

Executive turnover – Firms' subsequent performances and the moderating role of organizational characteristics

Gjerløv-Juel, Pernille

Published in:
European Management Journal

DOI (link to publication from Publisher):
[10.1016/j.emj.2019.04.004](https://doi.org/10.1016/j.emj.2019.04.004)

Creative Commons License
CC BY-NC-ND 4.0

Publication date:
2019

Document Version
Accepted author manuscript, peer reviewed version

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Gjerløv-Juel, P. (2019). Executive turnover – Firms' subsequent performances and the moderating role of organizational characteristics. *European Management Journal*, 37(6), 794-805.
<https://doi.org/10.1016/j.emj.2019.04.004>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Accepted Manuscript

Executive Turnover - Firms' subsequent performances and the moderating role of organizational characteristics

Pernille Gjerløv-Juel



PII: S0263-2373(19)30051-9
DOI: 10.1016/j.emj.2019.04.004
Reference: EMJ 1921
To appear in: *European Management Journal*
Received Date: 29 May 2018
Accepted Date: 30 April 2019

Please cite this article as: Pernille Gjerløv-Juel, Executive Turnover - Firms' subsequent performances and the moderating role of organizational characteristics, *European Management Journal* (2019), doi: 10.1016/j.emj.2019.04.004

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Executive Turnover

*Firms' subsequent performances and
the moderating role of organizational characteristics*

Pernille Gjerløv-Juel
Aalborg University, DRUID
Fibigerstræde 11, Aalborg O., Denmark
Tel: +45 9940 7251
pgj@business.aau.dk

ABSTRACT

I apply context-emergent turnover (CET) theory to investigate how different organizational characteristics moderate the effect of executive turnover on firm performance. I suggest and investigate different organizational characteristics as contextual factors. I find that executive turnover reduces future sales and employment growth, and show that three organizational characteristics (the firm's age, top management tenure, and employee tenure) moderate this effect. These results contribute to our understanding of the role of context in moderating executive turnover. Previous studies that examined the performance effects of executive turnover have often struggled to prove the causality between this event and a firms' post-turnover performance conclusively. The problem is that executive turnover is often correlated with a firm's current performance and expected future challenges. I address this endogeneity problem by exploiting the exogenous variation in firms' performances following 516 top managers' unexpected deaths. I use a matched sample to investigate which organizational characteristics that mitigate the negative effect on the firms' subsequent performances resulting from these executive turnovers. I obtained this sample randomly from a comprehensive dataset containing yearly observations of all Danish firms from 1995 to 2007.

Keywords: Executive turnover, context-emergent turnover (CET), top management succession, organizational disruption, employee tenure, TMT tenure, organizational change and performance.

Acknowledgements: The independent Danish Social Science Research Council provided funding for this project. I am grateful for discussions with Olav Sorenson, Michael S. Dahl, Kristian Nielsen, Christian Østergaard, Matt Marx, Ramana Nanda and Jesper Sørensen. Comments from the participants of the DRUID Society Conferences are gratefully acknowledged.

Executive Turnover

*Firms' subsequent performances and
the moderating role of organizational characteristics*

ABSTRACT

I apply the context-emergent turnover (CET) theory to investigate how different organizational characteristics moderate the effect of executive turnover on firm performance. I then suggest and investigate different organizational characteristics as contextual factors. I find that executive turnover reduces future sales and employment growth, and I show that three organizational characteristics (the firm's age, top management tenure, and employee tenure) moderate this effect. These results contribute to our understanding of the role of context in moderating executive turnover. Previous studies that examined the performance effects of executive turnover have often struggled to prove the causality between this event and a firm's post-turnover performance conclusively. The problem is that executive turnover is often correlated with a firm's current performance and expected future challenges. I address this endogeneity problem by exploiting the exogenous variation in firms' performances following 516 top managers' unexpected deaths. I use a matched sample to investigate which organizational characteristics mitigate the negative effect on the firms' subsequent performances resulting from these executive turnovers. I obtained this sample randomly from a comprehensive dataset containing yearly observations of all Danish firms from 1995 to 2007.

Introduction

As top managers are responsible for a firm's strategy, efficiency, and employee achievements, they are crucial to a firm's performance, and executive turnover is a critical event in many organizations (Kesner and Sebor, 1994; Wasserman, 2003; Schepker, Kim, Patel, Thatcher, and Campion, 2017). One reason is that executive turnover might trigger a disruptive shock within the firm, temporarily disrupting organizational structures and routines (Carroll, 1984; Johnson, Magee, Nagarajan, and Newman, 1985; Haveman, 1993; Kesner and Sebor, 1994; Shen and Canella, 2002; Hannan, Pólos, and Carroll, 2003; Ballinger and Marcel, 2010). Another reason is that executive turnover is likely to entail loss of human and social capital (Johnson et al., 1985; Cao, Maruping, and Takeuchi, 2006; Messersmith, Lee, Guthrie, and Ji., 2014; Bermiss and Murmann, 2015).

These arguments suggest that executive turnover induces negative effects on firm performance. However, such firm-level consequences of turnover are sensitive to contextual factors (Hausknecht and Holwerda, 2013; Nyberg and Ployhart, 2013; Brymer and Sirmon, 2018), and executive turnover might not be equally harmful to all organizations. The context-emergent turnover (CET) theory focuses on the moderating impact of contextual factors on the relationship between turnover and performance (Nyberg and Ployhart, 2013; Brymer and Sirmon, 2018). While CET was developed to explain differences in performance effects due to collective employee turnover, I suggest that this theory is also helpful in understanding the consequences of executive turnover. I thus build on CET to theorize contextual factors that might mitigate or enhance the performance effects of executive turnover.

In particular, idiosyncratic organizational characteristics, which are partly under a firm's control, are interesting contextual factors to explore (Brymer and Sirmon, 2018); this

is because the moderating effect of organizational characteristics suggests that firms can take precautions to reduce the performance effects of executive turnover. Nevertheless, the focus in previous studies has been on the consequences of executive turnover and post-turnover actions (e.g., Quigley and Hambrick, 2012; Schepker et al., 2017) rather than on the preturnover context-dependence of such effects. On the other hand, studies of organizational context factors that moderate the turnover–performance relationship are scarce. Two exceptions are works by Friedman and Singh (1989) and by Messersmith et al. (2014).

In this paper, I discuss how and why different organizational characteristics mitigate or enhance the effect of executive turnover on performance. I build on organizational ecology and human and social capital theory to hypothesize three organizational characteristics that moderate the turnover–performance relationship: the firm’s age, top management tenure, and employee tenure. These variables and context factors, I argue, are exponents of organizational stability and experience. Stable, routinized, and experienced organizations are less vulnerable to executive turnover. They buffer the effect of executive turnover because organizational experience reduces the human and social capital depletion of executive turnover, and this makes organizational routines and processes less dependent on individuals.

Previous studies that investigated the performance effects of executive turnover have struggled to prove causality between this event and the firm’s post-turnover performance conclusively. The problem is that executive turnover is often correlated with or even triggered by a firm’s performance. This means that the evidence of the impact of executive turnover on a firm’s performance is somewhat inconclusive (Haveman, 1993; Shen and Canella, 2002; Cao et al., 2006; Chang, Dasgupta, and Hilary, 2010; Boyne, James, John, and Petrovsky,

2011; He and Sommer, 2011; He, Sommer, and Xie, 2011; Schepker et al., 2017).¹ I address this endogeneity problem by examining the impact of top managers' unexpected deaths on firms' performances. To support my proposition, I show that a firm's age, top management team (TMT) tenure, and employee tenure all moderate the turnover–performance relationship, thus mitigating the negative effect of executive turnover.

This study contributes to and extends the literature on executive mobility. First, as the majority of the literature on the performance effects of executive turnover focuses largely on publicly traded US firms, it remains an open question as to how executive turnover affects the performances of small and private non-US companies (Cragun, Nyberg, and Wright, 2016). I fill this gap by investigating a broader cohort of companies, namely, private firms in Denmark, with more than ten employees. Second, I validate the negative effect of executive turnover on performance empirically by exploiting exogenous changes to TMTs. Third, by bridging two streams of literature, CET theory and executive mobility, this study contributes to a more detailed understanding of the consequences of executive turnover. Moreover, it contributes to the CET theory by investigating organizational characteristics that might mitigate the performance–turnover relationship. Finally, this study suggests managerial actions that may help to buffer (or enhance) the losses caused by executive turnover. I highlight the important role of top management and employee stability (tenure) in establishing efficient and routinized organizations that are better equipped to handle executive turnover. These findings suggest an increasing focus on employee retention strategies such as employee shares, terms of notice, or noncompetition agreements.

¹ See Karaevli (2007) for an exhaustive overview of empirical studies on the effects of executive turnover.

Executive turnover and firms' subsequent performances

In this section, I discuss how and why executive turnover affects firms' performances. I draw on organizational ecology and human and social capital theory to suggest a negative effect of executive turnover on performance, and I discuss the potential moderating effects of organizational characteristics.

A disruptive shock to the organization. Extensive organizational changes interrupt and reset the process of establishing efficient organizational routines (Tushman and Rosenkopf, 1996). Altering established organizational action patterns destabilizes the organization and has a negative effect on organizational performance because of subsequent lower productivity. While this is not a permanent state, realigning the organization, re-establishing efficient patterns of activity, and adapting to the new context take time (Hannan et al., 2003). However, conditional on survival, an organization can rebuild its internal processes (Amburgey, Kelly, and Barnett, 1993). This process is often called “resetting the liability of newness clock,” which compares the postdisruption situation with the conditions and challenges that are faced by new firms and that increase their potential to fail. An (unexpected) change to the TMT might be an example of such a destabilizing activity. Executive turnover might disrupt the internal functioning of the organization, as the loss of a top manager leaves gaps in the organizational structure. This alteration of organizational relationships and structures affects decision-making processes in the firm and, at best, involves implementing new and efficient organizational routines. During this period of reorganization, the organization is less efficient, as the process diverts resources away from other tasks (Hannan et al., 2003). Moreover, the alternate top manager might differ from his/her predecessor in competency, management style, strategic focus, and prioritization (Kesner and Dalton, 1994; Shen and Canella, 2002). This difference might complicate and

prolong the process further, as both routines and organizational norms are challenged. In addition, a shift in focus, a lack of decision-making authority, and committing resources to the restructuring process might lead to missed business opportunities (Hannan, Pólos, and Carroll, 2007). Altogether, this means that the post-turnover organizations are less efficient than they were before, thus further hampering firms' subsequent performances.

Loss of human and social capital. Executive turnover might also imply a loss of human capital (knowledge and skills) and social capital (relations) (Bermiss and Murmann, 2015). First, the negative effect of executive turnover performance increases with the manager's human capital, particularly firm-specific human capital and tacit knowledge (Johnson et al., 1985; Eriksen, 2013; Messersmith et al., 2014). Because top managers often perform nonroutine and idiosyncratic tasks, their organization-specific human capital is higher than that of other employees. This implies a relatively greater drop in the firm's human capital stock. Moreover, the idiosyncratic character of their work might complicate and prolong the process of finding a suitable replacement. This difficulty entails high recruitment and selection costs, particularly those associated with training and with learning organization-specific skills (Johnson et al., 1985; Eriksen, 2013; Bermiss and Murmann, 2014). Furthermore, top managers might entrench themselves through projects, investments, or routines, which further complicate the organization and increase the time and costs of replacement and reorganization (Shleifer and Vishny, 1989; Hannan et al., 2003).

Second, Cao et al. (2006) and Messersmith et al. (2014) paid attention to the detrimental performance effects of social capital loss following CEO turnover and collective TMT turnover, respectively. This includes relationships both within and outside the firm. In-firm social relations improve information flow to all levels of the organization and facilitate better exploitation of the organization's resources. This information flow, which works above

formal structures and procedures, is disrupted by CEO departure (Cao et al., 2006). Moreover, executive turnover might remove or weaken ties to external relations such as customers, competitors, and investors.

Finally, the alternate top manager might also have different competencies from his/her predecessor, such as technical, academic, and managerial skills. He/she might have a different managerial style, focus, and prioritization; for example, he/she may have different priorities regarding fields of work and divisions due to personal commitment and areas of interests. These differences might further prolong and complicate the restructuring phase, thus reducing efficiency and performance.

The negative effect decreases with time. After developing organization-specific skills, a potential successor might renew and strengthen the firm's competencies. He/she might bring new knowledge, perspectives, ideas, and social capital to the firm, potentially increasing the firm's efficiency and competitiveness (Tushman and Rosenkopf, 1996; Cao et al., 2006; McKendrick, Wade, and Jaffee, 2009). These improvements suggest that the expected negative effects of executive turnover might be short-lived and may reverse with time. While organizational changes might be disruptive and have a negative effect on a firm's performance, they are sometimes essential. Incumbent managers' reluctance to revise their strategic decisions suggests that TMT replacements might be necessary when strategic changes need to be enforced (Sliwka, 2007). Haveman, Russo, and Meyer (2001) found that CEO succession improved performance when regulatory changes have driven the firm to alter its strategy or other core features of the organization. Moreover, Baron and Hannan (2002) showed that changing an organization's blueprint appeared to be most disruptive when implemented by the original CEO. They further proposed that this reflected the nature of the implicit contract between employees and management (Baron and Hannan, 2002). This

suggests that executive turnover might sometimes provide an opportunity to change core organizational features with fewer disruptive effects. In support of this theory, Tushman and Rosenkopf (1996) argued that firms might exploit top management changes as an adaptation mechanism in turbulent environments.

The above section argues that executive turnover might cause a drop in organizations' firm-specific human and social capital stock and trigger disruptive organizational shocks. On average, these shocks mean that the post-turnover organizations are less efficient than they were before, thus reducing performance. However, these disruptive effects could be short-lived, as a potential successor might eventually strengthen the firm.

H1a: Executive turnover is associated negatively with a firm's subsequent performance

H1b: The negative effect of executive turnover on performance decreases with time

Organizational characteristics and post-turnover performance

The CET theory argues that a negative performance effect varies according to the organizational context, suggesting that turnover is not equally harmful to all firms (Hausknecht and Holwerda, 2013; Nyberg and Ployhart, 2013). The following sections discuss organizational characteristics that might mitigate the negative performance effects of executive turnover. Overall, I develop the argument that stable, routinized, and experienced organizations are less affected by executive turnover on average and therefore experience a smaller negative performance effect. To investigate this empirically, I suggest three variables that might indicate greater organizational experience and stability, namely, firm's age, TMT tenure, and employee tenure. I will elaborate on these variables in the following sections.

Organizational experience, stability, and the firm's age

Organizational experience and stability generally increase in tandem with the firm's age. The first argument for a positive correlation between post-turnover performance and a firm's age is the presumed higher productivity in older and thus often more routinized, experienced, and stable organizations. This efficiency includes the formal organizational structure and routines, as well as the organizational norms or culture (Hannan and Freeman, 1977). The efficient routinization of activity patterns is essential, as this implies the better coordination of organizational actions; that is, more efficient exploitation and integration of the organization's knowledge and resources (Nelson and Winter, 1982; Cohen and Bacdayan, 1994; Becker, 2004).

Increasingly coherent and efficient routines evolve gradually with time, implying that productivity increases with a firm's age. This process includes developing social trust relationships among employees, management, and external parties. Moreover, efficient routines evolve from learning-by-doing experiences and repeated interactions among organizational members. Building on its experience, an organization establishes and continues to improve its organizational routines. Because firms learn from their experience, older firms might also be better prepared for executive turnover, as they are more likely to have experience with regard to this. Furthermore, the selection effect suggests that older firms are more productive, as less efficient firms disappear with time (Stinchcombe, 1965; Jovanovic, 1982; Nelson and Winter, 1982; Tushman and Rosenkopf, 1996; Hannan, Baron, Hsu, and Koçak, 2006). On the other hand, Josefy, Harrison, Sirmon, and Carnes (2018) warned that success does not always lead to survival but may lead to sale and acquisition. While I acknowledge that a firm's age is not necessarily a sign of the firm's current competitiveness, market persistence, and hazard of exit (Josefy et al., 2018), I suggest that

organizational efficiency is generally higher in older firms. With all else being equal, this suggests a smaller negative effect of executive turnover on performance in these firms.

An alternative explanation is based on a positive relationship between a firm's age and organizational inertia. Organizational ecologists, studying the effects of fundamental organizational change, build on the premise that organizations are subject to strong inertial forces. Increasing inertia implies decreasing the speed at which organizational structures can change (Hannan and Freeman, 1984). Along these lines, Baron and Hannan (2002) and Hannan et al. (2006) argued that CEO turnover tended to affect subsequent performance because executive turnover often coincides with changing the organizational blueprint and altering established processes and organizational norms. However, if organizational inertia is strong, being based on multiple periods of refining efficient and deeply rooted routines, these routines are not altered easily. Because structural inertia increases with time, this suggests that older organizations are more resilient to disruptive organizational shocks, with fewer negative effects on subsequent performance. In support of this, Amburgey et al. (1993) showed that, even though organizational vulnerability to disruptions increases with the firm's age, the net effect of organizational disruptions on the firm's performance decreases because organizational inertia decreases the likelihood of change (Amburgey et al., 1993).

H2: The negative effect of executive turnover on performance decreases with the firm's age

TMT tenure

This paper is based on the premise that executive turnover is generally detrimental to a firm's performance (H1a). This negative effect occurs because executive turnover implies a

depletion of human and social capital and potentially disrupts organizational routines and social structures, leaving the post-turnover organization less efficient. These arguments imply that organizations with recent changes in the TMT are weakened, with all else being equal, and might therefore be ill-prepared to handle a disruptive shock. In support of this argument, Meyer (1975) showed that management continuity was a concomitant of organizational stability and of organizational structure predictability in finance departments. Therefore, we might expect that longer TMT tenure decreases the negative effect of executive turnover because it reflects past TMT stability.

TMT tenure and organizational experience

According to Messersmith et al. (2014), longer average TMT tenure will increase human and social capital, suggesting that longer TMT tenure is associated positively with a firm's performance and, as such, will mitigate the negative performance effects of executive turnover. For example, longer TMT tenure increases the likelihood of shared connections, thus reducing the drop in the firm's social capital following executive turnover. Longer TMT tenure also increases shared knowledge, experience, and absorptive capacity, leading to relatively higher TMT human capital and greater efficiency following executive turnover (Messersmith et al., 2014). Longer TMT tenure might also imply that top managers are more cognizant of internal communication norms and information flows, as well as the available resources in the organization (Cao et al., 2006). Shared experience in the TMT leads to a common language, joint perception, and capabilities, allowing the remaining team members to pursue the planned course of action with regard to the firm's strategy and management (Messersmith et al., 2014). Moreover, overlapping human, social, and organizational capital in

the TMT, as well as managerial concentration, implies a greater capacity and slack available to cover and redistribute managerial responsibilities (Brymer and Sirmon, 2018).

In summary, I suggest a moderating effect of TMT tenure because longer TMT tenure increases the likelihood of developing not only stronger but also overlapping firm-specific human capital and social networks, making the loss of individual members less detrimental to the firm's social and human capital (Messersmith et al., 2014). This increases managerial capacity, which helps the firm to absorb turnover shocks and retain efficient routines (Brymer and Sirmon, 2018).

TMT tenure and organizational stability

If the effect of executive turnover depends on whether the event triggers substantial organizational change (Baron and Hannan, 2002; Hannan et al., 2006), the subsequent replacement of the executive is important (Shen and Canella, 2002; Schepker et al., 2017). Potentially disruptive effects triggered by organizational change initiated by the successor might depend on the power balance between the successor and the organization, particularly incumbent top managers. In support of this, Schepker et al. (2017) demonstrated that the effect of CEO succession on long-term performance was mediated by successor origin. Below, I propose that longer TMT tenure implies a less disruptive succession following executive turnover.

Potential successors differ in their desire to signal a change of direction. By considering a potential successor's incentive to engage in or signal a new direction, for example, regarding management style or strategic focus, previous studies have shown that the type of successor is important (Shen and Canella, 2002; Perry, Yao, and Chandler, 2011; Quigley and Hambrick, 2012). “New leaders are under some pressure to demonstrate their

efficacy and worthiness, and they typically cannot do this by simply maintaining the status quo” (Quigley and Hambrick, 2012: 836-837). Internal contenders and outsiders are likely to chart different courses than followers, who have less cause to demonstrate their worth through a shift in management style or by restructuring the organization or introducing new strategies or markets (Shen and Canella, 2002). Internal CEO successors are less willing to replace or dismiss top executives (Kesner and Dalton, 1994) and introduce less strategic change (Schepker et al., 2017); therefore, the disruption costs are lower. In this context, it is interesting to see which organizations allow for greater/less strategic and organizational change.

Quigley and Hambrick (2012) found that CEO succession led to smaller post-succession performance changes when the predecessor remained at the company as chairman of the board. They argued that this occurred because the predecessor restricted the actions of his/her successor directly or indirectly, thus limiting the successor’s opportunities to influence the firm’s performance (Quigley and Hambrick, 2012). Following similar arguments, incumbent top managers may play a similar role following executive turnover. When longer tenured and thus stronger top managers comprise the incumbent TMT, there may be a greater capacity to withstand the pressure from a potential successor’s eagerness to “shake up” the organization. Moreover, such a TMT constitution might be more committed to the status quo, further reinforcing the internal reluctance to organizational change (Karaevli, 2007). This might reduce the likelihood that the organization chooses to bring new members who intend to challenge established routines into the TMT. This possibility further supports the proposition that organizational stability, particularly when affected by a strong and continuous TMT, diminishes the negative performance effect of executive turnover. For the reasons stated above, I follow Messersmith et al. (2014) to suggest that TMT tenure

moderates the relationship between executive turnover and a firm's subsequent performance in the following way:

H3: Longer TMT tenure reduces the negative effect of executive turnover on performance

Employee tenure

Hausknecht and Holwerda (2013), in their conceptual paper on the performance effects of employee turnover, argued that member configurations were an important context factor. They suggested that the proficiency of remaining members may serve as a buffer to the challenges of turnover, thus mitigating the performance effects of turnover. Employees' joint experience and firm-specific knowledge is essential for the continuous, efficient functioning of the organization following an organizational disruption such as executive turnover. Tenured employees may help to maintain organizational routines, ongoing processes, and operations and hence ensure the efficient continuation of productive activities in the firm (Ji, Guthrie, and Messersmith, 2014; Cascio, 2005).

As described previously, organizations become more efficient with time as resource coordination improves and social trust relationships develop. Sturman (2003) argued that organizational tenure had very similar effects. Tacit knowledge including social knowledge increases with employees' organizational tenure. Examples include knowledge of how to access organizational resources, knowing who does what and when, or who to ask for assistance (Sturman, 2003; Bell, Villado, Lukasik, Belau, and Briggs, 2011). Moreover, a language of organizational communication also develops with organizational tenure and helps to improve efficient coordination (Bell et al. 2011).

Finally, while pre-event tenure initially helps to absorb the shock, the human capital resource is not constant with time (Nyberg and Ployhart, 2013). Organizational shocks such as executive turnover might trigger excessive employee turnover, with negative effects on a firm's performance. Excessive employee turnover destabilizes organizational structures and routines and implies loss of social capital and human capital depletion (Baron, Hannan, and Burton, 2001; Ton and Huckman, 2008; Nyberg and Ployhart, 2013). However, because employees with longer tenure are less likely to leave the firm, higher employee tenure might add to post-turnover stability and reduce the negative effect of executive turnover (Robinson and Rousseau, 1994). Both TMT tenure and employee tenure are important for organizational stability and efficiency. Although tenure is not an organizational characteristic but an individual or group-level characteristic, I argue that the relationship is homologous and that tenure may serve as a proxy for organizational experience, stability, and routines.

H4: Longer employee tenure reduces the negative effect of executive turnover on performance

Method

Data

I investigated the effect of executive turnover on firms' performances using the Danish Database for Labor Market Research (IDA). Statistics Denmark maintains the IDA. This database is constructed for research purposes and combines various official registers from the Danish Government. It is a longitudinal database with annual observations of all Danish firms (for example, accounting figures and the industry) and their employees (for example, salary and education). Statistics Denmark also provides information about the date of death of all

individuals. This information can be linked to the IDA. Previous studies using the IDA include, for example, the work by Dahl (2011).

Sample

My observation period was from 1995 to 2007. I included only private, nonprimary sector firms with 10 or more full-time equivalents in most years from 1995 to 2007. To prevent outliers from driving my results, I further excluded the one percent of the largest firms in the sample.²

Definitions of top managers and executive turnover

Empirically, the objective of this study was to estimate how executive turnover affected firms' performances and, in particular, how this effect is moderated by organizational characteristics.

Examining the changes in firms' performances following executive turnover would provide an appropriate empirical setting if executive turnovers were assigned randomly to the sample of firms we wish to study, but they are clearly not. Managers with extraordinary abilities, presumably employed in better performing firms, are more likely to be headhunted (Bermiss and Murmann, 2015), while poor performance increases the likelihood that firms will terminate managers to improve performance (Huson, Malatesta, and Parrino, 2004; Buyl, Boone, and Wade, 2015) or to facilitate strategic change (Haveman et al., 2001; Sliwka, 2007).

I addressed this endogeneity problem by exploiting the exogenous change in TMTs following top managers' unexpected deaths. A few studies have applied a similar

² I measured size by average sales during the observation period.

methodology, exploiting the exogenous event of unexpected executive deaths to estimate the significance of top managers and independent directors for firms' performances (Johnson et al., 1985; Worrell, Davidson, Chandy, and Garrison, 1986; Hayes and Schaefer, 1999; Nguyen and Nielsen, 2010; Nguyen and Nielsen, 2014).³

I identified top managers by using their occupational codes in the IDA. The occupational code for "top manager" and "CEO" is the same, and both are included in my definition of "top managers." Focusing on the TMT's significance for firms' performances instead of that of the CEO is in line with, for example, Sørensen (1999). I do not know the cause of death; hence, I cannot confirm that a death was unexpected. Instead, I used the two variables "age" and "sickness benefits" to separate potentially anticipated deaths from unexpected deaths. First, I only included individuals younger than 70 years (but older than 18 years). Second, I excluded individuals who had received any sickness benefits during their final year. I allowed for only a single event per firm. If a second unexpected death occurred in the TMT, subsequent observations were omitted.⁴ This left an initial sample of 592 unexpected deaths in TMTs.

Matched sample

To estimate the performance effect of executive deaths, the ideal empirical setting requires companies to be identical across all dimensions (particularly previous performance) and to differ only with regard to top managers' unexpected deaths. However, large companies generally employ more top managers than do small companies. This implies an uneven

³ Other recent papers that used unexpected death as an exogenous event to study causal effects include Jones and Olken (2005); Borokhovich, Brunarski, Donahue, and Harman (2006); Azoulay, Zivin, and Wang (2010); Andersen and Nielsen (2012); and Oettl (2012).

⁴ Second deaths occurred in 12 of the 516 firms in the final sample.

distribution of top managers' unexpected deaths and resulted in significant performance differences among the firms with and without executive deaths. Therefore, I followed Oettl's (2012) method and constructed a control group using the coarsened exact matching (CEM) approach (Iacus, King, and Porro, 2012).

For each firm in the treatment group, I matched the following variables: *Employment growth*_{*t-1*}, *Full-time-equivalent employees*_{*t-1*}, *No. top managers*_{*t-1*}, *TMT tenure*_{*t-1*}, and *Firm age*_{*t-1*}.⁵ *Employment growth*_{*t-1*} is a function of size in years *t-2* and *t-1*, while *t-1* is the year before the top manager died. From the acceptable matches, I selected a random firm that was not among the 592 firms to serve as the control group; moreover, 34 firms in the treatment group were not observed at *t-2*, hence reducing the treatment group to 558 firms. I found matches for 516 of these 558 firms.⁶ The final sample thus included 516 treated firms and 516 control firms. I collected annual observations from two years before the executive death (*t-2*) and for ten years following the event. The post-match observation period thus spanned *t* to *t* + 10, depending on the years from the match to 2006. This left a sample of 6,640 firm-year observations.

Table 1 shows descriptive statistics for the matching variables, comparing the treatment and the control group in the matching year (*t-1*). Table 1 shows that, although the treatment group had more employees, the two groups did not show significant difference in terms of *TMT tenure*, *Firm age*, or *Employment growth* in the year before the event.

⁵ All variables were coarsened following the default binning algorithm of Stata, Sturges' rule; see Iacus et al. (2012).

⁶ A firm may serve as control more than once but in different years. This was the case for 12 of 516 controls. No controls in the sample were matched more than twice. For the 12 firms that served as a control more than once, I included the firm's observations for both matches. I did so to ensure an equal number of matches and controls. Thus, I added yearly firm observations for the second match but only from *t-2* onward, where *t* was the matching year. This added 71 observations to my dataset. As a robustness test, I re-estimated all models excluding these observations. This robustness test did not alter the results.

Table 1
Summary statistics of matching variables

	Controls			Treated			Diff.	T-stat of diff.
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.		
Employees, t-1	516	59.15	95.00	516	76.66	114.48	-17.51**	-2.67
Emp. growth (pct.), t-1	516	2.81	18.74	516	2.63	18.73	0.18	0.16
Firm age, t-1	516	13.61	6.66	516	13.63	6.64	0.02	-0.04
TM tenure (years), t-1	516	8.92	5.52	516	8.96	5.51	-0.04	-0.12
Top managers, t-1	516	4.92	6.20	516	5.42	6.01	-0.93*	-2.44

Growth_{t-1} is employment growth in percent from ultimo t-2 to ultimo t-1. Executive deaths occur during year *t*. *t-1* is the matching year. Significance levels: * $p < .10$ ** $p < .05$ *** $p < .01$

Dependent variable

Many previous studies have focused on how executive turnover affects financial performance in large, publicly traded firms, for example, the study by Huson et al. (2004). My sample did not include many publicly traded firms, if any, and I used employment growth (in percentage form) as a performance indicator. Employment growth is comparable across industries and is used increasingly in studies on new but small firms (Gjerløv-Juel and Guenther, 2019).

Employment growth offers an accurate measure of firms' real performances, as expansion or downsizing of the companies is related closely to the companies' productivity and competitiveness. While accounting measures such as net income or sales would provide equally good performance indicators, these variables were not available for all the companies in my sample over the entire observation period, leading to many missing observations.

Nevertheless, I provided sales growth estimations as a robustness test of my results.

Explanatory variables and controls

Executive deaths

I included a dummy variable for top managers' unexpected deaths, *TM Death*, to estimate the effect of executive turnover on performance (H1a). This variable takes a value of one in all years after the top manager's death. I included a clock variable, *Time since TM death*, to

analyze how the effect evolved with time (H1b). This clock variable counted the number of years since the event. Initially, it takes the value zero in year t , the value one in year $t + 1$, the value two in year $t + 2$, and it continues to grow similarly. While I only had annual observations of the firms' performances, I knew the exact date of death. Depending on how quickly the firms responded to and recovered from the shock, the effect on the firms' performances might be sensitive to the accuracy with which the event was dated. Controlling for this, I added $(1 - (\text{month of death}/12))$ to *Time since TM death* _{t} . If the top manager died in January (month is one), *Time since TM death* is 1.92 in year $t + 1$. Equivalently, if he/she died in December, the clock variable takes the value one in year $t + 1$.

Organizational characteristics and interaction effects

I followed Baron and Kenny's (1986) approach and included interaction terms with *TM death* to estimate the potential moderating effect of different firms' characteristics and to test my hypotheses.⁷ All interaction terms corresponded to firms' and TMT's characteristics in the year of the event. First, I included the interaction term between *TM death* and *Firm age* to test H2. To test H3, I estimated the interaction effect between *TM death* and *Ln(TMT tenure)*. *TMT tenure* is the average number of years the TMT members had been employed at the firm (corresponding to "organizational capital" in Messersmith et al., 2014). Similarly, to test H4, I included the interaction term between *TM death* and *Ln(employee tenure)*. *Employee tenure* is average tenure in the year in which the top manager died.

Table 2
Summary statistics of before and after matching

BEFORE or in match year	Controls			Treated		
	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>
Employment growth (pct.)	516	2.81	18.74	516	2.63	18.73

⁷ See also Brambor, Clark, and Golder (2006) and Edwards and Lambert (2007) for more details and a discussion of interaction effects and moderator effects, respectively.

Full-time equivalents	1032	58.04	93.50	1032	75.50**	113.48
TM death	1032	0	0	1032	0	0
Firm age	1032	13.12	6.68	1032	13.13	6.66
No. TMs	1032	4.04	5.90	1032	4.80**	5.71
No. workplaces	1032	1.73	2.97	1032	2.29**	5.79
Ln(TMT salary)	1032	13.21	0.45	1032	13.21	0.43
TMT turnover ratio	1032	39.78	58.65	1032	45.06*	62.61
TMT tenure, years	1032	8.23	5.73	1032	8.46	5.64
TMT tenure std. dev.	1032	3.15	3.59	1032	3.57**	3.43
Employee tenure, years	1032	4.03	2.12	1032	4.23*	2.19
Emp. growth, t-3 to t	1032	4.46	16.00	1032	3.04*	14.20
AFTER match year	Controls			Treated		
Employment growth (pct.)	2388	-2.38	27.63	2188	-3.73	30.67
Full-time equivalents	2522	61.95	95.17	2370	76.57**	112.14
TM death	2522	0	0	2370	1	0
Firm age	2522	17.17	6.42	2370	16.82 ⁺	6.48
No. TMs	2522	4.00	5.97	2370	4.21	6.30
No. workplaces	2522	2.05	4.54	2370	5.40*	4.95
Ln(TMT salary)	2522	13.20	0.45	2370	13.20	0.41
TMT turnover ratio	2522	53.28	73.41	2370	73.41**	73.68
TMT tenure, years	2522	8.88	6.97	2370	6.59**	6.12
TMT tenure std. dev.	2522	3.16	3.80	2370	3.24	3.73
Employee tenure, years	2522	4.81	2.50	2370	4.80	2.36
Emp. growth, t-3 to t	2522	-0.72	13.54	2370	-1.57	14.68

Significance levels: ⁺ p < .10 * p < .05 ** p < .01

Controls

I controlled for firm and, in particular, TMT heterogeneity. These controls included *Firm age* (years), *Firm size* (employees, logged), *No. top managers*, *No. work places*, *TMT salaries* (average, logged), *TMT turnover ratio* (percentage), *TMT tenure* (average years, logged), *TMT tenure variation* (standard deviation, years), *Employee tenure* (average years, logged), *Industry* (6 dummies), and *Year* (11 dummies). In a robustness test of my results, I further controlled for ex-ante performance, *Ex-ante emp. growth* (average annual employment growth from $t - 3$ to $t - 1$). Table 2 shows the descriptive statistics before and after the event and for the treatment group and the control group, respectively. Table 3 shows the correlation of key variables.

Table 3
Correlation of key variables

	1	2	3	4	5	6	7	8	9	10	11	12
1 TM Death	1.00											
2 Emp. growth	-0.05**	1.00										
3 Ln(employees)	0.08**	-0.05**	1.00									
4 Sales growth	-0.04**	0.37**	0.02	1.00								
5 Ln(sales)	0.10**	0.02*	0.78**	-0.09**	1.00							
6 Firm age, t	0.11**	-0.02	0.14**	-0.00	0.15**	1.00						
7 No. TMs, t	0.01	-0.02	0.59**	0.01	0.52**	0.10**	1.00					
8 TMT turnover, t	0.16**	-0.00	0.20**	-0.02 ⁺	0.20**	0.05**	0.08**	1.00				
9 Ln(TMT tenure), t	-0.16**	-0.02 ⁺	-0.01	0.01	-0.07**	0.17**	0.09**	-0.36**	1.00			
10 TMT ten std. dev, t	0.10**	0.01	0.31**	0.02	0.31**	0.22**	0.32**	0.09**	0.16**	1.00		
11 Ln(emp. ten), t	0.07**	-0.11**	0.00	-0.03**	0.02	0.33**	-0.01	-0.07**	0.23**	0.08**	1.00	
12 Ex-ante emp. growth	-0.07**	0.06**	0.21**	0.07**	0.14**	-0.15**	0.06**	-0.03*	-0.03*	-0.00	-0.26**	1.00
N	6,640											

Significance levels: ⁺ p < .10 * p < .05 ** p < .01

Results

I estimated linear models of employment growth (see Equation 1) using random effects generalized least squares (GLS) regression. Estimations were based on 6,640 firm-year observations from 1995 to 2006 for 516 treated firms and 516 controls. Table 4 presents the results of the effect of executive turnover on employment growth.

The descriptive statistics shown in Table 2 did not reveal a significant difference in post-turnover performance. However, the models given in Table 4 show a negative effect of executive turnover on performance. This result confirms H1a. This negative effect generally decreases with time, supporting H1b. Model 1, which only included the two explanatory variables *TM death* and *Time since TM death*, found that *TM death* decreased the yearly employment growth rate by 4.71 percentage points every year following executive death compared to firms that did not experience this organizational shock ($\beta = -4.71$, $p < .01$).

Model 3, Table 4, tests H2. In support hereof, Model 3 shows a positive effect of the interaction term between *TM death* and *Firm age* ($\beta = 0.48$, $p < .01$), suggesting that the negative effect of executive turnover decreases with the firm's age. The model thus estimates

Constant	-1.13** (0.40)	-21.65 (13.30)	-19.44 (13.29)	-22.79+ (13.24)	-22.78+ (13.23)	-20.79 (13.26)	-19.85 (13.41)
Industry (6 dummies)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year (11 dummies)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms	1,032	1,032	1,032	1,032	1,032	1,032	1,032
Observations	6,640	6,640	6,640	6,640	6,640	6,640	6,640
Wald chi2	22.25	145.63	154.28	150.89	151.02	156.38	155.14

Random effects regression. Dependent variable: yearly employment growth in % (from year t to $t+1$). Standard errors are clustered at the firm level and are reported in parentheses. Significance levels: + $p < .10$ * $p < .05$ ** $p < .01$

Model 4 tested H3 by including the interaction term between *TM death* and $\ln(\text{TMT tenure})$. In general, the effect of TMT tenure on employment growth was negative. However, the interaction term in Model 4 showed that TMT tenure had a positive effect on firm performance in the event of executive death ($\beta = 3.15$, $p < .01$). Thus, a one-percent increase in TMT tenure increased post-turnover employment growth by 3.15 percentage points. This finding supports the hypothesis that a longer TMT tenure increases organizational experience and stability and makes organizations more resistant to disruptive organizational shocks. However, while longer TMT tenure reduces the negative effect on performance, the death (or departure) of a long-tenured top manager might have contrasting effects, with significant effects on firm performance. For example, longer tenure might imply more opportunities for top managers to entrench themselves (Shleifer and Vishny, 1989). Model 5 tested this, including the interaction term between *TM death* and the deceased top manager's tenure at the time of death. This control, however, is insignificant, and including it did not alter the previous conclusion.

TMT tenure cannot exceed a firm's age, suggesting a positive correlation between the two variables. Thus, a positive effect on post-turnover performance of $\ln(\text{TMT tenure})$ might be the result of a mitigating effect of *Firm age* and vice versa. Models 4 and 5 already control for the firm's age at time t . In addition, Model 6 controls for the firm's age at the time of

death. This control did not alter the above findings. The coefficient estimates of the two interaction terms in Model 6 do not show significant difference from the estimates in Models 3 and 4, respectively.

Finally, Model 7 in Table 4 tested the proposed moderating effect of employee tenure (Hypothesis 4) and found a positive effect of the interaction between *TM death* and *Ln(emp. tenure)* ($\beta = 4.86$, $p < .05$), confirming that a longer employee tenure reduces the negative effect of executive turnover on performance.

Based on significant interaction effects, the above results generally confirmed that the effect of TM death on employment growth varies with the firm's age, TM tenure, and employee tenure. To demonstrate the significance of this variation, I calculated marginal effects of TM death for different values of firm's age, TM tenure, and employee tenure in turn. In Model 3, Table 4, the estimated marginal effect of TM death on employment growth is -7.28 percentage points for low values of firm age but only -0.91 percentage points for high values of firm age.⁸ From Model 4, Table 4, the estimated marginal effect of TM death on employment growth is -6.62 and -1.52 percentage points for low and high values of $\ln(\text{TMT tenure})$. From Model 7, Table 4, the estimated marginal effect of TM death on employment growth is -6.13 and -1.95 percentage points for low and high values of $\ln(\text{employee tenure})$.⁹

Finally, further demonstrating how the effect of TM death on employment growth varies with the three moderators, I estimated the employment growth rate following TM death for different values

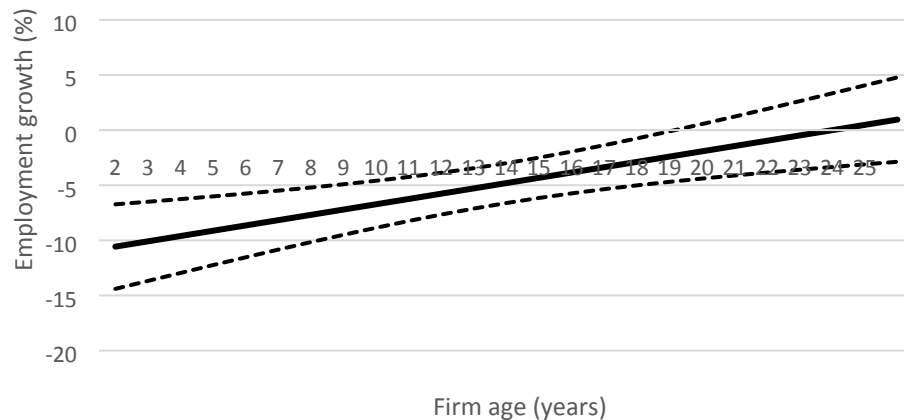
⁸ "Low" is one standard deviation below the sample mean, and "high" is one standard deviation above the sample mean. Mean value and standard deviation are 13.62 and 6.64, respectively. These values are the mean value and standard deviation from the treatment year and for the sample of 516 treated firms only. I calculate the marginal effects of TM death for high and low values of firm age using the estimates from Model 3, Table 4: $-10.63 + 0.48 \times 6.98 = -7.28$ and $-10.63 + 0.48 \times 20.26 = -0.91$ (see, for example, Brambor et al. 2006).

⁹ "Low" and "high" are one standard deviation below and above the sample mean, respectively. Mean values and standard deviations in parentheses: 1.94 (0.81) and 1.58 (0.43) for $\ln(\text{TM tenure})$ and $\ln(\text{employee tenure})$, respectively. Mean values and standard deviations are from the treatment year and for the sample of 516 treated firms only.

of the three moderators, while keeping other covariates at their means. I only plot the effect of the observed range of the respective moderator variables. Figures 1, 2, and 3 present the results, confirming that each moderator reduces the detrimental performance effect of TM death. For example, Figure 1 shows that firms aged seven years or younger have significantly lower employment growth following TM death than firms aged 17 years or older.

Figure 1

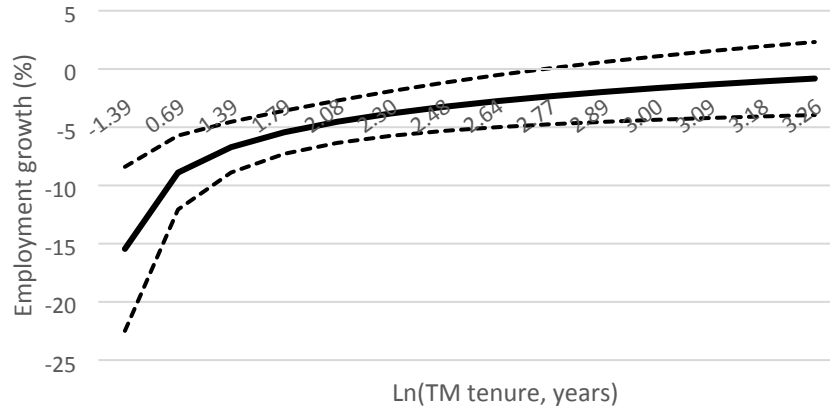
Estimated employment growth resulting from TM death and different values of firm age (with 95% confidence interval)



NOTE: The graph is generated using the estimates from Model 3 in Table 4. All covariates are at their means, except for TM death, which is set to one, and the interaction between TM death and firm age, which varies from two to 26 years (the minimum and maximum observations of firm age for firms experiencing TM death are two and 26, respectively).

Figure 2

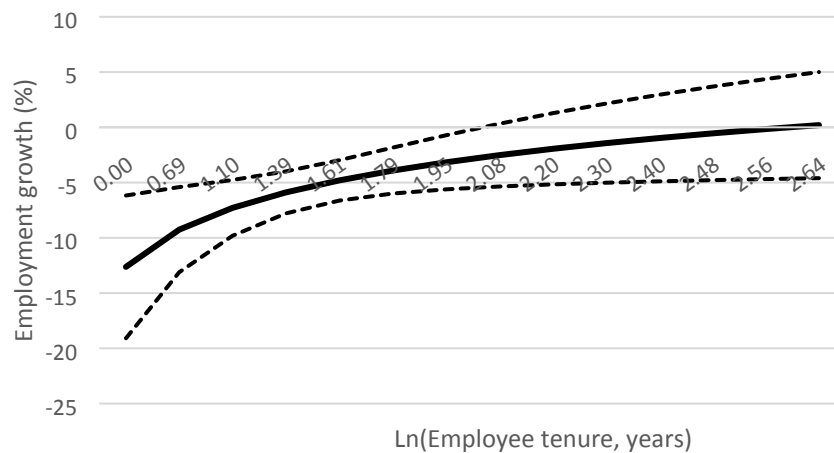
Estimated employment growth resulting from TM death and different values of $\ln(\text{TM tenure})$ (with 95% confidence interval)



NOTE: The graph is generated using the estimates from Model 4 in Table 4. All covariates are at their means, except for TM death, which is set to one, and the interaction between TM death and $\ln(\text{TM tenure})$, which varies from -1.39 to 3.26. I increase TM tenure with 2 years at a time from $\ln(2 \text{ years})$ to $\ln(26 \text{ years})$. The minimum and maximum observations of TM tenure for firms experiencing TM death are -1.39 (0.25 years) and 3.22 (25 years), respectively.

Figure 3

Estimated employment growth resulting from TM death and different values of $\ln(\text{employee tenure})$ (with 95% confidence interval)



NOTE: The graph is generated using the estimates from Model 7 in Table 4. All covariates are at their means, except for TM death, which is set to one, and the interaction between TM death and $\ln(\text{employee tenure})$, which varies from 0 to 2.64. I increase employee tenure with one year at a time from $\ln(0 \text{ years})$ to $\ln(14 \text{ years})$. The minimum and maximum observations of $\ln(\text{employee tenure})$ for firms experiencing TM death are 0 (1 year) and 2.61 (13.60 years), respectively.

Robustness checks

To control the robustness of my results, I also estimated the above models using sales growth as the dependent variable. Table 5 presents the results. These models generally confirmed the

above results, although the significance of the focal variables was reduced. For example, while indicating a positive effect on sales post death, *TM death x Firm age* ($\beta = 0.17$, $p = .11$), and *TM death x Ln(emp. tenure)* ($\beta = 2.45$, $p = .13$) were not significant at a 10 pct. significance level. This drop in significance was likely due to fewer observations, as I did not observe sales for all the firms or in all the years. For the same reason, I chose employment growth as my primary measure of a firm's performance.

Table 5
Executive turnover's effect on sales growth (1995 to 2006)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TM Death	-3.36** (1.04)	-2.17* (1.07)	-4.61* (1.90)	-6.26** (1.93)	-6.38** (1.95)	-7.03** (2.32)	-6.10* (2.76)
Time since TM death, t	0.40* (0.21)	0.20 (0.23)	0.27 (0.23)	0.27 (0.22)	0.26 (0.23)	0.30 (0.23)	0.26 (0.23)
Ln(employees), t		0.01 (0.05)	-0.04 (0.06)	-0.01 (0.05)	-0.01 (0.05)	-0.03 (0.06)	0.01 (0.05)
Firm age, t		0.16 (0.46)	0.17 (0.46)	0.25 (0.47)	0.26 (0.47)	0.25 (0.47)	0.18 (0.46)
No. TMs, t		-0.04 (0.06)	-0.04 (0.06)	-0.03 (0.06)	-0.03 (0.06)	-0.03 (0.06)	-0.04 (0.06)
No. workplaces, t		0.07 (0.05)	0.06 (0.05)	0.06 (0.05)	0.06 (0.05)	0.06 (0.05)	0.07 (0.06)
Ln(TMT salary), t		0.81 (0.87)	0.77 (0.87)	0.89 (0.87)	0.89 (0.87)	0.87 (0.87)	0.76 (0.86)
Ln(emp. tenure)		-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Ln(TMT tenure), t		-0.01 (0.37)	0.00 (0.37)	-0.10 (0.37)	-0.11 (0.37)	-0.09 (0.37)	-0.02 (0.37)
TMT turnover, t (pct.)		0.22* (0.11)	0.21* (0.11)	0.20* (0.11)	0.20* (0.11)	0.20* (0.11)	0.21* (0.11)
TMT tenure std. dev, t		-2.88** (0.87)	-2.84** (0.87)	-3.19** (0.87)	-3.15** (0.87)	-3.15** (0.88)	-3.42** (0.92)
TM death x Firm age			0.17 (0.11)			0.08 (0.10)	
TM death x Ln(TMT tenure)				2.03** (0.78)	2.45* (1.10)	1.85* (0.77)	
TM death x Ln(tenure), deceased TM					-0.07 (0.10)		
TM death x Ln(emp. tenure)							2.45 (1.61)
Constant	0.95* (0.39)	-1.85 (11.55)	-0.81 (11.60)	-2.60 (11.49)	-2.57 (11.50)	-2.06 (11.52)	-0.47 (11.45)
Industry (6 dummies)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Year (11 dummies)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms	1,024	1,024	1,024	1,024	1,024	1,024	1,024
Observations	6,476	6,476	6,476	6,476	6,476	6,476	6,476
Wald chi2	11.34	96.26	98.47	99.00	99.14	99.94	98.65

Random effects regression. Dependent variable: yearly sales growth in % (from year t to $t+1$). Standard errors are clustered at the firm level and are reported in parentheses. Significance levels: * $p < .10$ ** $p < .05$ *** $p < .01$

Ex-ante performance and executive turnover

The firm's historical performance might have affected the relationship of executive turnover, current performance, and my key variables. For example, one could argue that, if *TMT tenure* reduces the negative effect of executive turnover, it might be because longer TMT tenure is associated with better performing firms. In other words, TMT tenure might increase performance, but performance might also increase TMT tenure (Wiersema and Bantel, 1993). Similarly, because selection favors stronger organizations, *Firm age* might also be correlated with past performance. Moreover, Le Mens, Hannan, and Pólos (2011) suggested that firms accumulated organizational capabilities as a function of their previous performances. A firm's organizational capability stock, which includes both financial and nonfinancial resources, might serve as a buffer against disruptive organizational shocks and prevent fatal outcomes. For these reasons, the above conclusions might be subject to endogeneity issues, and the effects of executive turnover might vary depending on the firms' past performance rates. To investigate this, I re-estimated Models 3, 4, and 7 of Table 4 and included two controls for the firms' past performances. These controls were *ex-ante performance*, t (average annual employment growth from $t - 3$ to $t - 1$), and the interaction term between *TM death* and employment growth in the three years before executive death. Both controls were insignificant and did not alter the previous results in Table 4.

Limitations and future research

Heterogeneous top managers

I recognize that the effect of executive turnover on performance differs according to the top manager's firm-specific values and functional role. For example, Bermiss and Murmann (2015) showed that it was more detrimental to lose a top manager whose functional role focused on managing internal firm routines compared to the loss of externally focused executives. I accounted partly for top management's heterogeneity by controlling for TMT salary and tenure. However, other managerial characteristics including charisma, brand value, networking skills, and functional role were nonobservable. However, because I investigated top managers' unexpected deaths, which were drawn randomly from the population of top managers and firms, these unobservable factors should not have affected the empirical results.

External factors

By asking whether some organizational characteristics might reduce the effect of executive turnover on performance, this paper solely examines internal, or organizational, context factors. Thus, it does not investigate the effect of external context on post-turnover performance. However, previous studies have shown that the turnover–performance relationship is (also) moderated by environmental complexity and industry characteristics (Ji et al., 2014; Nyberg and Ployhart, 2013; Messersmith et al., 2014). For example, Messersmith et al. (2014) argued that unstable markets implied increasing uncertainty and complexity in strategic management. This places a premium on the human and social capital of the TMT, and executive turnover might be more harmful in unstable, complex, and growing industries (Messersmith et al., 2014). Ecologists have argued that selection favors stable, hence more efficient organizations, when the context is stable, while more flexible and adaptive organizations perform better in unstable environments (Hannan and Freeman, 1984; Baron et

al., 2001; Hannan et al., 2007). While I accounted partly for environmental differences by controlling for industry, I will leave the studies of external factors for future research.

Replacement strategy

While this study focuses on observable firm characteristics at the time of an exogenous executive turnover, I emphasize that the subsequent actions of heterogeneous firms also play an important role. Firms have different capabilities and strategies for handling this organizational disruption, including different replacement strategies, and these differences influence the effects of executive turnover on performance.

Successor type matters greatly to post-turnover performance (Schepker et al., 2017). Different successors have different incentives to initiate potentially disruptive organizational changes (Shen and Canella, 2002; Perry et al., 2011; Quigley and Hambrick, 2012). For example, Shen and Canella (2002) argued that outsiders and internal contenders were more likely to make significant organizational changes, while followers would continue the course of their predecessor.

The replacement choice might be influenced by the number of qualified candidates in the labor market, particularly within the firm. Moreover, the firm's replacement strategy is likely to be influenced by the firm's past performance and the board of directors', the CEO's, and other parties' willingness to adopt and request new ways. Firms might use follower succession to reduce organizational disruptions after executive turnover. However, the CEO and/or board of directors might also use executive turnover to change core features of the organization. As suggested previously, the situation sometimes calls for different perspectives and strategic changes, and executive turnover might facilitate the organizational change process (Shen and Canella, 2002; Sliwka, 2007). For example, when performance is low, the

replacement strategy might aim for someone to chart a different course (Shen and Canella, 2002; Karaevli, 2007).

While acknowledging the potential reversing effects of a subsequent replacement and the significance of different firms' actions and strategies after executive turnover, I leave this topic for future research. However, if executive turnover is triggered by an unexpected death, it is an unplanned and nonroutine event. Such an opportunity for strategic reorientation occurs by accident. It is not preconsidered, and one might argue that, in organizations with a strong desire to facilitate reorientation through executive turnover, this would have been initiated earlier; in other words, before the top manager's unexpected death. Moreover, Karaevli (2007) argued that, when controlling for the environmental context and the firm's performance, top management "outsiderness" did not affect post-turnover performance.

Conclusion and discussion

Executive turnover triggers a disruptive shock in a firm. This event implies a sudden drop in the firm's human capital and social capital stocks, and it disrupts organizational structures and routines temporarily. By investigating exogenous executive turnover due to top managers' unexpected deaths, this study confirmed a negative effect on firms' post-turnover performance. Moreover, by applying a CET theory framework, this paper suggested and investigated three organizational characteristics (contextual factors) that might moderate the effect of executive turnover on performance, namely, the firm's age, TMT tenure, and employee tenure.

I found that TMT tenure, employee tenure, and the firm's age were all associated with higher post-turnover performance. These findings suggest that top management and employee stability play a tremendous role in an efficient and routinized organizational behavior. Organizational experience, I argue, reduces the human and social capital depletion

resulting from executive turnover, and it makes organizational routines and processes less dependent on individual members. Overall, this reduces the negative effect of executive turnover on performance.

From an organizational ecology perspective, an alternative explanation for these results might be that an increase in one of the mentioned variables reflects greater organizational inertia, which might hinder or reduce potentially disruptive post-turnover organizational changes. The data at hand did not allow me to determine which of the proposed mechanisms play the greater role in driving the effects conclusively. I will thus leave this question for future research.

This study found that the firm's age and tenure moderated the negative effect of executive turnover on performance. In addition, I propose that these firms' characteristics and their moderating effects could apply to other organizational shocks. I suspect that this is particularly true for internal shocks. Conversely, some external shocks such as demand shocks might call for reorganization and focus shift. Stable and efficient organizational routines, particularly inertia, might stand in the way of accomplishing such necessary organizational changes or of perceiving the need to do so. Similarly, the paper's conclusions are not directly transferable to deliberate organizational changes, such as changes initiated to improve performance. This is particularly true if greater resistance to change, that is stronger inertia, drives the above results. Such measures might even lead to reverse effects on post-change performance. I leave this question for future research to investigate.

In contrast to existing studies on executive turnover and firms' performances, this study investigated small and private non-US companies. While this makes an important contribution to the literature on executive turnover, it does not allow for a direct comparison with previous studies. I suspect that smaller firms are more sensitive to executive turnover.

Similarly, the firm's size might influence the moderating effect of organizational characteristics on the turnover–performance relationship, and different samples, for example, of larger firms, might be less (or more) sensitive to these contextual factors. I therefore encourage future studies to investigate under which circumstances and in which industries these organizational characteristics moderate the turnover–performance relationship.

Practical implications

The main conclusion derived from this study implies that organizations can benefit by increasing their focus on retention strategies. These strategies might include the terms of notice, noncompetition agreements, or employee shares. Furthermore, this study confirmed the negative effect of executive turnover on firms' performances. Previous research has indicated that being on top of the situation helps organizations to overcome disruptive events more successfully and reduces negative effects on performance. This suggests that organizations should consider contingency strategies to prepare themselves for organizational disruptions such as executive turnover. Finally, these results suggest that managers should be careful not to initiate significant organizational changes too frequently but should only do so when such changes are essential. First, stable and routinized organizations might be more efficient and may resist and overcome negative organizational shocks more successfully. Second, previous studies have shown that significant organizational changes are likely to increase employee turnover, which may further destabilize and weaken the organization.

References

- Amburgey, T. L., Kelly, D., and Barnett, W. P. (1993). Resetting the clock: the dynamics of organizational change and failure. *Administrative Science Quarterly*, 38(1): 51–73.
- Andersen, S. and Nielsen, K. M. (2012). Ability or finances as constraints on entrepreneurship? Evidence from survival rates in a natural experiment. *The Review of Financial Studies*, 25(12): 3684–3710.
- Azoulay, P., Zivin, J. S. G., and Wang, J. (2010). Superstar extinction. *The Quarterly Journal of Economics*, 125(2): 549–589.
- Ballinger, G. A. and Marcel, J. J. (2010). The use of an interim CEO during succession episodes and firm performance. *Strategic Management Journal*, 31(3): 262–283.
- Baron, J. N. and Hannan, M. T. (2002). Organizational blueprints for success in high-tech start-ups: Lessons from the Stanford project on emerging companies. *California Management Review*, 44(3): 8–36.
- Baron, J. N., Hannan, M. T., and Burton, M. D. (2001). Labor pains: Change in organizational models and employee turnover in young, high-tech firms. *American Journal of Sociology*, 106(4): 960–1012.

- Baron, R. M., and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6): 1173-1182.
- Becker, M. S. (2004). Organizational routines: A review of the literature. *Industrial and Corporate Change*, 13(4): 643–677.
- Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., and Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management*, 37(3): 709-743.
- Bermiss, Y. S. and Murmann, J. P. (2015), Who matters more? The impact of functional background and top executive mobility on firm survival. *Strategic Management Journal*, 36: 1697-1716.
- Borokhovich, K. A., Brunarski, K. R., Donahue, M. S., and Harman, Y. S. (2006). The importance of board quality in the event of a CEO death. *The Financial Review*, 41: 307–337.
- Boyne, G. A., James, O., John, P., and Petrovsky, N. (2011). Top management turnover and organizational performance: A test of a contingency model. *Public Administration Review*, 71(4): 572–581.

- Buyl, T., Boone, C. and Wade, J. B. (2015). Non-CEO executive mobility: The impact of poor firm performance and TMT attention. *European Management Journal*, 33(4): 257-267.
- Brambor, T., Clark, W. R., and Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political Analysis*, 14(1): 63–82.
- Brymer, R. A., & Sirmon, D. G. (2018). Pre-exit bundling, turnover of professionals, and firm performance. *Journal of Management Studies*, 55(1): 146-173.
- Cao, Q., Maruping, L. M., and Takeuchi, R. (2006). Disentangling the effects of CEO turnover and succession on organizational capabilities: A social network perspective. *Organization Science*, 17(5): 563-576.
- Carroll, G. R. (1984). Dynamics of publisher succession in newspaper organizations. *Administrative Science Quarterly*, 29(1): 93–113.
- Cascio, W. F. (2005). Strategies for Responsible Restructuring. *Academy of Management Executive*, 19(4): 39-50.
- Chang, Y. Y., Dasgupta, S., and Hilary, G. (2010). CEO ability, pay, and firm performance. *Management Science*, 57(10): 1633–1652.
- Cohen, M. D. and Bacdayan, P. (1994). Organizational routines are stored as procedural memory: Evidence from a laboratory study. *Organization Science*, 5(4): 554–568.

- Cragun, O. R., Nyberg, A. J., Wright, P. M. (2016). CEO succession: what we know and where to go? *Journal of Organizational Effectiveness*, 3(3): 222-264.
- Dahl, M. S. (2011). Organizational change and employee stress. *Management Science*, 57(2): 240–256.
- Edwards, J. R., Lambert, L. S. (2007). Methods for integrating moderation and mediation: a general analytical framework using moderated path analysis. *Psychological Methods*, 12(1): 1-22.
- Eriksen, B. H. (2013). Should they stay or should they go? Sorting versus human capital loss in employee turnover. Working Paper, University of Southern Denmark. Electronic copy available at: <https://ssrn.com/abstract=1535969>.
- Friedman, S.D. and Singh, H. (1989). CEO succession and stockholder reaction: the influence of organizational context and event content. *Academy of Management Journal*, 32(4): 718-744.
- Gjerløv-Juel, P. and Guenther, C. (2019). Early employment expansion and long-run survival: examining employee turnover as a context factor. *Journal of Business Venturing*, 34(1): 80-102.

- Hannan, M. T., Baron, J. N., Hsu, G., and Koçak, Ö. (2006). Organizational identities and the hazard of change. *Industrial and Corporate Change*, 15(5): 755–784.
- Hannan, M. T. and Freeman, J. (1977). The population ecology of organizations. *American Journal of Sociology*, 82(5): 929–964.
- Hannan, M. T. and Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review*, 49(2): 149–164.
- Hannan, M. T., Pólos, L., and Carroll, G. R. (2003). Cascading organizational change. *Organization Science*, 14(5): 463–482.
- Hannan, M. T., Pólos, L., and Carroll, G. R. (2007). *Logics of organization theory - audiences, codes and ecologies*. Princeton University Press, Princeton and Oxford.
- Hausknecht, J. P, and Holwerda, J. A. (2013). When does employee turnover matter? Dynamic member configurations, productive capacity, and collective performance. *Organization Science*, 24(1): 210-225.
- Haveman, H. A. (1993). Ghosts of managers past: Managerial succession and organizational mortality. *Academy of Management Journal*, 36(4): 864–881.

- Haveman, H. A., Russo, M. V., and Meyer, A. D. (2001). Organizational environments in flux: The impact of regulatory punctuations on organizational domains, CEO succession, and performance. *Organization Science*, 12(3): 253–273.
- Hayes, R. M. and Schaefer, S. (1999). How much are differences in managerial ability worth? *Journal of Accounting and Economics*, 27(2): 125–148.
- He, E. and Sommer, D. W. (2011). CEO turnover and ownership structure: Evidence from the U.S. property-liability insurance industry. *Journal of Risk and Insurance*, 78(3): 673–701.
- He, E., Sommer, D. W., and Xie, X. (2011). The impact of CEO turnover on property-liability insurer performance. *Journal of Risk and Insurance*, 78(3): 583–608.
- Huson, M. R., Malatesta, P. H., and Parrino, R. (2004). Managerial succession and firm performance. *Journal of Financial Economics*, 74: 237–275.
- Iacus, S. M., King, G., and Porro, G. (2012). Causal inference without balance checking: Coarsened exact matching. *Political Analysis*, 20(1): 1-24.
- Ji, Y-Y., Guthrie, J. P., and Messersmith, J. G. (2014). The tortoise and the hare: the impact of employment instability. *Human Resource Management Journal*, 24(4): 355-373.

- Johnson, W. B., Magee, R. P., Nagarajan, N. J., and Newman, H. A. (1985). An analysis of the stock price reaction to sudden executive deaths: Implications for the managerial labor market. *Journal of Accounting and Economics*, 7: 151–174.
- Jones, B. F. and Olken, B. A. (2005). Do leaders matter? National leadership and growth since World War II. *The Quarterly Journal of Economics*, 120(3): 835–864.
- Josefy, M. A., Harrison, J. S., Sirmon, D. G., & Carnes, C. (2017). Living and dying: Synthesizing the literature on firm survival and failure across stages of development. *Academy of Management Annals*, 11(2): 770-799.
- Jovanovic, B. (1982). Selection and the evolution of industry. *Econometrica*, 50(3): 649–670.
- Karaevli, A. (2007). Performance consequences of new CEO ‘outsiderness’: Moderating effects of pre- and post-succession contexts. *Strategic Management Journal*, 28(7): 701–713.
- Kesner, I. F. and Dalton, D. R. (1994). Top management turnover and CEO succession: an investigation of the effects of turnover on performance. *Journal of Management*, 31(5): 327–372.
- Kesner, I. F. and Sebor, T. C. (1994). Executive succession: Past, present and future. *Journal of Management*, 20(2): 327–372.

- Le Mens, G., Hannan, M. T., and Pólos, L. (2011). Founding conditions, learning, and organizational life chances: Age dependence revisited. *Administrative Science Quarterly*, 56(1): 95–126.
- McKendrick, D. G., Wade, J. B., and Jaffee, J. (2009). Good riddance? Spin-offs and the technological performance of parent firms. *Organization Science*, 20(6): 979–992.
- Messersmith, J. G., Lee, J.-Y., Guthrie, J. P., and Ji, Y.-Y. (2014). Turnover at the Top: Executive Team Departure and Firm Performance. *Organization Science*, 25(3): 776-793.
- Meyer, M. W. (1975). Leadership and organizational structure. *American Journal of Sociology*, 81(3): 514–542.
- Nelson, R. R. and Winter, S. G. (1982). *An Evolutionary Theory of Economic Change*. Harvard University Press. Cambridge, MA.
- Nguyen, B. D. and Nielsen, K. M. (2010). The value of independent directors: Evidence from sudden deaths. *Journal of Financial Economics*, 98(3): 550–567.
- Nguyen, B. D. and Nielsen, K. M. (2014). What death can tell: Are executives paid for their contributions to firm value? *Management Science*, 60(12): 2994–3010.
- Nyberg, A. J., and Ployhart, R. E. (2013). Context-emergent turnover (CET) theory: A theory of collective turnover. *Academy of Management Review*, 38(1): 109-131.

- Oettl, A. (2012). Reconceptualizing stars: Scientist helpfulness and peer performance. *Management Science*, 58(6): 1122–1144.
- Perry, J. T., Yao, X., and Chandler, G. N. (2011). To get the best new CEO, must the old CEO go? Power distribution in external CEO successions. *Managerial and Decision Economics*, 32(8): 505–525.
- Quigley, T. J. and 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(7): 834–859.
- Robinson, S. L. and Rousseau, D. M. (1994). Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior*, 15(3): 245–259.
- Schepker, D. J., Kim, Y., Patel, P. C., Thatcher, S. M. B., and Campion, M. C. (2017). CEO succession, strategic change, and post-succession performance: A meta-analysis. *The Leadership Quarterly*, 28(6): 701-720.
- Shen, W. and Canella, A. A. J. (2002). Revisiting the performance consequences of CEO succession: The impacts of successor type, post-succession senior executive turnover, and departing CEO tenure. *Academy of Management Journal*, 45(4): 717–733.

- Shleifer, A. and Vishny, R. W. (1989). Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics*, 25: 123–139.
- Sliwka, D. (2007). Managerial turnover and strategic change. *Management Science*, 53(11):1675–1687.
- Stinchcombe, A. L. (1965). Social structure and organizations. In March, J. G., editor, *Handbook of organizations*, pages 153–193. Rand McNally, Chicago.
- Sturman, M. C. (2003). Searching for the inverted U-Shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management*, 29(5): 609–640.
- Sørensen, J. B. (1999). The ecology of organizational demography: managerial tenure distributions and organizational competition. *Industrial and Corporate Change*, 8(4): 713–744.
- Ton, Z. and Huckman, R. S. (2008). Managing the impact of employee turnover on performance: The role of process conformance. *Organization Science*, 19(1): 56–68.
- Tushman, M. L. and Rosenkopf, L. (1996). Executive succession, strategic reorientation and performance growth: A longitudinal study in the U.S. Cement industry. *Management Science*, 42(7): 939–953.

Wasserman, N. (2003). Founder-CEO Succession and the Paradox of Entrepreneurial Success. *Organization Science*, 14(2): 149-172.

Wiersema, M. and Bantel, K. A. (1993). Top management turnover as an adaption mechanism: The role of the environment. *Strategic Management Journal*, 14(7): 485–504.

Worrell, D. L., Davidson, W. N., Chandy, P. R., and Garrison, S. L. (1986). Management turnover through deaths of key executives: effects on investor wealth. *Academy of Management Journal*, 29(4): 674–694.