

OPTIMAL TURNOVER RATES AND ORGANIZATIONAL PERFORMANCE IN  
PUBLIC AND NONPROFIT ORGANIZATIONS

A Dissertation  
by  
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## ABSTRACT

Until recent years, most public and nonprofit management studies have focused on the determinants of turnover rather than the consequences. In this line of literature, a better theory of turnover for public and nonprofit organizations, especially the one focused on outcomes of turnover, is needed. This dissertation seeks to advance our knowledge on the issues of turnover and organizational performance in public and nonprofit management. Using the three-paper model, the dissertation not only develops a theoretical model on turnover and performance, but also conduct empirical testing on how turnover affects the performance of public and nonprofit organizations.

Specifically, the first essay presents an economic model based on turnover cost-benefit theories by incorporating labor market conditions and quality of employees, which can be applied regardless of sector and industry. To do so, I re-evaluate turnover and retention costs that change according to employee quality and labor supply and demand. I also propose several testable hypotheses for future scholars, which enable them to examine under what conditions the optimal rates of turnover change and how public managers would benefit from an occurrence of turnover. The second essay investigates the effects of employee turnover on organizational performance in Florida school districts, distinguishing types of turnover as voluntary and involuntary. In the essay, I find an inverted-U shaped relationship between involuntary turnover and organizational performance, first positive and then negative. The last essay tests an inverted-U shaped relationship in the context of the United Way nonprofit organizations. Findings suggest that governing board turnover rates have a nonlinear effect on nonprofit financial capacity, first positive and then negative. Taken together, both theoretical and empirical investigations in this dissertation suggest that optimal turnover rates exist and that those

can vary by sector. The findings provide an important lesson for both scholars and practitioners that turnover should be appropriately managed, not necessarily minimized.

## DEDICATION

To the love of my life, my mother, my father, and my grandparents.

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## NOMENCLATURE

OTR	Optimal Turnover Rates
TC	Turnover Costs
RC	Retention Costs
TTC	Total Turnover Costs
FCAT	Florida Comprehensive Assessment Test
VIF	Variance Inflation Factor
UW	United Way

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# 1. INTRODUCTION

## 1.1 Introduction

Turnover is inevitable across organizations regardless of sector and industry, and notwithstanding individuals' job security (Stahl, 1962). When personnel turnover occurs, public managers incur extra costs to conduct exit interviews, start a search procedure, and replace these workers (Pitts, Marvel, and Fernandez, 2011). Turnover, as a result, has been regarded as an aspect of organizational performance that should be minimized (e.g., Crewson, 1997; Kim, 2002; Wright and Kim, 2004; Langbein and Stazyk, 2018) due to its significant costs to organizations.

Two dominant theories that explain the turnover-performance link are human and social capital theories and cost-benefit theories. Human and social capital theory contend that turnover is always costly because it can hurt an organization's human and social capital; a new employee needs time to be socialized and trained, which can impose costs to the organization (Strober, 1990). Abelson and Baysinger (1984), however, propose cost-benefit theories of turnover that posit an inverted-U shaped relationship between turnover and performance. They argue that at low to moderate turnover rates, organizations can benefit by reducing unnecessary retention costs (and then distributing the resources to other core functions of organizations). If turnover is too excessive, however, its costs can outweigh its benefits thereby hurting organizational performance. Turnover, thus, might have a nonlinear effect on performance and needs to be evaluated based on its costs and benefits that are imposed to organizations; not all turnover events are necessarily *bad*.

The core argument of cost-benefit theories is that each organization has an optimal turnover rate and every turnover rate deviating from the optimal turnover rate can

be a sign of organizational inefficiency. In other words, too low or too high turnover rates are not desirable in terms of organizational performance. The conventional assumption of the mainstream literature in public and business management is that low turnover rates are more desirable compared to high levels of turnover (Glebbeeck and Bax, 2004; Huselid, 1995). Managerial efforts should, therefore, focus on minimizing turnover rather than managing it.

This dissertation investigates the issues of turnover and provides insights on how to manage turnover to improve organizational performance. In doing so, I present a theoretical model of turnover and performance incorporating labor market conditions and employee quality in Chapter 2. The following two chapters, Chapters 3 and 4, conduct empirical tests on the relationship between turnover and performance in two different contexts: employee turnover in public organizations, and governing board member turnover in nonprofit organizations. Together, the dissertation adds valuable knowledge to the evidence base on turnover and performance management. Before providing a brief overview of each chapter, I first review previous studies on the effect of turnover on organizational performance to better clarify the contribution of my work.

## **1.2 Literature Review**

Theoretically, turnover can have both advantages and disadvantages in term of organizational performance, as turnover often brings new employees who have better sets of skills, while at the same time imposing costs to an organization for searching and hiring the replacement (Call et al., 2015; Hausknecht and Holwerda, 2013). Meta-analytic results (Park and Shaw, 2013; Shaw, 2011) suggest a negative relationship between organizational turnover and organizational performance. Yet, recent studies argue that the relationship is not simply linear, but instead might be nonlinear; and they find some support for an inverted-U shaped relationship between turnover and performance (An,



2015; Meier and Hicklin, 2008; Moon, 2017; Siebert and Zubanov, 2009).

However, the theoretical argument between those studies is not entirely clear and often conflicts each other. For instance, Meier and Hicklin (2008) find the inverted-U shaped relationship for the first time distinguishing levels of task difficulty in the context of education. The key argument in the study is that new ideas from new teachers would be more valuable for high levels of task difficulty (e.g., college entrance exams) while the benefits would be marginal for state standardized exams since task difficulty for those exams is low. The task difficulty argument, however, does not hold in the study that examines retail stores in England where Siebert and Zubanov (2009) find an inverted-U shaped relationship between part-time employee turnover rates and annual sales, but, a negative linear relationship between full-time employee turnover rates and annual sales. More recently, Moon (2017) tests the nonlinear hypothesis using voluntary turnover rates in federal agencies and finds empirical support between voluntary turnover and goal attainment. Based on the findings, he contends that low levels of voluntary turnover can initially improve organizational performance through new employees who can revitalize the stagnated workforce with new ideas and innovation.

The aforementioned studies provide not only mixed empirical results but also provide different mechanisms to explain the effects of organizational turnover on organizational performance. Recently, scholars propose context-emergent (Nyberg and Ployhart, 2013) and capacity-based theories (Hausknecht and Holwerda, 2013) to better understand the turnover-performance link. The former emphasizes the role of context (i.g., organizational size, timing of changes, etc.) and the latter highlights the quality of leavers, newcomers, and remaining employees as key capacity factors that result in the different effects of turnover on organizational performance. In this dissertation, I plan to illustrate how optimal turnover rates would change based on labor market conditions, as well as how the effects of turnover would differ based on organizational and

environmental characteristics. I examine these issues through the lenses of the cost-benefit theories and develop both theoretical models and empirical testing. To these ends, I provide a synopsis of Chapters 2 to 4.

### **1.3 Overview**

In Chapter 2, I seek to advance the theory of turnover and performance, incorporating labor market conditions and the quality of employees and considering costs and benefits to organizations. I first challenge a common assumption in turnover-performance studies that organizations can find replacements as soon as the turnover occurs since many organizations often have a difficulty finding a suitable job candidate once a current employee announces her/his last day of work. The job market can be indeed notorious in searching for a suitable job candidate due to limited quality labor supply and the asymmetry of information between future employers and employees. Therefore, the failure to account for these factors can mislead our understanding of the relationship between turnover and the performance of organizations. Understanding labor market conditions is important since it also often determines the quality of employees. The chapter introduces a set of assumptions regarding how turnover and retention costs would differ based on labor market conditions and the quality of employees in public sector. Based on these I also propose a set of testable propositions for future scholars, which posit the turnover-performance relationships being conditioned on many different organizational and environmental contextual factors.

Chapter 3 incorporates the quality of employees into the cost-benefit theories and test the relationship between employee turnover and organizational performance in the public sector using Florida school district data from 2012 to 2014. More specifically, this chapter criticizes the common use of absolute measures in the literature and distinguishes types of turnover as voluntary and involuntary. I argue that employees with more

alternative options (which indicates that they are likely to be good performers) are more likely to leave organizations (voluntary turnover), and that this type of turnover can detrimentally affect organizational performance. In contrast, firing low-performing employees (involuntary turnover) can improve organizational performance until turnover costs become excessive. The results suggest that involuntary turnover has an inverted-U shaped relationship with organizational performance, which is first positive and then negative and that absolute turnover rates can mask the complex and dissimilar relationships between various types of turnover and organizational performance.

Chapter 4 investigates the effects of governing board turnover on organizational financial capacity in the context of nonprofit organizations. Governing board members in nonprofits serve as boundary spanners who link the organization with the external environment, and also act as principals who ensure that critical resources are spent to achieve organizational missions. They, therefore, play a critical role in attracting and utilizing financial resources. Given its importance, any turnover occurring to the governing board should affect the financial capacity of the organization. While the relationship between attributes of the nonprofit governing board and organizational performance has been an enduring research topic, we know very little about whether and how governing board turnover would affect the performance of nonprofit organizations, especially with regard to financial capacity. Adopting theoretical perspectives from cost-benefit, resource dependency, and agency theory, I develop a nonlinear hypothesis between governing board turnover and nonprofits' financial capacity. Using cross-sectional data constructed based on different sources, I test the hypothesis in the context of the United Way organizations. I find general support for my hypothesis, which yields implications for both research and practice of nonprofit human resources management.

## 2. OPTIMAL TURNOVER RATES AND PERFORMANCE IN PUBLIC ORGANIZATIONS: THEORETICAL EXPECTATIONS

### 2.1 Introduction

High-quality human capital is essential in all organizations (Cho and Park, 2011) regardless of sector and industry. To acquire and sustain high-quality human capital, organizations invest a significant amount of human and financial resources in hiring and training employees (Lee and Mitchell, 1994). Yet, once those employees leave the organization, the investments become sunk costs and organizations need to allocate resources, again, in hiring and training of employees who replace the ones leaving. Because of the significant turnover costs, public management literature generally focuses on minimizing turnover rates in organizations. This view aligns with human and social capital theories, which suggest that employee turnover is negatively associated with organizational performance, because turnover can cause the loss of firm-specific capital and skills that have been acquired and possessed by employees over time and also destabilize network structure among employees within the organization.

However, minimizing turnover rates to zero cannot always be the best managerial practice since it can distract organizations from their core functions. Abelson and Baysinger (1984) propose a theoretical framework of cost-benefit suggesting an inverted U-shaped relationship between employee turnover and organizational performance, first positive and then negative. In the similar vein, public management scholars have

developed theoretical explanations on the potential nonlinear relationship between turnover and performance, incorporating a classic public administration hypothesis proposed by Mosher and Kingsley (1936). To illustrate, at low levels of turnover, new hires who replace former employees can bring new ideas that can lead to positive changes in organizations and that can prevent organizational rigidity or inflexibility, all of which can positively affect organizational performance (Meier and Hicklin, 2008; Moon, 2017; Lee, 2017). Once turnover occurs too frequently, however, the total turnover costs can outweigh the benefits, thereby detrimentally affecting the organizational performance. There are two implicit assumptions in this line of literature, which are not necessarily the case; first, organizations can find replacements right after the employee who is leaving announces her/his last day at work, and second, the average quality of new hires is greater or at least equal to the average quality of leavers. In other words, previous studies on the turnover-performance relationship do not often take labor market conditions and the quality of labor into consideration.

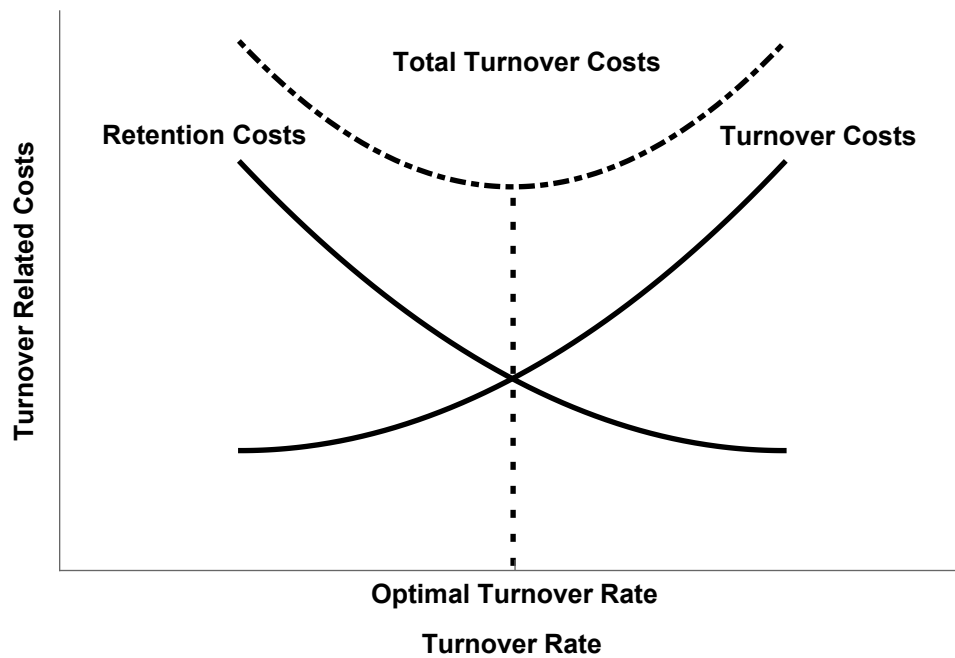
In this chapter, I incorporate labor market conditions and the quality of labor into the theoretical framework of cost-benefit to provide a better understanding of the turnover-performance link in the context of public organizations. The chapter proceeds as follows. I first introduce the cost-benefit model of turnover developed by Abelson and Baysinger (1984), and argue that Optimal Turnover Rates (OTR) would differ by sector due to the different labor supply and demand curves. Second, I show how changes in labor market conditions (increases in labor supply/demand) affect OTR in public

organizations. Third, I develop parsimonious decision-theoretic models of turnover-performance focusing on the quality of individuals, both those who leave the organization and those who newly enter the organization. The following discusses how turnover affect organizational performance and how the relationships differ according to various organizational-level characteristics. In doing so, I provide cases on whether and how to manage or minimize the turnover. After that, I conclude with discussions and implications.

## **2.2 An Overview of Optimal Turnover Rates from Cost-Benefit Theories**

The origin of cost-benefit theories is based on the idea that not all types of turnover are dysfunctional (Abelson and Baysinger, 1984; Meier and Hicklin, 2008); turnover should be evaluated based on its costs imposed to an organization. For instance, instead of spending massive retaining costs to minimize turnover rates to zero (regarding turnover as a bad thing), coping with a certain level of turnover can be a more cost-efficient way for an organization to manage performance (Dalton and Todor, 1979, 226). There can be an OTR for an organization, and the efforts to make the turnover rate close to OTR is a more desirable practice than making the rate to zero. If OTR exists, any turnover rates that deviate from it can be deemed as a sign of the organization being dysfunctional and inefficient. The goal of human resource management in any organizations, therefore, is to achieve OTR by balancing turnover costs (TC hereafter) and retention costs (RC hereafter). Abelson and Baysinger (1984) define TC as “the costs associated with the separation of incumbent employees plus the costs of searching for and training new

employees” (333) and RC as costs that occur to decrease turnover rates in an organization using such tools as higher compensation, promotions, and inter-departmental transfers. Figure 2.1 depicts the basic economic model of optimal turnover originally proposed by Abelson and Baysinger (1984) and shows the optimal rate of turnover in an organization is where RC and TC meet.



Source: Abelson and Baysinger (1984).

Figure 2.1: A model of optimal turnover rate

In figure 2.1, y- and x-axis represent *all* turnover-related costs and turnover rates, respectively. From the perspectives of human resource management, the low turnover rates can be the result of high RC, given that RC increases through attempts to reduce turnover rates by spending organizational resources to retain employees (Abelson and

Baysinger, 1984, 333). If an organization spends higher RC than the optimal point where TC and RC cross over, TC will go down as the organization successfully retains the current employees. In this case, as illustrated in the figure, at any other point besides the optimal one, Total Turnover Costs (TTC), the sum of vertical lines of RC and TC, are higher, which indicates that the organization is functioning inefficiently. A key takeaway from this figure is that if the RC curve is placed higher than the TC curve, an organization can improve its performance by redesigning their retention policies. In other words, if the organization pays equally high compensation for both poorly performing employees as well as skilled ones, managers may want to correct this practice, thereby increasing the efficiency of the organization. In the opposite case where the TC curve is higher than the RC curve, unless organizations can increase the retention costs to reduce turnover rates, the occurrence of any turnover hurts organizational performance. To summarize, the key three assumptions derived from the model are; first, when turnover rates increase and  $RC > TC$ , organizational performance is more likely to increase; second, when turnover rates increase and  $RC < TC$ , organizational performance is more likely to decrease; and third, when  $TC \neq RC$ , an organization is functioning inefficiently.

### **2.3 Optimal Turnover Rates and Labor Market Conditions**

The cost-benefit theory suggests that turnover rates and turnover costs play an important role in determining the effectiveness/efficiency of organizations. Previous studies that investigate the turnover-performance link show a negative (e.g., Alexander, Bloom, and Nuchols, 1994; Cannella and Hambrick, 1993; Meier, Mastracci, and Wilson, 2006),



positive (e.g., Keck, 1997; Virany, Tushman, and Romanelli, 1992), and nonlinear relationship (e.g., An, 2015; Meier and Hicklin, 2008; Moon, 2017) between the two. The mixed results on this topic call for a better theory that can explain the phenomena. I argue that to better understand the link, labor market conditions need to be considered, since the labor supply and demand are not exogenous to turnover rates and costs. In other words, changes in the labor supply and/or demand are more likely to affect turnover costs and retention policies in organizations. And an employee's decision to quit (or a manager's decision to fire an employee) can also be conditioned on the labor market conditions. This chapter defines the labor demand as "the number of positions for qualified individuals" that organizations advertise for a certain level of compensations, and the labor supply as "the number of qualified individuals willing to take those positions at a given level of compensation" (Grissom, Viano, and Selin, 2016, 242). The following section describes how OTR would differ by sector and how public managers can respond to changes in the labor supply and demand in managing human resources.<sup>1</sup>

### **2.3.1 Sectoral Differences in Optimal Turnover Rates**

An exit of bureaucrats poses transactional costs to a government organization such as searching, hiring, and bargaining. While conducting such activities to hire a new employee, a government agency participates in a labor market where bureaucrats are the suppliers of labor (supply curve) and the agency is a buyer (demand curve) (Teodoro, 2015). The conditions of the governmental labor market, such as labor supply, can

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<sup>1</sup> Although I investigate whether OTR would differ between sector (public vs. private), the argument is more likely to hold between industries as well.

substantially affect the agency's efforts to find a replacement. From a perspective of job candidates, the labor market entry selection – i.e. whether the candidates will work in a public or private organization – is not random; job candidates select a labor market based on their preferences (e.g., salaries, work hours, location, task significance, social impact, ambition, etc.). The non-random labor market entry process can make each sector or industry labor market unique. For simplicity, this chapter assumes that the number of qualified individuals for governmental jobs will vary depending on skill requirements and salary, holding motivation and ambition within sector constant.

Labor supply and demand curves of the public sector labor market are likely to differ from the ones in the private sector, due to different levels of salary (Wilson, 1994), job security (Rainey, 2009), and hierarchy (Downs, 1967). The different labor market conditions in the public labor market can have different impacts on TC and RC curves in the model of OTR. First, RC curves in the public sector labor market are less likely to shift in comparison to the ones in the private sector, since public managers have fewer managerial tools and options to retain bureaucrats; public managers cannot simply offer higher salaries or provide promotions when a highly skilled bureaucrat wants to quit.

Second, skill requirements and low-salaries in the public sector would influence the TC curve. In certain governmental agencies, acquiring policy-oriented knowledge or agency-specific expertise is necessary (Bertelli and Lewis, 2012). For instance, in regulatory agencies, without knowing regulatory laws and other detailed procedures, bureaucrats often have trouble continuing their work. Knowledge about the red tape or

other bureaucratic procedures is also required for a government employee. Public organizations, however, are not often able to provide sufficient (at least material) rewards to their employees for acquiring these specific knowledge and expertise. This is also an issue when coupled with the public organization's salary system, which is mostly determined based on previous experience and degrees; federal employees are paid based on their grade levels (or previous experience) and their degree level, not necessarily based on their performance. The salary system can create a potential problem in recruiting talented individuals, which can become even more severe over time. For instance, regulatory requirements for operating a public water facility have become more complex and technical than they were thirty years ago, which imposes much greater job requirements (or skill requirements) on the bureaucrats who were recently hired in such agencies compared to those who were employed before. Yet, due to an inflexible wage system in the public sector, salaries for senior employees are more likely to be higher than new employees who might possess better skills and technical expertise. Few incentives to obtain agency-specific skills and knowledge, as well as a pay system that are not based on performance, can drive potential job applicants away from getting into the labor market for public organizations.

To sum up, I argue that the labor supply in the labor market for government agencies might be scarce, compared to the market for private firms. In such cases, a public agency's costs of searching and hiring would be greater. If a talented job candidate receives multiple offers, bargaining costs increase as well. Furthermore, for some

governmental agencies (e.g., FBI and CIA), hiring processes often take years due to background checks and the civil service exam. For these reasons, I posit that turnover costs in a public labor market on average are greater than those in a private labor market, especially when public managers have fewer means to retain employees compared to the managers in their private counterparts.<sup>2</sup> Applying this logic to Figure 2.1, TC curve is more likely to move to the left due to higher turnover costs. Figure 2.2 depicts the new OTR in public organizations. Based on the logic, the first proposition is:

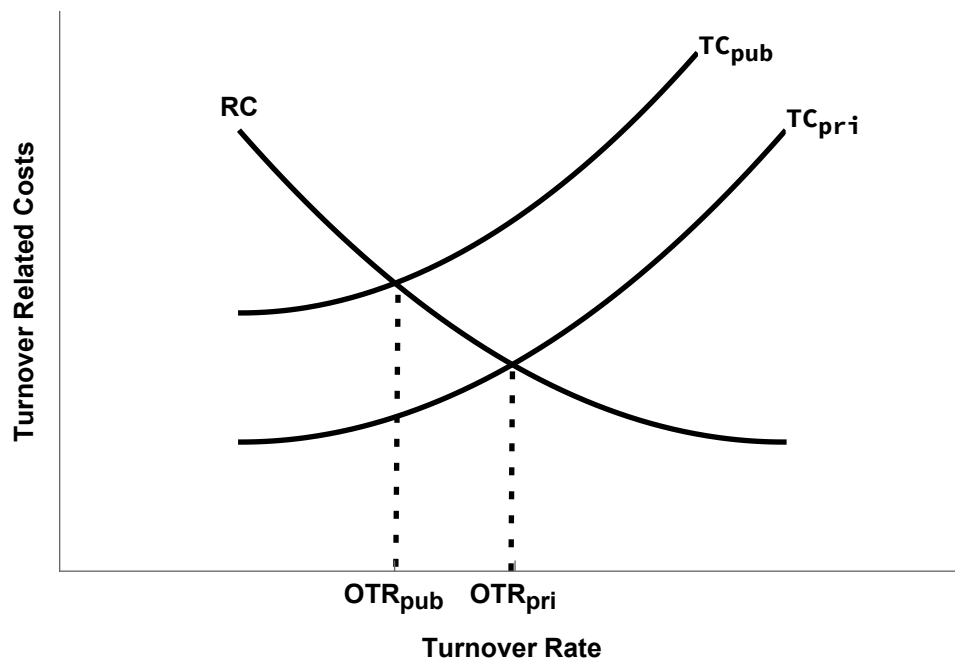


Figure 2.2: A model of optimal turnover rates in public organizations

<sup>2</sup>For simplicity, figure 2.2 assumes no differences in RC between public and private organizations. If private organizations spend higher RC, the gap of optimal turnover rates between public and private organizations is more likely to be greater (since optimal turnover rates for private organizations will be determined at a higher point than it is illustrated in figure 2.2).

**Proposition 1.** *An optimal turnover rate for a public organization is determined at a lower point than it is for a private organization.*

There is natural turnover due to death, illness, or other reasons; some types of turnover are simply unavoidable. If natural turnover rates in an organization are close to OTR, managers would have less room for managing turnover. Because OTR in private organizations are more likely to be at a higher point than the ones in public organizations, assuming natural turnover rates are lower than those optimal turnover points, public organizations are more likely to observe the negative effects of turnover on organizational performance sooner than what private organizations would experience.<sup>3</sup>

### **2.3.2 Optimal Turnover Rates in Public Organizations Responding to Labor Market Conditions**

OTR of public organizations can change according to the labor market conditions, which are dynamic rather than static. I will provide two cases to examine how OTR would change in public organizations when the labor supply or demand increases. First, suppose that the public labor market becomes more competitive due to an influx of labor supply. If the labor market becomes more competitive due to an increase in labor supply, public managers can spend fewer resources on recruiting talented employees compared to before. On the contrary, job seekers will have to invest more on cultivating their expertise to acquire a job in the competitive labor market; or, they may be willing to accept a job

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<sup>3</sup> This argument holds true if natural turnover rates are randomly distributed across sectors. If natural turnover rates are higher than OTR, this may indicate that organizations have a functional problem in recruiting employees. In this case, every turnover is more likely to hurt organizational performance. This also suggests that the probability of organizational survival in the long term is more likely to be low.

with worse conditions, such as lower salary or more hours to work. From a perspective of an organization, this means that the organization can get an equally skilled and qualified worker with fewer costs. If a newly hired employee has already invested in developing their skills getting through the job market, the organization can allocate human and financial resources currently being spent on training new employees to other key organizational activities. I, therefore, argue that an increase of labor supply will lower all turnover-related costs (from TRC1 to TRC2) and shift TC curve to the right (lowering turnover costs). When this occurs, OTR will be determined at a higher point, as shown in figure 2.3.

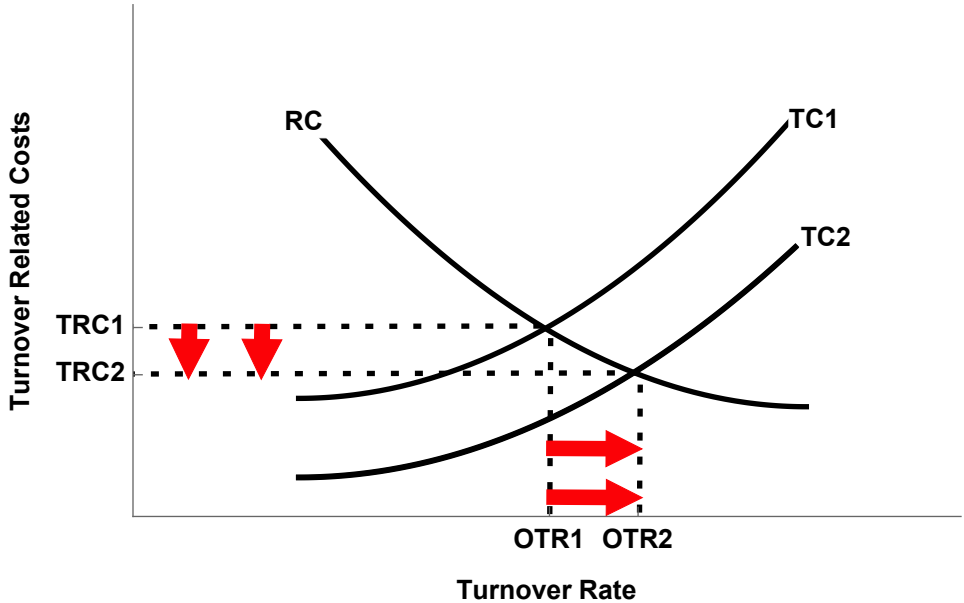


Figure 2.3: Optimal turnover rates responding to an increase in labor supply

In figure 2.3, the optimal turnover rate in a public organization moves from OTR1

to OTR2 due to an increase of labor supply. In this case, the manager in the organization has *more* room to manage organizational turnover. In other words, if the public organization was functioning at OTR1 initially, once the labor supply increases, the manager can encourage turnover by OTR2-OTR1 to improve organizational performance.

**Proposition 2:** *When the labor supply increases, optimal turnover rates in a public organization will be determined at a higher level.*

Second, suppose that the demand for labor in public organizations increases. As opposed to the first case that describes a more competitive labor market, turnover costs in public organizations are more likely to be greater. To illustrate, when an employee leaves her/his organization when the demand for labor is high in the labor market, an organization would be less likely to find a replacement with similar levels of skills and knowledge unless they offer higher compensations and better working conditions. Due to inflexible human resources systems in public organizations in general, however, public organizations are limited to offering and adjusting salaries or working conditions to attract good/qualified candidates. In this regard, to overcome the challenge, public managers can emphasize potential task significance and social impact that can be carried through the work of public organizations (Gailmard and Patty, 2007). Public organizations can also use their unique brands or reputations, if they have any, to attract future employees or retain current employees (Carpenter, 2002; Lee and Whitford, 2013; Teodoro and An, 2018). These managerial actions will raise turnover costs.

Figure 2.4 illustrates when there is a high level of labor demand in the market,

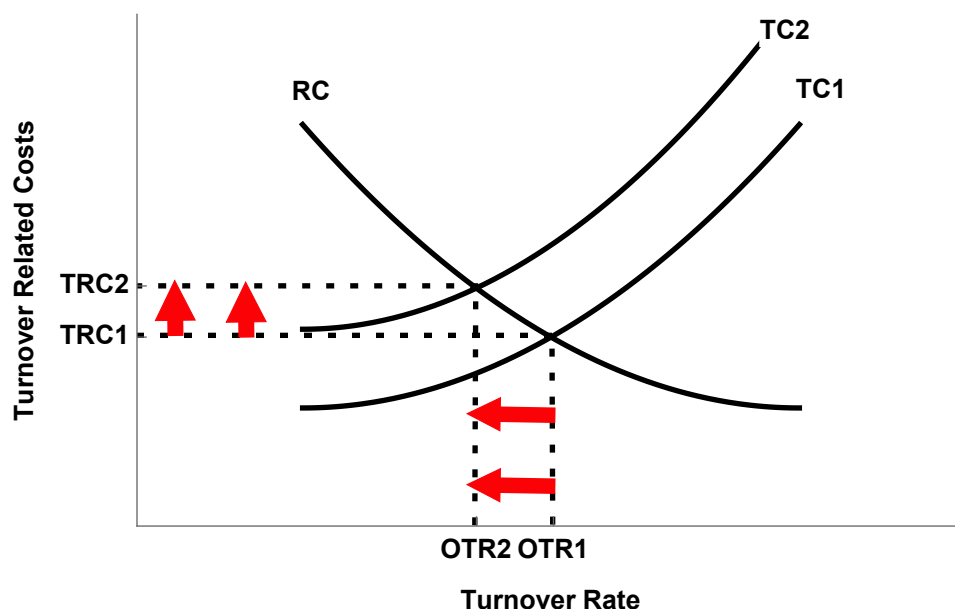


Figure 2.4: Optimal turnover rates responding to an increase in demand for labor

turnover related costs for a public organization will first increase from TRC1 to TRC2. Since the RC curve in the public organization is more likely to be fixed, TC curve in the figure shifts to the left, which determines OTR at a lower point. In this case, public managers are more likely to have *less* room for managing organizational turnover by OTR1-OTR2 in Figure 2.4.

**Proposition 3:** *When the demand for labor increases, optimal turnover rates in public organizations will be determined at a lower level of turnover.*

## 2.4 When Turnover Matters: Decision-Theoretic Models of Employee and Organizational Turnover

In addition to the labor market conditions presented above, I now focus on incorporating the quality of employee in the turnover-performance model. A key take away from the



theories thus far is that excessively low or high turnover can be harmful to organizational performance since organizations are spending more resources on either retention or turnover costs unnecessarily; organizations can spend less (or more) resources on retaining employees to encourage (or discourage) turnover rates to maximize organizational performance. The assumption, however, is less likely to be applied to public organizations, given that public managers have fewer managerial tools due to inflexible reward systems in the public sector. Public management scholars, therefore, focus more on the quality of employees when examining the relationship between turnover and performance in a public organization, and argue that turnover can be beneficial to the organization if replacements of leavers are more likely to bring new ideas, expertise, and skills that can revitalize the current workforce until the total turnover costs exceed such benefits (see, Lee, 2017; Meier and Hicklin, 2008; Moon, 2017). The assumption can be formally expressed as:

$$P_n - TC > P_l, \quad (2.1)$$

where  $P_n$  indicates performance of a new recruit,  $P_l$  denotes performance of the leaver, and  $TC$  is turnover costs that include Costs of Recruitment (CR), Costs of Training new recruit (CT), and Costs of Learning about organization-specific skills and the culture of the organization (CL).

Equation 2.1 suggests that if a new recruit performs better compared to the leaver, accounting for the total turnover costs (C), encouraging turnover can be a strategic action

for public managers:  $P_n - P_l - TC > 0$ , which means that turnover can benefit the organization. To illustrate, if bureaucrats are significantly underperforming, by laying off or letting them go, public managers can remedy the incorrect hiring decisions thereby improving organizational performance. The following equation illustrates the opposite case when the new recruiter's performance is equal to or less than the leaver's performance.

$$P_n - TC < P_l \quad (2.2)$$

If it is the case for equation 2.2, an occurrence of turnover is more likely to hurt organizational performance. In this situation, the best managerial strategy for public managers would be retaining employees who intend to leave, especially when those employees are highly skilled and valued in the organization. The key assumption in equations 2.1 and 2.2 is that an organization can immediately find a replacement once an employee leaves. If the organization cannot find a replacement on time, turnover costs become greater as organizations operate until they find a suitable replacement. Furthermore, comparing a new recruit's performance to the leaver's one might not be realistic since experience is one of the key factors that determine an individual's performance in the organization (Hunter and Thatcher, 2007; Juenke, 2005; Quíñones, Ford, and Teachout, 1995). In other words, when a new employee is hired, due to the learning curve and time to adjust to the new environment, it is more likely that she/he might not perform as good as the leaver. Thus, when a manager is hiring a new employee,

perhaps rather than a direct comparison of performance between the newcomer and leaver, she/he might consider potential qualities of candidates, which may appear after some time. Formally put,

$$\sum_{t=0}^T (P_{n,t} - TC_t) > T \cdot P_l, \text{ where } t=\text{time} \quad (2.3)$$

In equation 2.3, when  $t = 0$ ,  $P_{n,t}$  is more likely to be equal to zero, given that it is when the time of the leaver's departure. CR can be also zero after the organization hires a replacement of the leaver, since it is after the organization recruits the replacement. Note that  $P_{n,t}$  increases over time while CT and CL decrease due to the learning effect of the new employee. Suppose that the organization benefits from the occurrence of turnover at  $t_3$ . Equation 2.3 can be rewritten as

$P_{n,0} + P_{n,1} + P_{n,2} + P_{n,3} - (TC_0 + TC_1 + TC_2 + TC_3) - P_l \cdot 3 > 0$  (turnover benefits the organization). If  $T$  is shorter than 3 in this example, the effects of turnover are more likely to be negative. When it comes to a hiring decision, the realization of  $T$  for a public organization is more likely to depend on *managerial patience* (considering the long-term performance of a replacement of the leaver rather than short-term). Yet, regardless of levels of managerial patience, organizations would always prefer a shorter  $T$ , because while  $T$  increases, the costs associated with waiting for the new hires to perform well

increases.<sup>4,5</sup> In addition, it is worth noting that public managers pay attention to the performance of the organization as a whole, rather than focusing on the performance of individual employees specifically. For instance, a manager's level of patience might be higher in an organization with lots of good performers, while the opposite is the case for a manager who works in an organization with low quality of workers. In other words, organizational-level characteristics can also affect the relationship between turnover and performance. The following section explains four major factors that should be considered in the effect of turnover on performance in public organizations: the qualities of employees in an organization, labor market conditions (the labor supply and demand), organizational size, and social capital in the organization.

#### **2.4.1 Employee Quality in the Organization**

Even if turnover rates are the same across organizations, the effects of organizational turnover would be different depending on the quality of leavers (Hausknecht and Holwerda, 2013), as well as the ones who remain in the organization. Reflecting the notion of employee quality, recent public management scholars have distinguished types of turnover as voluntary and involuntary (e.g., An, 2015; Lee, 2017; Moon, 2017), as opposed to focusing on the quantity of turnover using total turnover rates (e.g., Meier and Hicklin, 2008). The idea is that the distinct origins of each turnover would have a

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<sup>4</sup>If  $T$  is always too long in organizations, this indicates that the organization may have a problem in their hiring process or in attracting quality candidates from the labor market.

<sup>5</sup>If managerial patience is constant or if an organization has rules or policies that require a newcomer to show a certain level of performance in a certain period, whether or not employee turnover improves organizational performance solely depends on a various individual, organizational, and environmental characteristics, which can affect the length of  $T$ .

different effect on organizational performance (see, An, 2015; Lee, 2017). For instance, voluntary turnover would have a negative effect on organizational performance since capable employees with more alternatives are more likely to quit, while involuntary turnover would have an inverted-U shaped relationship due to the initial benefits of laying off low-performing employees up to a certain point (An, 2015).

Though the categorization of voluntary and involuntary turnover is useful to capture the quality of leavers, the previous studies only take the quality of leavers into account; they do not fully capture other dynamics such as the quality of newcomers and remaining employees in the workforce. Considering the quality of newcomers and remaining employees in the organizational workforce is also equally important in addition to the quality of leavers (Hausknecht and Holwerda, 2013), not only because the average quality of remaining employees is conditioned on the quality of leavers but also because managerial patience for new hires is more likely to be affected by the performance of leavers. More importantly, both the quality of newcomers and remaining employees are more likely to affect organizational performance. To illustrate, if high-performing employees leave an organization, the effects of employee turnover are more likely to be negative on organizational performance (McEvoy and Cascio, 1987). The negative effects would become stronger if the rest of employees in the workforce are relatively new (i.g. lack of experience or low skills) or the replacements of high-performing leavers have low levels of human capital (Hausknecht and Holwerda, 2013). In this regard, I present three propositions:

**Proposition 4:** *When high-performing employees leave, the effects of organizational turnover would be more detrimental.*

**Proposition 5:** *When the replacements of leavers have low levels of human capital, the effects of organizational turnover would be more detrimental.*

**Proposition 6:** *If organizations are functioning with relatively inexperienced personnel after an occurrence of turnover, the effects of organizational turnover would be more detrimental.*

## **2.4.2 Labor Market Conditions**

Changes in labor supply and demand can affect turnover benefits or losses since the labor market conditions affect total turnover costs. In other words, the turnover-performance link is likely to be conditioned on the labor market condition. To illustrate how changes in a labor market condition would affect the turnover-performance link, I use cases from the context of K-12 education, which has a similar human resource management system and turnover rates as other government organizations (Grissom, Viano, and Selin, 2016).

### *2.4.2.1 Case 1: Changing a hiring standard*

The labor supply can increase or decrease depending on a hiring standard in a labor market. In the K-12 education labor market, to apply for a teaching position in a K-12 school in the US, applicants need to have a teacher certification. Though the requirements for the certification vary by states, in general one must have a bachelor's degree granted from an accredited college or university and should have passed tests for necessary

knowledge and skills. Imagine a state passed a law that removes the requirement of the teacher certification to overcome shortages of teachers for certain subjects. By lowering the standard, we would expect that an increase of labor supply in the K-12 education labor market; individuals without the teacher certification can now apply for a teaching position in K-12 schools. In this case, TC costs will be reduced and/or turnover rates will be determined at a lower level. To illustrate, first, for an organization, the costs of searching are more likely to decrease due to an increased labor supply. Once a teacher decides to leave, a school can find the replacement of the employee more easily. Second, from the perspective of teachers, since the labor market becomes more competitive due to an increase in the labor supply, employees are more likely to work harder to keep their current job and that they will think about their exit options more carefully if they were originally planning to leave the school. In these cases, all turnover-related costs are more likely to decrease from the perspective of the organization as a whole.

**Proposition 7:** *Turnover would be less detrimental to organizational performance when the labor supply increases in the labor market, holding the labor demand constant.*

#### 2.4.2.2 Case 2: Environmental Turbulence

The second case will illustrate how changes in the labor demand would affect optimal turnover rates in an organization. Here I provide an example of an occurrence of a natural shock: Hurricane Katrina. When Hurricane Katrina hit New Orleans, many Hurricane Katrina evacuees moved to neighboring states (e.g., Texas). Students from New Orleans had to go to a school in the neighboring state since many schools in their hometown were

devastated or closed for safety reasons. When the natural shock of student enrollments occurred, teachers in the neighboring state were more burdened with higher workloads simply because they had to take care of more students. If teachers leave the school due to the increased workloads, it would be difficult for a school manager to find replacements unless the school offers higher wages that would reflect the increase in the demand for labor in the market; in this case, an occurrence of turnover would become more costly.

**Proposition 8:** *Turnover would be more detrimental to organizational performance when the labor demand increases in the labor market, holding the labor supply constant.*

### **2.4.3 Organizational Size**

The key idea of cost-benefit theory related to the turnover-performance link is that how to better utilize resources in organizations. For instance, if organizations spend too much on retention costs, encouraging turnover can be a managerial strategy since they can spend saved resources on other core functions. If the key that determines the turnover-performance link is the resource utilization, organizations with more resources are more likely to be in a better position to manage turnover.

In a large organization, if turnover occurs, an immediate replacement of the leaver might not be necessary; a public manager may find a substitute within the current workforce of the organization until they find a suitable candidate. Larger organizations also tend to accumulate and/or have more slack resources. If utilized resources in search for a new employee are from those slack resources, organizations could potentially benefit from the occurrence of turnover.



When it comes to human resource management practices, larger organizations tend to have better systems and practices prepared for the occurrence of turnover, such as procedures and strategies for searching, hiring, and training new employees. If a small organization does not invest in those managerial activities due to a small number of turnovers, turnover costs could be even more significant when there is a sudden occurrence of turnover.

Lastly, job candidates' decision to apply for a position is not a random process. Large organizations are more likely to attract job candidates for various reasons such as higher reputations, brands, and job security (Barber et al., 1999; Carpenter, 2002; Lee and Whitford, 2013). Furthermore, if job candidates are more motivated to work in a public organization due to task significance and social impact, as they are being promoted higher in the chain of command, they would have more opportunities to have a more substantial impact on society. Taken together, turnover costs in large organizations would be less costly.

**Proposition 9:** *Turnover would be less detrimental to organizational performance in a large organization.*

#### **2.4.4 Organizational Social Capital**

At the organization level, turnover costs are not only attributable to replacement, training, and learning costs but also related to the disruption of social network and capital in the workforce. For instance, over time, employees not only develop skills and knowledge through their job and experience but also build trust and network with others in the

organization. A sudden leave of co-workers can, thus, have negative consequences in the organizational social capital, such as hindering communications among employees as well as between employees and managers, undermining trust among employees, deterring cooperation among staff, and so forth. When a loss of human capital due to an occurrence of turnover combines with that of social capital, the effects of turnover can be much greater in an organization (Shaw et al., 1998). Those effects are more likely to be greater if an organization has a high level of social capital in terms of social networks, cohesion, and trust among employees.<sup>6</sup>

**Proposition 10:** *Turnover costs will be greater at the organization level due to the disruption of social network and capital in the workforce.*

## **2.5 Minimizing Turnover: High Uncertainties in Hiring Processes**

Thus far I have discussed the management of turnover, based on assumptions that turnover is not always bad and that the effects of turnover on the organizational performance should be considered. Yet, there is a situation where turnover always brings out negative consequences on the organization and therefore should be minimized: when an organization faces a high level of uncertainty in hiring processes.

Managers often deal with uncertainties in hiring procedures due to information asymmetries between future employees and employers (Autor, 2001). The levels of uncertainties could differ depending on the specific needs and skills required for certain

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<sup>6</sup> Within an organization with a low level of social capital, a decrease of social capital due to an event of turnover would be minimal. Yet, if a low level of social capital attributes to high turnover rates in an organization, turnover could still be detrimental to organizational performance.

governmental jobs; the average and standard deviation of labor quality of bureaucrats can vary. In practice, to ensure the quality of employees, organizations often implement lengthy screening processes. As an example, when a university hires a faculty member, they pay candidates to visit and interview each candidate for at least two to three days. If a job requires higher skills and knowledge, or deals with security issues, the hiring processes can take longer (e.g., FBI, CIA, and NASA), which in turn can impose significant costs to organizations. If turnover occurs in such cases (positions that require higher levels of skills and knowledge or necessitates extensive examinations to select suitable candidates) and if the organization fails to replace the leaver promptly, the costs of turnover become greater as the organization continues to operate (An, 2015). If a public organization faces higher uncertainties in hiring a good quality of bureaucrats, therefore, since the likelihood of hiring the inferior as the replacement of a leaver also increases, they should focus more on minimizing turnover rather than taking the risk of looking for the appropriate replacement.

**Proposition 11:** *If organizations face higher uncertainties in hiring qualified employees, public managers are better off focusing on minimizing organizational turnover rather than managing it.*

## **2.6 Discussions and Conclusions**

This chapter presents theoretical investigations on how optimal turnover rates change according to labor market conditions and the quality of employees, and how public organizations can better tackle changes in the supply and demand of labor in the market

to make and sustain a well-performing organization. It adds valuable knowledge to the theory base on turnover and organizational performance in at least two main ways.

First, this study is among the first attempt to take labor market conditions and employee quality into consideration to investigate the relationship between turnover and performance in public organizations. Previous studies on this topic generally regard that turnover as a disruptive event that negatively affects the organizational performance. While several studies find that the effect of turnover may not merely be negative (An, 2015; Meier and Hicklin, 2008; Moon, 2017) in public organizations, they offer different mechanisms to explain the relationship between turnover and the performance of the organizations, which calls for a better theory on organizational turnover. Incorporating the supply and demand in the labor market and the quality of employees who leave and newly enter the organization, I not only examine the turnover-related costs at the individual level (i.e., employees and managers), but also explore the costs of turnover at the organizational level. By doing so, this study yields insights on how public organizations can better manage the occurrence of turnover to enhance the organizational performance.

Second, I develop testable propositions throughout the paper, which encompass the issues of sector differences in optimal turnover rates, the changes in the turnover-performance link according to labor market conditions and employee quality, and differences in the effects of turnover on performance according to various organizational-level factors. These propositions merit further empirical investigation

using different datasets and employing a variety of organizational contexts, including different types of public, private, and nonprofit organizations. Such efforts would advance our knowledge on how to deal with organizational turnover, which is one of the critical issues in human resources and performance management in organizations.

### 3. EMPLOYEE VOLUNTARY AND INVOLUNTARY TURNOVER AND ORGANIZATIONAL PERFORMANCE: REVISITING THE CLASSIC HYPOTHESIS FROM PUBLIC ADMINISTRATION

#### 3.1 Introduction

For the past few decades, education scholars have focused on teacher attrition and mobility (Boe, Cook, and Sunderland, 2008; Ingersoll, 2001; Smith and Ingersoll, 2004) and how these affect student achievement (Boyd et al., 2008; Dolton and Newson, 2003; Ronfeldt, Loeb, and Wyckoff, 2013).<sup>1</sup> Brummet, Gershenson, and Hayes (2017, 249-250) argue that teacher turnover, regardless of teacher attrition and mobility, can harm student achievement as it undermines the quality of education and leads to disruption in the curricula and courses offered by schools (Shields et al., 2001). In short, previous studies on education generally agree on the detrimental effect of teacher turnover on student performance (Dolton and Newson, 2003; Ronfeldt, Loeb, and Wyckoff, 2013).

Nevertheless, it is worth noting that the relationship between teacher mobility and student achievement is not simply negative (Boyd et al., 2008). The effect may be net positive if the quality of teachers who exit a school is inferior to that of the newcomers (Ronfeldt, Loeb, and Wyckoff, 2013, 17). This indicates the possibility of a nonlinear relationship between teacher turnover and student performance, which in fact has been

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<sup>1</sup> The distinction between mobility and attrition is an important aspect of managing turnover. When investigating its effect on performance, the distinction becomes blurred or unnecessary given that both are more likely to disrupt organizations (see, Boyd et al., 2008) as far as mobility and attrition occur voluntarily. For the reason, this study does not necessarily distinguish teacher mobility and attrition in the later part.

reported by business and public management studies on employee turnover (Abelson and Baysinger, 1984; Glebbeek and Bax, 2004; Meier and Hicklin, 2008; Moon, 2017; Siebert and Zubanov, 2009) – replacing poorly-performing employees should enhance organizational performance up to a certain point, after which such turnover starts to harm organizations.

Public and business management literature have tested the nonlinear relationship between organizational turnover and performance for the past decades. The empirical results, however, have been mixed. This chapter argues that distinguishing between different types of turnover would advance studies on the turnover-performance relationship. Since initiatives and processes that trigger voluntary and involuntary turnover are markedly different (Shaw et al., 1998; Selden and Moynihan, 2000), they may have different effects on organizational performance. While turnover-performance theories acknowledge the need for a distinction between voluntary and involuntary turnover, most empirical research on this topic employs absolute turnover rates (see meta-analytic results, Hausknecht and Trevor, 2011). This can hinder an accurate evaluation of the costs and benefits associated with the two types of turnover, which can, in turn, veil the outcomes that are linked to voluntary and involuntary turnover.

Using Florida school district data from 2009 to 2012, this study investigates the linear and nonlinear relationship between voluntary and involuntary teacher turnover and student Florida Comprehensive Assessment Test (FCAT) pass rates. The main argument of this paper is that voluntary teacher turnover has a negative linear relationship with

student performance while involuntary teacher turnover has a nonlinear relationship. Taken together, I claim that absolute measures of turnover are inadequate in capturing a more nuanced perspective on the consequences of turnover.

In the following sections, I first introduce the relevant literature from educational, public, and private management that describes the turnover-performance relationship with a primary focus on the nonlinear relationship between the two. Second, adopting human and social capital and cost-benefit theories, I develop a theoretical distinction between voluntary and involuntary turnover, and propose testable research hypotheses. Third, I present findings that show the inverted-U shaped relationship between involuntary turnover and organizational performance. After that, I conclude this paper with implications and limitations.

### **3.2 Turnover and Performance: An Inverted-U Shaped Relationship**

The idea of a nonlinear relationship between turnover and performance has been the subject of a long-running theoretical argument in the field of public administration. In their classic study, *Public Personnel Administration*, Mosher and Kingsley (1936, 286) argue that moderate levels of turnover can provide a healthy working environment in any agency and cause an inflow of new blood into the organization that prevents “the hardening of caste.” Yet, Mosher and Kingsley (1936, 282-283) also claim that high turnover rates can be harmful to any public organization, since high turnover is significantly costly to these organizations. To fill empty spots caused by turnover and to find and hire qualified workers, agencies need to invest considerable organizational assets



in the search process (Wright and Davis, 2003; Meier and Hicklin, 2008) to sustain and achieve their organizational goals. These assets may be human or financial resources, or both. High labor turnover might also be indicative of other problems within the organization, such as low employee morale (Meier and Hicklin, 2008; Rainey, 2009). These arguments about the level of turnover within organizations suggest an inverted-U shape relationship between performance and turnover. In other words, as turnover initially increases within an organization we may expect an improvement in performance. This improvement in performance has a threshold, however, after which the loss of more employees will hurt performance. A theoretical development of this idea can be found in the work of Abelson and Baysinger (1984), who suggest that turnover should be evaluated considering its costs to organizations, since the impact of low and high turnover rates can be substantially different.

Scholars have made attempts to provide empirical support to this nonlinear assumption. Alexander, Bloom, and Nuchols (1994) and Wagner, Pfeffer, and O'Reilly III (1984) test the inverted-U hypothesis with total turnover rates in community hospitals and manufacturing firms, but they do not arrive at any findings that are statistically or substantively significantly different from zero. Glebbeek and Bax (2004) find the nonlinear relationship, first positive and then negative, with the same measure using data from Dutch temporary employment agencies. However, they meet standard statistical significance thresholds only for the squared term, instead of both the key independent variable and its squared term. This impact further diminishes and shows a relationship of

somewhat low magnitude, when they control for the change in performance in their models. Shaw, Gupta, and Delery (2005) approach this hypothesis with voluntary separations, but only find evidence of a negative relationship with performance.

More recent studies have found significant nonlinear relationships between turnover and performance. Using an overall turnover measure, Meier and Hicklin (2008) test the nonlinear relationship between separations and organizational performance in the context of public schools in Texas. The authors claim that the costs of turnover to organizations might differ by the types of tasks performed by employees in those organizations. When turnover occurs, the costs of replacement for basic tasks are higher than the benefits that the organization may draw from recruiting new employees; productive gains cannot offset replacement costs, such as conducting an exit interview and searching for new employees (575-576). Thus, at low task difficulty, the relationship between organizational performance and turnover is negative. On the other hand, new ideas from high skilled workers, in an environment of high task difficulty, could have a positive impact on performance. Differentiating performance by high and low task difficulty, Meier and Hicklin (2008) were the first to find evidence of an inverted-U shaped relationship between turnover and performance at high levels of task difficulty in public organizations. Siebert and Zubanov (2009) also reveal an inverted-U shaped relationship in the impact of part-time employee turnover in English retail stores, but the turnover rate of full-time employees does not support the same nonlinear relationship hypothesis. The task difficulty argument that worked in Texas public schools does not

seem to apply in English retail stores.

Most recently, Moon (2017) finds the inverted-U shaped relationship between voluntary turnover and goal attainment in federal agencies. Although this is among the first to find the inverted-U relationship between the two in the context of federal agencies, this cannot be the last study that seeks the optimal turnover rates of public organizations, given that federal agencies included in his sample have different goals and functions that can determine organizational turnover in different ways. Furthermore, the nonlinear relationship between involuntary turnover and organizational performance has not been investigated, as Moon (2017) calls for future research. Taken together, most scholars have used total turnover rates in organizations to test the inverted-U shaped relationship between turnover and performance, except Shaw, Gupta, and Delery (2005) and Moon (2017) who have used voluntary turnover. No study has neither theorized nor examined the potential nonlinear effect of involuntary turnover on organizational performance. The aim of this study is to distinguish between voluntary and involuntary turnover, and see whether the inverted-U shaped relationship holds between each of these distinct turnover measures and performance.

### **3.3 Voluntary and Involuntary Turnover**

Voluntary turnover refers to when employees quit, that is when they decide to end their relationship with organizations on their own, whereas involuntary turnover occurs when employers fire or lay off workers (Hausknecht and Trevor, 2011; Selden and Moynihan, 2000; Shaw et al., 1998). Therefore, the key distinction between the two types of

turnover lies in who initiated the process.

Scholars have noted the importance of distinguishing voluntary and involuntary turnover. Using absolute turnover measures can be appropriate when all types of turnover (both voluntary and involuntary) are randomly distributed (Abelson and Baysinger, 1984), which is a rare case in practice. Indeed, voluntary and involuntary turnover occur based on different “etiologies” (Shaw et al., 1998, 520) and vary in the costs that turnover imposes on the organization (Bludedorn, 1978). Thus, this study investigates the effects of voluntary and involuntary separations on organizational performance separately.

### **3.3.1 Voluntary Turnover and Performance: A Linear and Negative Relationship**

Human and social capital theories assert that every turnover is a disruptive event to organizations (Dess and Shaw, 2001; Osterman, 1987; Shaw, Gupta, and Delery, 2005). From an organization’s perspective, employee turnover indicates a loss of firm-specific knowledge, skills, and abilities that have been acquired over time and possessed by the person who exited the organization (Lee and Whitford, 2013). The costs associated with such loss incur in (1) finding the replacement and (2) training new employees (Boyne et al., 2010; Michele Kacmar et al., 2006; Meier and Hicklin, 2008; Watlington et al., 2010). First, hiring a new employee involves several steps, from announcing a position, receiving and evaluating applications, and conducting interviews to making a final decision for the recruitment, all of which impose substantial costs to the organization. Second, even after the replacement, the organization still needs to invest efforts to train the newcomer on the organization’s processes and systems. Not only is implementing the

training costly, but an unnecessary delay in the organizational routine due to a new person who is not familiar with the existing work can decrease the performance of the organization. Moreover, the occurrence of turnover destabilizes social network structures in the workforce, which undermines the organization's social capital (Dess and Shaw, 2001). In short, employee turnover might have a negative effect on organizational performance.

The aforementioned costs become even greater when the employee who leaves the organization is a capable one (Tracey and Hinkin, 2008), because finding a replacement for a qualified worker is especially challenging. A sector's job market can be notorious for searching for a competent job candidate due to a limited supply of quality labor and the asymmetry of information between future employers and employees (for more details see, Autor, 2001). Until the organization finds an appropriate replacement, turnover costs are likely to increase as the organization operates. Furthermore, the costs of training and adjustment might also be higher given the need to restore significantly decreased productivity due to the loss of a competent employee. Despite the potential benefits of having newcomers (as identified in the next section), highly competent employee turnover would bring about disadvantages to an organization, given the substantial costs invoked above. In other words, an inverted U-shaped relationship between turnover and performance (Meier and Hicklin, 2008; Moon, 2017) might not hold when organizations lose capable workers.

It is important to note that a highly skilled individual's decision to leave an

organization is mostly voluntary, as companies always want to retain these employees (Holland, Sheehan, and De Cieri, 2007; Kyndt et al., 2009). An employee's intention to leave an organization and to move to another depends on his or her perception on the ease of such a transition (March and Simon, 1958; Gerhart, 1990); and needless to say, highly skilled individuals have more career alternatives (Lee and Mitchell, 1994), which makes movement much easier. Moreover, individuals who acknowledge their talents and are passionate about pursuing their career always look for better jobs, and thus are more likely to voluntarily leave the current organization when they find a more appealing position for developing their career (Muchinsky and Morrow, 1980; Drenzo and Greenhaus, 2011). As such, many incidents of voluntary turnover involve losing employees who have high levels of skills, knowledge, and talent, which can have a linear and negative effect on organizational performance. Therefore, I hypothesize:

**Hypothesis 1.** *The relationship between voluntary turnover and organizational performance will be linear and negative.*

### **3.3.2 Involuntary Turnover and Performance: An Inverted U-Shaped Relationship**

From the perspective of cost-benefit theories, turnover should be evaluated based on its costs imposed to an organization. For instance, instead of spending massive retaining costs to minimize turnover rates to zero, coping with certain levels of turnover can be a more cost-efficient way for an organization to manage performance (Dalton and Todor, 1979, 226). Therefore, there may be an optimal level of turnover, and efforts to be close to the optimal turnover rate can be more net productive than making the rate zero. In a

similar vein, scholars argue that not all types of turnover are dysfunctional (Dalton and Todor, 1979). There have been plenty of theoretical arguments and empirical evidence that shows a certain amount of turnover can be beneficial to an organization (see for example, Abelson and Baysinger, 1984; Dalton, Todor, and Krackhardt, 1982; Meier and Hicklin, 2008; Siebert and Zubanov, 2009). By firing significantly underperforming employees, if imposed (involuntary) turnover costs are less than saved retention costs, organizations can benefit from the action. Considering that hiring processes often fail to reveal actual labor quality due to their information asymmetries, even carefully selected employees can underperform after being recruited. Firing such underperforming employees can remedy these incorrect hiring decisions (Shaw et al., 1998, 512).

Having a certain level of involuntary turnover can be regarded as a reasonable choice for public organizations. This comes from the fact that involuntary turnover is a rare event in the public sector due to civil service protection and public managers' tendency for being risk-averse. Given its rareness, involuntary turnover in a public agency might be a sign of significantly low performance, since risk-averse public managers generally tend to avoid wrongful termination lawsuits. In this situation, dismissal of underperforming employees and replacing them with new, skilled workers can increase organizational performance (Meier and Hicklin, 2008). Even if a public organization is not successful in hiring a new worker with a high level of skills and expertise, by firing a significantly low performing bureaucrat, performance of the organization can still be enhanced. Involuntary separations can also be used to send

indirect signals to employees about performance expectations (McElroy, Morrow, and Rude, 2001, 1294). Considering that job security is one of the key factors that drive bureaucrats' decision to enter a public organization (Rainey, 2009), observing layoffs of colleagues can motivate bureaucrats to work harder.

In summary, firing a poorly-performing employee and hiring a new worker of average or above average skill level can positively affect organizational performance, which suggests a positive effect of involuntary turnover on performance (Boyne and Dahya, 2002; Meier and Hicklin, 2008). When overdone, however, the costs associated with replacing fired workers can outweigh the benefits. After shedding too many low-performing personnel, the benefits that managers can achieve by closing the performance gap between high and underperforming employees will be reduced. Too much firing can also hurt employee job satisfaction, commitment, and employee morale (Brockner et al., 2004; Travaglione and Cross, 2006) since employees might have the impression that they are not being valued in the organization or the organization is unwilling to invest in their expertise. Thus, after a certain point, extensive downsizing will have diminishing marginal returns and start to negatively affect the performance of the organization. Hence, I hypothesize that an inverted-U-relationship proposed by Abelson and Baysinger (1984) is more suitable for the relationship between involuntary turnover and organizational performance in public agencies.

**Hypothesis 2.** *The relationship between involuntary turnover and organizational performance will be nonlinear, first positive and then negative.*



Practically speaking, on average voluntary turnover is normally greater in organizations than involuntary separations (see, Selden and Moynihan, 2000; Shaw et al., 1998). As is the problem with any composite turnover measure, the actual effect of involuntary turnover might be hidden when fused with voluntary turnover. If the effect of voluntary turnover on organizational performance is negative and linear, as stated in hypothesis 1, then we might expect absolute turnover to have a similar impact on performance as voluntary turnover. The intention of this hypothesis is to bring a caution in the use of absolute turnover.

**Hypothesis 3.** *Given the proportion of voluntary and involuntary turnover in the absolute turnover measure, the relationship between absolute turnover and organizational performance will be linear and negative.*

### **3.4 Methods and Context**

When testing turnover effects, Glebbeek and Bax (2004) suggest using multiple departments or companies with different rates of turnover, or a department or firm with several years of data to test the nonlinear relationship between turnover and firm performance. Data on performance and organizational indicators in similar organizational settings over multiple years would be ideal for testing the theory and hypotheses (Meier and Hicklin, 2008); inference on parameters is more accurate in panel data than time series data (Hsiao, 2007).

In this study I use data from Florida school districts from 2009 to 2012, which are highly professionalized public organizations with multiple goals, one of which is to

achieve a high level of student performance. To achieve their varied goals, an elected school board in each Florida school district implements policy, sets budgets, and approves expenditures. In Florida schools, teachers are contracted annually and since 2011 newly hired teachers do not have tenure. Furthermore, teachers' unions in Florida are the weakest in the nation; teachers do not have the right to strike or bargain collectively (Winkler, Scull, and Zeehandelaar, 2012). They are less likely to interfere in the process of hiring and firing teachers in Florida schools.

When we use panel data, we often violate the classical linear model assumptions. To account for the issues, I employ robust standard errors clustered by school districts and add year dummy variables with 2009 as the base year. When testing the nonlinear relationship between organizational turnover and student achievement, I add a quadratic term for turnover in an Ordinary Least Squares (OLS) regression model. The squared term, however, can introduce severe collinearity issues in the estimated models; severe multicollinearity can limit the precision and predictive power of the estimated relationship between turnover and organizational performance. A solution to this problem is to use a large sample with substantial variation (Gujarati, 1995, 343). The data set includes 261 school districts during the four-year period. 261 observations are not few; however, it is also not too many.<sup>2</sup> Thus, I employ the Variance Inflation Factor (VIF) to test whether models suffer from severe multicollinearity problems. The VIF test results allay any concerns of severe multicollinearity in the estimated models.<sup>3</sup>

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<sup>2</sup> The number of observations in Meier and Hicklin (2008) are over 4000. Compared to their study, the 261 observations are relatively small.

<sup>3</sup> The average VIF ranges between 1.81 and 3.06 in table 3.1, between 3.04 and 4.01 in table 3.2, and

### **3.4.1 Data and Measures**

To test the aforementioned hypotheses, I collect data from the Florida Department of Education. All the other variables are pooled from the Florida Department of Education's online public database, including teachers' exit and free and reduced-price lunch eligibility surveys. These data are derived at school district level and are collected and openly disseminated for the purpose of accountability. Among the universe of seventy-four districts, I use sixty-seven Florida public school districts from 2009 to 2012. I exclude special and lab school districts from my sample. Special and lab school districts have different organizational goals and preferences in allocating their budgets, and are therefore not comparable with the rest of public school districts for the purposes of the current study. For example, lab school districts more often pursue long-term goals than their public counterparts. Special school districts for challenged students might focus more on other skills, rather than standard metrics of student performance. The descriptive statistics are presented in table A1 in Appendix A.

#### *3.4.1.1 Student Performance*

Among various school performance indicators, this study employs the FCAT test results as the main performance measurement. In Florida, students from 3rd to 11th grade take the FCAT test in math, reading, writing, and science. This is an excellent indicator of student performance in Florida school districts since most students, including English

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between 1.80 and 2.64 in table 3.3, no independent variable yielding greater than the VIF score of 10. Hence, I conclude that the models do not suffer from severe collinearity.

language learners and exceptional education students, participate in this test. To graduate from high school, 10th-grade students have to meet the minimum requirement in the FCAT reading and mathematics sections. If lower grade students fail to meet the standards, they will not be promoted in the following year. Given that FCAT reading and math tests are the most important subjects to graduate or be promoted, this study uses percent of students who pass FCAT reading and math tests as the dependent variable.

FCAT scores are also important to schools and parents. Schools in Florida receive letter grades from A to F based on student FCAT test results. These school grades are publicly available from the Florida Department of Education for the purpose of accountability. If parents want, they can access this information and see how students in a certain district are performing on state standardized tests. These grades are also used in decision-making about the distribution of funding, which indicates their importance to schools. In 2012, FCAT changed to FCAT 2.0. The new test includes multiple-choice questions at all grade levels in the reading and math sections. Gridded-response questions were also added to math test for grades 4 through 8. These changes are captured in my models by year fixed effects.

#### *3.4.1.2 Voluntary and Involuntary Turnover*

Since the dependent variable is student performance, to measure turnover, I use teacher turnover instead of all employees in schools. Using production level workers to measure organizational turnover is common in examining the effect of turnover on organizational performance (e.g., Alexander, Bloom, and Nuchols, 1994; Dolton and Newson, 2003;

Glebbeck and Bax, 2004; Meier and Hicklin, 2008; Shaw, Gupta, and Delery, 2005; Shaw, Park, and Kim, 2013; Zimmerman et al., 2002).

Defining voluntary turnover can be problematic because sometimes employees are encouraged to resign but are not fired. For example, the Florida Department of Education categorizes resignation in lieu of termination as voluntary turnover. To organizations and employees, this categorization is important because unemployment benefits vary based on this. The main concern for this study, however, is to determine how each type of turnover affects student performance, not the benefits that separated employees may derive. Thus, I consider those employees who resigned in-lieu-of termination as part of the involuntary turnover count, whom schools do not prefer to employ anymore.<sup>4</sup> Schools in Florida are stipulated to conduct a survey of teachers when they resign or are fired, and report to the Florida Department of Education annually. These exit surveys are filled out by outgoing teachers, not by administrators. Survey questions include the specific nature of teacher turnover, whether the severance was voluntary or involuntary, and the reason(s) why they resigned or were terminated (see table A2 in Appendix A). When teachers fill out the survey, they can choose up to five reasons for why they are leaving.

In short, I define voluntary turnover as separation of employees an organization prefers to keep (Abelson and Baysinger, 1984) and involuntary turnover as the dismissal of employees unwanted by the organization. Turnover rates in this study indicate the

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<sup>4</sup> The Florida Department of Education originally considers the resignation in-lieu-of termination category as voluntary turnover. The key findings of this study hold regardless of having the category as voluntary or involuntary. The purpose of the re-categorization is to capture more nuance in the voluntary and involuntary turnover measures.

number of teachers who are voluntarily or involuntarily separating from teaching positions per total number of teachers in a school district. To measure overall turnover, I sum both voluntary and involuntary turnover.

The trend in teacher turnover rates in Florida schools is similar to other governmental and public organizations. For instance, the average voluntary turnover of all state employees was 8.04 percent in 1997 (Selden and Moynihan, 2000), and the average involuntary turnover of the employees was 2.94 percent in 2003 (Selden, 2006). In Florida school districts, highly professionalized organizations, voluntary and involuntary turnover rates are each 5.58 and 2.08 percent. According to Meier and Hicklin (2008), turnover rates in over a thousand Texas school districts from 1994 to 2002 was 14.4 percent, including separations due to other reasons such as serious illness and death. While voluntary and involuntary turnover are the interest of this study, as compared to broader conceptual models like serious illness or death, when I calculate all types of teacher turnover in Florida school districts, the turnover rates (voluntary, involuntary, and other turnover) are 13.66 percent, which is slightly lower than Texas school districts. In the dataset, about 6 percent of turnover is due to other reasons, such as death and illness. Since organizations cannot control or influence employee death or illness, I exclude these turnover rates from the sample.

#### *3.4.1.3 Controls*

It is important to consider other factors, besides turnover, that may affect student performance. Excluding such factors can lead to a spurious relationship. The vast

literature devoted to the estimation of education production functions has identified school resources and constraints as key determinants of educational performance (e.g., Greenwald, Hedges, and Laine, 1996; Hanushek, 1996). Constraints include race and poverty. Race and poverty are related to family income levels, health conditions, and educational materials at home. Racial minority status or low-income status may affect student performance, since these students generally have relatively limited access to educational resources compared to their non-minority and non-low income peers. To capture these effects, the percent of African American, Hispanic, and low-income students are used as controls. Percentage of low-income students was defined as students who are eligible for free and reduced price lunch in school districts. As indicators of resources, I include the student-teacher ratio, the average experience and salary of teachers, instructional expenditures, and the percentage of classes not being taught by highly qualified teachers.<sup>5</sup> When teachers have more teaching experience and are better paid or schools distribute more resources toward instruction, we should expect them to positively influence student performance. In contrast, when class size and the number of nonqualified teachers increase, student performance should decrease.

### **3.5 Results**

Tables 3.1 and 3.3 include six models; models 1, 2, and 3 use students' FCAT pass rates on reading, while models 4, 5, and 6 use FCAT pass rates on math as the dependent

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<sup>5</sup> In Florida school districts, qualified teachers who teach core courses should at least hold bachelor's degree and hold a Florida Temporary or Professional Certificate. Teachers who fail to meet one of those conditions are considered as not highly qualified.

variable. In all models, both voluntary and involuntary teacher turnover rates are included, using the percent of teachers who stay in school districts as the base.<sup>6</sup> In tables 3.1 and 3.3, models 1 and 4 test the linear relationship between teacher turnover and student performance, models 2 and 5 include the squared term of involuntary teacher turnover to investigate its nonlinear relationship with student performance on subjects, and models 3 and 6 estimate autoregressive models adding the lagged dependent variable.

Table 3.1 illustrates the effect of voluntary and involuntary teacher turnover on FCAT reading and math pass rates. In model 1, voluntary teacher turnover is negatively associated with student reading test scores ( $b=-0.198$ ;  $p<.10$ ); when voluntary teacher turnover increases by one percent, FCAT reading pass rates would decrease by -0.198 percentage points compared to those who stay at school districts. The negative relationship between voluntary teacher turnover and student reading pass rates, however, becomes insignificant when the squared term of involuntary turnover is added (model 2) and when the autoregressive model is employed (model 3). Models 4, 5, and 6 also show that the relationship between voluntary teacher turnover and FCAT math pass rates is not statistically significant.

The results in models 2 and 5 reveal the inverted-U shaped relationship between FCAT reading and math pass rates and involuntary teacher turnover as hypothesized, first positive and then negative. The results indicate that involuntary teacher turnover is positively associated with FCAT reading and math pass rates until a certain point; the positive effect, however, rapidly diminishes once the involuntary turnover rates exceed

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<sup>6</sup> Models in table 3.2 will be introduced later in the manuscript.



Table 3.1: Voluntary and involuntary teacher turnover and its influence on student performance

Dependent variable:	FCAT reading pass rates			FCAT math pass rates		
	Model 1 Linear	Model 2 Nonlinear	Model 3 AR	Model 4 Linear	Model 5 Nonlinear	Model 6 AR
Voluntary turnover	-0.198+ (0.115)	-0.189 (0.118)	-0.043 (0.046)	-0.199 (0.160)	-0.166 (0.156)	-0.084 (0.068)
Involuntary turnover	0.094 (0.123)	0.332+ (0.196)	0.212* (0.089)	0.103 (0.185)	0.943** (0.279)	0.536** (0.129)
Involuntary turnover squared		-0.024+ (0.013)	-0.023+ (0.012)		-0.085** (0.023)	-0.051** (0.009)
Lagged student performance			0.847** (0.061)			0.910** (0.040)
% Black students	-0.176** (0.031)	-0.172** (0.030)	-0.003 (0.011)	-0.169** (0.059)	-0.155** (0.055)	0.017 (0.020)
% Hispanic students	-0.104** (0.026)	-0.106** (0.026)	-0.017 (0.013)	-0.019 (0.040)	-0.029 (0.040)	-0.000 (0.012)
% Low income students	-0.386** (0.033)	-0.383** (0.032)	-0.064* (0.025)	-0.374** (0.040)	-0.363** (0.039)	-0.045* (0.020)
Class size	0.182 (0.335)	0.166 (0.332)	0.099 (0.101)	0.328 (0.500)	0.272 (0.492)	0.064 (0.154)
Teacher experience	0.120 (0.175)	0.110 (0.170)	-0.021 (0.076)	0.208 (0.243)	0.173 (0.230)	-0.075 (0.083)
Expenses 000s	0.333 (0.577)	0.245 (0.589)	0.427 (0.256)	0.547 (0.757)	0.234 (0.803)	-0.010 (0.295)
Teacher pay 000s	0.192 (0.128)	0.213+ (0.127)	-0.001 (0.049)	0.043 (0.175)	0.118 (0.172)	0.036 (0.063)
Noncertified	-0.103+ (0.059)	-0.110+ (0.059)	-0.045+ (0.026)	-0.216* (0.102)	-0.241* (0.093)	-0.038 (0.025)
Constant	71.774** (7.912)	71.412** (7.863)	10.483* (4.229)	76.806** (11.549)	75.529** (11.279)	7.376 (4.823)
R-Squared	0.852	0.854	0.957	0.773	0.787	0.946
N	261	261	259	261	261	259

Note: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ ; clustered robust standard errors by school district in parenthesis; year fixed effects not shown; AR=Autoregressive.

the optimal rate.<sup>7</sup> *Ceteris paribus*, the optimal turnover rate can be calculated by taking the first derivative of this regression equation and setting it equal to zero. This calculation reveals that the optimal rates of involuntary teacher turnover for FCAT reading and math pass rates are 6.92% and 5.54% in models 2 and 5, respectively. Considering that the average involuntary teacher turnover rate in the sample data is 1.96, the average Florida school district in the sample is operating on the left side of the inverted-U. This indicates that in models 2 and 5, the average involuntary turnover rates in the sample data is lower than the optimal rates by 4.96 and 3.58, respectively. With the average point of turnover, the slopes of the inverted-U curve are +.332 and +.943 in models 2 and 5; although these points seem small, once school districts move from the midpoints, the effect of involuntary turnover becomes significant. Figure 3.1 depicts the predicted values of student reading and math performance at varying levels of involuntary teacher turnover (other variables held constant at their means), using models 2 and 5 in table 3.1.

Since an average school district in the sample operates on the left side of this nonlinear curve, an increase in involuntary teacher turnover rates in these schools can benefit their student performance. Yet, the slope of these curves falls rapidly to reflect a negative relationship when the turnover rises to the optimal rates of 5.54 for FCAT math pass rates (on the left of figure 1) and of 6.91 for FCAT reading pass rates (on the right of figure 1). Models 3 and 6 in table 3.1 provide more robust results controlling for the past student performance; the nonlinear relationships in these models are more consistent

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<sup>7</sup> The optimal point in this study indicates a statistical moment where the curve changes its direction. As a caution, I also note that this may predict well in some situations and not in other contexts. The optimal rates can be different depending on environmental factors, resources, and cultural norms in organizations.

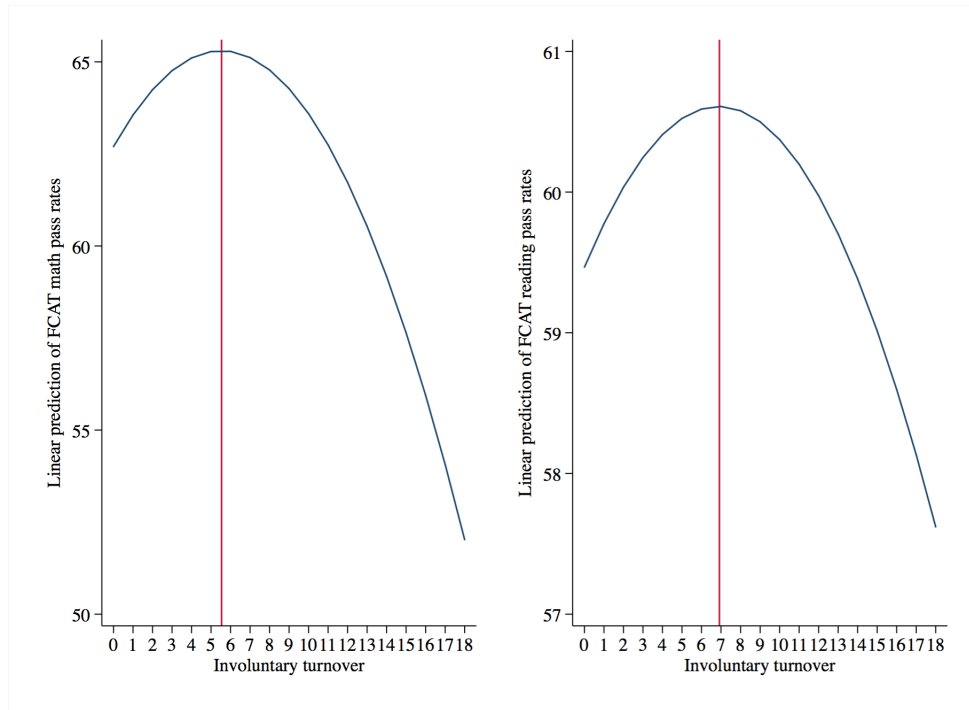


Figure 3.1: Predicted margins of involuntary turnover on student performance

compared to the ones in models 2 and 5.

As advised by Shaw (2011) and Hausknecht and Trevor (2011), I further examine whether there exists a nonlinear relationship between voluntary teacher turnover and student performance in math and reading, although this manuscript does not posit the relationship between the two. Models 1 and 3 in table 3.2 add the squared term of voluntary teacher turnover to models 2 and 5 in table 3.1, and models 2 and 4 control for the lagged dependent variable in the two models. The results in model 1 suggest statistically insignificant relationships between both direct and squared terms of voluntary (and involuntary) teacher turnover and student performance in reading. When adding the lagged dependent variable, the linear term of involuntary teacher turnover becomes

Table 3.2: Testing the nonlinear relationship between voluntary teacher turnover and student performance

Dependent variable: FCAT pass rates	Reading		Math	
	Model 1 Nonlinear	Model 2 AR	Model 3 Nonlinear	Model 4 AR
Voluntary turnover	-0.213 (0.355)	-0.152 (0.129)	0.016 (0.445)	0.217+ (0.129)
Voluntary turnover squared	0.002 (0.024)	0.008 (0.010)	-0.014 (0.031)	-0.023+ (0.012)
Involuntary turnover	0.343 (0.241)	0.264+ (0.138)	0.858* (0.338)	0.392** (0.118)
Involuntary turnover squared	-0.025 (0.020)	-0.028 (0.019)	-0.076* (0.034)	-0.036** (0.010)
Lagged student performance		0.849** (0.057)		0.913** (0.036)
% Black students	-0.172** (0.032)	-0.004 (0.012)	-0.152** (0.056)	0.022 (0.018)
% Hispanic students	-0.106** (0.026)	-0.017 (0.013)	-0.028 (0.041)	0.000 (0.012)
% Low income students	-0.383** (0.032)	-0.064** (0.024)	-0.363** (0.039)	-0.043* (0.019)
Class size	0.168 (0.338)	0.103 (0.102)	0.262 (0.500)	0.052 (0.154)
Teacher experience	0.112 (0.174)	-0.012 (0.078)	0.159 (0.232)	-0.101 (0.079)
Expenses 000s	0.238 (0.582)	0.385 (0.250)	0.289 (0.790)	0.104 (0.274)
Teacher pay 000s	0.214+ (0.127)	0.004 (0.052)	0.112 (0.173)	0.022 (0.061)
Noncertified	-0.110+ (0.059)	-0.044+ (0.025)	-0.242** (0.091)	-0.039+ (0.023)
Constant	71.446** (7.775)	10.550* (4.040)	75.265** (11.139)	6.651 (4.867)
R-Squared	0.854	0.957	0.787	0.948
N	261	259	261	259

Note: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ ; clustered robust standard errors by school district in parenthesis; year fixed effects not shown; AR=Autoregressive.

statistically significant ( $b=0.264$ ;  $p<0.10$ ). In model 3, there is no statistically significant evidence for the nonlinear relationship between voluntary teacher turnover and student

performance in math, while involuntary teacher turnover shows a nonlinear relationship with FCAT math pass rates, first positive and then negative. Controlling for the past performance, model 4 shows the nonlinear relationship of voluntary and involuntary turnover with student math performance, first positive and then negative; both voluntary and involuntary teacher turnover have a statistically significant relationship with changes in student math pass rates.

Table 3.3 estimates the effect of absolute turnover on student performance. In models 1 and 4 in this table, the relationship between absolute turnover and student performance in math and reading is not statistically significant. In model 2, both coefficients on turnover and the squared term of turnover are not statistically significant. Model 5, however, shows that the squared term of total turnover has a negative sign ( $b=-0.015$ ;  $p<0.05$ ) for FCAT math pass rates. Estimating autoregressive models, the squared term becomes statistically significant in model 3 and both linear and squared terms show statistical significances in model 6, first positive and then negative. This result is opposite of the expectation that voluntary turnover might override the impact of involuntary turnover when we use the absolute term. Although it is difficult to be sure, the results in models 3, 5, and 6 seem to be driven by involuntary teacher turnover rather than by voluntary turnover since these results show a nonlinear relationship; the relationship between involuntary turnover and student performance might be more systematic since involuntary turnover may involve more management.

Table 3.3: Absolute turnover and its influence on student performance

Dependent variable:	FCAT reading pass rates			FCAT math pass rates		
	Model 1 Linear	Model 2 Nonlinear	Model 3 AR	Model 4 Linear	Model 5 Nonlinear	Model 6 AR
Turnover	-0.073 (0.105)	0.264 (0.190)	0.207** (0.046)	-0.075 (0.075)	-0.020 (0.151)	0.081 (0.054)
Turnover squared		-0.015* (0.006)	-0.012** (0.002)		-0.003 (0.005)	-0.005* (0.002)
Lagged student performance			0.924** (0.039)			0.856** (0.065)
% Black students	-0.170** (0.061)	-0.159** (0.059)	0.018 (0.020)	-0.176** (0.033)	-0.174** (0.034)	-0.001 (0.012)
% Hispanic students	-0.018 (0.040)	-0.022 (0.041)	0.004 (0.012)	-0.103** (0.026)	-0.104** (0.026)	-0.015 (0.013)
% Low income students	-0.368** (0.041)	-0.361** (0.041)	-0.038+ (0.020)	-0.380** (0.034)	-0.379** (0.034)	-0.060* (0.027)
Class size	0.339 (0.510)	0.306 (0.512)	0.080 (0.157)	0.193 (0.345)	0.188 (0.348)	0.106 (0.104)
Teacher experience	0.164 (0.249)	0.104 (0.239)	-0.124 (0.087)	0.078 (0.180)	0.068 (0.178)	-0.040 (0.078)
Expenses 000s	0.465 (0.755)	0.347 (0.795)	0.076 (0.279)	0.254 (0.572)	0.235 (0.583)	0.474+ (0.266)
Teacher pay 000s	0.038 (0.181)	0.065 (0.179)	0.004 (0.060)	0.187 (0.131)	0.192 (0.130)	-0.016 (0.048)
Noncertified	-0.212+ (0.107)	-0.229* (0.102)	-0.032 (0.026)	-0.099 (0.062)	-0.102 (0.062)	-0.043 (0.027)
Constant	77.591** (11.684)	76.718** (11.543)	6.680 (5.192)	72.534** (8.028)	72.391** (7.963)	9.952* (4.506)
R-Squared	0.770	0.778	0.945	0.849	0.849	0.957
N	261	261	259	261	261	259

Note: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ ; clustered robust standard errors by school district in parenthesis; year fixed effects not shown; AR=Autoregressive.

### 3.6 Discussions and Conclusions

This chapter examines the nonlinear relationship between teacher turnover and student performance offering perspectives on voluntary and involuntary turnover. To investigate the relationship between voluntary and involuntary turnover and student performance, this study adopts its theory from Mosher and Kingsley (1936) *Public Personnel Administration* and private sector literature, and tests it using data collected from Florida public school districts.

This chapter makes theoretical contributions to the literature on the impact of turnover on organizational performance. Voluntary turnover implies that employees left an organization of their own volition. This concept is complicated when some employees, who leave voluntarily, were actually nudged to leave. By categorizing these employees separately from the voluntary group, I distinguish employees whom the employer prefers to retain and those whom the employer does not want. In the context of Florida public schools, types of turnover are significant predictors to reveal the nonlinear relationship. The primary findings offer us a key insight that using aggregated turnover measures (absolute turnover rates) might hide the unique impact of voluntary and involuntary turnover on performance. Using absolute turnover can lead to misstatements of the true relationship between organizational performance and organizational turnover.

Findings also yield critical insights on the effect of voluntary and involuntary turnover on organizational performance, as well as set directions for the future research. First, involuntary teacher turnover has a nonlinear relationship with student performance

in math and reading, first positive and then negative, except for model 2 in table 3.2. The finding aligns with perspectives of cost-benefit theories that a certain level of involuntary turnover (firing employees who do not perform well) benefit the organization. This also suggests that studying costs by turnover types can help us better understand the turnover-performance link. Future research might want to further explore this bifurcation. I suggest two possibilities. Retirement is categorized as voluntary turnover, considering early retirement has a choice factor associated with it. Since retirement is more predictable than other types of turnover, distinguishing it from other types of turnover may help to disentangle the mechanism of the turnover-performance link. Furthermore, in this study, reduction-in-force is categorized as involuntary turnover because organizations can decide whom to keep and whom to let go. From the perspective of cost mechanisms, one could treat this separately to arrive at a richer perspective of the turnover-performance link. Also, it will be worthwhile to test the relationship between types of turnover and performance in other types of professionalized public organizations or local or federal governments, given that public schools have inputs, processes, and performance measures that may differ from other public organizations. In the interest of generalizability, testing the proposed theory in different settings, such as public schools in different states or entirely different public organizations, will be helpful. A larger data set would also offer more explicit and robust relationships.

Second, results on the relationship between voluntary turnover and performance are inconclusive and call for further research. Although all linear terms of voluntary



turnover in models 1 through 6 in table 3.1 show a negative sign, only model 1 shows a statistically significant relationship with student performance in reading; however, the relationship becomes insignificant when adding the squared term of involuntary turnover or a lagged dependent variable. One result (model 4 in table 3.2) also demonstrates a possible nonlinear relationship between voluntary teacher turnover and student performance in FCAT math exams, first positive and then negative. The finding on the nonlinear relationship resonates with the argument by Moon (2017). In his study, he explains that given that public organization structures tend to be more stagnant, an influx of new employees can bring significant positive effects to organizations and help them revitalize. An investigation of the labor supply in the public sector would help develop a more robust understanding of the voluntary turnover and organizational performance relationship.

In conclusion, this study provides public managers with a critical lesson regarding strategic management and personnel recruitment and retention; all types of turnover are not necessarily bad, and thus turnover should be managed (not minimized) based on its types. As shown in the nonlinear relationship between involuntary teacher turnover and student performance, public managers can improve student performance by firing or laying off significantly underperforming teachers. Replacing such employees can benefit the organizations. However, if managers lay off employees aggressively, the initial spike in student performance after a certain point will be counteracted by a rapid decline in performance; the cost of replacing too many workers may override the benefits derived

from firing some underperforming workers. Public managers should be aware of the tradeoff between removing significantly underperforming employees and the transaction costs of replacing them.

## 4. GOVERNING BOARD TURNOVER IN NONPROFITS: EXAMINING THE EFFECTS OF GOVERNING BOARD TURNOVER IN UNITED WAY ON NONPROFIT FINANCIAL CAPACITY

### 4.1 Introduction

Nonprofit organizations – like public agencies and private firms – are profoundly affected by the occurrence of turnover (Jamison, 2003; Selden and Sowa, 2015). Especially, given that human resources play an even more critical role in nonprofits whose work is labor intensive (Pynes, 2008), the dearth of studies that examine the turnover-performance link in nonprofit organizations is surprising. This chapter investigates the relationship between turnover and performance in the context of nonprofit organizations. More specifically, I adopt turnover theories from public and business management literature, develop a theory of governing board turnover in nonprofits, and empirically examine its relationship with nonprofit performance.

While the performance of nonprofits is difficult to accurately evaluate (Sawhill and Williamson, 2001) due to its multi-dimensional nature (Brown, Andersson, and Jo, 2016; Forbes, 1998), scholars generally emphasize the importance of financial capacity (Ritchie and Kolodinsky, 2003; Bowman, 2011) as a key dimension of organizational performance, since organizational power comes from the ability to extract resources from the environment. Nonprofits conduct various activities and provide a range of services that align with their mission; needless to say, all of these requires sufficient amount of

financial resources. The acquisition of sufficient resources is essential for any organization (Pfeffer and Salancik, 2003) as the ability for doing so is related to organizational power (Meier, 1980; Rourke, 1976). It is even more critical for nonprofits who generally lack their own revenue-generating capacity (Froelich, 1999). Moreover, looking at financial capacity is a generalized method to assess the performance of many different types of nonprofits who pursue their own missions (Eckerd and Moulton, 2011). For these reasons, financial capacity has been received attention from both scholars and practitioners of nonprofit management (Eckerd and Moulton, 2011; Prentice, 2016; Ritchie and Kolodinsky, 2003).

Nonprofits' governing board can have significant effects on the financial capacity of the organization in that the board members play critical roles in attracting and utilizing resources needed to operate various programs (Ott and Dicke, 2016). Board members act as boundary spanners (Miller-Millesen, 2003) who bring and sustain networks of potential funders, which help with the acquisition of financial resources (Hager, Rooney, and Pollak, 2002), as hypothesized in the resource dependence theory (Brown, 2005). In addition, the board members play an oversight role, ensuring that the executives' decisions of utilizing resources resonate with the pursuit of organizational missions (Brown, 2005; Miller, 2002) from the perspective of agency theory (Miller-Millesen, 2003). Therefore, the attributes of nonprofit board and the organization's financial capacity, especially with regard to the acquisition and utilization of financial resources, are closely related (Brown, 2005, 2007; Green and Griesinger, 1996; Herman and Renz,

2000; Preston and Brown, 2004). Yet, the consequences of turnover occurring in the nonprofit governing board on organizational financial capacity, despite its importance, has been understudied. Most of the previous research on the relationship between the two has been conducted in the context of private firms (Daily and Dalton, 1995; Kaplan, 1993) whose organizational missions and goals are markedly different from nonprofits.

Using the data on United Way (UW) organizations, this chapter investigates the effects of nonprofit governing board turnover on the performance of organizations, specifically in terms the financial capacity. To this end, the chapter proceeds as follows. First, I briefly explain the challenges of measuring nonprofit performance and then emphasize the importance of financial capacity as performance indicators. Second, I discuss how members of nonprofit governing boards contribute to promoting the nonprofit financial capacity, using the perspectives from resource dependence theory and agency theory. Third, I apply the theories on turnover and performance in the context of nonprofit management and develop hypotheses to be tested. Fourth, I provide explanations on data, variables, and analysis method. The next section presents analysis results with interpretations. I conclude with discussing implications, contributions, as well as limitations of this chapter.

#### **4.2 Assessing Nonprofit Performance: Focusing on the Financial Capacity**

The performance of nonprofit organizations is difficult to measure (Sawhill and Williamson, 2001) in that it is multidimensional in nature (Brown, Andersson, and Jo, 2016; Forbes, 1998; Sowa, Selden, and Sandfort, 2004) and that different organizations

pursue different missions (Kaplan, 2001). Thus, one single measure for nonprofit performance does not exist in the literature; rather, scholars have used a variety of measures according to their research contexts and objectives. Lee and Nowell (2015) present a framework for assessing nonprofit performance that incorporates a variety of performance dimensions, along with specific measures for each dimension that have been used in previous studies. According to the framework, organizational capacity is a key performance dimension that shows “how well a nonprofit has constructed effective internal process and structures to use the resources efficiently and effectively toward the advancement of the organization’s mission” (305). It plays a critical role in producing outputs that would eventually help the organization’s effort to accomplish its mission and to create public values, and could, therefore, be used as a good proxy for judging the nonprofit performance.

While organizational capacity itself is also a broad term that encompasses many different attributes (Brown, Andersson, and Jo, 2016; Sowa, Selden, and Sandfort, 2004), many nonprofit scholars have studied financial capacity (Bowman, 2011; Carroll and Stater, 2008; Chikoto and Neely, 2014); it is a generalized measure for evaluating the performance of many different types of nonprofits with different organizational missions (Eckerd and Moulton, 2011), which has an advantage for empirical testing. Furthermore, financial capacity is a critical element of nonprofit performance, as it represents “the resources that give an organization the wherewithal to seize opportunities and react the unexpected threat” (Bowman, 2011, 38). Financial capacity is also important in that it

allows for the development of other capacity dimensions (AbouAssi and Jo, 2017), such as human resources capacity, managerial capacity, capacity for learning and innovation, since all of the organizational activities for capacity-building require sufficient financial resources (Brown, Andersson, and Jo, 2016). Furthermore, external environmental forces make nonprofits' financial capacity even more important in the recent years. The economic recession in 2008 has resulted in a substantial decrease in donations to nonprofit organizations (Salamon, Geller, and Spence, 2009), while at the same time the demands for nonprofits to provide social services have increased (Calabrese, 2011; Chikoto and Neely, 2014). Thus, financial capacity of nonprofits has been highlighted in both research and practice of nonprofit management. Following the perspectives, this paper focuses on nonprofits' financial capacity and examines how it is affected by nonprofit governing board turnover. Accordingly, the following section presents what roles nonprofit board member turnover play in developing nonprofits' financial capacity.

#### **4.3 The Roles of Governing Board Members in Nonprofit Organizations**

Nonprofit organizations are operated through a system of governance, which is “the function of oversight that a group of people assumes when they incorporate under the laws of a state for an organizational purpose that qualifies for nonprofit status” (Ott and Dicke, 2016, 2). Scholars have conflicting views on how to define nonprofit governance; whether it should refer to the function of the board of directors or should broadly incorporate the strategic leadership of nonprofits that are associated with executives' management decisions (Chait, Ryan, and Taylor, 2011; Cornforth, 2012). Regardless of

taking either perspective, the role of nonprofit board is quite substantial, as it has the final authority on nonprofits' governing decisions (Jackson and Fogarty, 2005, 30; Ott and Dicke, 2016, 2; Widmer, 1993, 344).

Moreover, the importance of nonprofit governing board in managing the organization is pretty obvious when considering its specific roles. Block (1998, 9) summarizes nonprofit governing board's roles in mainly nine ways: 1) determination of organizational mission; 2) establishment of policies and plans for the operation of the organization; 3) activities related to the organization's finance, including budget approval, development of financial controls and fiscal policies; 4) resources acquisition activities, such as fundraising and setting the goals of resources development; 5) networking activities to enhance the organization's visibility in the community; 6) help with ensuring the corporate documents of the organization to be updated and the required reports to be filed; 7) recruitment and selection of new board members and help them learn about the board's activities; 8) activities related to serving as a "principal" for the organization's executive director (i.e. recruiting, assessing, rewarding, and terminating the executive when necessary); and 9) protection of the organization's status being nonprofit and tax-exempt. In short, the board of directors is, and should be, involved in almost all stages of managing nonprofit organizations. Therefore, the well-performing board is a key to enhance and sustain the performance of nonprofit organizations in general (Brown, 2005; Brown, Andersson, and Jo, 2016; Green and Griesinger, 1996; Harris, 2014), as well as the dimension of financial capacity more specifically (Brown, 2005).



Several helpful organization theories provide insights on the linkage between the performance of the governing board and financial capacity of nonprofits, focusing on the roles of nonprofit board members. Notably, the perspectives from resource dependence theory and agency theory prevail (Brown, 2005; Herman and Renz, 2008; Miller-Millesen, 2003). These theories explain how nonprofit governing board contributes to the two critical components of the organization's financial capacity, namely "acquisition" and "utilization" of financial resources (Lee and Nowell, 2015, 305).

First, resource dependence theory argues that nonprofit board members are the vital asset of a nonprofit that connects the organization with its external environment (Hillman and Dalziel, 2003; Malatesta and Smith, 2014). To be specific, nonprofit board members act as boundary spanners who increase networks of the organization, and also serve as ambassadors of the organization who promote the organization's reputation in the community and the broader society (Miller-Millesen, 2003). Both of these activities can significantly increase the organization's ability to acquire resources from existing and potential funders in the external environment, which in turn contributes to the organization's financial capacity.

Second, agency theory postulates the relationship between the nonprofit governing board and the executive director(s) as a principal-agent relationship (Brown, 2005; Hillman and Dalziel, 2003; Miller-Millesen, 2003). In this sense, the governing board can be regarded as an oversight mechanism that controls the executives. The main responsibility is to ensure whether the executives make and implement decisions that

appropriately serve the interests of stakeholders and pursue organizational missions (Miller, 2002). For doing so, board members establish the criteria for evaluating program plans and monitor the executives' decisions for allocating resources to different programs (Miller-Millesen, 2003). Therefore, nonprofit governing boards help with the organization's efforts to spend its financial resources in a way that it prioritizes organizational activities to the pursuit of the mission. This ultimately boosts the organization's capacity to better utilize its financial resources.

To sum up, members of the nonprofit governing board play an essential role in building and sustaining nonprofits' financial capacity, especially in terms of its ability to attract and utilize financial resources for the operation of the organization. Given the arguments above, the occurrence of turnover in the governing board should affect the financial capacity, and ultimately have an impact on the performance of the organization. The following section discusses the effect of governing board turnover on nonprofit performance and presents a hypothesis to be tested in this paper.

#### **4.4 The Effects of Board Member Turnover on Nonprofit Financial Capacity**

Like any other organizations, governing board turnover is a common phenomenon in nonprofit organizations. Traditionally, studies from both fields of public and business management argue that turnover can be disruptive since organizations are exposed to sudden changes that can negatively affect the current functions of an organization. This argument focuses on the importance of organizational stability and routinization in reducing the risk of failure, and therefore, ensuring high-performance (Haveman, 1992,

50). Throughout its stages of growth, organizations tend to develop and routinize a set of strategies, activities, and processes; once they reach the “structural inertia,” any change happening with regard to goals, policies, and rules can be viewed as harmful (Hannan and Freeman, 1984).

Following the same logic, governing board turnover can result in bad consequences on nonprofit financial capacity. First, from the agency theory perspective, a new governing board member may want to represent a different set of community interest (Miller, 2002), being the principal who has a set of priorities that can differ the current ones in the organization. This can cause turbulence to pre-existing fiscal policies and fund development strategies and confusion among management staff about how to utilize financial resources and conduct fundraising activities. Second, governing board turnover can be a loss from the view of resource dependence theory. Each board member is a boundary spanner who connects the organization with a unique set of resources networks in the external environment (Hillman and Dalziel, 2003; Miller-Millesen, 2003). Therefore, the occurrence of governing board turnover indicates a decrease in the potential pools of financial resources (see examples from corporate governing boards, Denis and Denis, 1995; Kang and Shivdasani, 1995). In sum, governing board turnover breaks organizational stability in terms of resources utilization and acquisition, thereby negatively affecting nonprofits’ financial capacity.

One, however, can argue that turnover is not necessarily a bad phenomenon, because it prevents an organization from resisting changes and innovation that are

beneficial to organizational performance (Sørensen and Stuart, 2000). To illustrate, after a certain point of organizational expansion and growth, organizations often experience some types of red tape that make them less flexible, slow, and inefficient (Bernstein, 2015; Downs, 1967). This is based on an assumption that an organization does not want to pursue changes to the current practices when it reaches the stage of structural inertia (Hannan and Freeman, 1984). The failure to pursue organizational innovation and to swiftly adapt to environmental forces can undermine the performance of nonprofit organizations.

In this regard, governing board turnover may have some positive effects on nonprofits' financial capacity, especially if the turnover brings about a positive organizational change. Resource dependence theory offers valuable insights into this mechanism. Having a new governing board member who is equipped with a new set of knowledge, expertise, and background means an increase in critical resources of the organization. The new members can offer useful advice that could not be made by existing board members who have been involved in the organization for a long time and have been deeply adjusted to routinized organizational processes. For instance, the current members may have stuck to ineffective fundraising strategies that do not work in a new environment or may have allocated resources to the programs that are not helpful for meeting the needs of their clients and organizational missions. Furthermore, even if current board members have been successful in their job, at some point, they might exhaust their potential fundraising contacts. In those situations, the governing board

turnover can function as a beneficial organizational change that leads to better utilization and acquisition of financial resources, which can, in turn, increase nonprofits' financial capacity.

Given both sides of arguments, turnover in the governing board can have advantages and disadvantages in terms of nonprofits' financial capacity, and its effects are not simply positive or negative. I would posit that the relationship is likely to be nonlinear, first positive and then negative. As Wright and Millesen (2008, 323) put, board members are voluntary workers who often are not assumed to take significant roles in managing the organization; therefore, the costs of turnover may not be a great deal at the low level of turnover, as the organization can maintain its normal operations. At the same time, the organization starts to benefit from the occurrence of turnover, because a new member who is usually a professional in their field can immediately offer knowledge and expertise in better utilizing and acquiring financial resources based on their experiences, background, and network. In other words, the benefits outweigh the costs when the level of governing board turnover is low. However, if the turnover takes place frequently, the hypothesized bad consequences of turnover – such as confusion in financial management due to multiple principals and the loss of existing resources networks – become salient, which significantly increases the costs of turnover. In short, after a certain point of governing board turnover (i.e. an optimal level of turnover), the financial capacity of a nonprofit organization can be undermined. Based on the aforementioned mechanisms, I hypothesize:

**Hypothesis:** *Nonprofit governing board member turnover will have an inverted-U shaped relationship with the organizational financial capacity, first positive and then negative.*

#### **4.5 Data and Methods**

To examine the effects of governing board turnover rates on nonprofit financial capacity, this chapter uses the data on UW organizations, as well as the characteristics of communities where the UW organizations operate. I collect the data using the multiple sources: Internal Revenue Service (IRS) 990 electronic filer database in 2013 and 2014, IRS 990 digitized forms in 2014, American Community Survey 5-year estimates between 2010 and 2014. First, I obtain nonprofit financial capacity measures as well as organizational characteristics from 990 digitized forms. Second, county-level variables that capture community characteristics are from American Community Survey. Third, the list of governing board member names is available in the 990 electronic filer database, which serves as a base for the governing board turnover rates. In 2013 and 2014, approximately 53 percent of nonprofit organizations filed their tax forms through electronic filing. Initially, I obtain 780 UW organizations from the IRS efile database. While merging the data with IRS 990 digitized forms, 254 observations are excluded, which means that the 254 UW organizations did not file their tax forms through the regular means. Excluding observations with less than three governing board members<sup>1</sup> and no financial information, the total number of observations is 518.

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<sup>1</sup>The substantive results remain the same whether or not I exclude these observations. I exclude observations with less than three governing board members since most states require at least three governing board members to start a nonprofit.

I employ quadratic regression models to investigate the nonlinear relationship between governing board turnover and nonprofit financial capacity. In doing so, I add a quadratic term of governing board member turnover rates. In a quadratic regression model, severe multicollinearity often becomes a problem since it biases estimated standard errors. The results from Variance Inflation Factor (VIF), however, suggest that the set of models in this chapter does not suffer from severe multicollinearity.<sup>2</sup> Lastly, to ensure the results are not driven by the previous year's nonprofit financial capacity, I include a lagged dependent variable for each set of models as a robustness check.

## **4.6 Variables**

### **4.6.1 Dependent Variables**

As a proxy for nonprofit financial capacity, I employ two dependent variables—total contributions and total allocations toward partner nonprofits. Testing the effects of governing board turnover on multiple dimensions of nonprofit financial capacity is important since governing board turnover may have a different effect on each dimension (Kaplan, 1994; Kang and Shivdasani, 1995, for more details see examples from the private sector,). The two variables, total contributions and allocations, capture important dimensions of nonprofit financial capacity – resource acquisition and utilization – as explained in the sections on theories above (Lee and Nowell, 2015). Given that governing board members play an important role in promoting donations and accomplishing goals and missions of nonprofits through setting policies (Brown and Guo, 2010), the two

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<sup>2</sup>The average VIF is 2.92 for the contribution models and 2.87 for the allocation models.

particular financial capacity variables are critical when investigating the impact of governing board member turnover on nonprofit financial capacity. Since both variables (the amounts of total contributions and total allocations, in USD) are highly skewed to the right, I have log-transformed both.

#### **4.6.2 Key Independent Variable**

Governing board member turnover rates are the key independent variable. I create the governing board turnover rates by matching names between two time periods – in 2013 and 2014. I first obtain all governing board names from 990 forms listed in efilers between tax year 2013 and 2014. As a next step, I remove all titles associated with names and only keep voluntary governing board members.<sup>3</sup> Second, using the Stata package ‘matchit,’ I create the Jaccard similarity coefficient of the list of governing board member names between the two time periods; the matchit command splits words into grams of two moving characters and then calculate the similarity index. Third, except for the exact match of names between the two time periods, I manually check all observations with a similar score higher than 0.5, making sure whether or not names are an actual match. Going through this process, I have found more exact matches of the names. To illustrate, Bob and Robert or Bill and William are initially coded as unmatched, which has been corrected after the manual checking. There also exist human coding errors in the list of governing board member names, which has also been fixed. Fourth, with the number of

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<sup>3</sup>In the list of governing board member names, it includes key officers and employees in addition to governing board members. Since many nonprofits use different titles for key officers and employees, to safely exclude them all, I only keep governing board members who are not compensated by UW organizations—voluntary governing board members.



matches and total governing board members, I calculate the governing board turnover rates. The formula for doing so is:

Governing board member turnover rates=

$$\frac{\text{Total number of board members in 2013} - \text{board name matches between 2013 and 2014}}{\text{Total number of board members in 2013}}$$

Holding the board size in 2013, the measure successfully excludes any new board members that might have joined in 2014. In this regard, this measure is distinct from changes in governing board size and appropriately captures turnover rates of governing board members. A downside of this measure, however, is that it does not capture name changes. For instance, if a governing board member changes her/his name due to marriage or any other reason, this metrics would count those as turnover.<sup>4</sup>

### **4.6.3 Controls**

I include controls that capture both organizational and community characteristics. For organizational characteristics, I use the total amount of fundraising expenditures and program revenues including dues. Both controls are commonly used in the previous studies on nonprofit financial capacity (e.g., Frumkin and Kim, 2001; Harris and Ruth, 2015). Due to the high skewness of the measures, I transform both into logarithms.

I also account for community characteristics (at the county level) that can affect

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<sup>4</sup> I have also created another measure of governing board turnover, splitting all names by words and matching those split names by using regular expressions. The correlation coefficient of the two measures is 0.98 and the substantive results do not differ between the two measures. I use the one created via 'matchit' since it is more timely efficient.

nonprofit financial capacity, such as percent of people with bachelor’s degree, size of the community (population, logged), and indicators of community wealth (median family income, logged; percent of unemployment). While the operations of many nonprofits are conducted across multiple geographical areas, counties still serve as an important boundary for economic and social activities of nonprofits (Paarlberg et al., 2018; Polson, 2017); hence, the county characteristics need to be controlled in the context of this study. Summary statistics of all variables included in this chapter is presented in table 4.1. A histogram of governing board turnover rates is also depicted in figure B.1 in Appendix B.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Dependent variables</i>					
Total contributions, logged	518	13.53	1.76	0	18.6
Total allocations, logged	453	13.3	1.7	0	18.47
<i>Key independent variable</i>					
Governing board turnover	518	22.24	15.06	0	80
<i>Organizational characteristics</i>					
Fundraising expenditures, logged	518	3.22	4.61	0	13.21
Program revenues, logged	518	2.97	4.82	0	16.64
<i>Community characteristics</i>					
Median family income, logged	518	11.02	.19	10.4	11.78
Population, logged	518	11.61	1.11	8.84	16.12
% Bachelor’s degree	518	15.1	4.77	5.01	38.23
% Unemployment	518	5.21	1.3	.89	9.88

## 4.7 Results

Tables 4.2 and 4.3 include three models. Model 1 tests a linear relationship between nonprofit financial capacity and governing board turnover rates. Model 2 adds a squared term of governing board turnover rates. Model 3 lastly includes a lagged dependent variable as a robustness check.

Table 4.2: The effects of governing board turnover rates on total contributions

Dependent variable:	Total contributions, logged		
	Model 1 Linear	Model 2 Nonlinear	Model 3 AR
Governing board turnover	0.008+ (0.004)	0.042** (0.014)	0.023+ (0.012)
Governing board turnover squared		-0.001** (0.000)	-0.000+ (0.000)
L. Contributions, logged			0.723** (0.133)
Fundraising expenditures, logged	0.038** (0.012)	0.036** (0.012)	0.006 (0.006)
Program revenues, logged	0.041* (0.020)	0.042* (0.020)	0.005 (0.015)
Median family income, logged	0.146 (0.432)	0.123 (0.427)	-0.101 (0.143)
Population, logged	0.752** (0.089)	0.740** (0.089)	0.201* (0.101)
% Bachelor's degree	0.009 (0.014)	0.009 (0.013)	-0.005 (0.005)
% Unemployment	-0.111* (0.049)	-0.109* (0.048)	-0.060* (0.026)
Constant	3.191 (4.667)	3.290 (4.617)	2.583 (1.858)
R-Squared overall	0.266	0.280	0.710
N	518	518	515

Note: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ ; robust standard errors in parenthesis; AR=Autoregressive.

Table 4.2 shows the effects of governing board turnover rates in UW organizations on total contributions (logged). In model 1, governing board turnover rates are positively associated with total contributions ( $b=0.008$ ;  $p<0.10$ ). A one percent increase in governing board turnover rates is more likely to increase the total contributions by 0.8 percent. The next model investigates a potential nonlinear relationship between the two. To conclude an inverted-U shaped relationship as hypothesized, both linear and squared terms of governing board turnover rates must be statistically significant in the model. The results in model 2 show that both terms of governing board turnover rates are statistically significant. When governing board turnover occurs, it initially has a positive effect on the amount of total contribution ( $b=0.027$ ;  $p<0.01$ ). Yet, after a certain point, excessive governing board turnover would start damaging nonprofits' total contribution, financial resources acquired from the external environment ( $b=0.001$ ;  $p<0.01$ ). *Ceteris paribus*, by taking the first derivative of the equation, I can calculate the optimal governing board member turnover rates in UW organizations in the sample. The optimal governing board turnover rates for total contributions, derived from model 2, are about 34 percent. Figure 4.1 further elaborates the relationship and depicts the optimal turnover rates calculated via Model 2.

As shown in Figure 4.1, governing board member turnover rates and total contributions have an inverted-U shaped relationship, first positive and then negative. This provides strong support for the hypothesis. To illustrate, when governing turnover occurs up to a certain point, UW organizations are more likely to gain more contributions.

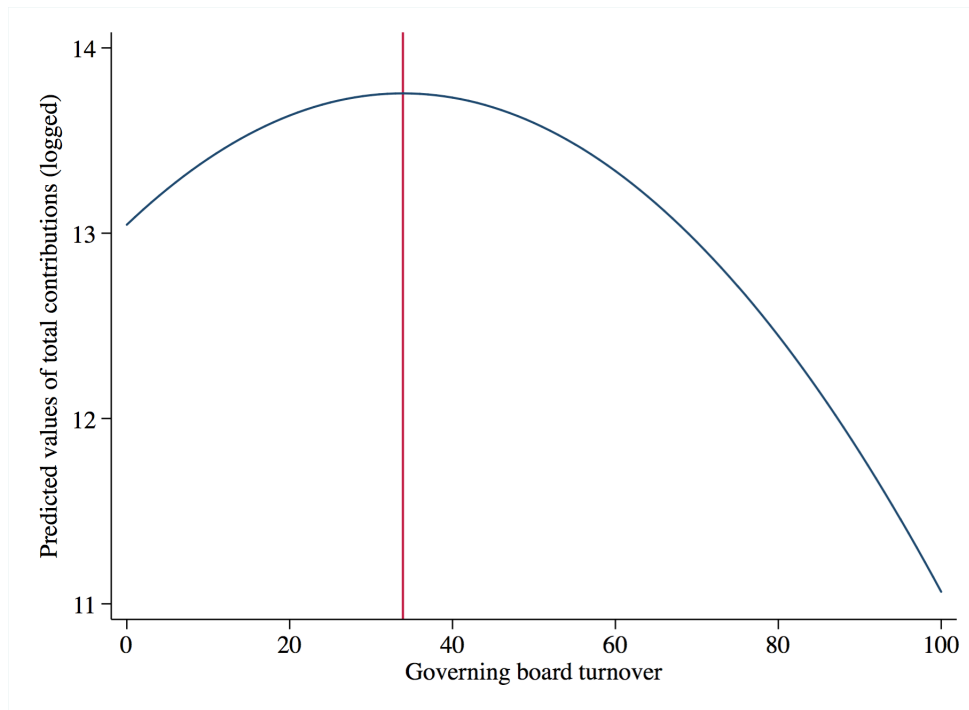


Figure 4.1: Predicted margins of governing board turnover rates on total contributions (logged)

As soon as governing board turnover rates exceed 34 percent in our sample, however, contributions are more likely to decrease; the slope for governing board turnover quickly drops after it passes the optimal point. Since the mean of governing board turnover rates in our sample are about 22 percent, UW organizations are functioning on the left side of the inverted-U curve and they can benefit from replacing some governing board members.

In model 3, the lagged variable of total contributions is included to ensure the results are not driven by the function of the previous year's values. The key results that show an inverted-U shaped relationship between governing board turnover rates and total contributions still remain the same, after controlling for the lagged dependent variable,

which suggests that the hypothesized nonlinear effect of the governing board turnover on nonprofits' financial capacity, in terms of the total amount of contributions, is quite robust.

Table 4.3: The effects of governing board turnover rates on total allocations toward partner nonprofits

Dependent variable:	Total allocations, logged		
	Model 1 Linear	Model 2 Nonlinear	Model 3 AR
Governing board turnover	0.003 (0.004)	0.027** (0.009)	-0.000 (0.004)
Governing board turnover squared		-0.000** (0.000)	0.000 (0.000)
L. Total allocations, logged			1.021** (0.037)
Fundraising expenditures, logged	0.009 (0.012)	0.008 (0.012)	-0.000 (0.006)
Program revenues, logged	0.064** (0.012)	0.064** (0.012)	0.004 (0.003)
Median family income, logged	0.002 (0.573)	-0.035 (0.568)	-0.151 (0.292)
Population, logged	0.944** (0.071)	0.937** (0.071)	0.013 (0.021)
% Bachelor's degree	0.025* (0.012)	0.025* (0.012)	0.002 (0.004)
% Unemployment	-0.169** (0.055)	-0.172** (0.054)	-0.028 (0.022)
Constant	2.539 (6.120)	2.828 (6.072)	1.258 (2.977)
R-Squared overall	0.403	0.411	0.853
N	453	453	446

Note: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ ; robust standard errors in parenthesis; AR=Autoregressive.

Table 4.3 employs another financial capacity measure of UW organization, total allocations toward partner nonprofit organizations (logged; hereafter total allocations).

Model 1 shows no statistically significant linear relationship between governing board member turnover rates and total allocations. Yet, since this chapter posits a nonlinear relationship between the two, it will be premature to conclude no relationship unless testing the nonlinear relationship. Model 2 suggests an inverted-U shaped relationship between the two. In other words, governing board turnover rates would increase total allocation toward partner nonprofit organizations initially ( $b=0.027$ ;  $p<0.01$ ). Once the turnover rates exceed a certain point, however, it will start decreasing total amount of resources being allocated to partner nonprofits ( $b=-0.0004$ ;  $p<0.01$ ). Holding all other variables constant, the calculation of optimal governing board turnover rates for total allocation shows about 30 percent. Figure 4.2 presents the relationship graphically using model 2.

Figure 4.2 depicts an inverted-U shaped relationship between governing board turnover and total allocations. To illustrate, governing board turnover rates would increase the total amount of resources allocated toward partner organizations, initially. As soon as the turnover rates go over 30 percent, the slope quickly changes to the decreasing rate. Given that the mean of governing board turnover rates in the sample (22.26 percent) is lower than the optimal turnover rates, there is still a room for better managing governing board member turnover for UW organizations. In other words, once a governing board member leaves, a newly joined board member (the replacement of the leaver) may allocate more resources to UW partner nonprofits to push their agenda further.

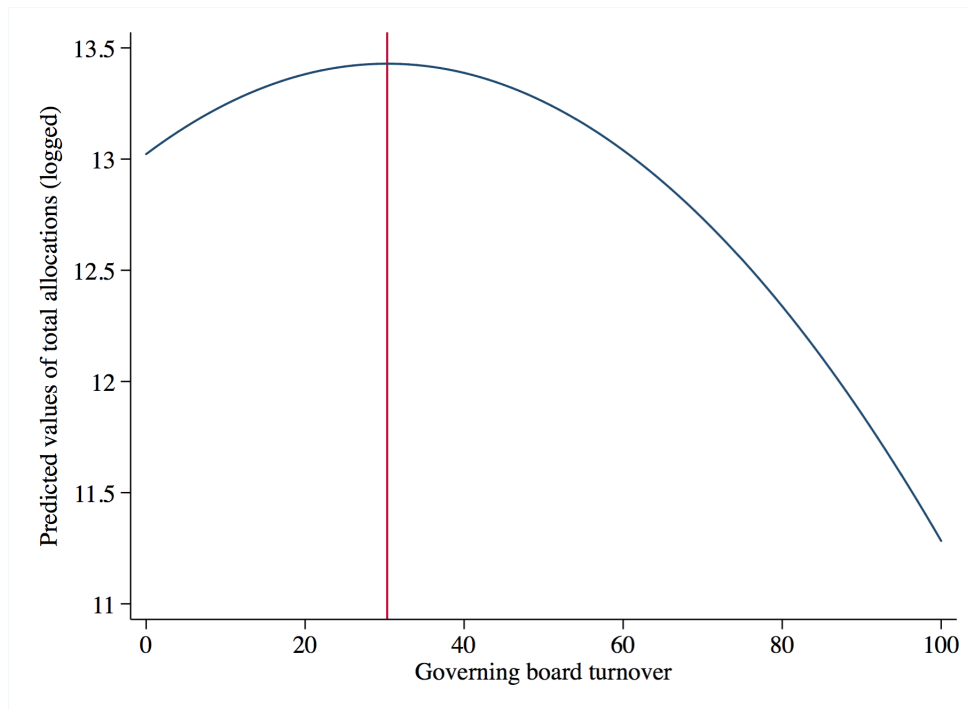


Figure 4.2: Predicted margins of governing board turnover rates on total allocations toward partner nonprofits (logged)

The inverted-U shaped relationship, however, disappears in model 3 when controlling for the total allocation in the previous year. Given that the lagged dependent variable is statistically significant and that both governing board turnover rates and its squared term are not in the model, governing board turnover might have a long-term effect on total allocation rather than short-term.

#### 4.8 Discussions and Conclusions

To sum up, I generally find support for the hypothesis on the nonlinear relationship between the governing board turnover and nonprofits' financial capacity. The results suggest that governing turnover rates increases the amounts of total contributions and



allocations up to a certain point, after which starts to decrease the amounts of both. It is worth noting that such inverted U-shaped relationship remains significant only for the total amount of contributions after controlling for the previous year's values. This indicates that the nonlinear relationship between governing board turnover and nonprofits' financial capacity holds for both in the short and long term in terms of the resources that the organization attract from the external funders (total contributions). The nonlinear relationship, however, may only hold in the long term with regard to the resources that are utilized for serving various organizational purposes (total allocations). These results provide key implications on how to manage the governing board turnover to improve the two aspects of nonprofits' financial capacity: resources acquisition and utilization.

First, having a certain level of governing board turnover helps with the efforts of nonprofit organizations to attract financial resources – immediately and also in the long run – as indicated by the results from the model on total contributions. A key in this mechanism is that each board member is a unique set of organizational assets that an organization can rely on for obtaining financial resources, which is expected from the resource dependence theory (Brown, 2005; Miller-Millesen, 2003). A new board member brings a different set of expertise and knowledge to the organization that can improve the organization's effectiveness in fundraising, and also links the organization with a new set of networks that can be potential funders of the organization. It is worth noting that the network they bring in and the advice they give come from their professional experiences

rather than their knowledge about the organization, which is a type of knowledge that takes some time for the new member to learn about. Hence, the positive effects of having governing board turnover appear pretty quickly, in terms of nonprofits' financial capacity in acquiring resources from the external environment.

Second, governing board turnover has the same inverted-U shaped relationship with another dimension of nonprofit financial capacity – the ability to utilize and allocate financial resources – but perhaps only in the long term. This seems plausible given the challenges associated with a new board member's participation in decisions of allocating financial resources to organizational programs. To make judgment and offer advice about utilizing and managing resources, the board members should be equipped with necessary knowledge about the organization itself – including the scope and range of services provided, different organizational activities, the current managerial practices, organizational rules and procedures, among others – as well as her or his expected roles in the organization (Wright and Millesen, 2008). All of these cannot be learned in the short term, and only after the new board member accumulates the organization-specific knowledge, she or he can make significant contributions to the improvement of the organization's capacity in utilizing resources. This explains the insignificant nonlinear effect of governing board turnover on the total amount of resources allocated to partner organizations who serve UW mission with the inclusion of the lagged value of total allocations.

Lastly, the costs of turnover keep increasing as the turnover rates increases, and

after a certain rate of turnover, the benefits of having a new member cannot positively affect the organization's financial capacity any longer in both cases – attracting and utilizing financial resources. Too frequent turnover brings multiple principals who represent different sets of interests and may offer conflicting advice for the organization, as suggested by the agency theory (Herman and Renz, 2008; Miller, 2002), which in turn can cause confusion and buffering in making and implementing key managerial decisions; thus, it is important to maintain the turnover rates in the governing board up to a certain point and put some efforts to prevent a high level of turnover occurring in the board, in order to make and sustain a financially capable nonprofit organization.

Yet, the study is not without limitations. First, governing board turnover rates could be slightly inflated since I could not account for name changes. Second, since I use the overall turnover measures, it does not capture whether governing board members are voluntarily left or forced to go out. Those different turnover types may have a different effect on nonprofit financial performance. I also encourage other scholars to examine this issue in other types of nonprofits and test the effects of governing board turnover rates on other types of nonprofit performance. Under what conditions the inverted-U shaped relationship would hold would be an interesting topic for nonprofit studies. Nevertheless, the study is among the first attempts to test the nonlinear relationship between governing board turnover and nonprofits' financial capacity. Findings from this study, therefore, add valuable insights to the growing knowledge base on the human resources management and capacity building in nonprofit organizations.

## 5. CONCLUSIONS

### 5.1 Introduction

Turnover-performance relationship has been an enduring research topic for organizational scholars, in the fields of public, private, and nonprofit management. The occurrence of turnover is unavoidable in any organization; therefore, understanding the dynamics of turnover is necessary for scholars and practitioners in any field. While the turnover is a universal phenomenon across different fields, understanding the causes and consequences of turnover, as well as managerial practices to deal with turnover, could differ across different fields and different types of organizations. Yet, both the theoretical investigation and empirical testing have been mostly conducted in the context of private firms. This dissertation aims to address such gap in public and nonprofit management literature, and add knowledge to growing theory and evidence base on turnover and organizational performance in the context of public and nonprofit organizations.

Using the three-paper model, I first develop a theory on optimal turnover rates and the relationship between turnover and performance incorporating labor market conditions and the quality of employees (Chapter 2), and then test the turnover-performance relationship in public organizations (Chapter 3), and in nonprofit organizations (Chapter 4). Key findings from the dissertation are at least three-fold. First, optimal turnover rates may exist in any organization, which is not necessarily close to zero. This indicates a potential nonlinear relationship between turnover and organizational performance.

Second, labor market conditions and the quality of employees in the organization should be considered in understanding the optimal turnover rates and the turnover-performance link. Third, organizations in different sectors can have different optimal turnover rates, and therefore, exhibit different turnover-performance relationships. This is largely due to the differences between public/nonprofit organizations and business firms, in terms of such factors as the labor market conditions, employee characteristics, organizational system, and managerial tools to hire and retain employees.

Previous empirical studies in public and nonprofit management have by and large focused on factors that are internal to organizations in examining the effects of turnover on organizational performance; these include characteristics of employees, organizations, and managerial practices. In other words, labor market conditions – factors related to the external environment – have largely been ignored in testing the turnover-performance link. Chapters 3 and 4 in this dissertation also could not incorporate labor supply and demand in the empirical analyses. In this concluding chapter, therefore, I will re-examine findings from these two chapters considering the conditions of public and nonprofit sectors' labor markets.

## **5.2 Labor Market Conditions and the Turnover-Performance Link in Public and Nonprofit Organizations**

In Chapters 3 and 4, turnover and organizational performance exhibit an inverted-U shaped relationship; specifically, (involuntary) teacher and governing board member turnover have the nonlinear effect on student performance in math and reading and

nonprofit financial capacity, respectively, first positive and then negative. I also found that the average turnover rates of teachers and governing board member rates in my samples (i.e. Florida school districts and UW organizations) are below the optimal turnover rates. This indicates that the organizations in the sample might have been functioning inefficiently and that they can benefit from an occurrence of turnover. Though organizations can improve organizational performance once turnover occurs, inefficient operations of the organizations would seem to be irrational at the first glance. Yet, these managerial decisions may have been a strategic choice, not necessarily managers' negligence on organizational inefficiency, especially if we take the conditions associated with labor markets for public schools and nonprofit organizations into consideration.

Table 5.1: Changes in labor market conditions and turnover gains

$\Delta$ Labor market conditions	$Q_n$	Turnover costs	Turnover gains
Labor supply $\uparrow$	$\uparrow$	$\downarrow$	$\uparrow$
Labor supply $\downarrow$	$\downarrow$	$\uparrow$	$\downarrow$
Labor demand $\uparrow$	$\downarrow$	$\uparrow$	$\downarrow$
Labor demand $\downarrow$	$\uparrow$	$\downarrow$	$\uparrow$

*Note:*  $Q_n$ =Quality of new employees; Turnover costs=f(costs of recruitment, costs of training, costs of learning).

Table 5.1 summarizes the relationship between labor market conditions and turnover gains from Chapter 2. Given that public schools in the United States face a great level of teacher shortage (i.e. a low level of labor supply), the expected gains from teacher turnover are likely to be small. Furthermore, a limited labor supply also increases

uncertainty in finding a suitable replacement after an occurrence of turnover. In this case, public managers might be better off by focusing on keeping turnover rates low rather than trying to achieve the optimal turnover rates. When the issue is coupled with a high level of labor demand, the managers may need to take a more conservative approach in managing turnover. Suppose that a math teacher in a public school is shirking. Since it is very difficult to find a math teacher with a high level of skills and the demand for skilled math teachers is higher than teachers for other subjects, even if the teacher is underperforming, it would be a strategic decision for a public manager not to lay off the teacher.

The same may be also applicable for nonprofit organizations in Chapter 4. Many nonprofits often struggle with recruiting (good or often any) volunteers (Hager and Brudney, 2011). In most cases, governing board members are highly qualified or successful professionals in their fields of expertise. The labor pool of voluntary governing board members, therefore, is more likely to be scarce (i.e. low level of labor supply). When a member of the governing board leaves the organization, there is no guarantee that the nonprofit organization is able to find another qualified candidate in a timely manner. Minimizing governing board member turnover, therefore, would be a strategic and reasonable decision for nonprofit managers. Such managerial strategy might be more of a necessity rather than of a choice for smaller nonprofits. Considering that nonprofits are often required to have a minimum number of governing board members to keep their tax-exempt status (Ott and Dicke, 2016), smaller nonprofits would be more vulnerable to

governing board turnover. If a nonprofit organization has slightly more governing board members than the minimum requirement, they would be more cautious not to let go of governing board members, even though the member has not been well performing.

### **5.3 Implications for Theory and Practice**

This dissertation offers key implications for both theory and practice of public and nonprofit management. First, managers and scholars in the fields should be aware of the existence of optimal turnover rates in every organization, which also indicate that the relationship between turnover and organizational performance is more likely to be nonlinear. Recent empirical studies on turnover and performance in the public sector (An, 2015; Meier and Hicklin, 2008; Moon, 2017) provide support to this argument; yet, many studies in the field of business management find a negative effect of turnover on performance. This suggests the sectoral differences with regard to optimal turnover rates. To illustrate, private firms tend to have higher turnover rates, while public organizations in general have a much lower level of turnover rates. Given the inverted-U shaped relationship between turnover and performance, since private firms have a higher level of turnover, findings of linear and negative relationship might indicate that only the right side of the inverted-U curve is observed in such types of organizations. This means that the accurate relationship between turnover and organizational performance might have been hidden due to the wrong assumption on the turnover-performance link.

Second, therefore, to develop more accurate knowledge on the effect of turnover on organizational performance, examining the turnover-performance link in a variety of



different contexts should be encouraged. This includes efforts to test the relationship in various types of public and nonprofit organizations; furthermore, sectoral comparisons would also advance our understanding on how the optimal turnover rates and the consequences of turnover can differ by sectors. This could be done using the data from organizations that operate in both sectors, such as hospitals and nursing homes.

Third, labor market conditions and the quality of employees should be taken into account for investigating the issues of organizational turnover. Such factors significantly affect employees' decisions to stay or leave the organization, as well as organizations' abilities to find, hire, and retain qualified individuals; needless to say, the turnover-performance link should be affected by these conditions. Incorporating them is even more important for public and nonprofit scholars, given that the turnover studies in the fields have generally ignored them. In addition, public and nonprofit managers indeed need to have a better understanding of optimal turnover rates and the effect of turnover on performance, considering that they often do not have sufficient managerial resources to prevent the occurrence of turnover (e.g., lower levels of salaries and inflexible rewarding system), compared to managers in private firms. Propositions in Chapter 2 of this dissertation, would serve as useful starting points for future scholars who want to further examine the turnover-performance relationship incorporating labor market conditions and employee quality.

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APPENDIX A

SUPPLEMENTAL MATERIAL FOR CHAPTER 3

Table A.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FCAT read pass rates	328	59.64	8.02	25.26	76.19
FCAT math pass rates	328	63.78	8.78	27.18	80.22
Voluntary turnover	327	5.62	3.15	0	20
Involuntary turnover	327	2.04	2.77	0	19.1
Absolute Turnover	261	7.25	4.72	.03	37.5
% Black students	328	18.87	14.21	.83	80.85
% Hispanic students	328	15.67	14.74	0	66.57
% Low income students	268	56.74	12.74	18.92	100
Class size	328	15.34	1.3	10.43	19.01
Teacher experience	261	12.3	1.76	7.26	19.42
Expenses 000s	261	7.16	.72	5.94	10.6
Teacher pay 000s	328	9107.91	17986.54	35.63	54083
Noncertified	261	5.06	4.66	0	29.8

Table A.2: Categorization of turnover types

Voluntary turnover	Involuntary turnover
Inadequate salary	Probationary
Lack of opportunity for advancement	Low-performance
Dissatisfaction with supervisor	Workforce reduction
Dislike of or unsuitable for assigned duties	Not reappointed
Family/personal reasons	Resignation in lieu of termination
Return to continuing education	
Relocation	
Retirement	
End of temporary assignment	
Inadequate benefits	
Stress on the job	
Spousal relocation	
Child rearing	
Entrepreneurship	
Promotion to a non-teaching position in the district	
Transfer to a non-teaching position in the district	
Health problems	

*Source:* The teacher exit surveys are provided by the Florida Department of Education.

APPENDIX B

SUPPLEMENTAL MATERIAL FOR CHAPTER 4

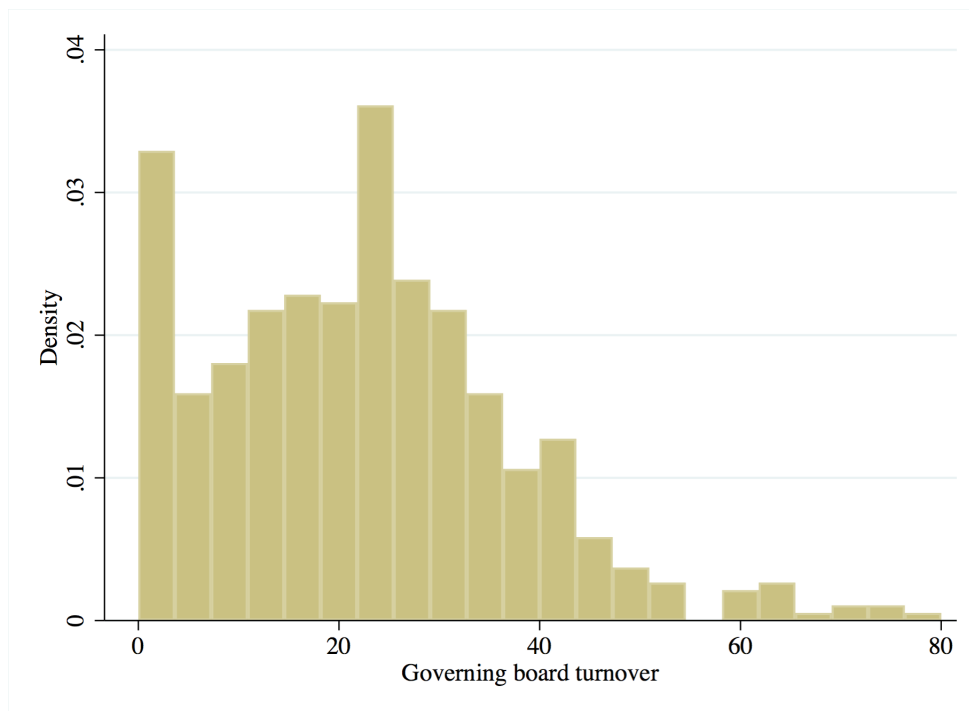


Figure B.1: Histogram of Governing Board Turnover Rates in United Way Organizations.