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Linking leader tenure and turnover to the performance of public organizations: evidence from public high schools

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Linking leadership turnover to the performance of public organizations: evidence from public high schools

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Abstract

Boyne, James, John and Petrovsky (2011) developed a contingency perspective of the impact of leadership turnover on organizational performance. They found that leadership turnover had a positive effect on low-performing organization and a negative effect on high-performing organizations. This heroic view of leadership has been supported by some studies in public and business management. In this article, based on longitudinal data from public high schools in New York City, we develop a different contingency perspective that the negative impact of leadership turnover is stronger is low-performing organizations but is mitigated in high-performing organizations.

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Introduction

How does leadership turnover affect organizational performance? Upper echelons theory posits that top leaders have substantial effect on the overall performance of firms largely due to their influence over firms' policies and administration (Hambrick, 2007). Leader turnover is considered one of the most critical events in an organization's life-cycle. Giambatista, Rowe and Riaz (2005) argued that the investigation of succession provides a unique lens to understand leadership. Existing research in business management has generated many insights into the consequences of leadership turnover, which are the foundation of this research.

Public and business organizations are very different in their environments and personnel management. Do the findings from business management apply to public organizations? The research on this topic in public management has been limited. Hill (2005) concluded that at that time "There is little public administration literature that looks specifically at how managerial succession affects organizational performance." Since then more research has been conducted to investigate the impacts of leadership turnover on various organizational outcomes, such as administrative spending (Villadsen, 2016), strategic change (Villadsen, 2012), local fiscal outcomes (Connolly, 2018), organizational performance (Boyne, James, John, & Petrovsky, 2011a, 2011b; Boyne & Meier, 2009). However, the evidence of the impacts of leadership turnover on organizational performance has still been limited, especially if we want to move from a linear perspective to a contingency perspective.

In this research, we used panel data from public high schools in New York City to further the research on the impacts of leadership turnover on organizational performance. Using fixed effect models, we tested the main effect of leadership turnover and how the effect is contingent on the baseline performance of organizations. We develop a contingency perspective that is different from the one developed by Boyne and his colleagues (2011a, 2011b). We found a negative main effect of leadership turnover, and the negative impact is stronger in poor-performing organizations but is mitigated in high-performing organizations. This research reveals more nuances in the contingences of leadership turnover. Our findings do not fit in the heroic view of leadership that new leaders are able to turn around failing public organizations (Boyne et al., 2011a, 2011b; Petrovsky, James, & Boyne, 2015). Instead, the findings suggest how task environments and organizational contexts may balance or mitigate the impacts of leadership turnover.

We first review the four major theoretical perspectives on the impacts of leadership turnover in business and public management literature. Given that we are using data from public schools, we pay special attention to relevant research in the education context when developing our hypotheses.

Theoretical perspectives on the impacts of leadership turnover

Four different perspectives have been developed in the study of the relationship between leadership turnover and organizational performance: disruptive effect, adaptive effect, ritual scapegoating, and contingency perspective.

Disruptive perspective

The disruptive effect of leadership turnover has long been recognized (Grusky, 1960). Based on this perspective, leadership turnover disrupts existing routines, procedures, operation and informal relationships among organizational members, makes organization less stable, and creates uncertainties. Moreover, employees' morale suffers if they resist the successor. The leaving of top-level managers also cause the loss of important organization-specific human capital involving "an in-depth understanding of a

company's history, personnel, culture, and internal strengths and weaknesses"(Bailey & Helfat, 2003, p. 351) and a drain of institutional knowledge. When successors are hired externally, the new leaders are less familiar with their organizations and need time to learn the organizational routines and develop the relationships with stakeholders. Therefore, organizational performance tends to decline first when new leaders take the helm. Even if the new leaders are hired internally, Desai, Lockett & Paton (2016) have argued that selecting inside candidates would not save organizations from information asymmetry, because the selection may be made with less strict screening process. The process of leadership transition often takes longer than expected, and thus put organizations in limbo for a significant period of time. A prolonged and chaotic transition process creates uncertainties and cause organizations to miss strategic opportunities, thus negatively affecting organizational performance (Ballinger & Marcel, 2010).

Adaptive Perspective

Leadership turnover can be an opportunity of organizational learning as new leaders bring with them new perspectives and expertise. From an organizational learning perspective, long-tenured managers are less open to change and are often attached emotionally to the status quo. As a result, the strategies they take often fail to fit the changing environment, and thus organizational performance stagnates or declines. Therefore, leader succession is a potentially powerful method to bring novel strategic perspectives, break organizational inertia, facilitate organizational learning, and aid organizations to better adapt to the environment (Haveman, Russo, & Meyer, 2001; Schepker, Kim, Patel, Thatcher, & Campion, 2017; Shen & Cannella, 2002; Virany, Tushman, & Romanelli, 1992). Secondly, leadership turnover also has a symbolic effect in that it sends a strong signal that the organization is serious and committed to turnaround, which may help motivate employees and gain support from key stakeholders (Boyne & Meier, 2009). Leadership turnover thus has adaptive effect that may help organizations, especially struggling organizations, to perform better. Connolly (2018) found that undergoing a change in city managers during the peak of the 2008 financial crisis was associated with a decreased probability of running a deficit in 2011 and 2012.

Ritual Scapegoat perspective

The ritual scapegoat perspective claimed that leadership succession plays little role in affecting organizational performance, because those factors that matter to the performance are beyond leaders' control. Leaders may not be the major reason that organizations perform poorly, and changing leaders can hardly make a difference. However, leaders hold a symbolic role in organizations. Changing leaders sometimes deflects attention from other more serious problems with organizations. This is called "ritual scapegoating" – leaders are sacrificed so that they bear the blame of the poor performance (Gamson & Scotch, 1964). Some empirical findings have shown that there is no correlation between leadership turnover itself and organizational performance (Bruton, Ahlstrom, & Wan, 2003; Chen & Hambrick, 2012). Brown (1982) and Khanna and Poulsen (1995) provided empirical evidence to support the scapegoating perspective of succession.

Contingency perspective

The above three perspectives all received some empirical support. Inconsistency in findings suggests that we need to investigate the conditions under which turnover happens. A contingency approach may thus be helpful (Berns & Klarner, 2017). Instead of making efforts to prove any one of the three traditional theories of leader succession, the more recent development of the field shifts the attention to developing fine-grained hypotheses regarding the boundary conditions on contextual factors that would shape the dynamics between turnover and performance. Giambatista, Rowe and Riaz (2005) along with other researchers such as Day and Lord (1988) criticized the existing succession research as being "plagued

with insufficient theory addressing the 'when' question", and thus they urged scholars to take the contingency perspective to disentangle the mixed findings between leadership turnover and performance.

Temporal horizons, environmental factors, organizational factors and successors' qualification and characteristics have been identified as important moderators. McTeer, White & Persad (1995)and Fablanic examined the succession – performance link in sports teams and found that the changes of head coaches have significant impact on short-term performance but have little influence on the long – term performance. Similarly, Schepker et al. (2017) conducted a meta-analysis based on 60 relevant studies and reported that CEO succession negatively influences performance in the short-term and has no significant direct influence on the long-term performance. Rowe, Canella, Rankin and Gorman (2005) drew organizational learning perspective when considering the boundary condition of timing and concluded that after succession the new leaders need time to become familiar with their organizations in order to develop organization-specific skills, therefore, the beneficial effect of succession only appears after a reasonable period of time.

The environmental context is another essential factor that would influence the outcomes of CEO succession. Chung and Luo (2013) found that social context where the succession takes place matters to the performance outcomes of leadership succession. In an emerging economy, the positive effect of the outside successor on firms' performance is likely to be suppressed when the firm has higher family involvement, is affiliated with business groups, and has low levels of foreign institutional ownership. Moreover, the positive relationship between successions and company performance is seen to be stronger under industry instability (Zhang & Rajagopalan, 2004) and munificent environments (Karaevli, 2007).

At the organizational level, organizational performance before turnover takes place is another contingency that has been identified. Boyne, James, John and Petrovsky (2011a, 2011b) developed an influential contingency perspective in the public management literature. They show that the adaptive effect of leadership turnover outweighs the disruptive effect for poor-performing organizations; however, the disruptive effect outweighs adaptive effect for organizations that have already been performing at a high level. Their research represents the best evidence that we have at this point in public management regarding the contingency effect of prior performance. In business management literature, Karaevli (2007) found a similar contingency effect that the impact of CEO turnover on post-succession performance is more positive if pre-succession performance is low, but mainly when the CEOs are hired externally as these CEOs are more likely to initiate major changes. However, the findings in business management literature are not conclusive in this regard as opposite perspectives have been proposed and supported (Georgakakis & Ruigrok, 2017; Tushman & Rosenkopf, 1996). The above contingency is also based on a strong assumption that the departing leaders are ineffective and the incoming leader is more suitable to poor-performing organizations, which may not always be the case. In addition, leaders are more likely to be victims of scapegoating when prior performance is low, and thus changing leaders may have little impacts on organizational performance – even if performance improved after leadership turnover, it is likely to be caused by regression to the mean (Chen & Hambrick, 2012).

Another stream of research places the foci on how the successors' qualification and characteristics moderate the performance consequence of turnover. The factors identified include the origin (Hill, 2005; Shen and Cannella, 2002; Zhang and Rajagopalan, 2004) and the competence (Chen & Hambrick, 2012; Pfeffer & Davis-Blake, Alison, 1986) of successors. The origin of successors attracted particular attention in both public and business management literature. An external hire to replace previous leaders is particularly beneficial from an organizational learning perspective as external hires are likely to bring novel perspectives, knowledge and skills and to initiate strategic change (Bailey & Helfat, 2003; Chung & Luo, 2013; Villadsen, 2012). However, they may lack firm-specific or industry-specific knowledge, and

may be under great pressure to make immediate and drastic strategic changes when they have not been familiar with their organizations yet. In contrast, a key strength of an internal hire is the familiarity with organizational contexts, which reduces disruption to operations. In addition, the firm-specific knowledge also reduces the time to learn the ropes and increases the odds to make a quick turnaround (Schepker et al., 2017). Research in public management has often shown that succession by internal hires is superior to succession by external hires in its performance impacts (Boyne & Meier, 2009; Hill, 2005). Petrovsky, James and Boyne (2015) further developed this perspective and argued that the fit between the publicness of the organization and the publicness of the new leader's managerial experience is the key to achieve high organizational performance.

Hypotheses development

To further the research on this topic in public management, we used data from public schools. Therefore, we pay special attention to relevant research in the education context to develop our hypotheses. Prior empirical research has provided strong evidence of the role a principal can play to affect school academic achievement and the success of school reforms (Partlow, 2008). The effectiveness of a principal's leadership is manifested in terms of his/her ability to clarify school's vision and objectives, to hire and motivate high quality teachers, to allocate resources and develop organizational culture for better school administration and student learning (Loeb, Kalogrides, & Horng, 2010) . However, there is considerable turnover in principals. Béteille, Kalogrides, Loeb (2012) reported principal turnover rates in several large urban school district in the US: The turnover rate of principals were 22% in Miami-Dade School District, around 26% in San Francisco, and about 20% in Milwaukee. Schools serving low-income, non-white, and low-achieving student bodies face even higher turnover rates in top-level school administrators. In other words, schools with large proportions of disadvantaged students tend to have a more difficult time retaining principals with more experience (Gates et al., 2006). Meanwhile, changes in demographics and the wave of retirement of principals make the competition for talent a serious challenge for public schools (Hargreaves, 2005).

Even though there have been some discussions regarding the antecedents of principal mobility and turnover, and its variations across individual schools, systematic evidence on the effect of principal succession on schools' administration and academic performance has been limited (Béteille et al., 2012; Branch, Rivkin, & Hanushek, 2013; Miller, 2013). We find only a handful of studies that contribute to this stream of research.

Unlike high-level administrative turnovers in other organizations that could be caused by poor performance, principals are less likely to leave their positions due to dismissal (Béteille et al., 2012). Managerial turnover in public schools is primarily driven by job advancement. A number of studies have shown that principals often choose to move to schools that they perceived as more appealing (Branch et al., 2013; Loeb et al., 2010). After they have gained experience, they tend to move to schools with fewer disadvantaged students and better qualified teachers given the positive climate and good working conditions there. Therefore, principals' turnover tends to be voluntary and not to be caused by poor school performance, thus schools typically do not gain the benefits of replacing ineffective leaders with effective ones (Béteille et al., 2012). The disruptive effect may outweigh the adaptive effect in principal turnover.

Consistent with the above discussion, most empirical studies found a negative association between principal turnover and organizational performance. Béteille et al (2012) and Wills (2016) found that principal turnover is indeed detrimental to student academic achievement, particularly in schools with disadvantaged student bodies, more less experienced teachers and consistently less effective leadership. This means principal turnover is often related to negative consequences in the education context. Other

studies such as Vanderhaar, Muñoz & Rodosky (2006) and Loeb, Kalogrides and Horny (2010), which tested the correlation between principals' tenure and student learning, indicated that the longer tenure the principals have in their schools, the more likely theycould make effective changes to raise student achievement. Their findings echo the research on school reform, which claims that organizational stability plays an essential role to effectiveness of school operation, and that leadership succession "is a disruptive event that alters lines of communication, realigns relationship of power within the school, affects decision-making processes and generally disturbs the equilibrium of normal activities" (Miskel and Cosgrove, 1985, p.88).

Some studies found that teachers are more likely to leave schools where principal turnover is high(Béteille et al., 2012; Ingersoll, 2001). This is because principals can have a crucial effect on creating a good working environment and promoting teacher achievement. Therefore, high principal turnover rate may lower teachers' morale and result in high teacher turnover rate, which is another mechanism through which principal turnover harm student achievement.

While there have been some studies that found no or positive relationships between principal turnover and school performance (Weinsten et al. 2009; Rowan and Denk 1984), the negative relationship has received the most empirical support in the education literature. We thus propose that:

Hypothesis 1: principal turnover is negatively associated with school performance

Boyne et al. (2011a) tested a sample of 148 English local governments and suggested that when pre-succession performance of municipal governments was low, the replacement managers had a positive effect, while when the prior performance was high, leadership turnover had a negative effect. In another study, Boyne et al. (2011b) tested the performance outcome of succession of senior management team. They found a similar moderating effect of the pre-succession performance. The reason is that, according to Boyne et al (2011a), the loss of leaders in high-performing organizations means the loss of positive forces on employee morale or external relationships, and further improving an already high level of performance is hard for successors. Therefore, the disruptive effect may dominate. In contrast, in poor-performing organizations, leadership turnover creates opportunities for organizational learning and strategic change, and thus the adaptive effect may outweigh the disruptive effect, leading to improvement in organizational performance.

The above contingency perspective painted a heroic view of the role of leaders by attributing a large part of high or low organizational performance to leaders; however, it does not give much attention to organizations' environments or contexts in which it operates. A different contingency perspective is that negative consequences of leadership turnover exacerbate in low-performing organizations and mitigates in high-performing organizations. In the education context, studies have shown that low-performing organizations have difficulties in attracting experienced principals who are the most effective; they often end up with hiring inexperienced principals, and even these principals tend to leave once they have gained experience, leaving these already struggling schools to deal with uncertainties and disruptions caused by leadership turnover (Béteille et al., 2012). The heroic view also assumes that changing top leader alone is sufficient to change internal politics and dynamics within organizations; however, without the cooperation or onboarding of top management teams or key stakeholders, new leaders may not be able to successfully initiate strategic changes or reforms to improve organizational performance (Tushman & Rosenkopf, 1996). Tushman and Rosenkopf (1996) thus argued that CEO turnover alone had a negative effect on organizational performance when there was a performance crisis. A more drastic change such as concurrent changing senior executive team may be needed. Similarly, several studies in the business management literature suggest that the adaptive effect of hiring an outsider CEO is more likely to be

achieved when pre-succession performance is good (Georgakakis & Ruigrok, 2017). Under this circumstance, instead of being pressured to make hasty decisions to turn organizations around, new CEOs have a more stable environment to learn more about the environment and their organizations, which will help them to make more informed decisions regarding strategic changes.

Hypothesis 2: The negative association between leadership turnover and organizational performance is stronger in poor-performing organizations and is weaker in high-performing organizations.

Data and Models

To study how leadership turnover affects organizational performance, we used administrative data of high schools in New York City from 2012-13 to 2016-17 Academic Years. The reasons to study public high schools are that, first, they are public organizations that are owned and funded via NYCDOE by New York City, New York State and, to a lesser degree, the Federal government; second, they offer a rich set of highly systematic performance measures, including graduation rates and college enrollment rates. NYCDOE manages the largest school district in the United States with an enrollment of 1,135,334 students in 1,840 schools as of September 2018 (NYCDOE, 2019). The sample of this study included all regular high schools during the study period. The number of schools ranged from 369 in 2012-13 AY to 416 in 2016-17 AY. The reason in the variation of numbers of schools are, first, schools with missing data were dropped in that year, and second, NYCDOE opened new high schools during the study period.

Dependent variables

The dependent variables included both short-term outputs and outcomes. Dropout rates measured the percentage of students who dropped out of high school in a specific year. Three forms of graduation rates were included: total graduation rates, Regents diploma graduation rates and advanced Regents diploma graduation rates. Regents diploma graduation rates measured the percentages of students who graduated with a Regents diploma, which is the standard high school diploma in New York State. Students who scored 65 or above in five Regents exams were eligible for this diploma. High performing students who scored 65 or above in eight Regents exams were eligible to get advanced Regents diploma, and the advanced Regents diploma was a measure of percentages of these high-performing students. Students with certain extenuating circumstances, such as disability, were eligible to get local diploma that had a lower academic standard. Total graduation rate is thus the most inclusive measure of high school graduation that included graduates with any one of three diplomas. We also included two college enrollment measures: college enrollment 6 months after graduation and 18 months after graduation. College preparedness is an important outcome for high schools, which is why we believe these two indicators are meaningful measures for high school performance.

Independent variable

The key independent variable is principal turnover. We obtained the names of high school principals over the study period and compared the names year by year. The variable was marked as 1 whenever there was a change in principal names in one year, and marked as 0 otherwise. This is thus a measure of principal turnover events during the study period.

Control variable

The school fixed effect and year fixed effect are key in identifying the effect of leadership turnover by controlling for unmeasured time-invariant variables that affected school performance and principal

turnover, but they are not able to control for time-variant variables. To address omitted variable bias, we controlled for a series of school, teacher and student variables. School variables included enrollment and pupil-teacher ratio, teacher variables included percentages of teachers who had master degrees or higher and teachers who had fewer than three years of experience. Student variables included percentages of students who were Black, Asian, and Hispanic (white students as the reference category), students who were English language learners, students with disabilities, students who were eligible for free or reduced-price lunch, and students who were female.

Models

Our main model is a fixed effect model that controls for time-variant school, student and teacher attributes, year fixed effect and school fixed effect. We estimate the following model:

$$Performance_{st}=\beta_1+\beta_2 leader\ turnover_{st}+\beta_3 S_{st}+\beta_4 X_{st}+\beta_5 T_{st}+\pi_s+\pi_t+\varepsilon_{st}, \quad (1)$$

Where the performance of a public school *s* in year *t* is a function of whether there was a principal turnover event in that school in year *t*, time-variant school attributes (S) in school s and year t, student attributes (X) in school s and year t, and teacher attributes (T) in school s and year t. The crucial part of the model that will address unobserved time-invariant factors are year fixed effect π_t and school fixed effect π_s.

To test the contingency model, we divided all schools into three groups based on their baseline total graduation rates. High-performing schools are defined as schools that had total graduation rates one standard deviation above the mean, and low-performing schools are defined as schools that had total graduation rates one standard deviation below the mean. The rest of the schools are defined as medium performing schools. We then constructed interaction terms between principal turnover and performance level and estimated the following model:

$$Performance_{st}=\beta_1+\beta_2 leader\ turnover_{st}+leader\ turnover_{st}*high-performing\ school+ leader\ turnover_{st}*low-performing\ school+\beta_3 S_{st}+\beta_4 X_{st}+\beta_5 T_{st}+\pi_s+\pi_t+\varepsilon_{st} \quad (2)$$

Compared with model 1, model 2 had two additional interaction terms that would allow us to see if the impact of leader turnover is contingent on the baseline performance level of schools.

Endogeneity

A common concern when studying how leadership turnover affects organizational performance is endogeneity. It is likely that school performance contributes to principal turnover – poor performance leads to the termination or resignation of principals, or factors leading to declining student performance also lead to principal turnover. If poor performance caused principal turnover, then we should observe a dip in performance prior to principal turnover. Miller (2013) and Brendan, Grissom and Rogers (2019) have documented such an Ashenfelter dip immediately prior to principal turnover in public schools in North Carolina, Missouri and Tennessee. To examine whether or not a pre-turnover dip existed in New York City public high schools, we graphed the trends of all six performance measures relative to the year of principal turnover. For example, if a school changed principal in 2013, then 2014 would be 1 and 2015 would be 2 on the new scale. We added three more years of total graduation rates, Regents diploma graduation rates, advanced Regents diploma graduation rates and dropout rates for all schools in our data to better graph longitudinal trends. More data were not available for two college enrollment measures, so their graphs were confined to the original study period. In general, the graphs show an improving or stable trend for almost all performance measures. For example, total graduation rates, Regents diploma graduation rates and college enrollment after 6 months of graduation had been increasing in the years

prior to principal turnover, and dropout rates had been declining prior to principal change. There was not sufficient graphical evidence to show a dip in performance prior to principal turnover, which could confound the effect of principal turnover on school performance.

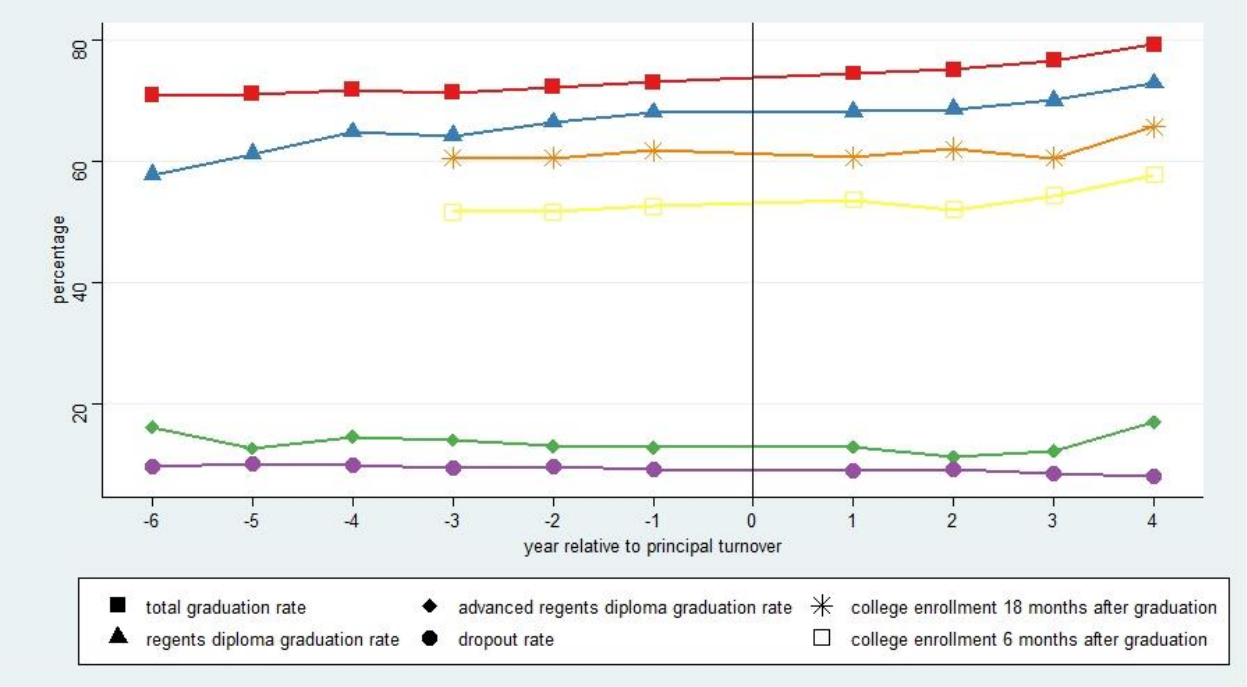

Figure 1. Longitudinal trend of performance measures relative to the year of principal turnover

To further address endogeneity, we removed schools that failed to meet accountability standards in the year prior to principal turnover in robustness tests. The results, presented in Table 5 and 6, were largely consistent with the main regression results.

Results

Descriptive statistics

Table 1 presents the descriptive statistics of six performance measures. On average, 74.81 percent students graduated with a high school diploma, 69.04 percent of students got a Regents diploma, and 12.25 percent students graduated with an Advanced Regents diploma. The average dropout rate was 8.66 percent during the study period. College enrollment rates were 55.29 percent six months after graduation, and 63.49 percent 18 months after graduation. The number of principal turnover events ranged from 42 to 61, and the total number of high schools ranged from 369 to 416 during the study period.

Table 1. Descriptive statistics of dependent variables

Variables	Mean	Standard deviation	n	N (n×T)
Total graduation rates (%)	74.81	16.33	434	1,979
Regents diploma graduation rates (%)	69.04	18.07	434	1,979
Advanced Regents diploma graduation rates (%)	12.25	20.01	434	1,979

Dropout rates (%)	8.66	7.48	434	1,979
College enrollment six months after graduation (%)	55.29	19.78	415	1,897
College enrollment 18 months after graduation (%)	63.49	17.89	401	1,813

Table 2: Principal turnover events in the sample during the study period

	Principal turnover	Total number of schools
2012-2013 AY	49	369
2013-2014AY	42	387
2014-2015AY	45	399
2015-2016AY	61	408
2016-2017AY	50	416

Regression results

Table 3 presents the results of fixed effect regressions. Principal turnover has a statistically significant relationship with all school performance variables but college enrollment six months after graduation. The impact of principal turnover is negative across the board. On average, principal turnover is associated with a 1.41 percentage point decrease in total graduation rate (8.7% of a standard deviation), a 1.2 percentage point decrease in Regents diploma graduation rates (6.7% of a standard deviation), a 0.65 percentage point decrease in Advanced Regents diploma graduation rates (3.3% of a standard deviation), 0.90 percentage point increase in dropout rates (12% of a standard deviation), a 1.12 percentage point decrease in college enrollment 18 months after graduation (6.2% of a standard deviation). The results thus strongly support hypothesis 1 that leadership turnover had a negative impact on school performance.

Table 4 presents the results of regressions of the contingency model. Again, the main effect of principal turnover is statistically significant on all but one dependent variable: college enrollment six months after graduation. Moreover, the interaction terms reveal more complicated contingencies. The interaction term between principal turnover and performance status reveals more nuances regarding the effect of leadership turnover. For total graduation rates and Regents diploma graduation rates, the interaction terms between principal turnover and low performance was not statistically significant, suggesting that the impact of leadership turnover was not different for medium- and low-performing schools; however, the interaction terms between principal turnover and high performance was statistically significant, suggesting that the impact of leadership turnover was different for high-performing and medium-performing schools. To be specific, leadership turnover was associated with 1.84 percentage point decrease in total graduation and 1.58 percentage point decrease in Regents diploma graduation rates for medium- and low-performing schools, but it was associated with only 0.21 percentage point decreased in total graduation rates and 0.05 percentage point decrease in Regents diploma graduation rates for high-performing schools. When it comes to dropout rates, principal turnover was associated with a 0.8 percentage point increase in medium-performing schools, a 2.9 percentage point increase in low-performing schools and a 0.24 percentage point decrease in high-performing schools. When it comes to college enrollment 18 months after graduation, the negative impacts are not different for three types of

schools. Interestingly, the results with advanced Regents diploma showed the opposite effect. Principal turnover is associated with a 0.54 percentage point decrease in medium- and high-performing schools, but is associated with a 0.7 percentage point increase in low-performing schools. To summarize, the findings from three regressions support hypothesis 2 that the negative impact of leadership turnover is stronger is poor-performing organizations and is weaker in high-performing organizations.

Robustness tests

Figure 1 suggests that, on average, the public schools in our sample did not show the Ashenfelter dip prior to leadership turnover, which alleviate some concerns for endogeneity. However, the graduation rates and college enrollment rates may have an upward trend during the study period, and thus the missing of a dip does not necessarily mean that these schools had met the accountability standards. If some schools failed to meet the accountability standards and then had principals changed, even if we are not sure if principal turnover was actually caused by the lack of progress, these schools may cause bias in our estimates. To guard against that, we read the school report card of each school that changed principal during the study period and checked if they failed to show "Adequate Yearly Progress (AYP)" as required by the No Child Left Behind Act prior to principal turnover. We did find seven schools failed to show adequate progress in graduation rates in 2011-2012 AY, and then had principal changed in the 2012-13 AY, which was 14% of the schools that had principal turnover in that year. This number was 6 in the 2012-13 AY (14%), 13 in the 2013-14AY (28%), 16 in the 2014-15 AY (26%), and 8 in the 2015-16 AY (16%). Those schools were a small percentage of all schools that changed principal during the study period, but in robustness checks, we excluded these schools from our original sample to re-conduct the regression analyses.

Table 5 and 6 presents the results of robustness tests with the new sample. The results are largely in line with the main regressions. The main effect of principal turnover was still negative and statistically significant for the three graduation measures, and the effect size was close. The major difference is that the main effect of turnover had no statistically significant relationship with dropout rates and college enrollment rates 18 months after graduation. Similarly, contingency models showed similar results to those of the main regressions. For total graduation and Regents graduation, the negative impacts of leadership turnover was stronger in low-performing schools compared with high-performing schools. Again, a major difference is that leadership turnover does not have statistically significant relationship with dropout or college enrollment in the contingency models with the new sample.

Table 3. Fixed effect regression on the impact of principal turnover

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Total graduation	Regents diploma graduation rates	Advanced Regents Diploma graduation rates	Dropout rates	College enrollment 18 months after graduation
Principal turnover	-1.41***	-1.20**	-0.65*	0.90**	-1.12**
	(0.49)	(0.48)	(0.34)	(0.35)	(0.00)
Observations	1,979	1,979	1,979	1,979	1,814
R-squared	0.18	0.11	0.05	0.05	0.04
Number of schools	434	434	434	434	401

Note: Abbreviated results shown. All models controlled for school, students, teacher attributes, year fixed effect and school fixed effects. Robust standard error clustered by school in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Results of contingency models

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Total graduation	Regents diploma graduation rates	Advanced Regents Diploma graduation rates	Dropout rates	College enrollment months afte graduation
Principal turnover	-1.84***	-1.58***	-0.54*	0.80*	-1.01*
	(0.59)	(0.60)	(0.30)	(0.44)	(0.01)
Principal turnover*low performance	1.09	1.04	1.26*	2.10*	-2.93
	(1.84)	(1.76)	(0.69)	(1.27)	(0.02)
Principal turnover*high performance	1.63**	1.53*	-1.64	-1.04**	0.67
	(0.74)	(0.82)	(1.44)	(0.50)	(0.01)
Observations (NxT)	1,979	1,979	1,979	1,979	1,814
R-squared	0.18	0.11	0.05	0.05	0.04
Number of schools (N)	434	434	434	434	401

Note: Abbreviated results shown. All models controlled for school, students, teacher attributes, year fixed effect and school fixed effects. Robust standard error clustered by school in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Fixed effect regression robustness tests

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Total graduation	Regents diploma graduation rates	Advanced Regents Diploma graduation rates	Dropout rates	College enrollment 18 months after graduation
Principal turnover	-1.605***	-1.33**	-0.77*	0.55	0.03
	(0.538)	(0.54)	(0.42)	(0.34)	(0.56)
Observations	1,760	1,760	1,760	1,760	1,597
R-squared	0.183	0.12	0.05	0.02	0.05
Number of schools	388	388	388	388	355

Note: Abbreviated results shown. All models controlled for school, students, teacher attributes, year fixed effect and school fixed effects. Robust standard error clustered by school in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Contingency model robustness tests

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Total graduation	Regents diploma graduation rates	Advanced Regents Diploma graduation rates	Dropout rates	College enrollment 18 months after graduation
Principal turnover	-2.25***	-1.81**	-0.63*	0.67	0.13
	(0.70)	(0.71)	(0.37)	(0.49)	(0.71)
bpfm1prpl	1.40	0.59	1.60*	0.58	0.03
	(2.11)	(2.13)	(0.89)	(1.03)	(2.09)
bpfm3prpl	2.17***	1.85**	-1.59	-0.90	-0.43
	(0.81)	(0.90)	(1.44)	(0.55)	(1.05)
Observations	1,760	1,760	1,760	1,760	1,597
R-squared	0.18	0.13	0.05	0.03	0.05
Number of schools	388	388	388	388	355

Note: Abbreviated results shown. All models controlled for school, students, teacher attributes, year fixed effect and school fixed effects. Robust standard error clustered by school in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Discussion

Results from our fixed effect models suggest that the main effect of principal turnover is negative. For example, in low-performing schools, principal turnover is associated with 1.84 percentage point decrease in total graduation rates, which translate to about 9 students in a school with 500 students. Although the magnitude of the negative association seems to be small, it is definitely not negligible, especially given the importance of high school diploma or equivalents on lifetime earnings and reducing crime or delinquency (Maynard, Salas-Wright, & Vaughn, 2015; Murnane, Willett, & Tyler, 2000; Rose & Betts, 2004) . The negative association suggests that in these public high schools, the disruptive effect of principal turnover outweighed the adaptive effect. It may reflect that principal turnover is often voluntary in public schools that thus the benefits of replacing ineffective leaders is not realized in this situation. The loss of a principal means the loss of a leader who had the school-specific human capital and who have built social capital with parents. This finding is consistent with findings from other studies in the education context (Béteille et al., 2012; Wills, 2016), although it is inconsistent with findings from some public management studies in which the main effect of leadership turnover was not statistically significant (Boyne et al., 2011a).

The findings also show that the impact of principal turnover is contingent on the baseline performance of these public high schools. However, contrary to some existing findings that leadership turnover produces beneficial effect in poor-performing organizations and disruptive effect in high-performing organizations (Boyne et al., 2011a; Boyne & Meier, 2009), our findings show that the negative impact of principal turnover is stronger in low-performing schools, while it is mitigated in high-performing schools. Principal turnover did not disrupt the operations of high-performing high schools as much as it did to low- and medium-performing schools.

How to explain the discrepancy? We believe the contingency view developed by Boyne and colleagues (2011a, 2011b) depends on a few critical presumptions that cannot always be met in all public organizations. Their view that leadership turnover produced more beneficial effect in poor-performing organizations and disruptive effect in high-performing organizations painted a heroic view of leadership (Petrovsky et al., 2015). One presumption of the heroic view is the availability of experienced or competent successors that will lead strategic changes or bringing in fresh knowledge or perspectives. However, such a labor market of successors does not exist for all types of organizations. Low-performing organizations may have significant trouble attracting leaders that are more competent or equally competent, who would then lead a strategic change or management reform. Highly competent leaders often have more choices, and low-performing organizations are probably not the most attractive options. Without more effective leaders as replacement, the assumed adaptive effects may not be realized. An inexperienced or ineffective leader may not be able to turn struggling organizations around, but the instability and disruption caused by leadership turnover may further damage organizational performance. Another presumption is that changing leaders alone is enough to overcome adversities caused by tough task environment or disrupt previous high performance. Organizational performance is often caused by a myriad of factors, many of which are out of the control of leaders. Some examples are the competency of top management team and task environment. Task environment is the organizational environment that is specific to individual organizations (Boyne & Meier, 2009). Struggling public organizations often face tough task environments. Take public schools as an example, poor-performing urban schools often lack sufficient funding or have a high concentration of students living in poverty. Even if these organizations are fortunate enough to hire organization-changing leaders, these leaders alone may not be able to overcome other adversities that negatively affect organizational performance. The managerial power of leaders in public organizations is often constrained by red tape, which means they typically do not have as

much freedom as business leaders do to launch strategic changes or radical management reforms. The support from top management teams or key stakeholders to new leaders' initiatives cannot always be guaranteed. The positive impact that leaders can produce is thus often rather limited, but, again, the disruption and uncertainties caused by leadership turnover is a real danger. The heroic contingency view may be a special case in which in poor-performing organizations the departing leaders misfit their organizations and the incoming leaders better fit the organizations (Chen & Hambrick, 2012).

The contingency view that we developed here is a weaker version of the heroic view, which balances the role of leadership and the task environments facing organizations. Our contingency view is based on the premise that organizational contexts moderates the impacts of leadership competency. Given the tough task environments and constrained power of public leaders, having a new leader thus may not produce as much beneficial effect to outweigh the disruptive effects in many public organizations. For poor-performing public organizations, having a leadership turnover thus may exacerbate their performance problem. In contrast, having a good leader is mostly likely not the only reason that organizations perform at a high level. Other factors such as a competent top management team, a culture for excellence, or a favorable environment may also contribute to high organizational performance. Therefore, these factors may be able to mitigate some of the negative effects of leadership turnover in high-performing organizations. In addition, as Georgakakis and Ruigrok (2017) suggest, the adaptive effect of leadership turnover is more likely to be achieved if the pre-turnover performance is high because successors will not be pressured to make hasty decisions to improve organizational performance.

Implications

One hope for changing leaders in poor-performing organizations is to initiate strategic changes to turn organizations around. This is often considered as a quick fix to performance problems. However, the findings of this research suggest that this hope may be based on some unrealistic presumptions. The negative main effect of leadership turnover may be a function of the lack of experienced or competent successors There is a real danger that leadership turnover may further exacerbate performance problems in these organizations. In contrast, high-performing organizations may have a culture for excellence or a competent top management team in addition to effective leaders. They are better positioned to withstand the shock of a leadership turnover. For example, when leaders in these high-performing organizations depart, the top management team may be able to step up and keep organizations perform at a relatively high level.

This article makes several contributions to the literature. One is the finding of different contingency effect of leadership turnover on prior performance. The findings did not support the heroic view of leadership that supported by previous research, but suggest how the impact of leadership is moderated by organizational task environments and contexts. Second, though it does not perfectly solve the endogeneity problem, using panel data and fixed effect models and including a series of time-variant controls and robustness tests, this article minimizes threats to validity. The findings of this article have stronger validity, which is an improvement over some of the previous research that relied on cross-sectional data.

This article also has several limitations. One is that due to data unavailability, we could not differentiate different types of principal turnover, such as retirement, resignation or dismissal. Different types of turnover may have different impacts on organizational performance. Another limitation is that we did not information related to the successors, for example, whether the successors came from internally or externally. Several studies in public and business management have tested the different impacts of internal and external succession (Boyne & Meier, 2009; Hill, 2005; Karaevli, 2007).

References

Bailey, E. E., & Helfat, C. E. (2003). External management succession, human capital, and firm performance: an integrative analysis. *Managerial and Decision Economics*, *24*(4), 347–369. https://doi.org/10.1002/mde.1119

Ballinger, G. A., & Marcel, J. J. (2010). The use of an interim CEO during succession episodes and firm performance. *Strategic Management Journal*, *31*(3), 262–283. https://doi.org/10.1002/smj.808

Berns, K. V. D., & Klarner, P. (2017). A Review of the Ceo Succession Literature and a Future Research Program. *Academy of Management Perspectives*, *31*(2), 83–108. https://doi.org/10.5465/amp.2015.0183

Béteille, T., Kalogrides, D., & Loeb, S. (2012). Stepping stones: Principal career paths and school outcomes. *Social Science Research*, *41*(4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003

Boyne, G. A., James, O., John, P., & Petrovsky, N. (2011a). Leadership succession and organizational success: when do new chief executives make a difference? *Public Money & Management*, *31*(5), 339–346. https://doi.org/10.1080/09540962.2011.598345

Boyne, G. A., James, O., John, P., & Petrovsky, N. (2011b). Top Management Turnover and Organizational Performance: A Test of a Contingency Model. *Public Administration Review*, *71*(4), 572–581. https://doi.org/10.1111/j.1540-6210.2011.02389.x

Boyne, G. A., & Meier, K. J. (2009). Environmental Change, Human Resources and Organizational Turnaround. *Journal of Management Studies*, *46*(5), 835–863. https://doi.org/10.1111/j.1467-6486.2008.00813.x

Branch, G. F., Rivkin, S., & Hanushek, E. A. (2013). School leaders matter: Measuring the impact of effective principals. *Education Next*, *13*(1), 62–69.

Brown, M. C. (1982). Administrative Succession and Organizational Performance: The Succession Effect. *Administrative Science Quarterly*, *27*(1), 1. https://doi.org/10.2307/2392543

Bruton, G. D., Ahlstrom, D., & Wan, J. C. C. (2003). Turnaround in East Asian firms: evidence from ethnic Overseas Chinese communities. *Strategic Management Journal*, *24*(6), 519–540. https://doi.org/10.1002/smj.312

Chen, G., & Hambrick, D. C. (2012). CEO Replacement in Turnaround Situations: Executive (Mis)Fit and Its Performance Implications. *Organization Science*, *23*(1), 225–243. https://doi.org/10.1287/orsc.1100.0629

Chung, C.-N., & Luo, X. R. (2013). Leadership succession and firm performance in an emerging economy: Successor origin, relational embeddedness, and legitimacy: Succession and Firm Performance in an Emerging Economy. *Strategic Management Journal*, *34*(3), 338–357. https://doi.org/10.1002/smj.2011

Connolly, J. M. (2018). Can Managerial Turnover Be a Good Thing? The Impact of City Manager Change on Local Fiscal Outcomes: Can Managerial Turnover Be a Good Thing? The Impact of City Manager Change on Local Fiscal Outcomes. *Public Administration Review*, *78*(3), 338–349. https://doi.org/10.1111/puar.12892

Day, D. V., & Lord, R. G. (1988). Executive Leadership And Organizational Performance: Sugges. *Journal of Management; Tucson*, *14*(3), 453.

Desai, M. N., Lockett, A., & Paton, D. (2016). The Effects of Leader Succession and Prior Leader Experience on Postsuccession Organizational Performance. *Human Resource Management*, *55*(6), 967–984. https://doi.org/10.1002/hrm.21700

Gamson, W. A., & Scotch, N. A. (1964). Scapegoating in Baseball. *American Journal of Sociology*, *70*(1), 69–72.

Gates, S. M., Ringel, J. S., Santibañez, L., Guarino, C., Ghosh-Dastidar, B., & Brown, A. (2006). Mobility and turnover among school principals. *Economics of Education Review*, *25*(3), 289–302. https://doi.org/10.1016/j.econedurev.2005.01.008

Georgakakis, D., & Ruigrok, W. (2017). CEO Succession Origin and Firm Performance: A Multilevel Study: CEO Succession Origin and Firm Performance. *Journal of Management Studies*, *54*(1), 58–87. https://doi.org/10.1111/joms.12194

Giambatista, R. C., Rowe, W. G., & Riaz, S. (2005). Nothing succeeds like succession: A critical review of leader succession literature since 1994. *The Leadership Quarterly*, *16*(6), 963–991. https://doi.org/10.1016/j.leaqua.2005.09.005

Grusky, O. (1960). Administrative Succession in Formal Organizations. *Social Forces*, *39*(2), 105–115. https://doi.org/10.2307/2574148

Hambrick, D. C. (2007). Upper Echelons Theory: An Update. *Academy of Management Review*, *32*(2), 334–343. https://doi.org/10.5465/amr.2007.24345254

Haveman, H. A., Russo, M. V., & 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. https://doi.org/10.1287/orsc.12.3.253.10104

Hill, G. C. (2005). The Effects of Managerial Succession on Organizational Performance. *Journal of Public Administration Research and Theory*, *15*(4), 585–597. https://doi.org/10.1093/jopart/mui034

Ingersoll, R. M. (2001). Teacher Turnover and Teacher Shortages: An Organizational Analysis. *American Educational Research Journal*, *38*(3), 499–534. https://doi.org/10.3102/00028312038003499

Karaevli, A. (2007). Performance consequences of new CEO 'Outsiderness': Moderating effects of pre- and post-succession contexts. *Strategic Management Journal*, *28*(7), 681–706. https://doi.org/10.1002/smj.589

Khanna, N., & Poulsen, A. B. (1995). *Managers of Financially Distressed Firms: Villains or Scapegoats? 50*(3), 23.

Loeb, S., Kalogrides, D., & Horng, E. L. (2010). Principal Preferences and the Uneven Distribution of Principals Across Schools. *Educational Evaluation and Policy Analysis*, *32*(2), 205–229. https://doi.org/10.3102/0162373710369833

Maynard, B. R., Salas-Wright, C. P., & Vaughn, M. G. (2015). High School Dropouts in Emerging Adulthood: Substance Use, Mental Health Problems, and Crime. *Community Mental Health Journal*, *51*(3), 289–299. https://doi.org/10.1007/s10597-014-9760-5

McTeer, W., & White, P. G. (1995). Manager/coach mid-season replacement and team performance in professional team sport. *Journal of Sport Behavior*, *18*(1), 58.

Miller, A. (2013). Principal turnover and student achievement. *Economics of Education Review*, *36*, 60–72. https://doi.org/10.1016/j.econedurev.2013.05.004

Murnane, R. J., Willett, J. B., & Tyler, J. H. (2000). Who Benefits from Obtaining a GED? Evidence from High School and Beyond. *THE REVIEW OF ECONOMICS AND STATISTICS*, *82*(1), 17.

Petrovsky, N., James, O., & Boyne, G. A. (2015). New Leaders' Managerial Background and the Performance of Public Organizations: The Theory of Publicness Fit. *Journal of Public Administration Research and Theory*, *25*(1), 217–236. https://doi.org/10.1093/jopart/muu008

Pfeffer, J., & Davis-Blake, Alison. (1986). Administrative Succession and Organizational Performance: How Administrator Experience Mediates the Succession Effect. *Academy of Management Journal*, *29*(1), 13.

Rose, H., & Betts, J. R. (2004). The Effect of High School Courses on Earnings. *Review of Economics and Statistics*, *86*(2), 497–513. https://doi.org/10.1162/003465304323031076

Rowe, W. G., Cannella, A. A., Rankin, D., & Gorman, D. (2005). Leader succession and organizational performance: Integrating the common-sense, ritual scapegoating, and vicious-circle succession

theories. *The Leadership Quarterly*, *16*(2), 197–219. https://doi.org/10.1016/j.leaqua.2005.01.001

Schepker, D. J., Kim, Y., Patel, P. C., Thatcher, S. M. B., & Campion, M. C. (2017). CEO succession, strategic change, and post-succession performance: A meta-analysis. *The Leadership Quarterly*, *28*(6), 701–720. https://doi.org/10.1016/j.leaqua.2017.03.001

Shen, W., & Cannella, A. A. (2002). REVISITING THE PERFORMANCE CONSEQUENCES OF CEO SUCCESSION: THE IMPACTS OF SUCCESSOR TYPE, POSTSUCCESSION SENIOR EXECUTIVE TURNOVER, AND DEPARTING CEO TENURE. *Academy of Management Journal*, 18.

Tushman, M. L., & Rosenkopf, L. (1996). Executive Succession, Strategic Reorientation and Performance Growth: A Longitudinal Study in the U.S. Cement Industry. *Management Science*, *42*(7), 939–953. https://doi.org/10.1287/mnsc.42.7.939

Vanderhaar, J. e. (1), Muñoz, M. a. (2), & Rodosky, R. j. (2). (2006). Leadership as accountability for learning: The effects of school poverty, teacher experience, previous achievement, and principal preparation programs on student achievement. *Journal of Personnel Evaluation in Education*, *19*(1–2), 17–33. https://doi.org/10.1007/s11092-007-9033-8

Villadsen, A. R. (2012). New Executives from Inside or Outside? The Effect of Executive Replacement on Organizational Change. *Public Administration Review*, *72*(5), 731–740. https://doi.org/10.1111/j.1540-6210.2012.02565.x

Villadsen, A. R. (2016). The Relation Between Executive Succession and Corporate Capacity. *Journal of Public Administration Research and Theory*, *26*(1), 19–29. https://doi.org/10.1093/jopart/muu036

Virany, B., Tushman, M. L., & Romanelli, E. (1992). Executive Succession and Organization Outcomes in Turbulent Environments: An Organization Learning Approach. *Organization Science*, *3*(1), 72–91. Retrieved from JSTOR.

Wills, G. (2016). Principal leadership changes and their consequences for school performance in South Africa. *International Journal of Educational Development*, *51*, 108–124. https://doi.org/10.1016/j.ijedudev.2016.08.005

Zhang, Y., & Rajagopalan, N. (2004). When the Known Devil Is Better than an Unknown God: An Empirical Study of the Antecedents and Consequences of Relay CEO Successions. *The Academy of Management Journal*, *47*(4), 483–500. https://doi.org/10.2307/20159598