Optimal Turnover Rates and Performance in Public Organizations:
Theoretical Expectations

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Abstract

This paper advances the theory of turnover and performance in public organizations, incorporating labor market conditions and quality of labor. In doing so, we first present theories on optimal turnover rates, based on a cost-benefit theoretical framework. We then discuss how optimal turnover rates in public organizations change according to labor supply and demand. After that, we illustrate how public labor market conditions and quality of labor affect turnover-performance relationship. Throughout the paper, we propose a set of testable propositions for future scholars, which posit the turnover-performance relationships being conditioned on various organizational and environmental contextual factors.

Introduction

High quality human capital is essential in all organizations (Cho and Park 2011) regardless of sector or industry. To acquire and sustain high quality human capital, organizations invest significant human and financial resources in recruiting, hiring, and training employees (Lee and Mitchell 1994). When turnover occurs, however, these investments become sunk costs; and the organization must reallocate additional resources for recruiting, hiring, and training replacement employees. Given the perceived significant impacts of turnover, management scholars have long developed theories and empirical tests of turnover, albeit mostly for private firms. Yet, there are conditions that need to be considered in managing the public sector workforce, such as different levels of salary (Wilson 1994), job security (Rainey 2009), and hierarchy (Downs 1967). More studies on turnover focusing on public organizations, therefore, would advance our understanding of managing the government workforce and improving public organizational performance.

Studying turnover in government is also timely. Recent commentators forecast a human capital crisis facing the US government (cf. Gorina and Hoang 2020; Lee, Fernandez, and Chang 2018) with the need to replace significant portions of the workforce soon to retire (Bordia and Cheesebrough 2002; Liebowitz 2012; Soni 2004); other countries with aging populations face similar concerns. Some public organizations are plagued with massive annual turnover rates: 30-40% in child protective services (GAO 2003), 29.7% in prison staff (Fifield 2016), 17.2% in nursing (NSI Nursing Solutions 2019) with individual health agencies reporting rates as high as 90% (Health and Human Services 2019). Other government agencies cannot find individuals willing to accept positions; in 2017 fully 14% of state government jobs in South Carolina were

vacant (Cope 2017); 27% of California's workers' compensation fraud investigators were vacant in the same year (Barrett and Greene 2018). The covid-19 pandemic exacerbated turnover problems at all levels of government; a recent report from the U.S. Bureau of Labor Statistics (2021) reveals that separations in government agencies drastically increased during the pandemic (increases by 9.3%, 55.7%, and 26.9%, in the number of quits, layoffs, and other separations, respectively). Such massive turnover rates in government can greatly influence organizational performance, in both the short and long run.

In this regard, this theory paper seeks to advance the theory of turnover and performance in public organizations and sets research agendas for empirical testing. Specifically, we first provide theoretical mechanisms on how the turnover rate that yields an optimal level of performance is determined. Second, we then explain the turnover-performance link in the public sector by incorporating two important, but largely ignored factors–labor market conditions and employee quality. In doing so, we make two major contributions to the public management literature. First, theoretically, the incorporation of labor market conditions and employee quality provides a more nuanced picture of turnover performance theory. This offers theoretical insights on how to better understand and manage turnover in public organizations. Second, we provide testable propositions along with potential empirical applications. If tested with appropriate data, these propositions can help produce much-needed empirical knowledge on turnover and performance management.

To that end, the rest of the article proceeds as follows. First, we provide the logic behind the concept of optimal turnover rates in public organizations and highlight the importance of labor market conditions and employee quality in investigating what determines this rate. Second, we introduce the cost-benefit model of turnover developed by Abelson and Baysinger (1984) and

argue that Optimal Turnover Rates (hereafter, OTR) should differ in the public sector due to the different labor supply and demand curves to highlight the relevance of studying the turnover-performance relationship in public organizations. We then present how changes in labor supply and demand affect OTR in public organizations. Third, we discuss how turnover affects organizational performance and how the relationships differ according to labor market conditions and quality of employees in the organization. In doing so, we provide cases on whether and how to manage turnover or to minimize turnover. After that, we conclude with discussions and implications.

Turnover and Optimal Rates

The theoretical discussion and empirical examination of optimal turnover rates have been keen interests of public management scholars, given the importance of human capital in government organizations. In their classic textbook, *Public Personnel Administration*, Mosher and Kingsley (1936) were among the first to raise potential possibilities of optimal turnover rates in public organizations. They argued that moderate levels of turnover can improve the organizational work environment by infusing novel ideas from new employees and those new ideas can prevent organizations from being rigid. If turnover becomes excessive, however, the costs of turnover can be significant, thereby hurting organizational performance.

This nonlinear relationship between turnover and performance, however, has been rarely tested and found in the public management literature. A handful of studies have shown the nonlinear effect of turnover on performance in public organizations (An 2019; Meier and Hicklin 2008; Moon 2017; Wynen et al. 2019). Meier and Hicklin (2008) argue that insights and information from new employees are likely to be more important to improve organizational

performance when tasks are difficult and challenging; they find that teacher turnover has a negative linear relationship with student standardized tests (low task difficulty) and an inverted-U shaped relationship with college entrance exams (high task difficulty). Moon (2018), An (2019), and Wynen et al. (2019) find an inverted-U shaped relationship between voluntary turnover and performance, between involuntary turnover and performance, and between total turnover and performance, respectively. The theoretical mechanisms that those studies propose to explain the turnover-performance relationship are noteworthy to better understand the dynamic. Moon (2018) and Wynen et al (2019) argue that the net benefits of turnover can occur due to the new ideas from new hires, and An (2019) claims that turnover can improve performance by separating poorly performing employees.

While studies that empirically observe the inverted-U shaped relationship propose different micro theories on how turnover can improve organizational performance, their common arguments can be summarized in two general points. First, at low levels of turnover, new hires who replace former employees can bring new ideas and more recent training that can lead to positive changes and prevent organizational rigidity or inflexibility and positively affect organizational performance (Meier and Hicklin 2008; Moon 2017; Lee 2018). Second, if turnover occurs too frequently, however, the total turnover costs of replacing workers can outweigh these benefits, thereby detrimentally affecting organizational performance. From this relationship, we can infer that two variables need to be considered in managing turnover. First, how quickly can organizations find replacements at a reasonable cost after an employee announces her/his last day at work? Second, how does the average quality of new hires compare to the average quality of leavers? In sum, labor market conditions and employee quality need to be incorporated into managerial decisions in dealing with turnover in the organization. Hiring

new employees and managers' decisions to fire poor performers are not exogenous from labor market conditions (i.e. labor supply and demand), as well as quality of existing and potential/prospective employees. These conditions can have both direct and indirect impacts on optimal turnover rates and organizational performance. Prior to developing our theoretical mechanisms incorporating labor market conditions and employee quality, we first illustrate the cost-benefit theories in the following section and show how optimal turnover rates could differ in the public sector.

An Overview of Optimal Turnover Rates (OTR) from Cost-Benefit Theories

Cost-benefit theories of turnover are based on the idea that not all employee turnover is dysfunctional (Abelson and Baysinger 1984); turnover should be evaluated based on the costs and benefits it brings to an organization. For instance, instead of spending massive retaining costs (more job training, greater perquisites, additional support staff, etc.) to minimize turnover rates (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). There can be an optimal turnover rate (OTR) for an organization, and an effort to match the turnover rate close to OTR is a more desirable practice than seeking to minimize the turnover rate. If an OTR exists, any turnover rates that deviate from it suggests the organization is inefficient and probably less effective.[1] A goal of human resource management in any organization, therefore, is to achieve an OTR by balancing turnover costs (TC hereafter) and retention costs (RC hereafter).

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[1] Effectiveness and efficiency might respond to suboptimal turnover in different ways. Suboptimal turnover will always be inefficient; however, it is possible that if turnover is too low that the resulting "inefficiency" can be used to increase effectiveness through either slack or using the resources to develop additional human capital. The leanest organization in terms of efficiency is not necessarily the best organization in terms of effectiveness.

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 such as higher compensation, promotions, better working conditions, and inter-departmental transfers. Figure 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 (RC = TC).

[Figure 1 about here]

In figure 1, y- and x-axes represent all turnover related costs (y) and turnover rates (x), respectively. From the perspective of human resource management, low turnover rates can reflect high RC, given that RC increase through attempts to reduce turnover rates by spending organizational resources to retain employees (Abelson and Baysinger 1984). If an organization spends more on RC than the optimal point (such that RC > TC) where TC and RC cross over, TC will go down as the organization successfully retains the current employees. In this case, figure 1 illustrates that at any other point beside 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 RC is greater than TC, an organization can improve its performance by redesigning 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 TC is higher than RC, the occurrence of any turnover adds to organizational costs and thus 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 likely to increase; second, when turnover rates increase and

RC<TC, organizational performance is likely to decrease; and third, when TC≠RC, an

organization is functioning inefficiently.[2]

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 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 relationships (e.g., An 2019; An 2021;

Meier and Hicklin 2008; Moon 2017; Wynen et. al. 2019) between the two. The mixed results on

this topic call for a better theory that can explain the phenomena. We argue that to understand the

turnover-performance link, labor market conditions need to be considered, since labor supply and

demand are not exogenous to turnover rates and costs. In other words, changes in the labor

supply and/or demand can affect turnover costs and retention policies in organizations. An

employee's decision to quit (or a manager's decision to separate an employee) can also be

conditioned on labor market conditions (that is, an employee is more likely to quit if there are

other attractive jobs available; and a manager is more likely to fire a worker who can be easily

replaced). We define the labor demand as "the number of positions for qualified individuals" that

organizations advertise for at a certain level of compensation, 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

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[2] An interesting theoretical situation is what happens at the extreme right of the curves when organizations face chronically high turnover. It is possible that the negative effect of turnover has diminishing marginal returns and thus the overall curve looks more like a normal curve than a strict quadratic. This could be investigated by examining organizations such as child protective services, probation agencies, prisons, and nursing services that have exceptionally high annual turnover rates.

in public organizations and how public managers can respond to changes in labor supply and demand in managing human resources.[3]

Optimal Turnover Rates in Public Organizations

An exit of public employees generates transactional costs for a government organization related to searching, hiring, and bargaining. While conducting such activities to hire new employees, 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). Conditions in the governmental labor market, such as the supply of labor, can substantially affect the agency's efforts to find a replacement. From the perspective of job candidates, labor market entry selection – i.e. whether the candidates will work in a public or private organization – is not random (see Lewis and Ng 2013); job candidates select labor markets 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, we first assume that the number of qualified individuals for governmental jobs will vary depending on skill requirements and salary, holding motivation and ambition within a sector constant. A second assumption is that labor supply and demand curves *on average* in 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) (we later relax this assumption to show how our theory can explain differences within the public sector).

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[3] Although we investigate whether OTR would differ between sector (public vs. private), the argument is likely to hold between industries and between public organization with different characteristics (see below). All arguments should be interpreted as ceteris paribus, that is, when organizations perform similar functions.

The different labor market conditions in the public labor market influence the TC and RC curves in the model of OTR. First, in general RC curves in the public sector labor market are less likely to shift in comparison to the ones in the private sector because public managers have fewer managerial tools and options to retain public employees; public managers usually are less able to offer higher salaries or provide promotions when a highly skilled bureaucrat wants to quit (Nigro, Nigro and Kellough 2012).

Second, skill requirements and inflexible wage systems in the public sector can influence the TC curve. Acquiring policy-oriented knowledge or agency-specific expertise is critical in many government jobs (Bertelli and Lewis 2012). For instance, in regulatory agencies, without knowing the regulatory laws and other detailed procedures as well as how they are applied to a specific industry, bureaucrats will have trouble being effective at their work. Regulating chemical exposure limits or drug efficacy is highly technical work. Knowledge about red tape or other bureaucratic procedures is also required. Public organizations, however, may not be able to provide sufficient (at least material) rewards to their employees for acquiring this specific knowledge and expertise, particularly given in inflexible salary system (which may not provide pay reflecting employees' skill levels).

Third, government agencies have higher transaction costs for turnover due to its hiring procedures and job security. For many governmental agencies (e.g., FBI and CIA), hiring processes often take months due to extensive background checks and specialized exams. In addition, public organizations are also likely to face higher transactions costs in terms of separating employees that they would prefer to replace owing to job security protections in many systems (Nigro, Nigro and Kellough 2012). Even with the federal government protections that limits terminations to "cause" and specifies detailed procedures, Office of Personnel

Management data indicates approximately 10,000 employees are terminated every year (see fedscope.opm.gov). These more elaborate procedures in essence add to the transactions' costs of turnover that managers face.

For these reasons, we posit that turnover costs in public labor markets on average are greater than those in private labor markets, especially when public managers have fewer means to retain employees compared to private sector managers.[4] Applying this logic to Figure 1, the public TC curve is more likely to move to the left due to higher turnover costs in public organizations, as seen in the Figure 2. In this case, total turnover related costs also increase for public organizations, and in turn, OTR will also be lower compared to private organizations; since turnover costs more in public organizations, they are likely to prevent it determining OTR at a lower rate. Figure 2 depicts the new OTR in public organizations (shown in the curve, TC_{pub} and the new OTR rate, OTR_{pub}). Based on the logic, if all other things are equal (e.g., organizations are performing the same function, etc.) the first proposition is:

Proposition 1: *The optimal turnover rate is lower for a public organization than a private organization.*

Empirical applications: Comparing turnover rates and the impact on performance across sectors requires that the organizations perform similar functions to control for the task, the skills needed, and other factors. Such comparisons could be made with public and private prisons (Camp and Gaes 2002), public and charter schools, and other areas where both public and private

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[4] For simplicity, figure 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 likely to be greater (since optimal turnover rates for private organizations will be determined at a higher point than is illustrated in figure 2).

organizations deliver public services (e.g., hospitals, nursing homes, trash collection, mental health provision, etc.).

[Figure 2 about here]

Some turnover is due to death, illness, or similar reasons; these natural types of turnover are unavoidable. If natural turnover rates in an organization are close to OTR, managers have less room for managing turnover. Because OTR in private organizations is more likely to be at a higher point than 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 private organizations would.[5]

Optimal Turnover Rates in Public Organizations Responding to Labor Market Conditions

OTR of public organizations can change in response to changes in labor market conditions. Two cases will illustrate how the 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. In such cases, public managers can spend fewer resources recruiting talented employees compared to before. In contrast, job seekers will need to invest more in cultivating their expertise to acquire a job in this more competitive labor market; or, they may need to be willing to accept a job with worse conditions (e.g., lower salary or more working hours). From the organization's perspective, this means it can get an equally skilled and

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[5] This argument holds true if natural turnover rates are randomly distributed across sector. 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 likely to hurt organizational performance. This also suggests that the probability of organizational survival in the long term is likely to be lower.

qualified worker at a lower cost. If a newly hired employee had to invest more resources in developing their skills to simply get through the job market, the organization can allocate some human and financial resources currently being spent on training new employees to other organizational activities. An increase of labor supply, therefore, 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 at a higher point, as shown in figure 3.

In figure 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, an increase in turnover by OTR2-OTR1 can improve organizational performance, in theory.[6]

[Figure 3 about here]

Proposition 2: *When the labor supply increases, optimal turnover rates in a public organization will be higher.[7]*

Empirical applications: Schools in states that allow an easier alternative teacher certification process will have a relatively larger labor pool and could be compared to schools in states with restrictive certification. In 2011 the state of Texas reduced the educational qualifications required for child protective services workers thus expanding the labor supply; before-after assessments

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[6] The manager might not encourage turnover but rather spend less on discouraging it when the supply of labor is ample. Afterall, if a manager can replace a worker with someone better qualified, then rationally the manager should not spend resources on retaining the employee.

[7] Though we focus on public organizations for the purpose of this paper, propositions 2 and 3 can be applicable to all types of organizations.

could be used in this case. Similar comparisons might be made between public organizations that give exams for custodial workers versus those that do not or health care organizations that are allowed to substitute licensed practical nurses for registered nurses.

Second, suppose that the demand for labor in public organizations increases, perhaps as the result of program expansion, a major increase in clientele, or significant demographic shifts. An increase in labor demand should generate higher turnover costs in public organizations. To illustrate, when an employee leaves her/his organization when the demand for labor is high, an organization would be less likely to find a replacement with similar levels of skills and knowledge unless they offer higher compensation or better working conditions.[8] Due to less flexible human resources systems in public organizations in general, however, public organizations are limited in offering and adjusting salaries or working conditions to attract good/qualified candidates. In this regard, to overcome the challenge, public managers might emphasize potential task significance and social impact of 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 4 about here]

Figure 4 illustrates when there is a high level of labor demand in the market, 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, the TC curve in the figure shifts to the

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[8] This is exacerbated by the fact that these conditions will also be more likely to entice an employee to leave an organization.

left, which determines the OTR at a lower point. In this case, public managers are likely to have less room for managing organizational turnover by OTR1-OTR2 in Figure 4.

Proposition 3: *When the demand for labor increases, optimal turnover rates in a public organization will be lower.*

Empirical applications: An influx of immigrants will increase the demand for bilingual police, social workers and educators, or the start-up of a major industry that will compete with government agencies for workers (e.g., a new Amazon headquarters) could increase demand for some public employees and optimal turnover rates could be assessed before and after. Policy changes could have a similar impact; the Affordable Care Act and subsequent Medicaid expansion increased demand for a wide variety of health practitioners and administrators.

The Turnover-Performance Relationship: Considering Employee Quality

Even if turnover rates are similar across organizations, the effects of organizational turnover can be different depending on the quality of leavers (Hausknecht and Holwerda, 2013) and the quality of employees who remain in the organization. Reflecting the notion of employee quality, recent public management scholars have distinguished between voluntary and involuntary turnover (e.g., An 2019; Lee 2018; Moon, 2017), rather than just total turnover rates. The idea is that the distinct origins of each type of turnover would affect organizational performance differently (see An 2019; Lee 2018). For instance, voluntary turnover would likely have a more 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 2019).

Though the categorization of voluntary and involuntary turnover is useful to capture the quality of leavers, previous studies only take the quality of leavers into account; they do not fully capture other dynamics such as the quality of the newcomers and remaining employees in the organization. Considering the quality of newcomers and remaining employees in the organizational workforce is equally important (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 likely to be affected by the performance of leavers as well as by the remaining employees. More importantly, both the quality of newcomers and the remaining employees are 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 remaining employees in the organization are relatively new (i.e. lack experience or have fewer skills) or the replacements of high-performing leavers have lower levels of human capital (Hausknecht and Holwerda 2013). In this regard, we present three propositions:

Proposition 4: *The turnover of high-performing employees has a more detrimental effect on organizational performance than that of low-performing employees.*
Empirical applications. If one assumes that individuals who voluntarily leave the organization are higher performing than those who are terminated (see An 2019), this could be tested with existing data sets that distinguish by reasons for turnover. Alternatively, one might measure high

performance by how rapidly an employee had been promoted or by employee ratings if the researcher could get access to an organization's human resources' files.

Proposition 5: *The effects of turnover are more detrimental to organizational performance when the replacements of leavers have low levels of human capital (compared to when the replacements of leavers have high levels of human capital).*

Empirical applications: Testing this proposition is dependent on the ability to assess both the skills of the labor pool and the skills of the exiting personnel. This could be done for agencies employing scientists if a measure of research productivity was available or agencies employing accountants with and without CPA certification.

Proposition 6: *The effects of turnover are more detrimental to organizational performance when remaining employees in the organization are inexperienced (compared to when remaining employees in the organization are experienced).[9]*

Empirical applications: Most public data bases that measure turnover also measure worker experience so there are many applications. One example is the interaction of turnover and worker experience in child protective services, social work, or mental health services.

The Turnover-Performance Relationship: Considering Labor Market Conditions

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[9] The experience hypothesis is based on the relative need for experience in an organization; as fast food franchises and sales call centers demonstrate, in some organizations' jobs can be designed such that very little if any experience is necessary to perform a job. Many public organizations operate call centers, but we found little discussion in the public administration literature on them. It may be the case that public organizations' call centers are contracted out.

Various conditions in the labor market should be considered in theorizing the effect of turnover on organizational performance since labor market conditions affect total turnover costs. In other words, the turnover-performance link is likely to be contingent on labor market conditions. In this section, we focus on four conditions in the public sector labor market (changes in the labor supply, changes in the labor demand, variations in the personnel system, and the presence of multiple labor markets), and illustrate how these labor market conditions affect the turnover-performance link (Grissom, Viano, and Selin 2016).

Changes in the Labor Supply

The labor supply can increase or decrease depending on a hiring standard in a labor market, which in turn affects the turnover-performance relationship. In the US K-12 education labor market, for example, to apply for a teaching position in a public school, applicants need to have a teacher certification. Although the requirements for the certification vary by states, in general one must have a bachelor's degree from an accredited college and should have passed tests for necessary knowledge and skills. Imagine a state passed a law that removes the requirement of teacher certification to overcome shortages of teachers for certain subjects (in many states, for example, charter schools are not restricted by teacher certification requirements). By lowering the standard, we would expect the supply of labor to increase in the K-12 education labor market; individuals without a teacher certification can now apply for a teaching position.[10] 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 likely to decrease due to an increased labor supply. Once a teacher decides to leave, a school can find a replacement for the

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[10] Whether this change in standards affects the performance of the organization will depend on whether or not the requirement is a bona fide occupational qualification.

employee more easily. Second, from the perspective of teachers, since the labor market becomes more competitive due to an increase in labor supply, employees are more likely to work harder to keep their current job and think more carefully about their exit options if they were originally planning to leave the school. In these cases, total turnover costs are likely to decrease from the perspective of the organization as a whole. By analogy, adding a new employment standard (e.g., all math teachers must have a master's degree in math) would have the opposite effect.

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

Empirical applications. Labor supply for many government agencies means college graduates, and the rise and fall of such labor with state or local markets could be tracked based on new college graduates within various fields. Changes in education requirements for welfare caseworkers after the passage of welfare reform in 1996 provide a more specific example (Watkins-Hayes 2009). Within specialized areas such as forestry, scholars could get relatively precise estimates of labor supply based on college degree production. Similarly, any set of jobs that currently requires certification (accountants, engineers, nurses, etc.) could increase the labor pool by allowing experience to substitute for certification.

Changes in the Labor Demand

To illustrate how changes in the labor demand affect the turnover-performance relationship, we use 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, Mississippi). Students from New Orleans enrolled in schools in neighboring states since many

schools in their hometown were destroyed or closed; evacuees required assistance to finding

housing, employment opportunities and other social services. When the natural shock increased

the population, public employees in the neighboring states were burdened with higher workloads

simply because the demand for services increased. If public employees leave the organization

due to the increased workloads, it would be more difficult for a manager to find replacements

unless the organization could offer higher wages that would reflect the increase in the demand

for labor in the market; in this case, turnover would become more costly.

Proposition 8: *Turnover would be more detrimental to organizational performance when there*

is turbulence in the labor market, holding the labor supply constant.

Empirical Applications. Additional cases can be gleaned relative to natural disasters. Most

recently, the covid-19 pandemic could provide numerous cases. During the pandemic, the US

governments at all levels reported an increase in turnover. The percentages of annual quits in

2020 increased by 18.3% and 8.6%, in federal government, and in state and local governments,

respectively (US Bureau of Labor Statistics 2021). Turnover in public education agencies (at

state and local levels) was particularly noticeable. The numbers of quits, layoffs, and other types

of separations in 2020 increased by 16.4%, 56.7%, and 52.6%, respectively. Comparing the

impact of turnover on performance in public educational entities, before and during the covid-19

pandemic, can offer a solid base for testing the proposition 8.

Variations in the Public Personnel System

Variations in the personnel system in different public organizations can also affect the turnover-

performance relationship. For purposes of argument, this paper assumes that public personnel

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systems are more restrictive than private personnel systems in terms of limits on managerial action, hiring processes, rewards and other factors. At the same time, it is important to recognize that public personnel systems vary a great deal as traditional civil service systems have been eroded by efforts to give managers more discretion even to the application of the "employment-at-will" doctrine to public employees (Maynard 2013). Several US states including Georgia, Arizona, Florida, and Indiana have legislatively adopted the employment at will doctrine (Maynard 2013; Muhl 2001), a highly criticized private sector doctrine that permits dismissals without cause, or passed laws that eliminated other civil service protections (Hayes and Sowa 2006). Other governments such as Wisconsin have restricted the actions of public labor unions to remove job protections (Dau-Schmidt and Lin 2011) or contracted out public programs to avoid civil service restrictions on human resources management (Bel and Fageda 2007). Cross-nationally the variation in public personnel systems is even greater in terms of flexibility or lack thereof (Van der Meer, Raadschelders, and Toonen 2015).

Considering the restrictiveness of a personnel system as a variable generalizes this theory so that it can deal with comparisons among public organizations such as similar agencies across nations, states or cities. The generalization also implies that the theory is applicable to the use of alternative organizational forms to implement public programs such as contracting, the use of non-profits, and the creation of networks. Contracting, in particular, can be used to circumvent restrictive personnel processes (Kramer and Grossman 1987). The two previous cases of changing a hiring standard or changes in environmental conditions, as a result, might be considered special cases of simply treating the restrictions on the management of public employment as a variable that affects the linkage between turnover and performance.

Proposition 9: *Turnover would be more detrimental to organizational performance when the restrictiveness of the personnel system increases.*

Empirical Applications. Studies could examine agencies that perform similar functions but operate under more or less restrictive public personnel systems. Comparisons might be between service delivery organizations in at-will jurisdictions versus those in traditional merit systems or between jurisdictions that permit probation monitoring to be contracted out with those operating the function with a traditional government agency.

The Presence of Multiple Labor Markets

Although the theory focused on parsimony by treating public organizations as if they faced a single labor market, that is clearly not the case. Virtually all public organizations hire a wide range of personnel and operate in multiple labor markets simultaneously. A national organization such as the US Department of Agriculture competes in national labor markets for agronomists, entomologists, agricultural economists and other technical specialists, but at the same time faces a local labor market to staff clerical and other support personnel. Given the vast number of field offices of the Department, the agency also must complete in a variety of more narrow markets (e.g., agricultural economists willing to live in Kansas City, urban foresters, etc.). These multiple labor markets qualify many of the existing propositions. Logically, the propositions presented are more likely to apply to mission critical personnel rather than general support personnel such that the Forest Service and its performance is more reliant on turnover among foresters than among its clerical support staff. This logic suggests that for agencies

facing multiple labor markets, the general propositions need to be adapted to the specific types of organizations that are being studied.

Proposition 10. *Turnover in positions with tight labor markets would be more detrimental to organizational performance, given that the organizations relying on multiple labor markets will face different costs and benefits of turnover for different positions.*

Empirical applications. This could be tested in public schools with the expectation that turnover for math teachers and bilingual teachers (both high demand and low supply fields) would be more detrimental than other teachers. In long term care facilities, the turnover of registered nurses should be more critical than that of nurses' aides.

Discussion and Conclusions

This paper presents a theoretical exposition 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. As summarized in Figure 5, we first explain that how optimal turnover rates in public organizations are determined and can change (propositions 1-3), and then illustrate how the turnover-performance relationship can be affected by employee quality (propositions 4-6) and by labor market conditions (propositions 7-10). By doing so, this paper adds to the theory base on turnover and organizational performance in at least two main ways.

[Figure 5 about here]

23

First, this study is among the first 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 turnover as a disruptive event that negatively affects the organizational performance. While several studies find that the effect of turnover may not simply be negative (An 2019; An 2021; Meier and Hicklin 2008; Moon 2017; Wynen et. al. 2019) in public organizations, they offer different mechanisms to explain the relationship between turnover and the performance of organization, which calls for a better theory of organizational turnover. Incorporating supply and demand in the labor market and the quality of employees, we examine how those conditions affect costs of turnover and how it could in turn have effects on organizational performance. By doing so, this study yields insights on how public organizations can better manage the occurrence of turnover to enhance organizational performance.

Second, we 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 the differences in the effects of turnover on performance according to various organizational and environmental factors. These propositions are general in nature and amenable to empirical verification by scholars. Although it provides empirical applications and cases focusing on the US, the theoretical arguments and empirical applications should be generalizable across countries. Scholars can conduct empirical investigation of these propositions 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, one of critical issues in human resources and performance management in organizations.

The current examples do not exhaust the model's applications. The model could be applied to major human resource policy actions such as types of veteran's preference laws, e-verify, quota systems, or to the establishment of "employment at will" mandates. Interesting applications might exist to cases where there are segmented labor markets or major selection bias in professions (such as the gender preferences for nursing or teaching) which can dramatically affect the quality of available in the labor pool. The model can also be applied at the individual level to consider how decisions by employees and employers present strategic situations that enhance the bargaining power of either the employee (when labor is in short supply) or the manager (when labor is in oversupply).

This study is not without limitation. Even though we propose labor market conditions as a key factor that explains the turnover-performance relationship, other factors may exist that organizations may or may not be able to control. One possibility is (large) organizations' turnover policies. If organizations are large enough, changes in turnover policies are likely to affect the labor market conditions, which can in turn affect organizations' turnover policies. We encourage future scholars to further investigate the effects of other various factors on turnover-performance link.

Although the presentation here has been theoretical, empirical research using the theory has potential applications for the practice of human resource management and the efforts to maximize organizational productivity. The "human capital" crisis currently facing many governments calls for a more strategic approach to managing human resources and that includes paying greater attention to turnover (Bordia and Cheesebrough 2002; Liebowitz 2012; Soni 2004). Similarly, the New Public Management maxim to "do more with less" creates pressure for public managers to generate higher outputs with existing human resources as slack resources

decline and labor supply shrinks. Public managers and public organizations can clearly benefit

from paying attention to the benefits and costs of turnover in their efforts to improve government

performance.

References

Abelson, M. A., and Baysinger, B. D. (1984). Optimal and dysfunctional turnover: Toward an organizational level model. *Academy of Management Review*, 9(2), 331-341.

Alexander, J. A., Bloom, J. R., and Nuchols, B. A. (1994). Nursing turnover and hospital efficiency. *Industrial Relations: A Journal of Economy and Society*, 33(4), 505-520.

An, S. H. (2019). Employee voluntary and involuntary turnover and organizational performance: Revisiting the hypothesis from classical public administration. *International Public Management Journal*, 22 (3): 444-469.

An, S. H. (2021). Nonprofit board turnover and financial performance: Examining optimal board turnover rate in United Way organizations. *Nonprofit Management and Leadership*.

Autor, D. H. (2001). Wiring the labor market. *The Journal of Economic Perspectives*, 15(1), 25-40.

Barrett, K. and Greene, R. (2018). Unfilled Jobs Take Toll on Governments Across the Nation. Governing the States and Localities. ttps://www.governing.com/topics/mgmt/gov-job-vacancies-unfilled-empty-government-public.html access August 7, 2019.

Bel, G., and Fageda, X. 2007. Why do local governments privatise public services? *Local Government Studies* 33 (4): 517-534.

Bertelli, A. M, and Lewis, D. E. 2012. Policy influence, agency-specific expertise, and exit in the federal service. *Journal of Public Administration Research and Theory,* 23(2), 223–245.

Bordia, A., and Cheesebrough, T. (2002). *Insights on the Federal Government's Human Capital Crisis*. Cambridge: Kennedy School of Government. https://ourpublicservice.org/wp-content/uploads/2002/07/2e2fd83a502ed7231bc91e725331aad0-1414079558.pdf

Camp, S. D., and Gaes, G. G. 2002. Growth and quality of US private prisons: Evidence from a national survey. *Criminology and Public Policy,* 1(3), 427-450.

Cannella, A. A, and Hambrick, D. C. (1993). Effects of executive departures on the performance of acquired firms. *Strategic Management Journal* 14(S1), 137–152.

Carpenter, D. P. (2002). Groups, the media, agency waiting costs, and FDA drug approval. *American Journal of Political Science* 46(3), 490–505.

Cheremisinoff, P. N. (2018). *Handbook of water and wastewater treatment technology*. New York: Routledge.

Cho, Y. J., and Park, H. (2011). Exploring the relationships among trust, employee satisfaction, and organizational commitment. *Public Management Review,* 13(4), 551–573.

Cope, C. (2017). "Help Wanted: 14 Percent of SC State Jobs Vacant." thestate.com. https://www.thestate.com/news/politics-government/article140767628.html accessed August 1, 2019.

Dalton, D. R., and Todor, W. D. (1979). Turnover turned over: An expanded and positive perspective. *Academy of Management Review* 4(2), 225–235.

Dau-Schmidt, K.G. and Lin, W. (2011). The great recession, the resulting budget shortfalls, the 2010 elections and the attack on public sector collective bargaining in the United States. *Hofstra Labor & Employment Law Journal* 29, 407-432.

Downs, A. (1967). *Inside bureaucracy*. Boston: Little-Brown.

Fifield, J. (2016). "Many States Face dire shortage of Prison Guards." Pew Charitable Trust. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/03/01/many-states-face-dire-shortage-of-prison-guards, accessed August 17, 2019.

Gailmard, S., and Patty, J. W. (2007). Slackers and zealots: Civil service, policy discretion, and bureaucratic expertise. *American Journal of Political Science* 51(4), 873–889.

General Accounting Office, US. (2003). HHS Could Play a Greater Role in Helping Child Welfare Agencies Recruit and Retain Staff. Available at https://www.gao.gov/new.items/d03357.pdf, accessed August 17, 2019.

Gorina, E., & Hoang, T. (2020). Pension reforms and public sector turnover. *Journal of Public Administration Research and Theory*, *30*(1), 96-112.

Grissom, J. A., Viano, S. L. and Selin, J. L. (2016). Understanding employee turnover in the public sector. *Public Administration Review* 76 (2): 241–251.

Hausknecht, J. P., and Holwerda, J. A. (2013). When does employee turnover matter? Dynamic member configurations, productive capacity, and collective performance. *Organization Science* 24(1), 210–225.

Hays, S. W., and Sowa, J. E. (2006). A broader look at the "accountability" movement: Some grim realities in state civil service systems. *Review of Public Personnel Administration,* 26(2), 102-117.

Health and Human Services, US Department of. (2019). "Child Welfare Information Gateway." https://www.childwelfare.gov/topics/management/workforce/retention/turnover/ accessed August 17, 2019.

Keck, S. L. (1997). Top management team structure: Differential effects by environmental context. *Organization Science* 8(2), 143–156.

Kramer, R. M., and Grossman, B. (1987). Contracting for social services: Process management and resource dependencies. *Social Service Review,* 61(1), 32-55.

Lee, S. (2018). Employee turnover and organizational performance in US federal agencies. *The American Review of Public Administration,* 48(6), 522-534.

Lee, S., Fernandez, S., & Chang, C. (2018). Job scarcity and voluntary turnover in the US federal bureaucracy. *Public Personnel Management*, *47*(1), 3-25.

Lee, S. Y., and Whitford, A. B. (2013). Assessing the effects of organizational resources on public agency performance. *Journal of Public Administration Research and Theory,* 23(3), 687–712.

Lee, T. W, and Mitchell, T. R. (1994). An alternative approach: The unfolding model of voluntary employee turnover. *Academy of Management Review,* 19(1), 51–89.

Lewis, G. B., and Ng, E. S. (2013). Sexual orientation, work values, pay, and preference for public and nonprofit employment: Evidence from Canadian postsecondary students. *Canadian Public Administration,* 56(4), 542-564.

Liebowitz, J. (2012). *Addressing the human capital crisis in the federal government.* New York: Routledge.

McEvoy, G. M, and Cascio, W. F. (1987). Do good or poor performers leave? A meta-analysis of the relationship between performance and turnover. *Academy of Management Journal,* 30(4), 744–762.

Maynard, M. (2013). States overhaul civil service rules. USA Today (Aug. 27, 2013), https://www.usatoday.com/story/news/nation/2013/08/27/states-civil-service-government/2707519/ accessed January 26, 2019.

Meier, K. J., and Hicklin, A. (2008). Employee turnover and organizational performance: Testing a hypothesis from classical public administration. *Journal of Public Administration Research and Theory,* 18(4), 573–590.

Meier, K. J., Mastracci, S. H., and Wilson, K. (2006). Gender and emotional labor in public organizations: An empirical examination of the link to performance. *Public Administration Review,* 66(6), 899–909.

Moon, K. K. (2017). Voluntary turnover rates and organizational performance in the US federal government: the moderating role of high-commitment human resource practices. *Public Management Review,* 10 (10), 1480-1499.

Mosher, W. E., and Kingsley, J. D. (1936). *Public personnel administration.* Harper & Brothers.

Muhl, C. J. (2001). The employment-at-will doctrine: three major exceptions. *Monthly Labor Review*, 124, 3-11.

Nigro, L. G., Nigro, F. A, and Kellough, J. E. (2012). *The new public personnel administration.* Thousand Oaks, CA: Cengage Learning.

NSI Nursing Solutions. (2019). "2019 National Health Care Retention & RN Staffing Report." http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/2019%20National%20Health%20Care%20Retention%20Report.pdf, accessed August 17, 2019.

Rainey, H. G. (2009). *Understanding and managing public organizations.* 4th ed. John Wiley & Sons.

Soni, V. (2004). From crisis to opportunity: Human resource challenges for the public sector in the twenty-first century. *Review of Policy Research,* 21(2), 157-178.

Teodoro, M. P. (2015). Dress for the job you want: Bureaucratic job markets as markets for public policy. Paper presented at the *Midwest Political Science Association.*

Teodoro, M. P, and An, S. H. (2018). Citizen-based brand equity: A model and experimental evaluation. *Journal of Public Administration Research and Theory,* 28(3), 321-338. United States Bureau of Labor Statistics (2021). As the COVID-19 pandemic affects the nation, hires and turnover reach record highs in 2020. Available at https://www.bls.gov/opub/mlr/2021/article/as-the-covid-19-pandemic-affects-the-nation-hires-and-turnover-reach-record-highs-in-2020.htm.

Van der Meer, F. M., Raadschelders, J., and Toonen, T. (Eds.). (2015). Comparative civil service systems in the 21st century. London: Springer.

Watkins-Hayes, C. (2009). *The new welfare bureaucrats: Entanglements of race, class, and policy reform.* University of Chicago Press.

Wilson, P. A. (1994). Power, politics, and other reasons why senior executives leave the federal government. *Public Administration Review*, 54(1), 12-19.

Wynen, J., Van Dooren, W., Mattijs, J., and Deschamps, C. (2019). Linking turnover to organizational performance: the role of process conformance. *Public Management Review*, 21(5), 669-685.

Figures
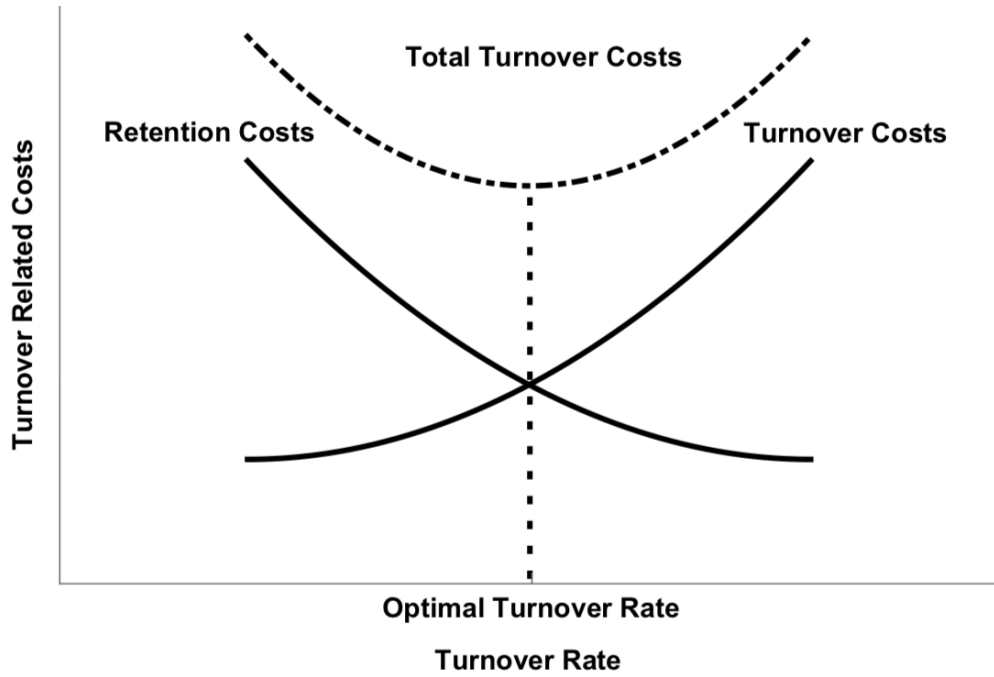
Source: Abelson and Baysinger (1984)
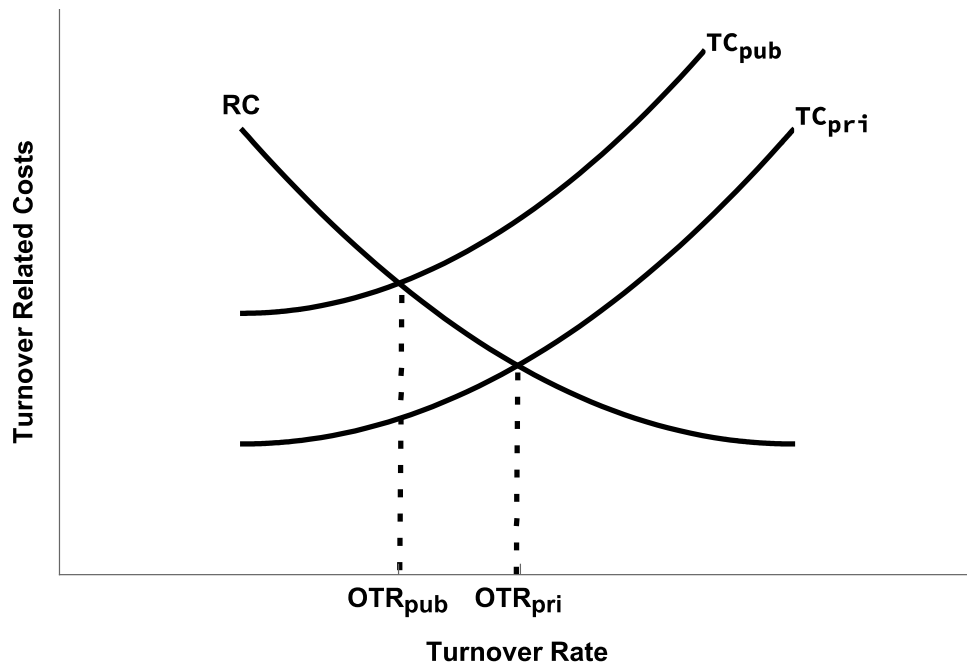
Figure 1: A model of optimal turnover rate

Figure 2: A model of optimal turnover rates in public organizations
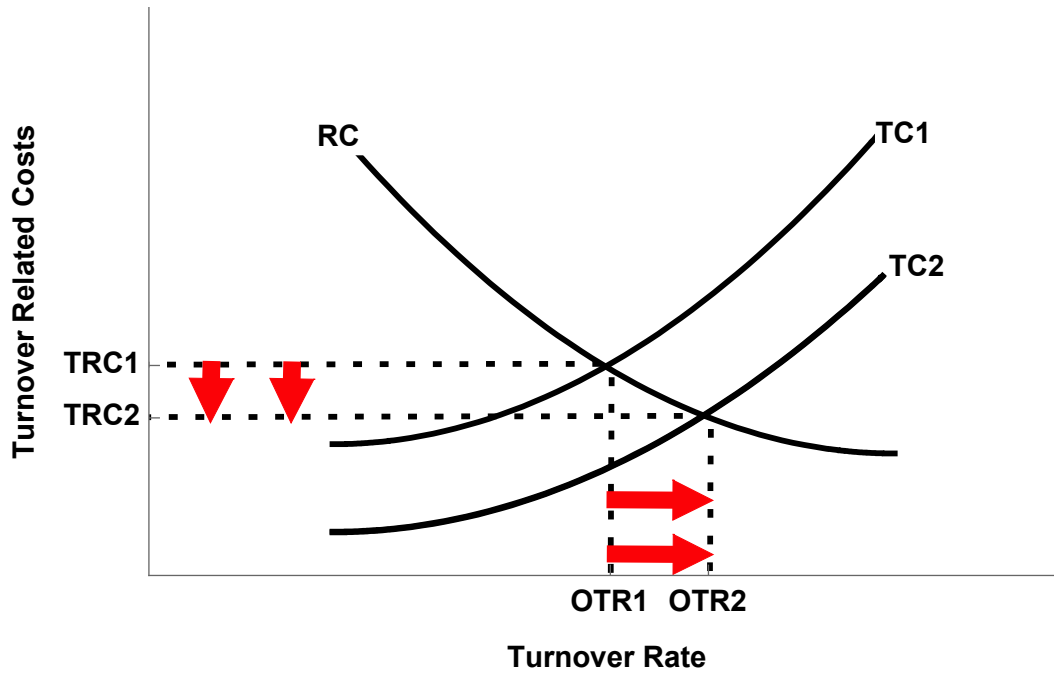
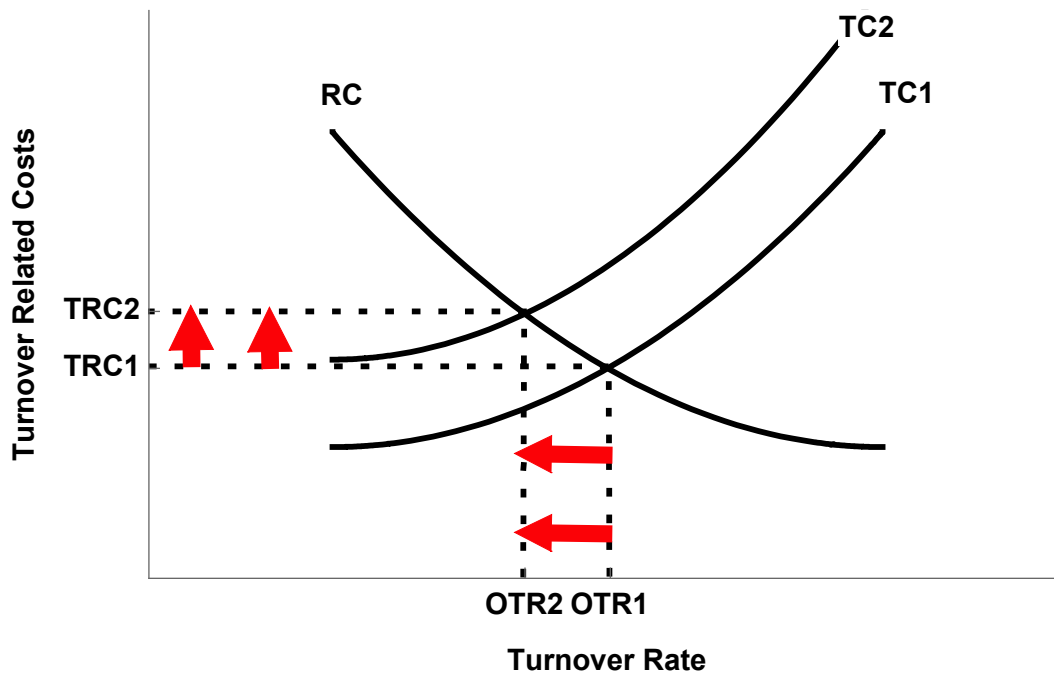Figure 3: Optimal turnover rates responding to an increase in labor supply

Figure 4: Optimal turnover rates responding to an increase in demand for labor

1. **How can optimal turnover rates be determined and change in public organizations?**

Proposition 1: *The optimal turnover rate is lower for a public organization than a private organization.*
Proposition 2: *When the labor supply increases, optimal turnover rates in a public organization will be higher.*
Proposition 3: *When the demand for labor increases, optimal turnover rates in a public organization will be lower.*

2. **How can employee quality affect the turnover-performance relationship in public organizations?**

Proposition 4: *The turnover of high-performing employees has a more detrimental effect on organizational performance than that of low-performing employees.*
Proposition 5: *The effects of turnover are more detrimental to organizational performance when the replacements of leavers have low levels of human capital (compared to when the replacements of leavers have high levels of human capital).*
Proposition 6: *The effects of turnover are more detrimental to organizational performance when remaining employees in the organization are inexperienced (compared to when remaining employees in the organization are experienced).*

3. **How can labor market conditions affect the turnover-performance relationship in public organizations?**

Proposition 7: *Turnover would be less (more) detrimental to organizational performance when the labor supply increases (decreases) in the labor market, holding the labor demand constant.*
Proposition 8: *Turnover would be more detrimental to organizational performance when there is turbulence in the labor market, holding the labor supply constant.*
Proposition 9: *Turnover would be more detrimental to organizational performance when the restrictiveness of the personnel system increases.*
Proposition 10. *Turnover in positions with tight labor markets would be more detrimental to organizational performance, given that the organizations relying on multiple labor markets will face different costs and benefits of turnover for different positions.*

Figure 5: Summary Figure of Propositions