested in analyzing career variety before reaching a position on the management board, and the time it takes until being appointed

to the management board for the first time. While other studies restrict their definition of reaching the top to the CEO position only (Hamori & Koyuncu, 2011; Koch et al., 2017), we believe that being appointed to the management board, for instance as a CFO, CMO, CTO or COO or in any other role on the management board (Groysberg et al., 2011; Menz, 2012), demonstrates that an individual has made it to the top.

What is our analytical approach? To answer the first research question, we use agglomerative hierarchical cluster analysis, the results of which suggest a four-cluster solution as the best fit for our data. This demonstrates that those managers who reach the top are by no means a homogeneous flock. To answer the second research question, we conduct regression analysis, and the results reveal a positive association between career variety and time to the top. In other words, managers with high career variety need longer to reach the top.

We seek to contribute to research on top managers' career variety and their time to the top in several ways. First, our results contribute to the nascent stream of literature on top managers' *career variety* (Crossland et al., 2014). By applying literature about boundaryless careers, we demonstrate that there are different types of top managers with respect to career variety. While prior literature has often stressed that each country has one dominant career model for those aspiring to reach the top (Davoine & Ravasi, 2013), we demonstrate that there is considerable variety in the career paths of top managers in a particular country. We add to the current state of knowledge by showing that, for the way to the top, there is not one predefined career path. Instead, based on our cluster analyses, we find that different types of top managers co-exist, when it comes to career variety.

Second, we contribute to the literature on top managers' *time to the top*. Previous literature has investigated factors influencing career advancement to upper echelons, such as the number of prior employers, the breadth of international work experience or prior functional responsibilities (Georgakakis et al., 2016; Hamori & Kakarika, 2009; Koyuncu et al., 2010; Schmid & Wurster, 2017). However, to the best of our knowledge, a study taking into account every single dimension of career variety and examining the impact of overall career variety on the time it takes to be promoted to firms' top ranks is missing. We fill this gap and find that career variety slows down the time an individual needs to reach firms' top ranks. Consequently, more variety may indeed enlarge the stock of knowledge and skills and hence human capital, but it does not accelerate the ascent to the top. In essence, we contribute to recent discussions in management literature that depart from the view that human capital has only positive consequences and which consider mixed or detrimental outcomes that human capital can have (Li & Patel, 2019; Mueller et al., 2020).

Third, we extend the range of methodological approaches used in the field of top managers' careers.

With our hierarchical cluster analysis, we apply a person-centered approach to the field of top managers' career research. Thus, our study responds to recent calls for more *methodological pluralism* in the (top management) career field (Hofmans et al., 2020), thereby complementing well-established variable-centered approaches, such as regression analysis (Howard & Hoffman, 2017). With our approach, we contribute to knowledge about top managers, accentuating that individuals are not homogeneous in terms of both their career variety and their way to the C-suite.

Fourth, our research also carries *implications for managerial practice*. Prior research has highlighted career variety having positive effects, such as amplifying an individual's agility, adaptability, or cognitive breadth (Crossland et al., 2014). However, results of our study show that higher levels of career variety come at the expense of fast promotion to firms' top ranks. Thus, the arising implication of our research is that top managers-to-be are well advised to weigh up the various outcomes that career variety may have—at least those who see a fast ascent to the top as desirable. Furthermore, according to our data, firms (still) prefer to have many top managers on their board with moderate levels of career variety (and not with too high levels of career variety). Despite constant changes in their environment, firms apparently not only want to have top managers on their board whose high career variety allows them to be good in exploration activities, and hence display preferences for experimentation and novelty; firms also benefit from top managers on their boards who, given their career path, have shown capabilities in exploitation, and therefore stand instead for continuity and stability (see, on the balance between exploitation and exploration, Auh & Menguc, 2005; de Visser & Faems, 2015).

THEORY, LITERATURE AND RESEARCH QUESTIONS

The boundaryless career approach and career variety

The traditional understanding of a corporate career comprises "long-term employment with a single employer and movement through a sequence of increasingly challenging jobs within a hierarchy" (O'Mahony & Bechky, 2006, p. 918; see also, for instance, Sullivan, 1999). Over the last three decades, however, many careers have changed (Baruch & Vardi, 2016; Dickmann et al., 2018; Wang & Wanberg, 2017). In management literature, the boundaryless career approach has been introduced to offer a new perspective on these more contemporary careers (Arthur & Rousseau, 1996; see, with more critical notes, also Budtz-Jørgensen et al., 2019; Inkson et al., 2012; Pringle & Mallon, 2003).

Originally, the boundaryless career approach focused on career contexts in which individuals move across different employers (Sullivan & Baruch, 2009). Yet, over the years, research on boundaryless careers has not been restricted to movement across employers; it has also addressed movements across different industries (Karaevli & Hall, 2006), across different functions (Briscoe et al., 2006; Çakmak-Otluoğlu, 2012) and across different countries (Georgakakis et al., 2016). It has been stated that, by frequently crossing boundaries, individuals accumulate disproportionately high human capital. In other words: it has been said that they acquire knowledge and skills that act as critical 'resources' for their subsequent career development and, hence, also for their career success (Converse et al., 2012; Crowley-Henry et al., 2019). Altogether, research has come up with numerous beneficial outcomes a boundaryless career can have for the individual. These consequences, among others, are better responsiveness to uncertain environments, better self-management behavior, career satisfaction, better marketability or a higher salary (Arthur et al., 2005; Arthur & Rousseau, 1996; Baruch & Lavi-Steiner, 2015; Dries et al., 2008; Eby et al., 2003; Guan et al., 2019; Verbruggen & Sels, 2008; Wiernik & Kostal, 2019).

Relying on the core ideas of the boundaryless career approach, prior research has introduced the concept of career variety. Chen et al. (2011), Dries et al. (2012) and Karaevli and Hall (2006) conclude that individuals who move across different industries, employers, functions and countries have high career variety. An individual's work-related experiences throughout the career provide him or her with a broad scope of knowledge and skills (Cascio, 2005). Thus, literature on career variety has come up with several beneficial outcomes for the individual. High career variety may improve an individual's agility, his or her adaptability or his or her strategic competence (Dries et al., 2012; Guan et al., 2016; Zhu et al., 2013). Moreover, it has been shown that career variety fosters career advancement and is beneficial in ensuring higher levels of responsibility and higher salary growth (Chen et al., 2011).

While career variety of managers has been discussed in literature, little attention has been devoted to career variety of those managers who reach upper echelons (Crossland et al., 2014). Most existing studies focus on career variety of (middle-) managers. In other words: career variety, along with similar constructs and concepts such as career mobility, career complexity or career specialization, has received considerable attention in career literature in general (e.g., Andresen & Biemann, 2013; Baruch et al., 2016; Biemann et al., 2011; Lyons et al., 2015; Sicherman & Galor, 1990; or Zhu et al., 2013; for an overview, see, Feldman & Ng, 2007). However, top management literature has not thoroughly investigated the role that career variety plays. Hence, not much is known about how much career variety exists for

those managers who reach the C-level (see also, Vinkenburg & Weber, 2012). In this paper, we follow a call by Crossland et al. (2014), who stated that patterns of career variety should be investigated in more detail in upper echelons research. Hence, our first research question is:

Research question 1: What types of career variety can be identified for those managers who reach the top?

Career variety, human capital and time to the top

Time to the top has already garnered some interest in studies examining top managers' careers (Hamori & Kakarika, 2009; Koyuncu et al., 2017; Schmid & Wurster, 2017). Hamori and Kakarika (2009) reveal that the number of employers during an individual's career before reaching the CEO position is negatively associated with his or her career advancement. Blanco and Sastre Castillo (2020) confirm these findings; according to their study, a so-called lifetime experience, that is, having only one employer, accelerates the time it takes to reach the CEO position. Other studies concentrate on the number of countries: while Hamori and Koyuncu (2011) claim that breadth of international work experience and time to the top are negatively related, Georgakakis et al. (2016) and Schmid and Wurster (2017) present mixed results, with crossing country boundaries labeled a "double-edged sword." Analyzing migrant CEOs' way to the top, Legrand et al. (2019) identify meso- and macro-level factors such as missing language proficiency or missing understanding of the country's institutional context as barriers for migrant top managers' rapid way to the top. Prior research claims that the number of industries and functional responsibilities also matter when it comes to career advancement and to the entrance ticket to the boardroom. Crossland et al. (2014), for instance, state that moving across industries is beneficial for the upward progress of CEOs to-be. According to Koch et al. (2017), gaining experience in a moderate number of industries paves the way to the top. Chen et al. (2011) find that middle managers' numbers of functional responsibilities are positively related to their career advancement. In the same vein, Davoine and Ravasi (2013) argue that top management career models are characterized, among other things, by a considerable number of different functional responsibilities while climbing the ladder to the top.

Our brief literature review shows that previous research has already linked elements of career variety to career advancement. We state that all components of career variety matter, and we argue that individuals accumulate human capital when crossing borders in the work-related context. First, while working in different industries, individuals expand their knowledge and skills,

since they are exposed to various environments that differ in elements such as competitiveness, munificence and regulatory constraints (Chen et al., 2011; Crossland et al., 2014; Hofmann & Martin, 2017). Second, individuals working for several firms gain knowledge and skills about different organizations, their practices and their challenges, for instance from a market and customer perspective (Díaz-Fernández et al., 2019; Hamori et al., 2011; Pearce & Randel, 2004). Prior studies have already argued that the higher the number of social systems, that is, the number of industries and firms to which an individual has been exposed, the broader the range of knowledge and skills (Bidwell & Briscoe, 2010; Karaevli & Hall, 2006). Third, by covering different functions, individuals enhance their knowledge and skill base, since they adapt to the diverging requirements of various functional specializations, for example, by moving from operations to finance, or from R&D to marketing (Buyl et al., 2011; Sidhu et al., 2020). Previous research has also shown that individuals with a multi-functional background enhance their human capital. Having been exposed to various challenges and tasks broadens managers' knowledge and skills (Forrier et al., 2009). Fourth, by engaging in country variety, that is, by increasing the breadth of international work experience, individuals gain additional knowledge and skills about how to do business abroad (Carpenter et al., 2001; Herrmann & Datta, 2006). In a recent review on objective career success, Bagdadli and Gianecchini (2019) state that international assignments augment managers' human capital while facing dynamic and problematic circumstances in unknown contexts and institutional settings. Such human capital is particularly helpful for career advancement in firms operating across borders (Magnusson & Boggs, 2006). These firms usually value managers with broad insights and expertise in dealing with foreign business practices, cultures and norms (Nielsen, 2010; Oxelheim & Randøy, 2005).

Altogether, we conclude that career variety increases human capital. This human capital helps managers to respond effectively to the various tasks they need to fulfill throughout their way to the top. In addition, the acquisition of experiences from different industries, firms, functions and countries makes managers fast and adaptive learners who can utilize diverse knowledge and skills across a variety of conditions and contexts (Karaevli & Hall, 2006). In sum, this human capital allows managers to achieve noteworthy accomplishments during early and mid-career stages which in turn justify faster job promotion (Judge et al., 1995). Hence, we assume that career variety accelerates career advancement. This notion is underlined by a recent meta-analysis conducted by Spurk et al. (2019), which shows that the acquisition of human capital on the one hand, and career advancement on the other hand, are positively correlated. Hence, higher levels of human capital may speed up time to the top.

However, while human capital theory makes us assume that more career variety accelerates the ascent to the top, we know from previous studies that we reviewed above that this is not necessarily the case: for instance, employer variety as well as industry variety can be detrimental for social capital (Blanco & Sastre Castillo, 2020; Hamori & Kakarika, 2009). In addition, spending parts of the career in other countries increases country variety, but may isolate a potential C-suite candidate from power networks and the elite circles in the home country (Schmid & Wurster, 2017). Hence, for our study, we do not opt for a hypothesis with a unidirectional effect; instead, we opt for an open research question that takes into account the potential existence of effects in several directions. Thus, the second research question of this paper reads as follows:

Research question 2: What association exists between career variety and top managers' time to the top?

SAMPLE, VARIABLES AND METHODOLOGY

Sample

To answer our research questions, we use a sample that is based on top managers from German DAX-30 firms as of December 31, 2015. Opting for this sample was motivated by several reasons. First, DAX-30 firms are the 30 largest, publicly listed firms in Germany (mainly in terms of market capitalization). Despite being large firms, there is considerable variety in terms of activity, strategy, culture and history in these firms. Hence, there is good reason to assume some difference in terms of career variety for those who sit on the board of these firms. Second, because public firms (need to) publish extensive annual reports and since public firms are highly discussed by the media, there is a high chance of obtaining considerable relevant data on the respective top managers and on their careers (Oehmichen et al., 2017). Third, while career variety has already been studied through samples of top managers from countries such as the Netherlands, Switzerland, the UK and the US (Crossland et al., 2014; Georgakakis et al., 2016), career variety of top managers in Germany, despite being the largest European economy, has mostly been overlooked so far. Hence, with our study, we wish to provide novel empirical results stemming from a country that is understudied in upper echelons research.

We hand-collected data from a broad range of sources such as top managers' CVs in firms' annual reports, firms' websites and biographical databases, via the following process: in a first step, we screened firms' annual reports and websites to collect biographical information on the top managers in our sample. In a second step, if some data on the career was unavailable, we

referred to secondary sources such as biographical databases (BoardEx, Who's Who or Lexis Nexis). This approach allowed us to ensure high data quality as most information is provided by the firm itself.

Our initial sample size consisted of 432 top managers. Due to lacking data, we had to drop 176 cases, thereby leaving us with a final sample of 256 top managers.¹ The reason for the high number of eliminated cases is that we excluded each case as soon as any piece of biographical information was missing. Our final sample only contains top managers for whom we have complete data on their entire careers. We analyzed the careers of these 256 top managers in-depth from the beginning of their professional life, that is, after graduation, until the first appointment to a management board. As our sample consists of top managers from DAX-30 firms as of December 31 in 2015, not all top managers serving on the board in 2015, reached the first management board position in the same year. For instance, we have top managers in our sample who started their career in 1999 and who were appointed to the management board shortly before 2015, for example, in 2014. In such a case, we cover and analyze the entire career of the board member from 1999 to 2014. Yet, we also have top managers in our sample who started their career in 1982, and who, in 2015, had already served on the management board for many years because they reached a management board position long ago, for instance, in 2004. In this case, we consider the career of the board member from 1982 to 2004. While a sample size of 256 may appear low, it is well in line with sample sizes for similar analyses on top managers and their careers (Koch et al., 2017; Salvato et al., 2012). For our 256 top managers, we cover 5,040 career years (19.69 career years on average).

Main variables

Career variety

In our paper, career variety consists of four summands—the number of industries, the number of employers, the number of functions and the number of countries he or she has worked in. For every single top manager, we considered the time span between the start of his or her professional career until the first appointment to a management board. After identifying the number of industries, employers, functions and countries, we added up the four summands. All four elements have approximately the same mean (values ranging from 1.38 to 2.05; for more details, see the results section and Table 6). Hence, we opted for the sum of our four variety dimensions. We classified industries in line with the 10 categories of one-digit SIC codes. For functional responsibilities, we built on Cannella et al. (2008), who differentiated between eight different categories: (1) production/operations, (2) R&D/engineering, (3) accounting/

finance, (4) management/administration, (5) marketing/sales, (6) personnel/labor relations, (7) law and (8) other (see, for instance, also Georgakakis et al., 2018; Oehmichen et al., 2017; or Tuggle et al., 2010).

Time to the top

By using time to the top, we apply a construct that has previously been taken as a proxy for objective career success in upper echelons research (see, for instance, Georgakakis et al., 2016; Hamori & Kakarika, 2009; Hamori & Koyuncu, 2011; Schmid & Wurster, 2017). Time to the top is operationalized as follows: we counted the number of years of full-time work experience from the beginning of an individual's professional career until the first appointment to a management board. As we analyze top managers from Germany's largest listed firms (DAX-30), we only considered first management board appointments at firms with a minimum of €2 billion in revenues.² This helps us to achieve commensurability in the first management board position with respect to firm size.

Change pace

In order to add a relative dimension of career variety into our analysis, we computed another variable which we label change pace. Integrating a temporal lens helps us to examine not only career variety per se, but also how quickly career variety increases (Ancona et al., 2001). The variable change pace equals career variety divided by the time the respective top manager needed until his or her first appointment to a management board. The higher the score for this variable, the higher the career variety per year of the respective top manager.³

Additional variables

Next to our main variables, we also collected data on additional variables. First, we use these additional variables to characterize further the clusters of top managers in our cluster analysis (that we use to answer our first research question). Second, our additional variables serve as control variables in our regression models (that we run to answer our second research question), where we control for factors that may affect time to the top at the individual, firm and industry levels.

In our empirical analyses, we added age of the top manager in 2015 as an additional variable, since career patterns may have changed over the last decades (Davoine & Ravasi, 2013; Hamori & Koyuncu, 2011). Moreover, prior research revealed that women's time to the top differs from men's time to the top (Tharenou et al., 1994). It has been found out that women need

longer to reach the top (Korn Ferry, 2020). Thus, we included gender as a variable in our models. Prior studies have stressed that foreigners ascend to the C-suite later than home-country nationals (Greve et al., 2015). Therefore, in our analyses, we differentiated between German and non-German nationals. Moreover, we added a top manager's university background, as prior research has shown that an individual's field of study is a valid predictor of his or her career advancement (Miller et al., 2015). We differentiated between university degrees in business, law, engineering, natural sciences and other fields (Chahyadi & Abusalim, 2011). In addition, we considered that academic qualifications may be important for an individual's ascent to the top. First, in general, the MBA degree is often interpreted as a 'fast ticket to the top' (Datta & Iskandar-Datta, 2014; Houldsworth et al., 2019). Second, in German-speaking countries, the PhD (i.e., the 'Dokortitel') is widely seen not only as a signal for highly specific knowledge, but also as a career booster (Hartmann, 2009; Opitz, 2005; Schmid et al., 2017). Therefore, for our empirical analyses, we took into account MBA and PhD degrees. We also may reasonably assume that starting the career in a DAX-30 firm accelerates a top manager's time he or she needs to reach a management board position. Hence, we integrated a variable indicating whether or not the respective individual started his or her career in a DAX-30 firm (Delhvi & Süß, 2016). Finally, it has often been stated that prior work experience in a consulting/auditing firm impacts top managers' career advancement. Fulfilling the expectations of high-caliber consulting/auditing firms and benefiting from the prestige and the networks of these firms (such as McKinsey, the Boston Consulting Group or PWC), may 'boost' the career to the top (Cerruti et al., 2019; Gill, 2015). Therefore, we included a variable for having previously worked in a prestigious consulting/auditing firm.

At the firm and industry levels, we controlled for firm size by including the logarithm of total sales (Georgakakis et al., 2016; Hamori & Koyuncu, 2011) and we integrated industry categories based on firms' primary one-digit SIC codes (Hamori & Kakarika, 2009).

Analytical approach

To answer our first research question, we used agglomerative hierarchical cluster analysis (for a similar approach, see, for instance, Salvato et al., 2012) with Ward's linkage (Everitt et al., 2011). The four summands of our career variety construct, that is, the number of industries, the number of functions, the number of employers and the number of countries, served as the input for our cluster analysis. As this clustering method does not include a definition of the number of clusters prior to the analysis, we used the Calinski-Harabasz and Duda-Hart cluster

stop rules to determine their number (Calinski & Harabasz, 1974; Duda & Hart, 1973).

To answer our second research question, we applied ordinary least squares (OLS) regression analysis, with career variety as the independent and time to the top as the dependent variable. This approach is common in upper echelons research and has been used to investigate antecedents of top managers' career advancement (see, for instance, Georgakakis et al., 2016; Hamori & Koyuncu, 2011; Schmid & Wurster, 2017). In order to minimize specification bias, we entered all our control variables in a first step (model 1 of Table 3). Then, in a second step, we added the relevant predictor, i.e., career variety (model 2 of Table 3).

RESULTS

Results of the cluster analysis

With our cluster analysis, we arrive at a four-cluster solution as the best fit for our data. Table 1 shows the results of this cluster analysis. Cluster 1 ("Generalists") includes 100 out of the 256 top managers and is the cluster with the highest number of top managers. Top managers in this cluster have medium levels of career variety when it comes to industries and employers. Country variety is low to medium, while functional variety is low. Combining all dimensions of career variety, a mean of 6.43 can be observed. For our variable change pace, top managers in this cluster show a mean value of 0.38. Hence, in the case of Cluster 1, on average, top managers engage in 0.38 "units" of career variety per year.⁴ Expressed differently, every 2.6 years, on average, top managers in this cluster changed either the industry or the employer they worked in/for, or the functional responsibility they had or the country in which they worked in. Compared to other clusters, change pace is distinct at moderate levels. We label top managers in cluster 1 "Generalists," since they show some career variety in each of our four dimensions.

Cluster 2 (59 cases) comprises the top managers we call "Specialists". Each top manager in this cluster has worked in only one industry along his or her way to the top, and most of the top managers also worked for the same employer. On average, functional variety is medium, whereas country variety is low. Consequently, the mean of career variety in this cluster (4.54) is by far the lowest of our four clusters. Not surprisingly, the change pace of these top managers also is the lowest out of our four clusters, with a value of 0.26. Hence, a change of either employers or functions or countries only occurred approximately every four years. Many top managers in this second cluster have the typical chimney career, sometimes also labeled "mountain climber career" (Davoine & Ravasi, 2013). After graduating, they mostly joined well-established companies and made their way to

the top without any inter-industry (and in most cases without inter-firm) changes. While these managers may have worked in a foreign subsidiary or may have had different functional responsibilities in their respective firms, they are very loyal to their employer (and the employer was loyal to them).

With only 25 cases, Cluster 3 ("Jacks of all trades") is the smallest cluster in our sample. This cohort of top managers has accumulated very high levels of industry and employer variety, whereas functional variety only exists at comparatively low levels. During their ascent to the top, these managers have rarely worked abroad, that is, country variety is relatively low. In total, top managers in this cluster display high levels of career variety (the mean of 9.44 is the highest of our four clusters) at a considerable change pace, namely, 0.43 which is the second highest of our four clusters. Top managers in this cluster had a career change in one of the four dimensions (i.e., industry, employer, function or country) every 2.3 years on average. These top managers can be labeled as "Jacks of all trades". Equipped with diverse human capital, they made their way to the top by engaging in various inter-industry and inter-firm changes but have spent most of their career in one or two countries.

Out of our four clusters, Cluster 4 ("International jacks of all trades") is the second largest and comprises 72 individuals. The top managers in this cluster display medium levels of industry, employer and functional variety, but they have worked in a multitude of countries during their ascent to the top. In sum, prepared with notable country variety and some variety in terms of industry, employer and function, top managers from Cluster 4 may be called "International jacks of all trades". The means of career variety as well as of change pace in Cluster 4 (8.49 and 0.43 respectively) are quite similar to the means of career variety and change pace in Cluster 3.

We used a one-way analysis of variance (ANOVA) to test if, and to what extent, means of the variables describing career variety (i.e., industry variety, employer variety, functional variety, country variety, overall career variety and change pace) differ across clusters (see Appendix Table A1). Despite the slight skewness of the variables' distribution, we opted for an ANOVA, as Schmider et al. (2010) or Blanca et al. (2017) attest robustness to ANOVA's results when applying non-normally distributed data. Results show that for our four dimensions of career variety, for career variety as a multidimensional construct and for change pace, means are largely statistically different across the four clusters. One exception is functional variety. It is evident that, across clusters, our top managers do not appreciably differ when it comes to variety of functional responsibilities. It seems that functional variety is a typical prerequisite of most managers who reach the top, while there are distinct groups of individuals when it comes to industry, employer and country variety.

TABLE 1 Results of the cluster analysis

Summary statistics		Cluster 1 (n = 100)	Cluster 2 (n = 59)	Cluster 3 (n = 25)	Cluster 4 (n = 72)	Entire sample (n = 256)
Industry variety	Mean	1.5400	1	2.2800	1.4306	1.5156
	Standard deviation	0.5009	0	0.5260	0.6463	0.6972
	MIN	1	1	2	1	1
	MAX	2	1	4	3	4
Employer variety	Mean	2.3500	1.0678	3.8400	1.8194	2.0508
	Standard deviation	0.5752	0.2536	1.1060	1.0919	1.0853
	MIN	2	1	3	1	1
	MAX	4	2	8	6	8
Functional variety	Mean	1.8100	1.9492	1.8000	2.0972	1.9219
	Standard deviation	0.6308	0.7052	0.5000	0.7901	0.6929
	MIN	1	1	1	1	1
	MAX	3	3	3	4	4
Country variety	Mean	0.7300	0.5254	0.9200	3.1389	1.3789
	Standard deviation	0.7502	0.5036	0.6403	1.2254	1.4006
	MIN	0 ^a	0 ^a	0 ^a	2	0 ^a
	MAX	2	1	2	7	7
Career variety	Mean	6.4300	4.5424	9.4400	8.4861	6.8672
	Standard deviation	1.0372	0.8575	1.4742	2.3195	2.2365
	MIN	5	3	7	5	3
	MAX	9	6	14	15	15
Change pace	Mean	0.3803	0.2592	0.4311	0.4313	0.3717
	Standard deviation	0.1339	0.0795	0.1122	0.1575	0.1442
	MIN	0.2083	0.1250	0.2432	0.2069	0.1250
	MAX	0.8182	0.4545	0.7333	1	1
Verbal description		"Generalists" (Some variety in all four dimensions)	"Specialists" (Focus on one industry and – mostly – one employer, some variety in terms of functions and countries)	"National jacks of all trades" (High variety in terms of industry and employer variety, average variety for functions, however, mostly in one country)	"International jacks of all trades" (Some variety in all four dimensions, particularly high country variety)	

Note:

^aA score of 0 in terms of country variety indicates that the respective top manager has spent his or her entire career (i.e., from graduation until reaching the first management board position) in his or her country of origin.

Results of the regression analysis

Table 2 shows descriptive statistics and correlations. Since some correlations between our variables are significant, we computed variance inflation factors (VIFs). Results disclose that with a maximum VIF of 2.40 (mean VIF 1.44), we are well below the generally accepted cut off value of 10 (Cohen et al., 2003; Gujarati et al., 2017). This implies that multicollinearity is not an issue (Chatterjee et al., 2000).

Table 3 displays the results of the main regression analysis. Model 1 shows results with control variables only. With respect to our controls, we can confirm various associations regarding top managers' time to the top. Age is positively associated with time to the top ($p < 0.01$). Hence, we may conclude that the older generation of our top managers needs longer to reach firms' top ranks. Next, being a foreigner slows down an individual's ascent to the top ($p < 0.01$). This mirrors recent scholarly discussions noting that, in most countries ethnocentric tendencies may still be predominant at the board level; foreigners may have to expend a high level of effort over a long period before they finally get their ticket to the boardroom (Michailova et al., 2017). Moreover, not holding a university degree is highly positively associated with top managers' time to the top ($p < 0.01$). In other words: not having an academic degree does not prevent an individual from reaching a management position, but the individual without a university degree needs longer to get the ticket to the boardroom. Finally, we are able to show that the PhD degree accelerates top managers' way to the top. Holding a PhD degree statistically reduces the time individuals need to reach the management board ($p < 0.01$). This finding is fully in line with prior research stating that, in contrast to most countries in the world (see, for instance, Canolle & Vinot, 2020), in German-speaking countries, the PhD is not only relevant for an academic career, but also enhances an individual's career advancement in the corporate context (Hartmann, 2009; Opitz, 2005; Schmid et al., 2017).

Model 2 discloses a positive relationship between career variety and time to the top (0.81 at $p < 0.01$), indicating that the ascent to the top is decelerated by increasing career variety. While, according to human capital theory, we may expect that more career variety leads to more human capital and, therefore, should accelerate a manager's way to the top, our results show that top managers' career variety goes hand in hand with a longer period before the management board position is reached.

In addition, we regressed each of our four summands of career variety separately on time to the top. Table 4 reveals that each summand has a positive influence on time to the top. However, effect sizes differ considerably from 2.3 (industry variety) to 0.4 (country variety) with functional variety showing no significant influence on time to the top.

Robustness checks

While we tested the robustness of our cluster analyses via one-way ANOVA (see Appendix Table A1) and chi-squared tests (in case of dichotomous variables, see Appendix Table A3), we ran several additional models and applied another estimator to check the robustness of our regression analyses. First, we tested the robustness of our central construct, that is, career variety in two different ways. To ensure that our findings were not overly driven by just one of the summands of a top manager's career variety, we calculated standardized scores for each summand (mean of zero; standard deviation of one) and added them up to form our career variety construct (see, for instance, Woolridge, 2019). As the results show (see model 1 in Table 5), our key findings do not appreciably differ from those of the main analysis (model 2 in Table 3).

Second, the types of career variety might differ in terms of their frequency. In our sample, industry and country variety are less frequent than employer and functional variety (see Table 6 for descriptive data on career variety and the four dimensions). Therefore, in a second robustness check, both employer variety and functional variety (the two more frequent summands) were weighted with factor loadings (of an exploratory factor analysis [EFA] of our construct career variety) to take into account their disproportionately high frequency and hence to give the two summands lower weight. Then, we again added the two weighted summands⁵ and the two non-weighted summands up to form our construct career variety (for a similar approach, see, Crossland et al., 2014). Once more, the findings (see model 2 in Table 5) do not vary appreciably from those reported in our main analysis (model 2 in Table 3).

Third, since "time to the top" is counted in nature, that is, a positive integer, it is also possible to run a Poisson regression (Greene, 2020) next to an OLS model (as we did in our main analysis). Hence, we employed a Poisson regression technique to rerun our main regression model (for a similar approach, see, for instance, Georgakakis et al., 2016).⁶ Again, as evident in Table 7, results reveal largely the same findings compared to our main analysis (model 2 in Table 3).

Supplementary analyses

To derive further insights into career variety and time to the top, we also carried out some supplementary analyses. The first supplementary analysis relates to our clusters: we compared the means of our two main variables, that is, career variety and time to the top, for each of the four clusters: Cluster 1 displays a career variety mean of 6.43 and an average time to the top of 18.37 years, whereas in Cluster 2 the career variety mean amounts to 4.54 and the mean number of years to reach firms' top

TABLE 2 Means, standard deviations and correlations

		Mean	S.D.	1	2	3	4	5	6
1	Time to the top	19.688	5.677	1.00					
2	Career variety	6.867	2.236	0.32***	1.00				
3	Age	56.184	7.082	0.10	-0.13**	1.00			
4	Gender	0.113	0.318	0.07	0.08	-0.13**	1.00		
5	Nationality	0.234	0.424	0.27***	0.30***	-0.06	0.06	1.00	
6	Business degree	0.461	0.499	0.01	0.05	-0.09	-0.08	0.08	1.00
7	Engineering degree	0.191	0.394	-0.05	0.04	0.05	-0.11*	0.08	-0.08
8	Law degree	0.133	0.340	-0.13**	-0.05	0.08	0.15**	-0.08	-0.36***
9	Science degree	0.137	0.344	0.02	-0.04	0.05	0.04	0.02	-0.37***
10	Other field of study	0.043	0.203	0.05	-0.00	-0.09	0.17**	0.06	-0.20***
11	No academic degree	0.035	0.185	0.21***	-0.04	-0.00	-0.07	-0.01	-0.18***
12	MBA	0.129	0.336	0.13**	0.21***	-0.07	0.12*	0.31***	0.14**
13	PhD	0.422	0.495	-0.27***	-0.17**	0.32***	-0.06	-0.30***	-0.19***
14	Career start in DAX comp.	0.410	0.493	-0.04	-0.32***	0.02	-0.22***	-0.22***	-0.05
15	Consulting/auditing exp.	0.152	0.360	-0.08	0.18***	-0.09	-0.01	0.02	0.17***
16	Firm size	11.416	1.045	-0.03	-0.14**	0.13**	-0.02	0.06	-0.08

Note:

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

ranks is 18.80. With regard to Cluster 3, the mean of career variety is 9.44 and the average time to the top is 23.08 years. In Cluster 4, career variety's mean is distinct at 8.49 and the mean for time to the top is 21.07 years. In total, the association between the means of career variety and time to the top in our four clusters suggests that there may be a decrease in time to the top until a certain threshold of career variety, but beyond this point, time to the top may increase. To check whether such an assertion is valid, we move from the cluster level to the individual level to determine whether such a U-shaped relationship exists between a top manager's career variety and the time it takes for him or her to reach the top.

We apply the three-step procedure suggested by Haans et al. (2016) when testing for a U-shaped relationship: first, the squared term of top managers' career variety needs to be significant and positive, second, the turning point needs to be located within the range of the data, third, the slope must be significant and negative (positive) at the low (high) end of the data range. The results of the Haans et al. (2016) analysis do not confirm any of the three criteria. First, the squared term is not significant (0.02 at $p > 0.1$). Second, the turning point (-11.41) is not located within the range of our data (3–15). Third, the slopes are not significant at the low end (-0.15 at $p > 0.1$) nor at the high end (1.09 at $p > 0.1$) respectively. In sum, with our data, we have no indication of a U-shaped relationship between a top manager's career variety and his or her time to the top.

In our main cluster analysis (see section 4.1, Table 1), we investigated the career variety of top managers who

reached a management board position. However, it is often stated that the CEO and the CFO are the two most important decision-makers on a management board (Menz, 2012; Uhde et al., 2017). Hence, in a second supplementary analysis, we focused on CEOs and CFOs only, in order to find out whether similar clusters emerge as in the main analysis. We conducted another hierarchical agglomerative cluster analysis with Ward's linkage for a sub-sample with the 30 CEOs and 29 CFOs taken from our entire sample.⁷ Applying once again the two cluster stop rules, we arrived at a three-cluster solution as best fit for our data for this sub-sample (in contrast to the four-cluster solution which we have for the entire sample in our main analysis). Table 8 provides the results of this supplementary analysis, with our CEOs and CFOs only.

Cluster 1 ("National generalists") contains 21 individuals (10 CEOs and 11 CFOs). Top managers in this cluster display intermediate to high levels of industry, employer and functional variety, but low levels of country variety. In total, with a mean career variety of 8.29 and a mean change pace of 0.45, these top managers have accumulated considerable career variety at a fast pace during their ascent to the top.

Cluster 2 ("International generalists") is of similar size and includes 22 individuals, with 14 CEOs and eight CFOs. Contrary to the top managers in Cluster 1, individuals in Cluster 2 display relatively high levels of country variety, whereas the other three elements of career variety are reaching intermediate levels. With values of 8.23 and 0.45, average career variety and change pace are very close to the values of the top managers in Cluster 1.

TABLE 2 (Continued)

	7	8	9	10	11	12	13	14	15	16
1										
2										
3										
4										
5										
6										
7	1.00									
8	−0.19***	1.00								
9	−0.19***	−0.16**	1.00							
10	−0.10	−0.08	−0.08	1.00						
11	−0.09	−0.07	−0.08	−0.04	1.00					
12	−0.04	−0.05	−0.09	−0.02	−0.01	1.00				
13	0.03	0.23***	0.17**	−0.10	−0.16**	−0.23***	1.00			
14	0.08	0.00	−0.05	−0.06	0.14**	−0.15**	0.06	1.00		
15	−0.12*	−0.10	0.02	−0.04	−0.02	0.19***	0.01	−0.31***	1.00	
16	0.11*	0.04	0.04	−0.17***	−0.00	−0.02	0.06	0.12*	0.04	1.00

Note:

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Cluster 3 (“Specialists”) is the cluster with a slightly lower number of top managers ($n = 16$; 6 CEOs and 10 CFOs). This group of top managers has made its way to the top after working in one industry, mostly in one country and usually with few changes in employers and functions, with an overall career variety mean of only 4.75. Top managers in this cluster have accumulated considerably less career variety along their way to the top, compared to individuals in Clusters 1 and 2. In addition, they have reached their first management board position at a considerably lower change pace, namely, 0.30. It is noteworthy that not only 10 out of 29 CFOs, but also six out of 30 CEOs display such a career pattern.

We applied an ANOVA, to test if and to what extent the means of variables describing our CEOs/CFOs’ career variety differ across clusters (see Appendix Table A2). Once more, as in our ANOVA analysis for the full sample, apart from functional variety, the means for industry, employer and country variety as well as the means of career variety and change pace are largely statistically different across the three clusters. In addition, we checked whether there are significant differences in time to the top between the three clusters of our CEO/CFO subgroup. The results indicate no significant difference in time to the top between the three clusters ($p > 0.05$). At first sight, this result may implicate that for CEOs and CFOs (unlike for members of the management board in general; see section 4.2) career variety may not increase time to the top. To verify, we computed the correlation coefficient between career variety and time to the top for the CEO/CFO subgroup ($n = 59$); the correlation

coefficient amounts to 0.36. Hence, we can fairly assume that, for our subgroup of CEOs and CFOs, similar to the entire sample, a positive association between career variety and time to the top exists. A bivariate regression analysis for our subgroup confirms this relationship (0.88 at $p < 0.01$).⁸

DISCUSSION

Based on the boundaryless career approach, we first investigated whether different types of career variety exist for those managers who reach firms’ top ranks and, hence, have successfully made their way to the C-suite. Combining the boundaryless career approach, human capital theory and arguments from top management career literature, we then analyzed the association between different types of top managers’ career variety and time to the top. In contrast to other studies which focused on high potentials or (middle) managers’ career variety in the relatively early stages of their respective careers (see, for instance, Chen et al., 2011; Dries et al., 2012 or Wai & Rindermann, 2015), we cover the entire period from a top manager’s career start until his or her first appointment to a management board.

Discussion of results from the cluster analysis

Our cluster analysis demonstrates that there are considerable differences between top managers’ career paths,

TABLE 3 Results of the regression analysis

Variables	Model 1	Model 2
Age	0.157*** (0.0501)	0.174*** (0.0478)
Gender	1.293 (1.119)	1.329 (1.065)
Nationality	2.413*** (0.874)	1.450* (0.853)
Engineering degree	−0.112 (0.952)	−0.640 (0.913)
Law degree	−1.304 (1.100)	−1.526 (1.048)
Science degree	0.480 (1.052)	0.660 (1.002)
Other field of study	0.428 (1.705)	0.916 (1.625)
No academic degree	5.595*** (1.866)	5.733*** (1.776)
MBA	0.403 (1.090)	0.192 (1.038)
PhD	−2.316*** (0.798)	−2.123*** (0.761)
Career start in (former) DAX firm	−0.344 (0.770)	0.482 (0.751)
Consulting/auditing experience	−1.186 (1.021)	−1.804* (0.980)
Firm size	0.0252 (0.436)	0.287 (0.418)
Career variety		0.806*** (0.159)
Industry dummies included		
Constant	10.66* (5.726)	1.143 (5.766)
Observations	256	256
R-squared	0.218	0.295

Notes: Standard errors in parentheses.

***p < 0.01, **p < 0.05, *p < 0.1.

TABLE 4 Results of the regression analysis per summand

Summand	Coefficient	p-value
Industry variety	2.317	p < 0.01
Employer variety	1.478	p < 0.01
Functional variety	0.621	p > 0.1
Country variety	0.441	p < 0.1

resulting in distinct types of career variety. Cluster 1 comprises the “Generalists” on management boards. Out of the 100 top managers in this cluster, 86 (86%) are male

TABLE 5 Results of the robustness check (adjusted career variety)

Variables	Model 1	Model 2
Age	0.182*** (0.0479)	0.168*** (0.0479)
Gender	1.331 (1.063)	1.248 (1.068)
Nationality	1.691** (0.842)	1.300 (0.863)
Engineering degree	−0.644 (0.910)	−0.514 (0.912)
Law degree	−1.589 (1.046)	−1.340 (1.049)
Science degree	0.731 (1.000)	0.663 (1.004)
Other field of study	0.832 (1.621)	1.059 (1.631)
No academic degree	5.724*** (1.773)	5.743*** (1.780)
MBA	0.400 (1.035)	0.0808 (1.042)
PhD	−2.208*** (0.758)	−2.170*** (0.762)
Career start in (former) DAX firm	0.470 (0.748)	0.569 (0.757)
Consulting/auditing experience	−1.934** (0.981)	−1.918* (0.986)
Firm size	0.327 (0.418)	0.215 (0.418)
Career variety (standardized)	0.794*** (0.154)	
Career variety (weighted)		0.929*** (0.188)
Industry dummies included		
Constant	5.687 (5.523)	3.488 (5.652)
Observations	256	256
R-squared	0.298	0.291

Notes: Standard errors in parentheses.

***p < 0.01, **p < 0.05, *p < 0.1.

and 14 are female (14%). Almost two-thirds of top managers in Cluster 1 hold either a business degree or a law degree (62%), 47% of them have a PhD and 13% of them an MBA degree (for an overview of the variables' frequencies, see Appendix Table A2).⁹ As Cluster 1 is the largest group out of our four clusters, it appears that “Generalists” still account for a large proportion of top managers in the C-suite in Germany. This, in turn, may also imply that firms still value top managers with moderate levels of career variety (O'Mahony & Bechky, 2006; Sullivan, 1999).

TABLE 6 Descriptive data on career variety and its dimensions

Summand	Mean	Standard deviation	MIN	MAX
Industry variety	1.52	0.70	1	4
Employer variety	2.05	1.09	1	8
Functional variety	1.92	0.69	1	4
Country variety	1.38	1.40	0 ^a	7
Career variety	6.87	2.24	3	15

Note:

^aA score of 0 in terms of country variety indicates that the respective top manager has spent his or her entire career (i.e., from graduation until reaching the first management board position) in his or her country of origin.

TABLE 7 Results of the robustness check (Poisson regression)

Variables	
Age	0.00875*** (0.00234)
Gender	0.0645 (0.0510)
Nationality	0.0721* (0.0405)
Engineering degree	−0.0313 (0.0449)
Law degree	−0.0800 (0.0529)
Science degree	0.0356 (0.0489)
Other field of study	0.0453 (0.0775)
No academic degree	0.250*** (0.0785)
MBA	0.00725 (0.0495)
PhD	−0.111*** (0.0378)
Career start in (former) DAX firm	0.0236 (0.0370)
Consulting/auditing experience	−0.0984** (0.0486)
Firm size	0.0145 (0.0203)
Career variety	0.0386*** (0.00750)
Industry dummies included	
Constant	2.056*** (0.279)
Observations	256

Notes: Standard errors in parentheses.

***p < 0.01, **p < 0.05, *p < 0.1.

Cluster 2 contains the top managers labeled “Specialists”. Out of the 59 top managers in this cluster, 56 (95%) are male and three are female (5%). More than one-third of managers in this cluster hold an engineering degree or a science degree, and almost half of this cohort has a PhD, while only 3% obtained an MBA degree. The strong prevalence of engineering and science degrees in this cluster coincides with the lowest female quota (5%) out of our four clusters. During their career, managers in this cluster stick to one industry, and they usually cross boundaries of firms, functions and countries only rarely. “Specialists” account for 23% of the top managers in the entire sample. This group of top managers is similar to those who were labeled “highly experienced insiders” in a study by Biemann and Wolf (2009) on top managers in large German firms. In a similar vein, Blair-Loy (1999), in her study of female top managers’ careers, labeled top managers with such a profile “corporate climbers.” It should be noted, however, that, in our study, in contrast to Biemann and Wolf (2009) and Blair-Loy (1999) not all of the “Specialists” are having an entirely insider career.

The smallest out of our four clusters is Cluster 3, namely, the “Jacks of all trades”. Out of the 25 top managers in this cluster, 23 (92%) are male and 2 are female (8%). It is noteworthy to mention that, in this cluster, top managers’ average age amounts to 53.72 years, ranging from 44 to 69 years and making this cohort of top managers the “youngest” out of our four clusters. Individuals in this cluster have accumulated high levels of industry, employer and functional variety in a maximum of two countries. Top managers in this cluster exhibit some similarities to what Baruch and Reis (2016) label a “local boundaryless career”, although in our case, some top managers do exhibit some cross-border work experience. In combination with the lowest average age out of our four clusters, and with high levels of industry, employer and functional variety top managers in this cluster accentuate what has been stated in academic and practitioner-oriented literature—a growing importance of boundaryless careers over the last two to three decades. Throughout their way to the top, managers of Cluster 3 have demonstrated some adaptability, since they have worked in various industries, for different employers and in several functions.

Finally, Cluster 4 contains those top managers we label “International jacks of all trades”. These individuals display what McNulty and Vance (2017) call “global careers”. Those top managers also relate to “international boundaryless careers” or “global boundaryless careers” as described by Andresen and Biemann (2013) and Baruch and Reis (2016). Out of the 72 top managers in this cluster, 62 (86%) are male and 10 are female (14%). Top managers in this cluster have worked their way to the top with a considerable amount of inter-country changes while also engaging in inter-industry, inter-employer and inter-functional changes. Cluster 4 is the second largest

TABLE 8 Results of the supplementary analysis (cluster analysis for the subgroup of CEOs/CFOs)

Summary statistics		Cluster 1 (n = 21)	Cluster 2 (n = 22)	Cluster 3 (n = 16)	Entire subgroup (n = 59)	Entire sample (n = 256)
Industry variety	Mean	2.333	1.646	1	1.7112	1.5156
	Standard deviation	0.5774	0.5811	0	0.7204	0.6972
	MIN	1	1	1	1	1
	MAX	3	3	1	3	4
Employer variety	Mean	3.2381	2	1.2500	2.2373	2.0508
	Standard deviation	0.9952	0.8165	0.4472	1.1347	1.0853
	MIN	2	1	1	1	1
	MAX	5	5	2	5	8
Functional variety	Mean	2.1429	1.9091	1.9375	2.0000	1.9219
	Standard deviation	0.5732	0.7502	0.5737	0.6433	0.6929
	MIN	1	1	1	1	1
	MAX	3	4	3	4	4
Country variety	Mean	0.5714	2.6818	0.5625	1.3559	1.3789
	Standard deviation	0.6761	1.3934	0.5123	1.4113	1.4006
	MIN	0 ^a	1	0 ^a	0 ^a	0 ^a
	MAX	2	7	1	7	7
Career variety	Mean	8.2857	8.2273	4.7500	7.3051	6.8672
	Standard deviation	1.8205	2.1366	0.8563	2.3360	2.2365
	MIN	6	6	4	4	3
	MAX	11	15	6	15	15
Change pace	Mean	0.4540	0.4486	0.2969	0.4094	0.3717
	Standard deviation	0.1522	0.1299	0.0901	0.1449	0.1442
	MIN	0.3000	0.2222	0.1250	0.1250	0.1250
	MAX	0.8182	0.7895	0.4545	0.8182	1
Verbal description		"National generalists" (Some career variety in terms of industries, employers and functions, – mostly – in one country)	"International generalists" (Some career variety in all four dimensions)	"Specialists" (Focus on one industry and – mostly – one employer, some variety in terms of functions and countries)		

Note:

^aA score of 0 in terms of country variety indicates that the respective top manager has spent his or her entire career (i.e., from graduation until reaching the first management board position) in his or her country of origin.

cluster in our sample. This is a somewhat interesting finding, as the “traditional” German chimney or mountain climber careers (as described by Davoine & Ravasi, 2013), rather represented by top managers in Cluster 2 (at least in terms of functional and country variety), seem to be increasingly complemented by top managers of a different, more international or even global profile. The existence of Cluster 4 resonates with the results of Freye (2015), who attests top managers in larger German firms a shift from pure chimney careers towards more boundaryless careers—at least in terms of the number of prior employers.

When concentrating on the subgroup of CEOs and CFOs, the following can be observed: out of the 59 top managers in the CEO or the CFO role, 58 (98%) are male and only one is female (2%). Those top managers who, as of 2015, are CEO or CFOs, already accumulated career variety beyond “intermediate levels” when being appointed to a position in a management board for the first time. In other words: for those managers who one day become CEO or CFO, career variety up to the first appointment to a management position goes beyond “intermediate levels”. Hence, we can tentatively conclude that above-average career variety seems to be beneficial for those top managers who (aspire to) have the CEO or the CFO role. This can be explained via the argument that CEOs as well as CFOs have to cope with a higher variety of challenges compared to some board members with a more functional responsibility, such as the COO, the CTO or the CHRO. The results of our study are in line with findings of Cappelli et al. (2014) who attest CEOs a higher average number of jobs held during their way to the top than other top managers. Our results also resonate with findings from other studies that indicate CFOs to move beyond a pure functional role, that is, the finance/accounting role, and that consider the CFO to be the second most important executive in a firm, making CFOs prone to have a broad variety of experiences (Schmid & Altfeld, 2018; Tulimieri & Banai, 2010).

Our results also provide interesting insights into the change pace of our subgroup of CEOs and CFOs. It is interesting to see that (future) CEOs and CFOs not only show higher levels of career variety during their way to the top, but also do this at a higher change pace (compared to the values of change pace of the entire sample).¹⁰ This cohort of top managers opted for “additional variety” already before being appointed to a management board for the first time. On average, our CEO and CFO subgroup change either the industry, or their employer, or their function or the country they work every 2.4 years. Once more, these findings can be linked to Cappelli et al. (2014) who reveal that CEOs as well as Board Chairs, in their study labeled “top tiers,” change their jobs more frequently compared to the other cohorts of top managers. Hence, we can tentatively conclude that not only higher career variety, but also higher change pace are particularly evident for (future) CEOs and CFOs.

Discussion of results from the regression analysis

Existing literature on careers in general has already investigated predictors of managerial advancement or career progress (for an overview, see, Arthur et al., 2005). Herein, we provide novel insights, as we investigate in how far career variety may have an effect on the duration of a top manager’s ascent to the top. Our analyses reveal that managers from different clusters, that is, with different career variety, reach top management at different speeds. Human capital theory assumes that accumulating more capital in terms of knowledge and skills has positive consequences (Mueller et al., 2020). If we agree that a shorter time to the top is considered a positive consequence, we should expect individuals with more career variety having more human capital and hence also arrive earlier in the C-suite. However, we find empirical evidence that top managers with higher levels of career variety need more time until their first appointment to the management board.

When analyzing effect sizes of our regression analysis, we find that each additional unit of career variety decelerates time to the top by 0.8 years (approximately 9 months). As the average number of years to the top in our sample amounts to 19.7 years, this can be interpreted as a moderate effect size. However, when regressing each summand separately on time to the top, results show that industry and employer variety (with coefficients of 2.3 and 1.5 respectively) have a greater impact on time to the top compared to functional and country variety (coefficients being 0.6 and 0.4, respectively, with functional variety showing no statistical significance). Consequently, we can conclude that industry and employer variety slow down time to the top more than functional and country variety do. One explanation is that each inter-industry change requires a considerable amount of time for the individual top manager to familiarize with the specificities of a new industry, for example, with industry structure or industry specific know-how. Similarly, inter-employer changes may engender the need to adapt to firm-specific processes and routines and to build up relevant firm-specific social capital which may be relevant in order to make it to the top. By contrast, functional variety and country variety not only seem to be transferable “universally”, but also can take place within one firm. Hence, this can explain why functional variety and country variety have a less negative influence on time to the top compared to the other two dimensions of career variety.

In terms of functional variety, findings from our regression analysis can be related to the results from our cluster analysis. The respective means of functional variety do not differ significantly across the four clusters. Hence, on the one hand, it appears that our top managers display more or less the same degree of functional variety. On the other hand this functional variety does not significantly influence the time it takes to reach the top. It seems that intermediate levels of functional variety are expected

in order to make it to the top, and hence this type of variety is perceived rather as a standard requisite than a specific asset in terms of top managers' human capital.

CONTRIBUTIONS

More than 20 years ago, Hurley et al. (1997, p. 65) asked the question: "Who makes it to the top of an organization?" In our study, we focus on the career variety of those individuals who are appointed to the management board of large firms and we relate career variety to the time needed to reach the top. Altogether, our study makes various contributions.

First, one implication of our cluster analysis is a "demystification" of national top management career models. Previously, it has been suggested that in each country there is still a typical or dominant career model for (nearly) all top managers (Davoine & Ravasi, 2013). While, in Germany, the chimney or mountain climber model may have been very dominant after the Second World War and up to the 1990s, nowadays, other career models co-exist in parallel. Thus, our findings resonate with Bühlmann et al. (2018) and Klarsfeld and Mabey (2004), who stressed that we should overcome the belief that each country has only one dominant national (top management) career model. We can also link our results from the cluster analyses to the idea of scripts, that is, "behaviors or event sequences that are appropriate for specific situations" (Gioia & Poole, 1984, p. 449). Career scripts refer to the behaviors or sequences during our top managers' career course from the start of the career until the moment they reach firms' upper echelons for the first time (Duberley et al., 2006). Valette and Culié (2015, p. 1748) state: "When applied to careers, a script is an individual's answer to the question: in a given context, what are my possible and desirable career paths?" Scripts can be interpreted as mediating between the constraints and expectations of institutions on the one hand and individual action on the other hand (Barley, 1989; Barley & Tolbert, 1997; Duberley et al., 2006; Laudel et al., 2019). Thus, in the institutional context of our study, namely, Germany and its DAX-30 firms, four clusters seem to co-exist when it comes to career scripts for those managers who (want to) reach the top. Career scripts that are encoded by the socio-institutional field of Germany's DAX companies offer managers who aspire to be part of the management board interpretative schemes to fashion their career in different ways (Cappellen & Janssens, 2010). If we move beyond the German context and encompass the global level, we can expect that there is a multitude of co-existing scripts, offering many options for today's managers and their possible and desirable career paths towards the C-suite (Dickmann & Baruch, 2011; McKouen et al., 2019).

Second, we contribute to the stream of literature that investigates top managers' time to the top as an objective

measure for career success. We claim that time to the top is not necessarily equal to reaching the CEO position, but it is equal to reaching a management board position. With this approach, we extend previous studies focusing on the time it takes to become CEO (e.g., Blanco & Sastre Castillo, 2020; Georgakakis et al., 2016; Hamori & Kakarika, 2009; Rovelli & Curnis, 2020; Salvato et al., 2012). By considering the number of industries, employers, functions and countries, we offer a comprehensive perspective on career variety as a predictor of the time it takes to reach the top. Combining the boundary-less career approach, human capital theory and literature on top management careers, our study conceptualizes the relationship between a top manager's career variety and his or her time to the top. While Feldman and Ng (2007) and Spurk et al. (2019) have shown that more human capital is positively related to career advancement for managers, the results of our study do not support these propositions namely, that engaging in more career variety is related to a faster ascent to firms' upper echelons. By contrast, our empirical findings reveal a positive relationship between career variety and time to the top—at least for the German corporate landscape. Hence, we add to the literature investigating outcomes of top managers' human capital at the individual level in a more nuanced way (Li & Patel, 2019; Mueller et al., 2020).

Our third contribution is of a methodological nature. While most past research had a preference for regressing different outcome variables on career variety, it has been stressed recently that understanding career variety as such is of utmost importance (Crossland et al., 2014). One way to understand career variety better is by using explorative approaches. Through our hierarchical cluster analysis, we use a person-centered approach in the field of top managers' career research. Such an approach is appropriate for investigating research questions aimed at categorizing subjects into different subgroups (Howard & Hoffman, 2017). Hence, our study responds to recent calls for more methodological pluralism in the (top management) career field (Hofmans et al., 2020), thereby complementing variable-centered approaches, such as regression analysis. Clearly, past research had a tendency to insufficiently acknowledge the value that explorative research has in career research, and so there is almost no descriptive data on top managers and their careers available (for notable exceptions, see, for instance Koch et al., 2017 or Salvato et al., 2012). However, it is only on the basis of profound knowledge on the types of careers that may exist, that top management research can also link career variety to various outcomes.

Finally, we conclude this section with a practical contribution. Career variety has previously been shown to be beneficial for individuals, e.g., in terms of agility, adaptability or strategic competence (Dries et al., 2012; Guan et al., 2016). However, results of our study show that higher levels of career variety come at the expense of promotion velocity to firms' top ranks for the individual.

While we do not claim the faster the better, engaging in somewhat intermediate levels of career variety appears to be beneficial for the individual as it may ensure the continuous development of human capital in terms of knowledge and skills as well as reaching some form of diversity in terms of role-related experiences (Chen et al., 2011; Karaevli & Hall, 2006). Taken together, and based on the results of our study, one tentative implication for top managers to-be might be the following: individuals should focus on one industry and rather engage in inter-functional and inter-country changes in order to balance the positive outcomes of career variety and an ascent to the top within a reasonable timeframe.

LIMITATIONS AND FURTHER RESEARCH

Our study is not without limitations, albeit these may serve as promising avenues for further research. First, while we have a very comprehensive understanding of career variety, which goes beyond most existing studies, we concentrated on the breadth of variety. Further research may refine the construct of career variety. One idea would be to not only count the number of career spells, but also to include the length of each job spell in a measure of career variety, since a top manager to-be needs to cognitively process the acquired knowledge and skills (see, for instance, Brymer et al., 2011; Koch et al., 2017 or Zhu et al., 2013). A second development could lead to an even more explicit analysis of the sequences of career changes. This includes studying career trajectories, by considering the sequence of changes with regards to industries, employers, functions and countries. A third extension could encourage researchers to investigate the density of variety and analyze whether there are many or just a few changes over a particular period of time, for instance during the first ten years of a career or the last ten years before the appointment to a board. We partially include these ideas by computing and interpreting what we label change pace, that is, career variety per year during an individual's ascent to the top. However, future research could take into account the exact length of each career spell, the sequence of these career spells and the question when most variety takes place (i.e., in early or later stages of a career). Finally, differentiating between single changes (such as an inter-employer change within the same industry), simultaneous changes (such as inter-industry and inter-employer changes) or the type of changes (e.g., with regards to functional changes, from a primary activity to a support activity or vice versa), could reveal further insights about top managers' career variety. Considering these refinements in our career variety construct may also lead to other research methods, such as optimal matching analysis (Biemann et al., 2020; Vinkenburg & Weber, 2012), which could complement the results of our cluster analysis.

Second, on a general level, we are aware that boundaryless careers and career variety may be very different with regard to successful managers who aspire to reach the C-suite compared to other individuals. Examples of other groups of individuals comprise workers in government service (Ferguson & Hasan, 2013) or professionals in industries such as film production, software development or fine arts where short-term projects prevail over established corporate structures (Dubois & François, 2020; Inkson, 2008). In the particular setting of managers reaching the C-level, it would be interesting to see, in how far some variety and hence some changes during an individual's time to the top were forced, that is, firm-initiated, or at least not undertaken completely voluntarily (Ng et al., 2007). Involuntary changes may add to career variety, but may come at the expense of the individual's satisfaction or fulfillment. While we linked career variety to time to the top as an objective career success measure, further research could shed light on the link between career variety and subjective career success measures, for example, fulfillment or satisfaction. Of course, such analyses would also require alternative research designs, such as surveys or interviews (see, for instance, Kelly & Gennard, 2000). With such research designs, it would be better possible to also determine in how far the "individual is the agent of his or her own career" (Inkson et al., 2012, p. 327). In addition, the focus on time to the top as an objective career success measure neglects the fact that once a top manager is appointed, that is, once he or she has made it to the top, other objective career success measures such as tenure on the board, compensation or power status become relevant. We do not state that the effect of career variety on time to the top is similar to the effect of career variety on other measures of objective career success. Further research could take into account the link between career variety and additional objective career success measures which interpret career success not only as "climbing the ladder" but also staying successfully in the C-suite (Schmid & Mitterreiter, 2021).

Third, when analyzing top managers who reached the management board in large firms, we identified clusters across all firms. However, we did not take a firm-level perspective. It would therefore be interesting to investigate in how far each firm has different types of top managers sitting on their board, since each firm may have different requirements in terms of, for instance, its culture, strategy and structure and the industry the firm operates (Datta et al., 2002; Gupta, 1986; Roth, 1995). Likewise, it would be fruitful to find out in how far top managers on the board of one firm may complement each other (or not) when it comes to career variety. In other words: while we identified some heterogeneity among all management board members in terms of their career variety prior to their first management board appointment, we did not study heterogeneity within each of the firms' management board. We partially started to investigate heterogeneity in our sub-sample analysis, in which we

focused on CEOs and CFOs, but we did not relate CEOs and CFOs to their peers on the same management board. Hence, disentangling heterogeneity of career variety (and also time to the top) on corporate boards and the consequences at the firm level, for example, performance, may be a worthwhile endeavor for future studies. This could contribute to a better understanding of heterogeneity and diversity on the board (see Baker et al., 2020 or Boerner et al., 2011), thereby moving beyond established dimensions, such as age, gender or nationality. Studying heterogeneity and diversity of managers with different degrees of career variety may also be coupled with the question whether such heterogeneity and diversity on the board allow firms to reach a good balance in terms of exploitation and exploration of knowledge and to respond to challenges of ambidexterity (Oehmichen et al., 2017; Sidhu et al., 2020). While top managers with lower career variety may have advantages in terms of exploitation, their peers on the board with higher career variety can have advantages in exploration (Crossland et al., 2014).¹¹

Finally, we call for studies in other institutional and cultural contexts. It would be highly interesting to analyze career variety and time to the top in other European countries, for instance, France, Italy or the UK, and to compare results from such studies to results from studies about top managers in other parts of the world, for example, America or Asia. Further research of this kind could also help us identify whether there is a general decline in previously existing national career models for top managers and whether there is evidence for career models to emerge that exist independently of the country of origin of a manager or independently of the home country of the firm (Davoine & Ravasi, 2013).

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ENDNOTES

¹We conducted a t-test in order to compare the initial sample of 432 top managers with the 256 top managers in our final sample. We used the variable age to compute the respective means (age was a variable available for all 432 top managers). The mean age of the initial sample's 432 top managers amounts to 57.75 years, which is approx. 1.6 years higher compared to the mean age of the 256 top managers in the final sample (56.18 years). The results show a significant difference between the mean of the 432 top managers (57.75 years) and our final

sample's mean of 256 top managers (56.18 years; $p < 0.01$). We admit that there might be a slight bias in terms of age, which may also entail a slight bias in terms of career variety and time to the top (since those top managers who were excluded may have a slightly different career path).

²We considered the size of the firm in fiscal year 2015.

³While we differentiate between "career variety" on the one hand and "change pace" on the other hand, Crossland et al. (2014) operationalize "career variety" in the way we operationalize "change pace".

⁴Across all clusters, values range from 0.13 (minimum value) to 1 (maximum value).

⁵Employer variety was weighted with a factor of 0.76 and country variety was weighted with a factor of 0.19.

⁶Due to the over-dispersed distribution of our dependent variable time to the top (the variance exceeds the mean), we estimated a negative binomial regression, which can be considered a generalization of a Poisson regression, since it has the same mean structure as a Poisson regression and an extra parameter to model the over-dispersion (Wooldridge, 2019).

⁷We have 30 CEOs in our sample as Deutsche Bank opted for a dual-CEO solution at that time.

⁸We refrain from running and reporting a multivariate regression analysis (taking into account all our control and explanatory variables) for our CEO/CFO subgroup as we would considerably exceed respectively undercut Darlington's (1990) and Harris's (2001) rules of thumb regarding the maximum number of explanatory and control variables for small sample sizes.

⁹As stated above, we also conducted chi-squared tests to verify if our additional variables' means statistically differ across the four clusters. We used chi-squared tests, because all of our additional variables are dichotomous (for a similar approach, see, for instance, Andresen & Biemann, 2013). Results from these chi-squared tests are displayed in Appendix Table A3.

¹⁰A mean comparison and the corresponding t-test confirm that the difference between the subgroup's ($n = 59$) mean (0.41) and the remaining sample's ($n = 256 - 59 = 197$) mean (0.36) is significant ($p < 0.05$).

¹¹This idea was one of many constructive hints brought to our attention by the reviewers of this paper.

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APPENDIX

TABLE A1 ANOVA results (variables describing clusters in Table 1)

		Sum of squares	Df	Mean square	F	Significance ^a	Pairwise comparison ($p < 0.05$) ^b
Industry variety	Between groups	62.805	3	20.935	86.30	0.0000***	1 2 ^c , 1 3, 2 3, 2 4, 3 4
	Within groups	61.133	252	0.243			
	Total	123.938	255	0.486			
Employer variety	Between groups	149.848	3	49.949	83.64	0.0000***	1 2, 1 3, 1 4, 2 3, 2 4, 3 4
	Within groups	150.492	252	0.597			
	Total	300.340	255	1.178			
Functional variety	Between groups	3.881	3	1.294	2.75	0.0434*	1 4
	Within groups	118.557	252	0.470			
	Total	122.438	255	0.480			
Country variety	Between groups	313.373	3	104.458	140.86	0.0000***	1 4, 2 4, 3 4
	Within groups	186.873	252	0.742			
	Total	500.246	255	1.962			
Career variety	Between groups	692.184	3	230.728	99.68	0.0000***	1 2, 1 3, 1 4, 2 3, 2 4, 3 4
	Within groups	583.300	252	2.315			
	Total	1275.484	255	5.002			
Change pace	Between groups	1.098	3	0.366	21.93	0.0000***	1 2, 2 3, 2 4
	Within groups	4.206	252	0.017			
	Total	5.304	255	0.021			

Notes:

^aNull hypothesis: cluster means are equal.^bWith Bonferroni correction.^cFor instance, '1 2' means that there are significant differences between the means for Cluster 1 and Cluster 2 ($p < 0.05$).*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

TABLE A2 ANOVA results (variables describing clusters in Table 8)

		Sum of squares	Df	Mean square	F	Significance ^a	Pairwise comparison ($p < 0.05$) ^b
Industry variety	Between groups	16.344	2	8.172	33.26	0.0000***	1 2 ^c , 1 3, 2 3
	Within groups	13.758	56	0.246			
	Total	30.102	58	0.519			
Employer variety	Between groups	37.868	2	18.934	28.81	0.0000***	1 2, 1 3, 2 3
	Within groups	36.810	56	0.657			
	Total	74.678	58	1.288			
Functional variety	Between groups	0.673	2	0.336	0.81	0.4510	
	Within groups	23.327	56	0.417			
	Total	24.000	58	0.414			
Country variety	Between groups	61.672	2	30.836	32.07	0.0000***	1 2, 2 3
	Within groups	53.853	56	0.962			
	Total	115.525	58	1.992			
Career variety	Between groups	143.359	2	71.680	23.18	0.0000***	1 3, 2 3
	Within groups	173.149	56	3.092			
	Total	316.508	58	5.457			
Change pace	Between groups	0.278	2	0.139	8.29	0.0007***	1 3, 2 3
	Within groups	0.940	56	0.017			
	Total	1.218	58	0.021			

Notes:

^aNull hypothesis: cluster means are equal.^bWith Bonferroni correction.^cFor instance, '1 2' means that there are significant differences between the means for Cluster 1 and Cluster 2 ($p < 0.05$).*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

TABLE A3 Chi-squared tests (key individual-level variables)

Variable	χ^2 ^a
Gender	3.75
Nationality	22.16***
Business degree	5.47
Engineering degree	1.68
Law degree	3.37
Science degree	0.81
Other field of study	1.33
No academic degree	4.38
MBA	10.19*
PhD	7.16
Career start in (former) DAX firm	60.00***
Consulting/auditing experience	15.49*

Notes:

^aNull hypothesis: cluster means are equal.

***p < 0.001, **p < 0.01, *p < 0.05.

TABLE A4 Descriptive data on key individual-level variables (frequencies)

Demographics		
Variable	Number of top managers (total sample <i>n</i> = 256)	Percentage of total sample
Gender (female)	29	11%
Gender (male)	227	89%
Nationality (German)	196	77%
Nationality (foreign)	60	23%
Education		
Variable	Number of top managers (total sample <i>n</i> = 256)	Percentage of total sample
Field of study: Business	118	46%
Field of study: Engineering	49	19%
Field of study: Law	34	13%
Field of study: Science	35	14%
Field of study: other	11	4%
Field of study: no academic degree	9	4%
MBA	33	13%
PhD	108	42%
Vocational behavior		
Variable	Number of top managers (total sample <i>n</i> = 256)	Percentage of total sample
Career start in (former) DAX firm	105	41%
Consulting/ auditing experience	39	15%