THREE ESSAYS ON PUBLIC SERVICE BUREAUCRACY

by

AHRUM CHANG

(Under the Direction of Andrew B. Whitford)

ABSTRACT

As a global pandemic has a catastrophic impact in 2020, many people are increasingly interested in the role of public service bureaucrats, such as healthcare workers, police officers, or firefighters, who are working at the frontlines of the government. These first responders make decisions that can influence various facets of people's lives. Different from a classic Weberian bureaucracy, street-level bureaucrats deliver essential public service by directly interacting with citizens.

Amid a growing interest in public service delivery, this dissertation presents three essays that show the varieties of public service bureaucracies interacting with citizens. The dissertation consists of one theoretical essay and two empirical chapters. The first essay develops a model to explain how frontline bureaucrats are motivated to engage in activities to help citizens and the extent of their behavior. This chapter is the first study that applies formal logic to the topic of street-level bureaucracy in the field of public administration.

The second essay investigates the demand side of public service delivery by examining how citizens' prior expectations, existing perceptions, and post-disconfirmation influence their evaluation of public service performance. Findings suggest that people's prior expectation on public service is positively related to their subsequent performance evaluation of the service. It

turns out that citizens' expectation also functions as a reference point when there are discrepancies between their expectations and lived experience. Furthermore, respondents' overall perceptions of public service create a halo and thereby influence their subsequent appraisals of that service. Findings provide implications for understanding performance information reported from citizen surveys and for developing strategies to improve perceived service performance in the eyes of citizens.

Finally, the third essay examines the supply side of public service delivery by examining police officers' law enforcement activities toward black citizens. Results suggest that when white officers comprise a greater percentage of a force, African American cops on that force are more likely to warn, cite, and arrest black citizens; however, when black officers form a high enough percentage of a force, warnings, citations, and arrests of black citizens made by black cops decrease.

INDEX WORDS: Public Service Bureaucracy, Street-Level Bureaucracy, Cognitive Biases, Citizens' Performance Appraisals, Representative Bureaucracy, Law Enforcement.

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CHAPTER 1

INTRODUCTION

One subject has dominated headlines around the world in 2020: COVID-19. This global pandemic has sickened more than one million people and threatened the world's well-being. All eyes are on government now. Citizens expect government to meet their needs through providing public service in a stable and opportune manner, not matter the circumstances. Based on their varying expectations and experiences of public service, citizens offer contrasting evaluations of the government's service performance. A new national survey conducted by Pew Research Center from April 29th through May 5th in 2020 finds that around 52 percent of U.S. adults express great concern about their government's initial response to this pandemic and a stalled economy. The survey also reports that nearly 47 percent of American adults hold favorable views on what their government has done for handling the outbreak. Perhaps those who have had a low-level of expectation for the public sector may positively evaluate their governments' service performance. On the other hand, those who have experienced a pay cut or lost a job during these challenging times may make an opposite assessment of the public sector.

Amid a variety of citizens' evaluations of public service, people in recent days are paying more attention to the role of public service bureaucrats. Many government services are delivered to citizens via frontline bureaucrats such as police officers, fire fighters, or health care workers. These public employees touch the lives of citizens by delivering essential public service as a routine part of their job. To receive welfare assistance, obtain a driver's license, or pay a

traffic fine, we need face-to-face contact with these frontline service workers. Therefore, citizens' assessment of public service performance centers the first responders' individual behavior and overall ability to meet public demand.

Public service bureaucracies are organizations at the lowest level of the government hierarchy that deliver services to individual citizens. Early scholars in sociology and political science studied these civil servants who work at the boundaries of the government. However, the concept of *street-level bureaucracy* was first introduced by American political scientist Michael Lipsky at the Annual Meeting of the American Political Science Association in 1969. To find viable means for examining the impact of government on the general public, Lipsky focuses on those bureaucrats who work at the intersection between the public sector and citizens.

Scholarship surrounding street-level bureaucracy centralizes on two characteristics. First, street-level bureaucrats directly interact with citizens and these bureaucrats' decisions influence various facets of people's lives in a profound way. Second, street-level bureaucrats have substantial discretion in the execution of their work, which is somewhat different from other bureaucrats who may have wider berths of formal authority but little operational discretion. In most cases, public bureaucracies are expected to be efficient and effective in their response to the needs of citizens. Max Weber (1978, 973) once stated,

> [P]recision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs—these are raised to the optimum point in the strictly bureaucratic administration.

Yet Weber's portrayal does not adequately describe modern world bureaucracy in that street-level bureaucrats operate in today. Lipsky (1969) demonstrates that policy professionals on the frontlines are governed by their own occupational and professional ideologies. This accounts

for the paradoxical nature of street-level bureaucracy what is at once bounded by rules, but grounded on expertise and its inherent discretion. Lipsky (1980) further provides groundbreaking insights into how we understand street-level bureaucracy. He develops a theoretical framework of street-level bureaucracy in his book *Street-Level Bureaucracy: Dilemmas of Individual in Public Services*. His study focuses on who they are and how they behave. He illuminates the behavior of street-level bureaucrats, which is highly influenced by the nature of their job characteristics and work environment. Since then, a large amount of studies in public administration have examined street-level bureaucrats' discretionary power (Brodkin 1997; Hill and Hupe 2003, 2004; Keiser, 2010; Sandfort 2000; Tummers and Bekkers 2014), their attitudes about clients (Baviskar and Winter 2017; Jilke and Tummers 2018; Maynard-Moody and Musheno 2000, 2003; Prottas 1978; Winter 2002), and their role in policy implementation (Brewer 2005; May and Winter 2009).

From the previous literature, we know much about street-level bureaucrats' discretion in their regular interactions with citizens, but less about their behavior during encounters with citizens (Tummers, Bekkers, Vink, and Musheno 2015). Here, this study defines street-level bureaucrats' behavior as public service workers' response when there are citizen-evoked stimuli (regardless of citizens' intention) on public service provision. Although recent studies focus on street-level bureaucrats' coping activities, little effort has been made to analyze their decision-making calculus (but see Jilke and Tummers 2018). Lipsky's student Prottas (1978, 287) highlights the need to understand street-level bureaucrats' behavior because it is "a precondition for understanding the way the service of justice is distributed to citizens." How street-level bureaucrats behave in their interactions with citizens is thus central to policy implementation. People experience government and public policies through these frontline practitioners. In

reality, however, public service workers use their discretion to meet some citizens' needs while deliberately overlooking the needs of others.

This dissertation presents three essays on public service bureaucrats in their daily encounters with citizens. In practice, public encounters take an infinite variety of forms, and throughout the following essays, I study those encounters initiated by both citizens and bureaucrats. All three essays share a common focus of street-level bureaucrats and the general public, but each essay focuses on a different aspect of interactions between street-level bureaucrats and citizens. In doing so, the dissertation provides deeper understanding on how public service is delivered both in the eyes of citizens and from the perspectives of bureaucrats.

In this regard, chapter two, the first essay of this dissertation, examines motivational bases of street-level bureaucrats' behavior when they interact with citizens. This essay asks—what makes street-level bureaucrats motivate to work for citizens? To answer this question, a model is developed to explain how street-level bureaucrats are motivated to move toward citizens and the extent of their behavior. In this chapter, the model is driven by costs and benefits of behavior based on the assumption that frontline bureaucrats are rational actors who try to maximize their utility (Brehm and Gates 1994, 1997; Downs 1967). However, utility here is defined as more than self-interest; it is the set of outcomes valued by the bureaucrats such as reducing job-related stress, pursuing work-generated ends, serving needy citizens, and implementing good public policy. One responsibility for street-level bureaucrats is to transform the citizens they encounter to the clients they serve. Since street-level bureaucrats are often confronted with resource scarcities and occupational-related constraints, categorizing the people makes street-level bureaucrats simplify and standardize their work. These strategies allow them to process a large amount of public demand in their course of job. After discussing street-level

bureaucrats' people-processing mechanism, this chapter also explores bounded rationality and social optimality as a theoretical extension of the model.

The first essay advances understanding of street-level bureaucrats' behavior in several ways. First, it drills deeper than previous research by specifying the underlying motives of street-level bureaucrats, which provides richer insights into their actual behaviors. Second, findings elaborate various types or patterns of low-level bureaucrats' behavior when they are dealing with citizens. Finally, I expect that this study will contribute to showing how formal logic provides some implications for theory formation and further reinforces empirical verification of one of core topics in public administration.

Although the first essay is theoretical research that can be applied to all types of street-level bureaucrats, the next two essays conduct an empirical test regarding a separate topic. In the next two empirical chapters, I will investigate both the supply and demand side of public service delivery, respectively. How service recipients consider street-level bureaucrats and their public service provision is important for government performance and accountability in a democratic state. Looking into both public service provision and service recipients' feedback helps create a comprehensive understanding of the mechanism of public service delivery.

In this regard, chapter three, the second essay of the dissertation, examines the demand side of the public service delivery. From the perspectives of citizens, this chapter examines how citizens' prior expectations, existing perceptions, and post-disconfirmations influence their evaluation of public service performance. In most cases, public officials navigate the public opinion by fielding a citizen survey. However, the subject nature of appraisals by people reflects that many citizen survey results might be biased. To better understand the cognitive biases of citizens, this study examines the link between citizens' internal biases and their performance

appraisals of public service. As a theoretical discussion, this chapter borrows much of its insights from psychological and behavioral explanations of citizens' cognitive biases. Among many of potential cognitive biases, anchoring, reference points, and halo effects are thoroughly discussed. Evidence comes from a victimization survey in *Police Service Study: Phase II* conducted by Elinor Ostrom and her colleagues. In 1977, a telephone interview was conducted by trained experts with randomly selected residents (totaling 12,019) in Rochester, St. Louis, and St. Petersburg. A benefit of using this secondary data is that the victimization survey is well-structured and contains full accounts for how citizens experience, respond, interact, and evaluate the delivered public service.

Through this research, I expect to show that people's initial expectation can function as an anchor for them to evaluate service performance and also as a reference point for when there are discrepancies between their prior expectations and lived experience. Furthermore, this chapter also examines whether citizens' overall perceptions of police service create a halo and thereby influence their subsequent appraisals of police courtesy, equal treatment, and honesty. It is expected that findings of this study provide some implications for understanding performance information reported from citizen surveys and for developing strategies to improve perceived service performance in the eyes of citizens.

Chapter four, the third essay of the dissertation, examines the supply side of public service delivery by examining police officers' law enforcement activities toward citizens. In the real world, a relationship between police officers and citizens who are representing ethnic minorities has often been a source of contention and concern. On February 23, 2020, African American Ahmaud Arbery was shot to death by a former white cop and his son in Brunswick, Georgia. This shooting incident remained uninvestigated until an anonymous witness released a

video that shows Arbery was ruthlessly shot, while his jogging. More recently on May 25, 2020, a white Minneapolis cop kneeled on African American George Floyd's neck until the life left his body. In the wake of these series of tragic incidents, public outrage has sparked conversations (and even protests) on racism in law enforcement practice involving black citizens. The issue called racial profiling or racial discrepancies in policing has been a longstanding issue in U.S. society. Racially biased policing pollutes the legitimate law enforcement practice in this society.

Borrowing from some incidents in practice, the third essay examines law enforcement officers' policing behavior toward African American citizens in the state of Florida in 2013. In particular, this study focuses on officers' post-stop activities including searches, warnings, citations, and arrests. Drawn from the theory of representative bureaucracy, this study examines the institutional context that might condition the link between minority officers' passive representation and their active representation in the context of policing.

First, this chapter examines the relationship between ethnic representation in a police force and the force's engagement in racial disparity, particularly in regard to black citizens. To better understand the conditions that promote black police officers' active representation in policing, this study tests whether more exposure to organizational norms strengthens their cop identity, which may hinder the translation of their passive representation into active modes of representation. Furthermore, this study also uses the implication of the critical mass condition in representative bureaucracy theory to examine individual black officers' law enforcement activities involving African American citizens. Based on the implications of the critical mass condition, this essay examines whether an individual black cop's policing behavior toward a black citizen would be influenced by the racial makeup of the police force for which they work. I expect that findings of this chapter will be helpful for public managers and practitioners looking

to better understand minority officers' pressure to act like their white counterparts in the field and what job conditions might help minority officers overcome this pressure. This will provide a useful guideline for practitioners to encourage such officers to overcome their pressure to conform to white-dominant organizational settings and further to actively engage in advocating for minority citizens. The basic components of all three essays are illustrated in table 1.1 below.

The fifth and final chapter summarizes the major findings of the three previous essays and addresses some limitations of each research. It also provides some suggestions for future research on similar topics. Ultimately, this dissertation aims to help public managers and policymakers understand the public service delivery both from the perspectives of their peers who are working at the frontlines of the government and from the perspectives of those service recipients who expect, experience, and assess public service performance.

Table 1.1 Overview of Three Essays

	Essay One	Essay Two	Essay Three
Aim	Theoretical Framework	Empirical Test	Empirical Test
Focus	Motivations of SLBs	Biases of Citizens	Race of SLBs and Citizens
Theoretical discussion	A behavioral model of rational choice (extended version),	Anchoring Reference points Halo effects	Representative bureaucracy
Method	Formal Model	Stereotype Logistic Model	Multivariate Probit Model
Data	-	Police Service Study	Stanford Open Policing
DV	SLB's Engagement Behavior	Citizens' Performance Rating	Black Citizens Searched, Warned, Cited, or Arrested by Patrol Officers
IVs	Benefits Costs	Expectation, Experience, Overall perception	Passive Representation, Role Identity, Critical Mass

CHAPTER 2

A FORMAL MODEL OF PUBLIC SERIVCE BUREAUCRATS' BEHAVIOR

Introduction

Many academics have focused on the linkage between people and the government in their discussion of bureaucracy, highlighting considerable independence of public service bureaucrats' behavior[1] (Becker 1952; Blau 1955; Simon 1947; Skolnick 1960; Thompson 1967). Public service bureaucrats—such as healthcare workers, police officers, firefighters, and welfare caseworkers—are actors who need to achieve policy objectives and also to be responsible for their citizens (cf., Maynard-Moody and Musheno 2000; Prendergast 2007). These bureaucrats at the frontlines of government have been referred to several different ways such as boundary-spanners (Thompson 1967), boundary actors (Prottas 1978, 1979), human service bureaucrats

[1] A dictionary definition of "action" is the process of doing something to deal with situation or make something happen while "behavior" means the way someone functions or behaves toward other people. The term "action" is not always observable, while the "behavior" is observable since it arises as a response to a stimulus (Becker 2004). It is difficult to make a sharp distinction between the two in this study, but in the context of street-level bureaucracies, I distinguish their behavior from the action by the existence of citizen-evoked stimuli (regardless of citizens' intention) on public service provision.

(Goodsell 1981) or operators (Simon 1947; Wilson 1989). A major theoretical advance occurred when the concept of street-level bureaucracy was articulated by Michael Lipsky in 1969.

One defining characteristic of street-level bureaucrats is their face-to-face interactions with the public (Keiser 2010; Lipsky 1969, 1980, 2010; Maynard-Moody and Musheno 2000). This feature makes them efficiently manage their ambiguous, uncertain, and complex tasks on a mass basis. Lipsky (1969) summarizes street-level bureaucrats' job conditions from a viewpoint of service providers: (1) resource inadequacy, (2) physical and psychological threat, and (3) ambiguous role expectations. To reduce job-related difficulties, these field practitioners strategically (or sometimes inevitably) structure their behavior. It has been suggested that street-level bureaucrats invent special devices to cope with complexities, uncertainties, and ambiguities in their workplace. They establish routines in their work practice, control the service-seekers, husband the given resources, and ration the public service. Bureaucrats thus develop their own routines; some are working to accomplish the policy, while others are intentionally shirking or even undermining the policy objectives through sabotage (Brehm and Gates 1997).

Research in public service bureaucrats' behavior has developed in several different ways; some studies describe the behavioral patterns of these bureaucrats, by relying on the term 'coping behavior' (Baviskar and Winter 2017; Kelly, 1994; Tummers, Bekkers, Vink, and Musheno 2015; Winter 2002), while others emphasize the street-level bureaucrats' behavioral divergence (Brodkin 2011; Gofen 2014). Also, ways of frontline bureaucrats' behaviors are illustrated such as stretching the rules to meet the public demand (Evans 2013; Maynard-Moody and Musheno 2000), making routines for work processing (Sandfort 2000), and prioritizing needy citizens (Jilke and Tummers 2018; Keiser 2010).

Although research on street-level bureaucracies has made significant progress and further developed in the field of public administration and policy, relatively little attention has been paid to this topic in recent political science studies. It is salient when we look further into previous formal model approaches on bureaucracy. Much of formal literature of bureaucracies has focused on their relations to political authorities, emphasizing information asymmetries and principal-agent relationships (see Gailmard and Patty 2012). Different from a Weberian perspective on bureaucracy, public service bureaucrats play a significant role in their interactions with citizens. The topic is appealing to political scientists in that decision-making behavior of these low-level bureaucrats draws a comprehensive picture of political process (Egeberg 1995).

To better understand the political process and public bureaucrats' behaviors therein, this study grapples with a more fundamental question on bureaucratic behavior. It particularly concentrates on the underlying motives of public service bureaucrats' behavior when they deal with public demand. How are street-level bureaucrats motivated to move toward the public? What determines the extent of the bureaucrats' behavior in their encounters with citizens?

These questions echo Downs's (1967) portrayal of public bureaucracies. He presents five types of public officials—*climbers, conservers, zealots, advocates,* and *statesmen*. This typology provides us with significant insights into the nature of bureaucratic behavior. The *climbers* are likely to maximize their power and authority, while *conservers* only seek to retain their current power. While these two are driven by their pure self-interests, the other three—*zealots*, *advocates*, and *statesmen*—are grouped as being both self-interested and altruistic.

Following Downs's (1967) discussion, this study assumes that bureaucrats have multiple goals; some of their goals may lead them to outweigh their own self-interests while the other goals may make them engage more in serving citizens. Complex trade-offs among these goals

results in heterogeneous motivations of bureaucratic behavior (cf. Gailmard and Patty 2007). To better understand the decision-making calculus of public service bureaucrats, utility functions of the street-level bureaucrats' behavior in my model are made up of both self-interested and altruistic motives. Therefore, this study proposes that street-level bureaucrats would value a set of goals such as reducing work-related stress, pursuing job-related ends, serving needy citizens, and ultimately implementing public policies. Note that some of these goals may be partially or wholly motivated self-interest while others may be motivated by altruistic or prosocial intentions.

This study aims to develop a simple model of public service bureaucrats' behavior in their encounters with citizens. It drills deeper by specifying the underlying motives of these low-level bureaucrats, which provides richer insights into their actual behaviors. Moreover, the model assumes utility-maximizing bureaucrats, but it extends the meaning of the utility by considering the nature of street-level bureaucrats as boundary actors between the government and citizens. This will show how major assumptions on utility maximization can be relaxed to explain the frontline bureaucrats' behavior more realistic. The next section lays out the basic model of street-level bureaucrats' behavior. After that, it extends the model in the context of their people processing, bounded rationality, and the issue of social optimality, respectively, and then concludes.

The Basic Model

In my model, street-level bureaucrats are rational actors who try to maximize their utility (see Brehm and Gates 1994, 1997). According to Downs (1967), utility maximizers are those who rationally pursue their goals. He adds:

> [a]ll the agents in our theory—officials, politicians, citizens, bureau clients, and so on—

> are assumed to be utility maximizers. …. In other words, a man implicitly assigns certain "utility ratings" to the results of possible acts various acts, chooses the act, or the combination of acts, that gives him the most total utility. Thus, he maximizes his utility (Downs 1967, 81).

Since public service bureaucracies try to meet their clients' demand, this study assumes that utility of these bureaucrats contains more than self-interest. As stated, it is a set of goals valued by the bureaucrats such as reducing occupation-related stress, pursuing personal goals, serving citizens, and implementing public policies.

Street-level bureaucrats seek to attain their goals rationally by achieving the balance between costs and benefits of their behavior towards citizens. In his study on the behaviors of law enforcement officers, Wilson (1978, 83) explicitly mentions that public service bureaucrats rely on their evaluation of the "costs and benefits of various kinds of action" when they should decide whether to intervene in a situation. Concerning the underlying mechanism of street-level bureaucrats' behavior, Lipsky (2010, xvi) claims that frontline practice seeks to "find a satisfactory balance between the realities of the job and personal fulfillment." The cost-benefit calculus of both risks and rewards under uncertain circumstances is useful for explaining bureaucratic behavior in their encounters with citizens. The basic model thus considers both benefits and costs that street-level bureaucrats can expect in their encounters with citizens.

Notably, Lipsky (1969, 1980, 2010) describes the dilemmas that street-level bureaucrats would experience and their efforts to orchestrate between their job expectations and personal aims. Through their behavioral response to clients, for instance, frontline bureaucrats can benefit directly by receiving pay incentives or getting promoted faster at the workplace. At the same time, the bureaucrats can also be benefited from serving a needy citizen. As found in Handler

and Hollingsworth's (1971) study of welfare officers in Wisconsin, public service is delivered by frontline workers in the context of not only public demand but also their work-generated ends. When we look further into their decision-making process, bureaucrats consider both "the cognitive mechanisms and mechanisms of social motivation" as the rewards in determining the criteria of choice (Simon 1956, 284).

Connecting the motivations to actual behavior, Downs (1967) argues that bureaucrats have two goals for their behavior—private motives that carry out their behavior and social function (or goals) that their behavior serves. He demonstrates that the private motives include power, income, prestige, convenience, or security. In contrasts, social motives are desire to serve the public interests and commitment to a specific policies or programs.

Based on the previous literature, the model in this study specifies two types of benefits that street-level practitioners can get from their behavior—private benefits and social functions. In my model, I assume that frontline bureaucrats can benefit personally by: (1) improving their reputation (prestige), (2) receiving promotions and, (3) being rewarded personally (perhaps including convenience, security, or even bribery). Here, this study assumes that the personal rewards are gained when bureaucrats seek private interest. It includes the bribes or gifts that the bureaucrats may gain when they deal with their citizens. While these private motives are a return that can be directly and personally benefitted, social functions are what street-level bureaucrats can attain from service recipients' satisfaction. Lipsky (2010, 105) clarifies this aspect by saying that street-level workers derive satisfaction from "making a difference for some clients and improving clients' lives." Nielsen (2006) buttresses this aspect in his study on the behavioral mechanism of regulatory inspectors. He argues that street-level bureaucrats often develop their own coping mechanisms such as routinizing their work when they deal with citizens, not just a

way of reducing their high workload, but also for maximizing their job satisfaction. There are many different elements, but the model in this study assumes that street-level bureaucrats have a desire to serve needy citizens based on the theories of public service motivation (PSM) (Perry and Wise 1990). PSM is assumed to be instrumentally developed in bureaucracies in their improving public policy and engaging in public service (Gailmard 2010)

At the same time, there are costs when street-level bureaucrats behave toward the citizens. These costs are specified using insights from Lipsky who views the cost from the client's perspective. Based on Lipsky's (2010, 88-94) understanding, this study reinterprets the 'cost' in this model from the street-level bureaucrats' viewpoint when they deal with clients' needs. The costs of street-level bureaucrats' behavior involve (1) psychological and physical strain such as job-related stress, and (2) money, time, and other immeasurable efforts involved in acquiring information, additional knowledge, and capabilities to complete a given task. Street-level workers are likely to make decisions based on their assessment of citizens' characteristics and identities (Maynard-Moody and Musheno 2003). To this end, street-level practitioners often require information about customers of public service to categorize and prioritize them. Assessing clients and their demand also rests on street-level bureaucrats' own expertise, knowledge, intuition, and adaptation to circumstances.

The model also assumes two broad conditions that constrain street-level bureaucrats' behavior: (1) resource availability and (2) the amount of authority conferred on the bureaucrats. Above all, early literature shows that insufficient or inadequate resources influence both the attitudes and behavior of frontline bureaucrats (Riccucci, Meyers, Lurie, and Han 2004). If resources are not available to meet a client's demand, a 'public service gap' would exist and the street-level bureaucrat might experience policy alienation (Brodkin 2011; Hupe and Buffat

2014). Accordingly, there are inherent tensions between resource constraints and public service demands. Here, resources include both tangible and intangible ones that are given to each organization and are available to the frontline bureaucrats. It is possible to understand the problem of resources by regarding street-level bureaucrats as personal resource units (Lipsky 2010). For instance, if newly joined healthcare workers are undertrained or inexperienced in the field, existing healthcare professionals will need to make more efforts in making eligibility determinations and training them. In this case, bureaucratic behaviors toward clients would be influenced by the lack of personal resources. Furthermore, resources need to be adequate, even if the amount of resources would be sufficient to meet the public demand. It is inevitable that all these cost issues put street-level bureaucrats under a lot of stress in the workplace.

Another constraint subject to street-level bureaucrats' behavior is the range of authority delegated from those higher-ups, which determines the range of bureaucratic discretion. Indeed, frontline bureaucrats exhibit differences in their dispenses of benefits or impose sanctions, due in part to their wide range of authority.

Taken together, the street-level bureaucrats' problem is to maximize their utility as follows:

$$max_a \mathrm{U} = \mathrm{B}\big(\mathrm{r(a)},\ \mathrm{p(a)},\ \mathrm{k(a)}\big) + \mathrm{Z}\big(\mathrm{w(a)}\big) - \mathrm{S(a)} - \mathrm{T(a)} - \mathrm{I(a)} \qquad (1)$$

$$\text{subject to } \mathrm{M(a)} \leq \bar{M} \text{ and } \mathrm{A(a)} \leq \bar{A},$$

where U denotes the total net benefits of street-level bureaucrats' behavior,

B denotes personal benefits such as reputation (r), promotion (p), private interests (k),

a is the level of street-level bureaucrats' behavior,

Z denotes the social functions that street-level bureaucrats attain, as a public servant, from the satisfaction of service recipients (w),

S means the job-related stress that the bureaucrats have due to high workloads or

conflicting citizens' demands,

T is the time costs that the bureaucrats spend to process citizens' requests,

I indicates the costs that street-level bureaucrats make in order to acquire the information about citizens' personal background, their demand, and to administer or process them,

M and $\bar{M}$, respectively are the amount of resources required to implement a given level of behavior and the total amount of resources that an organization has, and

A and $\bar{A}$, respectively, are the amount of authority required for street-level bureaucrats' behavior and the total amount of authority that an organization would delegate to them.

In this study, the level of street-level bureaucrats' behavior reflects how much they move toward or move away from citizens they encounter with. Equation 1 presents an answer to the following question: how is the level of street-level bureaucrats' behavior determined? The first-order condition of equation 1 is given as $\frac{\partial \mathrm{B}}{\partial \mathrm{r}}\frac{\partial \mathrm{r}}{\partial a}+\frac{\partial \mathrm{B}}{\partial \mathrm{p}}\frac{\partial \mathrm{p}}{\partial a}+\frac{\partial \mathrm{B}}{\partial \mathrm{k}}\frac{\partial \mathrm{k}}{\partial a}+\frac{\partial \mathrm{Z}}{\partial \mathrm{w}}\frac{\partial \mathrm{w}}{\partial a}=\frac{\partial \mathrm{S}}{\partial a}+\frac{\partial \mathrm{T}}{\partial a}+\frac{\partial \mathrm{I}}{\partial a}+\lambda_1(\frac{\partial M}{\partial a})+\lambda_2(\frac{\partial A}{\partial a})$ and there exist the complementary slackness conditions under the Kuhn-Tucker Theorem: $\lambda_1 \geq 0,\ \lambda_2 \geq 0$, λ_1(M(a) - $\bar{M}$)=0, and λ_2(A(a) - $\bar{A}$)=0.

Here, there are two different cases. If λ_1=λ_2=0, which means M(a) $<\bar{M}$ and A(a) $<\bar{A}$ in the complementary slackness condition, the street-level bureaucrats' behavior is determined where their marginal benefit equals their marginal cost. If an organization sets both resources ($\bar{M}$) and authority ($\bar{A}$) at sufficiently large levels, for instance, street-level bureaucrats' behavior is not influenced by the constraints.

When M(a)=$\bar{M}$ and/or A(a)=$\bar{A}$, however, their optimal choice a^* changes. Let me consider the case in which A(a)=$\bar{A}$ [2]. This is the case when the organization sets the maximum

[2] A similar logic is applicable to how resource problems—insufficiency or inadequacy—imply the degrees of street-level bureaucrats' behavior (M(a)=$\bar{M}$).

level of authority ($\bar{A}$) given to street-level bureaucrats at a low level, it is likely that the required amount of discretion equals the given level of authority. When the required authority at a^* is bigger than $\bar{A}$, the bureaucrat cannot choose a^* since the given authority by organization ($\bar{A}$) is less than that of required in actual behavior. Then, the maximum level (optimal) of behavior occurs somewhere between 0 and a^*, such as a", as shown in figure 2.1.

Given the assumption that a street-level bureaucrat is likely to decrease his/her level of behavior if there exist constraints of resource and/or authority from the organizations, this study develops several arguments on a basis of the model. In each argument, I add some explanations.

First, a street-level bureaucrat is likely to increase his/her level of behavior if it brings more personal benefits. As stated previously, the first-order condition of equation 1 is given as[3]:

$$\frac{\partial \mathrm{B}}{\partial a} + \frac{\partial Z}{\partial a} = \frac{\partial S}{\partial a} + \frac{\partial T}{\partial a} + \frac{\partial I}{\partial a} + \lambda_1\left(\frac{\partial M}{\partial a}\right) + \lambda_2\left(\frac{\partial A}{\partial a}\right). \quad (2)$$

Provided that street-level bureaucrats obtain more personal benefits, $\frac{\partial \mathrm{B}}{\partial a}$ becomes larger. In order for equation 2 to be held in equality, the three types of marginal cost on the right-hand side, $\frac{\partial S}{\partial a} + \frac{\partial T}{\partial a} + \frac{\partial I}{\partial a}$ shall increase[4]. The reason is that the total marginal cost is an increasing function

[3] Here, I simplified the Equation 2 from the following condition:

$$\frac{\partial \mathrm{B}}{\partial \mathrm{r}}\frac{\partial \mathrm{r}}{\partial a} + \frac{\partial \mathrm{B}}{\partial \mathrm{p}}\frac{\partial \mathrm{p}}{\partial a} + \frac{\partial \mathrm{B}}{\partial \mathrm{k}}\frac{\partial \mathrm{k}}{\partial a} + \frac{\partial \mathrm{Z}}{\partial \mathrm{w}}\frac{\partial \mathrm{w}}{\partial a} = \frac{\partial \mathrm{S}}{\partial a} + \frac{\partial \mathrm{T}}{\partial a} + \frac{\partial \mathrm{I}}{\partial a} + \lambda_1\left(\frac{\partial M}{\partial a}\right) + \lambda_2\left(\frac{\partial A}{\partial a}\right).$$

The second order condition for maximization is assumed to be satisfied. That is, $\frac{\partial^2 \mathrm{B}}{\partial a^2} + \frac{\partial^2 \mathrm{Z}}{\partial a^2} - \frac{\partial^2 \mathrm{S}}{\partial a^2} - \frac{\partial^2 \mathrm{T}}{\partial a^2} - \frac{\partial^2 \mathrm{I}}{\partial a^2} - \lambda_1\left(\frac{\partial^2 M}{\partial a^2}\right) - \lambda_2\left(\frac{\partial^2 A}{\partial a^2}\right) < 0.$

[4] It is assumed that $\frac{\partial \mathrm{M}}{\partial a}$ and that $\frac{\partial \mathrm{A}}{\partial a}$ are constants, or (linearly) increasing function of a.

of the level of behavior (a). Thus, street-level bureaucrats will increase their behavior in this case. The result of the first argument provides key implications for when street-level bureaucrats actively move toward the people. It can be suggested that, in practice, street-level bureaucrats will proactively deliver public goods or services to the public when their behavior provides more personal benefits for the bureaucrat.

This study also provides a graphical representation of the equilibrium that shows my first argument. Figure 2.2 delineates how street-level bureaucrats deal with public demand at point a^* in the first place[5]. However, suppose that street-level bureaucrats can attain more individual benefits such as better reputation or faster promotion at the workplace or additionally obtain some performance-related pay from their behavior. Their benefit curve increases; B curve moves upward to B', so the bureaucracy is no longer dealing with citizens' requests in an optimal way at a^*. By increasing their level of behavior to point a', street-level bureaucrats can deal with citizens' demand in an optimal way (or maximize their utility).

Second, a street-level bureaucrat is likely to increase his/her level of behavior if he/she benefits more from service recipients' satisfaction. Provided that a street-level bureaucrat values more satisfying his or her client, it implies that $\frac{\partial Z}{\partial a}$ becomes larger in equation 2. This shall raise the marginal cost on the right-hand side to achieve the equivalence between both sides of the equation. As noted previously, the marginal cost is an increasing function of the street-level bureaucrat's level of behavior, a, and the worker will move toward a citizen to meet the client's demand in this case.

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[5] For an explanatory purpose, this study ignores the part of $\lambda_1(\frac{\partial M}{\partial a}) + \lambda_2(\frac{\partial A}{\partial a})$ in equation 2. The result remains the same even if this part is considered.

Figure 2.2 also depicts the result graphically in this case. The initial equilibrium point (a^*) is the optimal degree of the street-level bureaucrats' behavior toward the citizen. If the street-level bureaucrat benefits more from service recipient's satisfaction, this shifts his or her benefit curve upwards (from B to B'). This causes the changes of equilibrium (a^*) up to the point a'.

Another argument is the case when street-level bureaucrats move away from their clients. In the real world, we can witness that frontline workers rationalize their workload and even overlook the clients they encounter. In this regard, my third argument is that a street-level bureaucrat is likely to decrease his/her level of behavior if its cost rises.

As given in equation 1, there are three possible costs for street-level bureaucrats in their interactions with citizens (*S, T,* and *I*). If at least one among S, T, and I increases, $\frac{\partial S}{\partial a} + \frac{\partial T}{\partial a} + \frac{\partial I}{\partial a}$ becomes larger in equation 2. As the marginal cost increases, the marginal benefit on the left-hand side also should increase to achieve equivalence between both sides of the equation. Since the total marginal benefit is a decreasing function of the level of bureaucratic behavior (a), the street-level bureaucrat will move away from the citizen.

Figure 2.3 illustrates how changes in the cost influence the bureaucrat's behavior. If the cost of bureaucratic behavior increases, this will lead the cost curve to move upwards from C to C'. The new equilibrium for the street-level bureaucrat's behavior is now determined at a' where the marginal cost equals the marginal benefit. As the optimal point declines from a^* to a', the street-level bureaucrat will decrease their level of behavior and move away from the citizen.

Extensions

People-Processing

Up to this point, the model assumes that there are one public service bureaucrat and one client. The reality, however, is that street-level bureaucracies are confronted with unspecified masses. The first extension of the model relates to the situation where one public service bureaucrats encounter more than one citizen. Most importantly, street-level bureaucrats differentiate the citizens. These encounters show how street-level bureaucrats do 'people-processing' toward non-voluntary citizens (Lipsky 1980, 2010; Prottas 1979).

As a way of people processing, street-level workers transform the citizens into clients as a first step and then categorize these clients in favor of their preferences. How street-level bureaucrats categorize their clients into deserving or underserving would be one determinant of their behaviors. Lipsky (1980, 2010) compares street-level bureaucrats' client assessment to a model of 'triage'—a medical personnel's decision, during a battle, to optimize the medical resources between two wounded soldiers considering their degree of woundedness and recovery, respectively. In the real world, for example, if ventilators get scarce under the covid-19 pandemic, frontline healthcare workers should choose who get the priority. If there is no uniform guideline from the top, these street-level bureaucrats need to do people-processing based on the condition of patients. Confronted with heavy workloads and resource limitations, client assessment enables the bureaucrats to manage efficient work-processing. When coupled with discretionary power, however, client assessment generates routine abuse by frontline practitioners who procrastinate or neglect clients' demand on purpose.

Accordingly, scholars have explored how street-level bureaucrats prioritize their clients in terms of client attributes–such as their friendliness (Sandfort 2000), gender or race (Hong

2017; Wilkins and Williams 2008). Evidence shows that frontline bureaucrats in practice are more likely to move toward the clients who are underperforming (Jilke and Tummers 2018) or hardworking (Kelly 1994; McDonald and Marston 2006). All these provide somewhat challenging implications on Lipsky's (1980) illustration of creaming practice which refers to the frontline bureaucrat's strategy to deal with clients who expect to perform well. Nevertheless, it has been suggested that street-level bureaucrats' client assessment enhance their job performance. Tummers (2017) demonstrates that bureaucrats who prioritize motivated clients are more likely to receive higher ratings of job performance from their supervisors, using a survey of both employees and supervisors in the U.S. nonprofit organizations.

As such, bureaucrats often identify, categorize, and assess people they meet in order to manage a large volume of public demand and, thereby, determine eligibility priorities and allocate public service benefits. Much scholarship has argued that both people processing and client assessment affect how street-level bureaucrats behave (Evans 2013; Jilke and Tummers 2018; Keiser 2010; Maynard-Moody and Musheno 2003; Winter 2002).

Below, this study examines how the presence of more than one citizen changes the street-level bureaucrat's behavior. Suppose that there are two citizens who are seeking the same public service, and one is a 'favored citizen' as categorized by the bureaucrat. This study formally establishes the street-level bureaucrat's differentiation of these two and show how this influences bureaucratic behavior.

First, if there are two citizens, a street-level bureaucrat will differentiate between them and will likely display a different level of behavior for each. Here, the street-level bureaucrat's net benefit in an encounter with two citizens is given by:

$$U = B_1(a_1) + B_2(a_2) - C_1(a_1) - C_2(a_2) \quad (3)$$

subject to $M(a_1) + M(a_2) \leq \bar{M}$ and $A(a_1) + A(a_2) \leq \bar{A}$.

Let $B_i$denote the benefit that the street-level bureaucrat gains from his or her degree of behavior in response to citizen *i* and C_i the cost of bureaucratic behavior for citizen *i* (*i*=1 and 2). The street-level bureaucrat maximizes his or her net benefits by choosing a_1 and a_2. Under the assumption that the level of bureaucrats' behavior for each client does not influence the others' cost or benefit, the following conditions are derived:

$$\mathrm{MB}_1 = \mathrm{MC}_1 + \lambda_1(\frac{\partial \mathrm{M}}{\partial \mathrm{a}_1}) + \lambda_2(\frac{\partial \mathrm{A}}{\partial \mathrm{a}_1}), \quad (4)$$

$$\mathrm{MB}_2 = \mathrm{MC}_2 + \lambda_1(\frac{\partial \mathrm{M}}{\partial \mathrm{a}_2}) + \lambda_2(\frac{\partial \mathrm{A}}{\partial \mathrm{a}_2}), \quad (5)$$

$$\lambda_1 \geq 0,\ \lambda_2 \geq 0,\ \lambda_1(M(a_1) + M(a_2) - \bar{M}) = 0 \text{ and } \lambda_2(A(a_1) + A(a_2) - \bar{A}) = 0. \quad (6)$$

Suppose that the bureaucrat is more in favor of citizen 1 than citizen 2. This implies that, all else constant, the bureaucrat has more willingness to prioritize processing citizen 1's request than that of citizen 2. Therefore, one can expect that higher benefits and lower costs result from dealing with client 1's needs, while dealing with client 2's needs would generate lower benefits but at a higher cost. In formal terms, one can say $\mathrm{MB}_1 > \mathrm{MB}_2$ and $\mathrm{MC}_1 < \mathrm{MC}_2$ at the same time. Here, MB*i* (*i*=1 and 2) and MC*i* (*i*=1 and 2)are simplified from: $\frac{\partial B_1}{\partial a_1} = \mathrm{MB}_1$, $\frac{\partial B_2}{\partial a_2} = \mathrm{MB}_2$, : $\frac{\partial C_1}{\partial a_1} = \mathrm{MC}_1$, and $\frac{\partial C_2}{\partial a_2} = \mathrm{MC}_2$.

The case is illustrated by two sets of graphs in one dimension (see figure 2.4). In each case, the street-level bureaucrat determines the level of their behavior when the marginal benefit and marginal cost becomes equal. Here, this study also ignores the terms, $\lambda_1(\cdot) + \lambda_2(\cdot)$. In figure 2.4, a1 shows the bureaucrat's level of behavior with public demand, whereas a2 shows his or her level of behavior in regards to client 2's case.

In the real world, we can easily recognize that frontline bureaucrats draw a distinction

among multiple clients and behave differently. Such client differentiation appears salient when citizens are seeking the same public service assistance. Even though their behavior does not break the rules, how much bureaucrats engage into each client is not equal. Sometimes, we could also observe an extreme case when a street-level bureaucrat solely serves a certain citizen and ignores the other one's request. This behavioral mechanism can be explained by the assumption that the former brings far greater net benefits than the latter from the perspectives of the bureaucrats. It is salient when the constraint condition such as resource shortfall is coupled with the bureaucrat's coping strategies.

Bounded Rationality

The second extension of the model considers the fact that rationality is bounded by some limitations. In the real world, bureaucrats may confront their lack of knowledge or limited capacity in making decisions. Theories of bounded rationality imply that bureaucrats' decision making would be influenced by the uncertain external environment. Simon (1947, 241) articulated the concept, demonstrating that human behavior is determined by "the irrational and nonrational elements that bound the area of rationality." By demonstrating that people are not omniscient calculators, bounded rationality softened the assumptions of the theory of subjective expected utility. Simon (1947, 1955, 1956) posited that people often "*satisfice*" (satisfy and suffice), in lieu of maximizing their utility in decision-making.

Simon (1947) distinguishes administrators from economic men (*homo economicus*) with the concepts of bounded rationality and satisficing. He defines the rationality as selecting effective and appropriate means to reach designated ends. Goodsell (1981, 764) describes human service bureaucracy as follows: "Bureaucracy is neither entirely dispassionate nor primarily

exploitive…. But it is itself under stress with unexpected pro-client consequences." Simon's idea on the limits of rational adaptations compelled scholars in many social science disciplines to delve into the area of bounded rationality and explore its implications (e.g., Jones 2003; Kahneman 2003; March 1978; Padgett 1980; Sunstein 2006).

The limits of rationality suppose some situations: (1) complexity, risk, and uncertainty influence either the benefit or cost, or both, of actors' behavior; or (2) actors have incomplete information on alternatives or consequences (Simon 1972, 163). Individual bureaucrats are also bounded by their own values and experiences that would influence their decision-making process. Here, this study proceeds with a model in which street-level bureaucrats' rationality is bounded due to their lack of information or uncertain environments that constrain or prevent them from calculating the best course of their behavior. Suppose that appropriate information is not transmitted immediately, which might make frontline bureaucrats have difficulties in calculating their precise net benefits. Street-level bureaucrats may find it more difficult to expect benefits because those rewards such as promotions, reputation, or overtime pay at the workplace would occur in the future, compared to the costs, such as expense or time, which explicitly occur in the present. This implies that some type of discounting is perceived by the street-level bureaucrats.

Moreover, it is possible to assume that street-level workers voluntarily "satisfice" themselves to serve their clients at the expense of maximizing their expected benefit. In other words, street-level bureaucrats tend to discount benefits to a large extent than those in equation 1. In the real world, for example, a teacher (a public service bureaucrat) even uses her own money to allow her student (client) to buy what is required for in-class activity (Kelly 1994).

Let δ represent the discount factor benefits that ranges from 0 to 1. The range of the

discount depends on the bureaucrat's degree of bounded rationality. Formally, the bureaucrat's net benefit can be expressed as follows:

$$\mathrm{U} = \delta\{\mathrm{B}\big(\mathrm{r}(a),\ \mathrm{p}(a),\ \mathrm{k}(a)\big) + \mathrm{Z}\big(\mathrm{w}(a)\big)\} - S(a) - T(a) - I(a) \tag{7}$$

$$\text{subject to } \mathrm{M}(a) \leq \bar{M},\ \mathrm{A}(a) \leq \bar{A}, \text{ and } 0 < \delta < 1.$$

If a street-level bureaucrat's rationality is bounded because of a high future discount, he/she will less move toward the citizen. The first-order condition to maximize the equation above is given as:

$$\delta\left(\frac{\partial \mathrm{B}}{\partial \mathrm{a}} + \frac{\partial Z}{\partial a}\right) = \frac{\partial S}{\partial a} + \frac{\partial T}{\partial a} + \frac{\partial I}{\partial a} + \lambda_1\left(\frac{\partial M}{\partial a}\right) + \lambda_2\left(\frac{\partial A}{\partial a}\right). \tag{8}$$

Comparing the above condition with the first-order condition in the basic model (see equation 2), one would find that bounded rationality decreases street-level bureaucrats' behavior. Denote the solution for the above equation as a^{**}. Then, a^{**} is always less than a^{*} because δ is between 0 and 1.

This study depicts the above arguments graphically in figure 5. When frontline bureaucrats discount future benefits, the benefit curve shifts down from B1 to B2. Then, the optimal level of their behavior will decrease from a^{*} to a^{**}. Further, one may think of an extreme case where street-level bureaucrats who are boundedly rational do not expect any benefits at all from their dealing with public demand. In other words, they only consider the cost when they deal with public demand. In this case, the discount factor (δ) becomes to 0. We can find this extreme case from the real world situation where street-level bureaucrats do not behave at all or do not intervene (that is, they do not respond or overlook citizens' requests in practice) because they think dealing with citizens will only result in costs to them. Although it is not common, the real-world example is social workers who are routinely overlooking the children neglected by their parents. It also reflects the situation when law enforcement officers think

about intervening the situation or backing off, while they are off duty.

Social Optimality

This section extends the model of street-level bureaucrats' behavior by considering its relationship to interests of a wider public. Provided that street-level bureaucrats' behavior is determined at an individually optimal level, can it be socially optimal as well? To seek an answer to this question, suppose that we have a social utility function *V*. Mostly, street-level bureaucrats' behavior cannot be scaled up to the socially optimum level, even if each bureaucrat is assumed to behave rationally. Formally, the function looks as:

$$V = w(\mathrm{a}) - sc(\mathrm{a}) \tag{9}$$

where w is client's satisfaction and *sc* is the social cost from behavior a.

Street-level bureaucrats' personal benefit is not counted as social benefit because the latter only includes the citizens' satisfaction with the public service. For the same reason, the bureaucrats' personal cost such as occupation-related stress, time, or efforts to deal with public demand is not counted as a social cost. Social costs, *sc*, are those incurred from the bureaucratic behavior. If there is no cost from the bureaucrats' behavior, the *sc* term would be removed.

By maximizing equation 1, the following condition is derived as:

$$\frac{\partial \mathrm{w}}{\partial \mathrm{a}} = \frac{\partial \mathrm{sc}}{\partial \mathrm{a}}. \tag{10}$$

Equation 10 implies that the social optimal level of bureaucratic behavior is determined when the marginal social benefit becomes equal to the marginal social cost. Let's denote a^{**} the solution of equation 10. One can easily see that a^{**} is different from a^{*} in equation 2, the street-level bureaucrats' solution to maximize their net benefits. In consequence, street-level bureaucrats might not engage in any activities for helping their citizens up to the socially optimum level,

although each behavior is carried out with an individual bureaucrat's optimality.

Discussion and Conclusion

This study has several implications. Above all, it sheds light on the lowest echelon of the bureaucracy. Although there has been much progress in the development and extension of formal models of public bureaucracies in their relation to political institutions or authorities, relatively little effort has been made to examine the public bureaucrats who work at the frontlines of the government. Implicit in the public service bureaucracy perspective is the fact that they represent the government by having face-to-face interactions with the public in their daily course of job. How these field bureaucrats deal with people's demand is important to improving public service provision and enhancing government accountability in democratic governance.

Against this backdrop, this study presents a model of public service bureaucrats' behavior in their interactions with citizens. By concentrating on the relationship between service providers and recipients, this study offers insights into the various frontline bureaucrats' behavior. Drawn from this real-world insight, this study aims to explain how street-level bureaucrats are motivated to move toward the public and the extent of their behavior. In the illustration of frontline bureaucrats' engagement in activities for helping their clients, this study extends the model based on a theoretical discussion on: (1) people-processing, (2) bounded rationality, and (3) social optimality. By bringing such consideration to frontline public servants, this study contributes to identifying their motivational bases and deepening the understanding of bureaucratic behavior toward citizens.

Furthermore, the model extends the theoretical framework set forth by Lipsky (1969, 1971, 1980, 2010). His basic rationale for street-level bureaucrats' behavior rests on high

workloads, resource constraints, and the conflicting demands from multiple citizens they face in their course of job. Following Lipsky's theoretical definition, scholars have explored how street-level bureaucrats have coped with public demand in various ways (Baviskar and Winter 2017; Evans 2013; Lipsky 1980, 2010; Maynard-Moody and Musheno 2000, 2003; Tummers, Bekkers, Vink, and Musheno 2015; Winter 2002). In the real world, we can find that frontline bureaucrats are developing routines such as prioritizing citizens or rationing the service to lessen their heavy workloads. However, Lipsky's discussion emphasizes relatively one side of street-level bureaucrats' behavior as their self-defense mechanism—a way of handling their job stress. This possibility arises when street-level workers voluntarily use their personal resources to serve their needy citizens (e.g., Dubois 2010; Kelly 1994) or bend a rule to grant more benefits as a quid pro quo for clients who are seeking public service assistance (e.g., Gofen 2014; Maynard-Moody and Musheno 2000, 2003).

In addition to Lipsky's articulations of the self-defense mechanism, this study takes a more comprehensive perspective based on Down's (1967) five types of public officials. This study views street-level bureaucrats' behavioral mechanism as their cognitive or behavioral way of dealing with work-related stress, but also factors in other concerns such as the desire to serve the general public and further the employee's personal aims. To this end, I extend the meaning of the utility by considering the nature of street-level bureaucrats as boundary actors between the government and citizens. In short, this study reconsiders the underlying premise that street-level bureaucrats always suffer from job frustration in their daily encounters with citizens; it aims to extend and encompass what Lipsky and other early scholars have reported.

It is evident that street-level bureaucrats' behavior will either enhance or undermine the predictability of administrative practices in the eyes of citizens. Scholars need to continue this

line of research by examining how public service bureaucrats develop their work-related strategies and translate them into a set of actual behavior in the field. To better understand the behavioral mechanism of street-level bureaucrats, further research should closely look into their decision-making calculus relating to other work-related environment or their relationships with those higher-ups.

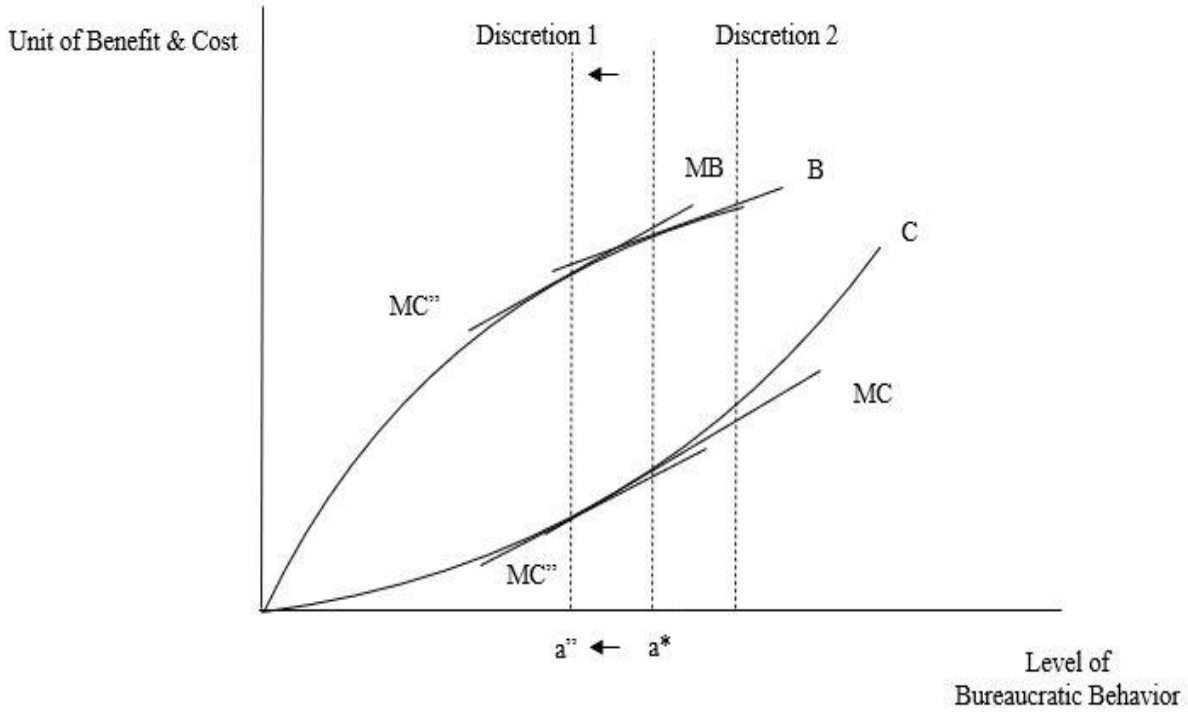

Figure 2.1 Street-Level Bureaucrats' Behavior under Constraints

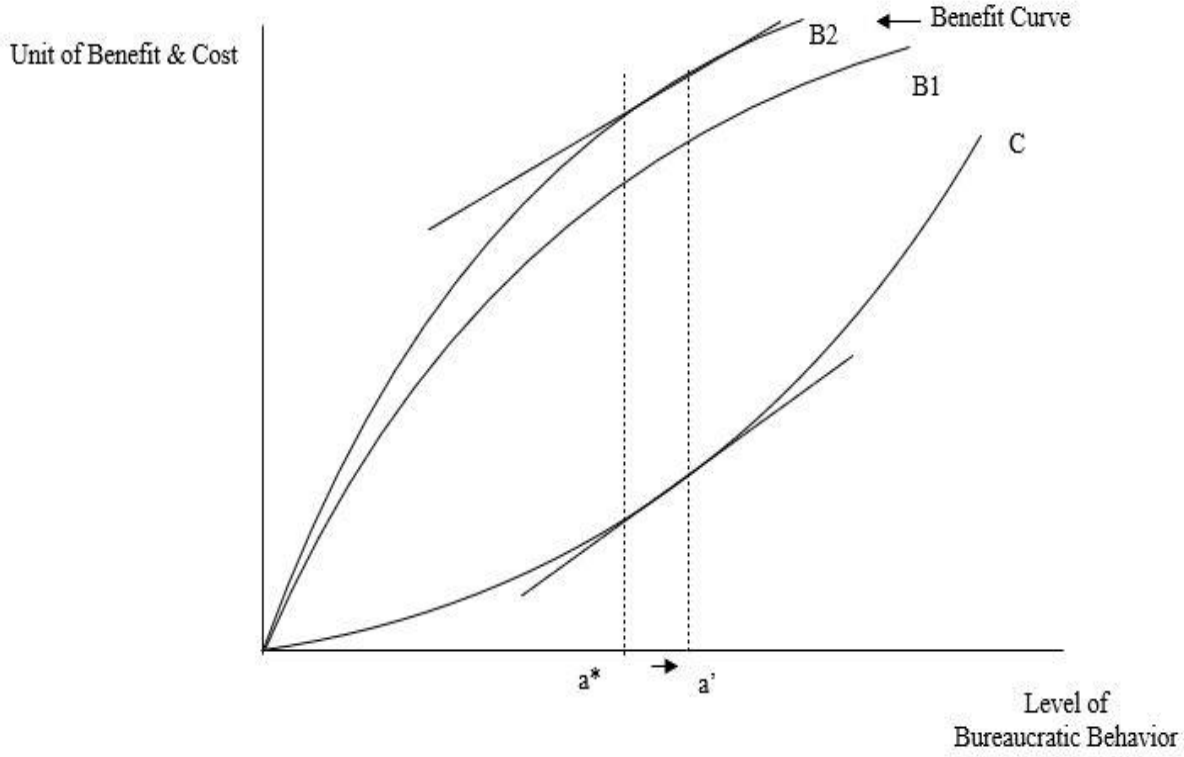

Figure 2.2 Street-Level Bureaucrats' Behavior When Benefits Change

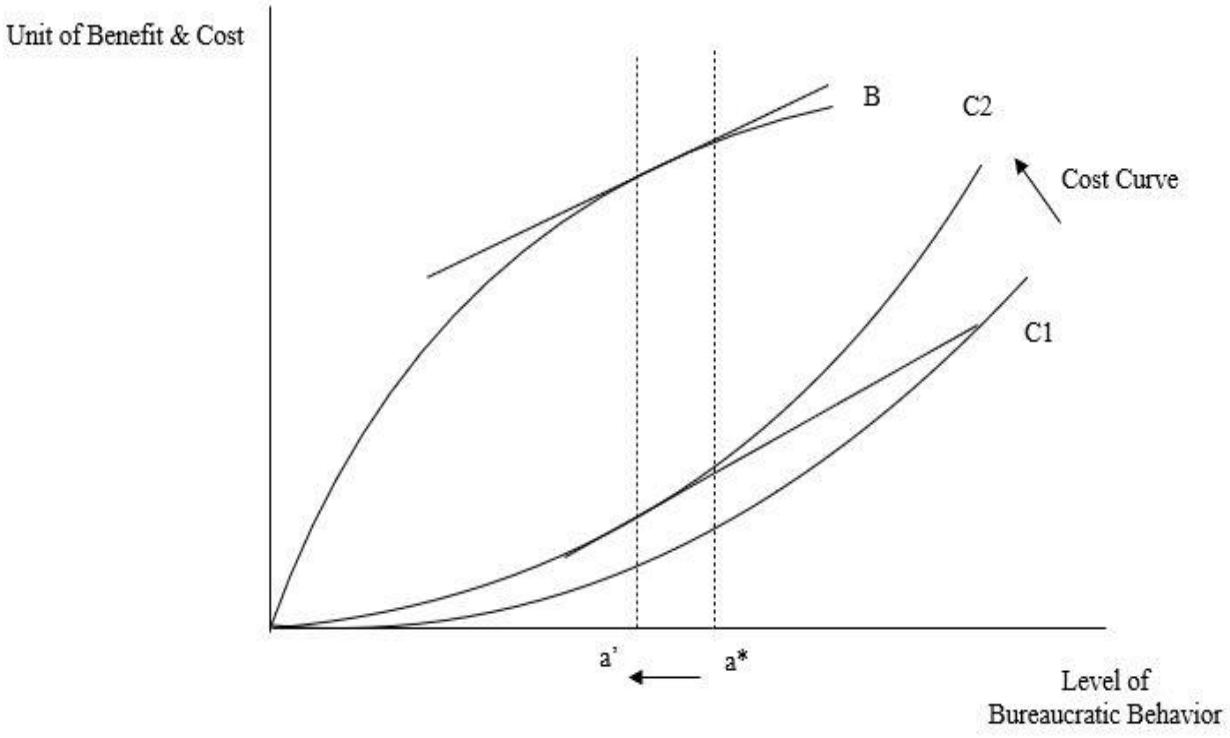

Figure 2.3 Street-Level Bureaucrats' Behavior When Costs Change

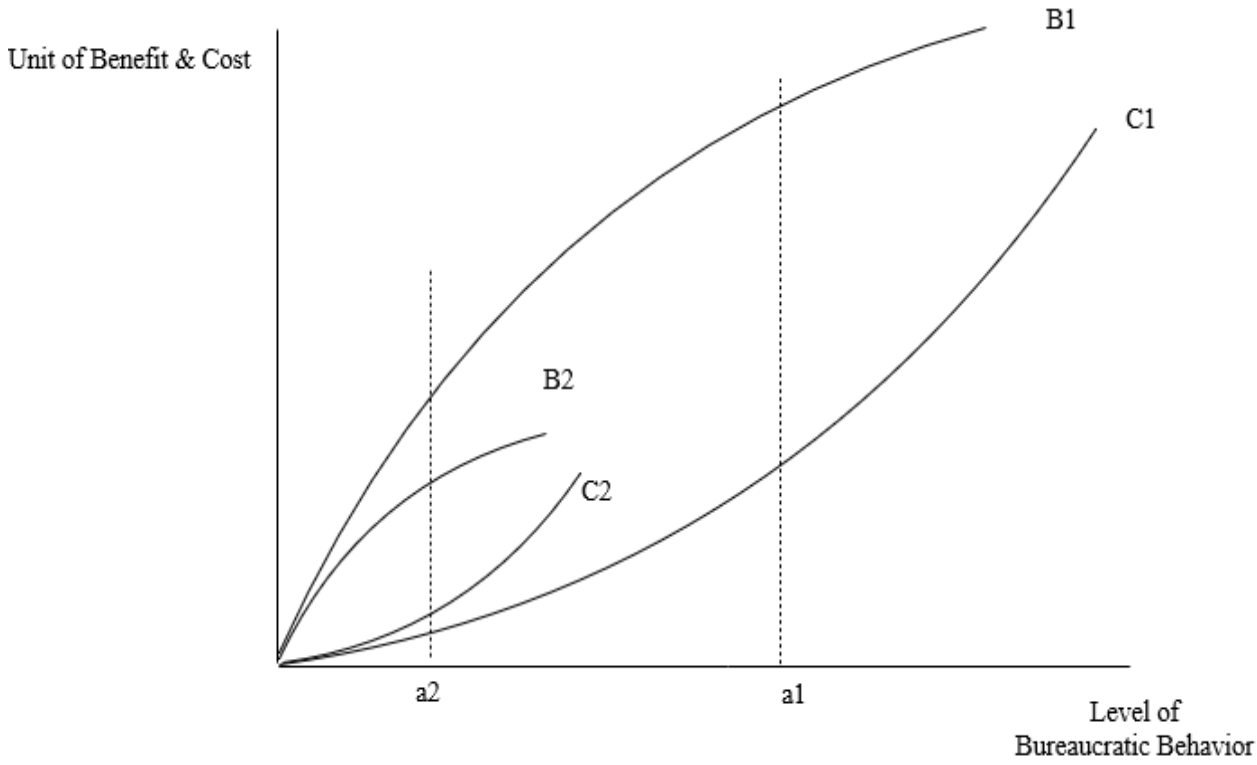

Figure 2.4 Different Bureaucratic Behaviors on Two Types of Citizens

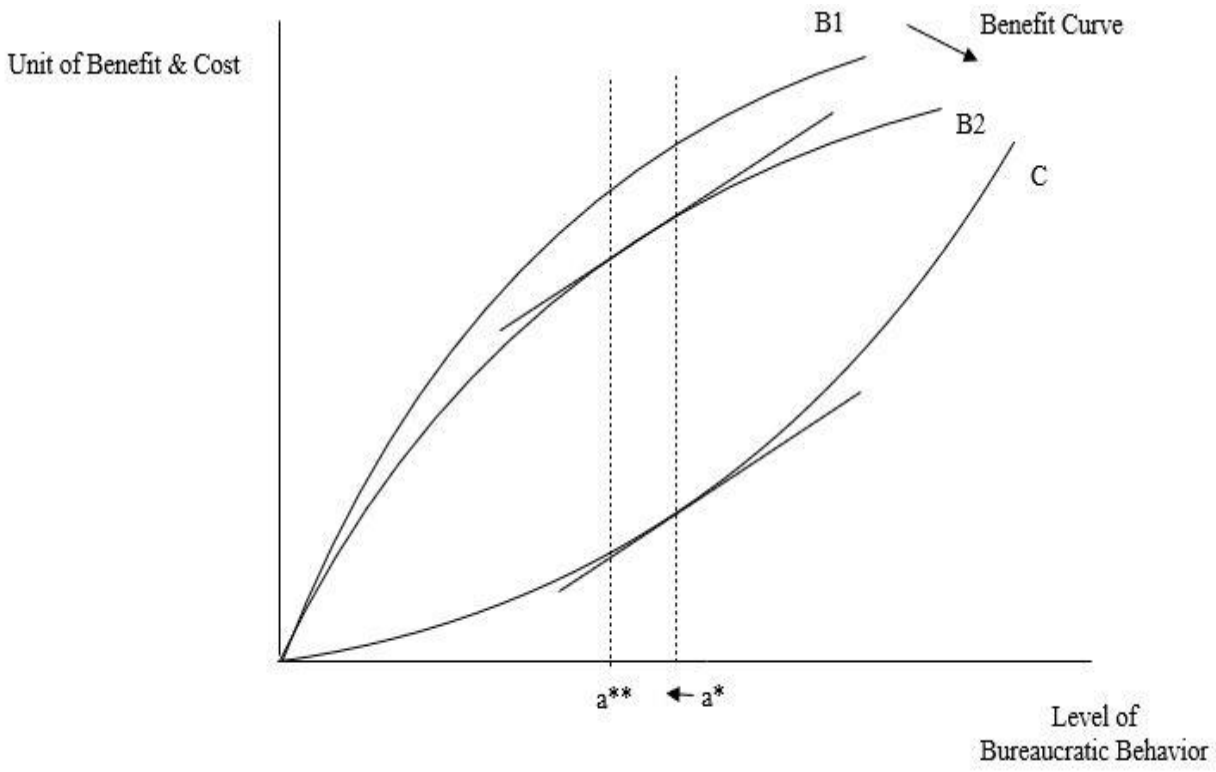

Figure 2.5 Bounded Rational Street-Level Bureaucrats' Behavior

CHAPTER 3

COGNITIVE BIASES IN PERFORMANCE APPRAISALS: EVIDENCE FROM A CITIZEN SURVEY

Introduction

One characteristic of well-functioning democracies is that government reflects citizens' feedback in improving public service delivery. How service recipients think is valuable information for the public sector in order to enhance its service quality and set up future strategies. In public administration, performance evaluation by citizens, such as their satisfaction or ratings on public service quality has been used as performance information (e.g. James 2004; Van de Walle and Van Ryzin 2011; Van Dooren and Van de Walle 2016). Despite this widespread practice, there has been conflicting evidence on measuring public service performance with citizen's surveys: some raise skepticism on the correlation between subjective and objective measures of public service outcomes (Kelly 2003; Kelly and Swindell 2002), while other studies demonstrate that citizen surveys mirror the actual public service performance (Licari, McLean, and Rice 2005; Van Ryzin, Immerwahr and Altman 2008). Along with this trend, scholars have cast a question for public administration regarding how to measure performance (Behn 1995; Rosenbloom 1998) or how to use the performance information (Van Dooren and Van de Walle 2016). This study starts from a slightly different angle: how to interpret the performance information that is reported from citizen surveys?

Performance information interpretation is important not only for those who provide

citizens with public service at the frontlines of the government but also for those who design, conduct, and interpret a citizen survey. In utilizing citizen surveys as performance information, public officials should consider some inherent cognitive limitations, implicitly embedded in performance appraisals. Cognitive constraints are believed to convey various manifestations on the same questions. For this reason, respondents are likely to rely on a number of heuristics in making their judgements and answer to the questions of the survey. These heuristics are proposed to transform complex inferential tasks into simpler cognitive operations (Tversky and Kahneman 1974). Nevertheless, the nature of evaluation process by people makes performance appraisals bias-prone.

In recent years, cognitive limitations in performance satisfaction and assessment have increasingly drawn attention in the field of public administration (see Battaglio, Belardinelli, Bellé, and Cantarelli 2019). Jilke and Baekgaard (2020) categorize this burgeoning scholarly interest into three streams: (1) the institutional approach; (2) the expectations-disconfirmation models; (3) cognitive-psychological explanations. This study mostly focuses on the cognitive-psychological explanations in its illustration of underlying biases in people's judgement of public service[6]. A number of errors or biases are extant or at least latent in human cognition. Evidence suggests that people's assessment on public service performance is influenced by anchoring (Bellé, Cantarelli, and Belardinelli 2017, 2018; James 2009), reference points (Olsen 2017), question order effects (Van de Walle and Van Ryzin 2011), context effects (Hjortskov 2017),

[6] As Jilke and Baekgaard (2020) explained, the three streams are interrelated. Therefore, our theoretical discussion contains some implications from expectation disconfirmation model, although we see that the present study mostly adopts a cognitive-psychological lens in explaining citizens' performance appraisals,

priming (Andersen and Hjortskov 2016, Hjortskov 2017), framing (Andersen and Hjortskov 2016; Bellé, Cantarelli, and Belardinelli 2018; Olsen 2015), halo errors (Battaglio 2015; Bellé, Cantarelli, and Belardinelli 2017; Van de Walle 2018), partisan bias (Jilke and Baekgaard 2020), negative bias (Olsen 2017), status quo, and proportion dominance (Bellé, Cantarelli, and Belardinelli 2018).

In an effort to expand this line of research, this study examines how citizens' performance appraisals are influenced by their initial expectations, existing overall perceptions, and post disconfirmation of police service through the lens of cognitive-psychological perspectives. The reason for focusing on the expectation, experience, and overall perception at the same time is that these three cognitions are highly likely to be extant in most citizens who are asked to assess public service performance. Regardless of situations or the contexts of conducting a public opinion survey, citizens' cognitive heuristics cannot be free from their inherent expectations, perceptions, and experiences. Much previous literature on this topic has conducted experiments to identify cognitive biases and advanced the theoretical and practical discussion. This study, however, does not give any treatment, but relies on a secondary survey data to examine the potential cognitive biases that citizens inherently have whenever they participate to the survey on government service. Moreover, conducting and reviewing a public opinion survey is one common way for the public sector to use citizen feedback to improve its service provision. Thus, it is worth examining how to understand and interpret performance information reported from citizen surveys.

In general, expectation refers to people's desire or anticipation that they are looking forward to something before consuming goods or services they want, while the experience is an impression or feelings obtained after consuming them (Anderson 1973). The expectation

approach originates from consumer satisfaction literature, as an element that influences individual's satisfaction or dissatisfaction with private goods or services. Much of expectation literature demonstrates that the balance between expectation and the real experience shapes satisfaction and performance appraisals. This assumption has been empirically tested in the field of public administration based on the expectation-disconfirmation model (e.g. Andersen and Hjortskov 2016; Morgeson 2013; Roch and Poister 2006; Van Ryzin 2004, 2006, 2013).

In addition to the focus of expectation and experience, this study also considers people's general perceptions on public service. In an era of community policing, people's perception of the police is much influenced by their preconceived assumptions or thoughts on law enforcement officers and service toward the general public. Empirical evidence on police service suggests that people's general perceptions function as a major determinant in public attitudes toward police (Scaglion and Condon 1980), the police-citizen relations (Liou and Savage 1996), and citizen satisfaction with the police (Hinds 2009). The importance of public perception on performance evaluation studies is buttressed by the fact that personal experience is not a necessary condition for police service performance appraisals. Weitzer and Tuch (2005) emphasize that when people evaluate the police service performance, they tend to internalize or be influenced by external factors such as their knowledge of other citizen's encounters with police or information from media. This proposition is evidenced in several studies, demonstrating that people may have some critical views on law enforcement workforce although they had good experience with police officers individually (Brandl, Frank, Worden, and Bynum 1994). Against this backdrop, the next section elaborates on several cognitive biases found in performance judgement including anchoring, reference points, and halo effects.

Theoretical Background

Anchoring

Anchoring occurs when people base their final judgement on an initial value. According to Tversky and Kahneman (1974), people experience a series of adjustments to render a final estimate under uncertainty, but these adjustments are not sufficient enough to generate reasonable judgement. Uncertainty leads people to be susceptible to initial stimuli. Therefore, people make judgment based on the first piece of information they encounter (Strack and Mussweiler 1997). Such assimilation happens during the process of adjustment unless the stimuli are too remote to the position of the subjects (Sherif, Taub, Hovland 1958). The anchoring bias has been assumed to underlie many practical situations when people answer general questions (McElroy and Dowd 2007), estimate probabilities (Chapman and Johnson 1999), make legal judgements (Englich and Soder 2009), present a forecast (Critcher and Gilovich 2008), and negotiate (Galinsky and Mussweiler 2001).

Anchoring in ratings comes from people's reliance on their judgmental heuristics. To account for the broad array of anchoring bias in performance appraisals, scholars have tried to identify the initial point that continuously influences subsequent judgement. People are likely to utilize prior performance information as a parameter for their performance appraisals or selectively magnify the part of existing information that is similar to their anchor (see Heslin Latham, and Van de Walle 2005; Jacowitz and Kahneman 1995). Suppose citizens are asked to evaluate public service. For assessment, they are likely to retrieve past performance experience or selectively activate an image that is consistent with the anchor. Hence, the judgmental assimilation toward the anchor would lead citizens to recognize the prior assessment as representative of current performance.

A number of public administration studies have discussed the anchoring effect on

performance appraisals or citizen's satisfaction with public service. Empirical evidence shows that people's expectation serves as an anchor for their judgement. For example, James (2009) analyzes how UK citizens' expectation of public service influences their satisfaction with frontline service. His result reveals that people with a higher level of expectation are likely to show reduced predicted probabilities of being satisfied with the service. His results imply that high expectations would impose biases in citizens' satisfaction with public service performance. This is because people are likely to employ their previous expectations as an anchor for their subsequent judgement on public service (Van Ryzin 2013). In a similar vein, it has been reported that prior performance information would anchor public workers' performance ratings. Bellé and his colleagues (2017) conduct an experiment on 600 Italian public sector managers and employees, arguing that those exposed to high anchors mark the higher average score in subordinates' performance. These three scholars conduct a different experiment on the same topic by asking Italian public employees and managers to answer the maximum number of days that they should reply to public inquires (Bellé, Cantarelli, and Belardinelli 2018). It turns out that respondents consider the first stimulus as a baseline for their responses.

Given this, it seems likely that initial expectation of police service is salient to citizens before they yield final appraisals, and that citizens continuously evaluate the performance (target value) based on the expectation they have (anchor). We can surmise that citizens with higher expectation are likely to be less satisfied with delivered public service due to their initial criterion. Therefore, these citizens are expected to evaluate the public service performance with lower scores. This line of reasoning leads to the first hypothesis:

Hypothesis 1: Performance judgement is negatively influenced by expectations.

Reference Points

Theory and empirical research on human judgement has emphasized that relativity and comparison are the essence of human cognitive calculus (Kahneman and Miller 1986; Mussweiler 2003). People make assessments in a comparative manner by utilizing available information cues in order to make sense of uncertain environments. Therefore, performance assessments by people are often processed in a comparison to their own criterion. Here, the criterion functions as a reference point, defined as recent probabilistic belief that people hold about future outcomes (Kőszegi and Rabin 2006). Although reference points have been used interchangeably with the anchoring, scholars distinguish the reference points from anchoring. Kahneman (1992) draws a distinction between reference points and anchors in the context of negotiation. He explains the reference point by comparing it to the standard that outcomes are compared to and coded with, while anchors influence people's mechanism of mapping stimulus to their judgement scales.

A comparative mode of human judgement echoes Simon's (1937) insights on comparative statistics in performance evaluation: he highlights the function of comparisons and the nature of appraisal process in measuring municipal service efficiency. Olsen (2017) further examines how citizens use reference points in their judgement of public service performance. By providing various types of performance information with citizens, he examines their assessment on school grade averages and municipal unemployment rates, respectively. His findings show that citizens' evaluation of government performance is not only affected by absolute outcomes, but also influenced by many other available reference points. This argument is consistent with the implication of Rowe and Puto's (1987) study that prior information influences the formation of an initial reference point of people's judgement.

In keeping with these arguments that people make judgements based on their available reference points, we can reason that citizens' prior expectations are a point of reference when prompted to rate their public service experience. Provided that citizens have experienced public service assistance, it would be fair to predict the case when they feel distance between their prior expectation and actual experience after using the service. This happens when citizens' real experience may exceed or fall short of their anticipated quality of public service. In consumer satisfaction literature, such a gap has often been called expectation disconfirmation (Oliver 1977). Then, a question can be addressed: if there is a discrepancy between citizens' prior expectation and the real experience on public service, does this sense of separation influence their subsequent performance evaluation? In his study on the cognitive model of satisfaction decisions, Oliver (1980) suggests some answers for this question:

> Expectations are thought to create a frame of reference about which one makes a comparative judgement. Thus, outcomes poorer than expected (a negative disconfirmation) are rated below this reference point, whereas those better than expected (a positive disconfirmation) are evaluated above this base (Oliver 1980, 460).

Insights on expectation disconfirmation can be gained from studies of consumer behavior. Accumulative evidence has demonstrated that customer satisfaction is a function of people's initial standard and the subsequent discrepancy from this initial reference point (e.g. Andrews and Withey 1976; Ilgen 1971; Oliver 1977, 1980). Scholars suggested that customer's real purchase or experience of the service lead this perceived feeling of separation. Such disconfirmation effect has been tracked as consumer's post-exposure product reactions.

This line of logic developed the basic component of Expectancy Disconfirmation Theory

(EDT), which has widely been discussed in citizen satisfaction studies in the public administration. Although EDT elucidates citizens' satisfaction, its theoretical framework also gives insight into their performance appraisals. A comprehensive navigation of the EDT has enabled theoretical advance to public service satisfaction studies. However, this section focuses on the cognitive biases in citizens' performance appraisals when there are some discrepancies between their expectations and lived experience. Therefore, this study explains the underlying cognitive heuristics on how citizens' feelings of separation between the expectations and the experiences bias their subsequent rating mechanisms through the lens of reference points.

Oliver (1980) assumes that people's expectation about public service performance is considered as an adaptation level. He elucidates that when people experience the service and have some feelings of discrepancies, their prior experience will function as a reference point. This logic has been applied to previous literature on citizen's satisfaction with police service. Empirical evidence shows that people are more satisfied with public service if their initial expectation exceeds their real experience (Percy 1980; Reisig and Parks 2002). In their survey of Georgia residents, Roch and Poister (2006) demonstrate that people tend to assess delivered public service with respect to a reference point. Their findings report that positive disconfirmation of people's expectation enhances their satisfaction with urban service areas such as trash, police, and schools. Although the theoretical framework of EDT is much more comprehensive, when we focus on a relationship between expectation disconfirmation and citizen's satisfaction, the subtractive expectation disconfirmation appears to increase people's satisfaction in citizen surveys (James 2009; Poister and Thomas 2011; Roch and Poister 2006; Van Ryzin 2004, 2006) and experiments (Andersen and Hjortskov 2016; Van Ryzin 2013).

Given the evidence that expectation is used as a reference point in performance

judgement, citizens who experienced satisfaction from police service are expected to provide a positive evaluation at the end. In other words, those who were pleased with the delivered service are more likely to record higher assessment compared to those who experienced the opposite. Consistent with both theoretical and empirical arguments, the second hypothesis is derived:

> **Hypothesis 2**: Performance judgement is positively influenced by expectation disconfirmation (experience minus expectation).

Halo Effects

One notable characteristic of citizens' encounters with public service bureaucrats is that neighborhood context would affect public opinion on the frontline service. When we look into police-citizen relations as an example, people tend to shape their views on the police not only by their direct contacts with officers but also by the perception of police interaction with their neighbors or from media coverage of law enforcement activities (see Alpert and Dunham 1988; Weitzer and Tuch 2005). Despite their lack of direct experience,[7] citizens unconsciously formulate their own perceptions on public service based on images they see. One possible example is that the public sector has long been ingrained as a symbol of inefficiency (Goodsell 2004). Thus, it is highly likely that such biases might influence citizens' evaluation; people may think that the public sector is less innovative in its provision of service, compared to the private

[7] This is supported by the most recent Police-Public Contact Survey conducted in 2015 and released 2018 by the U.S. Bureau of Justice Statistics; it reveals that merely 21 percent of U.S. residents had a direct contact with the police officers during that year. The sample of this survey is 253,587,400 U.S. residents age 16 or older and only 21.1 percent (n=53,469,300) responded that they had experienced a direct contact with police.

sector.

Given the assumption that individuals' attitude drives their cognitive information process, Marvel (2016) focuses on people's implicit attitudes on U.S. postal service and its influence on their performance evaluation. His findings suggest that either favorable performance information or advertising has only a temporary effect on raising citizens' performance appraisals. Rather, citizens' implicit assumptions or general attitudes about the public sector would influence their evaluation of frontline service performance.

Research on citizen's evaluation has demonstrated that halo errors are prevalent and even inevitable (Feeley 2002). When it comes to performance appraisals, halo effects seem to be the most common cognitive bias that raters have (Schneider, Gruman, and Coutts 2011). In his experiment on military officers' evaluation of their subordinates, Thorndike (1920) discusses the halo effect as a type of cognitive bias in which a rater's general perception on ratees is likely to influence how he or she evaluates certain aspects. Halo errors occur when people overestimate the covariance between traits or behaviors (Feeley 2002). Such errors stem from raters' insufficient understanding of the attributes or lack of full knowledge. Fisicaro and Lance (1990) look further into the halo effect in the context of assessment. According to them, halo error occurs when the evaluation of a certain trait is colored by general impression on the same ratee or a certain aspect of the ratee, which influences people's evaluation of that ratee on a different but smaller trait.

Public administration scholars have paid attention to the halo effect in a variety of relationships in teachers-students, public manager-employees, and citizens-public sector. Bellé and his colleagues (2017) argue that raters are likely to transfer their perceptions on ratees from one domain to another. Although the result has found only for female participants, it turns out

that public managers tend to mark a higher score of interpersonal skills for their subordinates who are known to have a higher-level of processing documents. This reflects that people are likely to create halos when they evaluate the performance with a variety of sub-dimensions.

Scholars also make efforts to reduce such cognitive errors in their survey study. In examining the relationship between management and students' performance, Favero, Meier, and O'Toole (2014) use halo-corrected measures to check whether their findings are colored by halo errors. Their premise is that teachers' evaluation on internal management in terms of goals, trust, commitment, participation, and feedback might be influenced by their general impressions on the organization and its performance. Van de Walle (2018) highlights that citizens' general attitudes toward the public sector would bias their evaluation of smaller traits of the government, such as citizens' satisfaction on public service. Similarly, we can expect that citizens' overall perception of police service could create a halo and thereby influences their evaluation of the other traits of the police service. In this study, we predict that citizens' general perceptions on the police service will function as a halo and thereby influence their judgement on the police courtesy, equal treatment, and honesty toward the citizens, respectively:

Hypothesis 3a: Overall perception on police service quality is positively related to evaluation of the police courtesy.

Hypothesis 3b: Overall perception on police service quality is positively related to evaluation of the police's equal treatment

Hypothesis 3c: Overall perception on police service quality is positively related to evaluation of the police honesty.

Data and Methods

Data of this study comes from a victimization survey, one of four datasets in the *Police Service Study Phase II* (Ostrom, Parks, and Whitaker 1988), which documents citizens' comprehensive attitudes about the police services in their neighborhoods. From May to August in 1977, a telephone interview was conducted with randomly selected 12,019 residents in three metropolitan areas—Rochester, St. Louis, and Tampa-St. Petersburg. To this end, trained researchers were employed for the data collection.

There are several benefits for using this secondary data. Elinor Ostrom and her colleauges conducted a large-scale citizen survey, which provides accounts of how citizens expect, experience, and evaluate the local police service. All these items are asked in the context of the police-civilian relationship, which helps us to better understand citizens' specific perspectives of police service. In particular, the survey contains the evaluations of the police by crime victims or their families, who substantially experienced the police service in the region. Such direct interactions enable "more accurate, informed, and policy-relevant assessment " of local police service in the eyes of citizens (Brandl and Horvath 1991).

Another strength of this survey is that it was not originally intended to examine citizens' cognitive biases in police serivce performance. Therefore, it asks citizens a comprehensive list of questions about the police, and thereby it minimizes the possibility that respondents might speculate about the meaning of questions or feel pressured to answer in a certain way, as indended by researchers. Taken together, we believe that this survey, albeit dated, will provide contemporary scholars with some cognitive and behavioral implications for understanding performance information drawn from citizen surveys.

Dependent Variables

This study has two different dependent variables in testing three hypotheses. First, the dependent variable of the first two hypotheses is citizens' performance rating of the police service. As shown in table 3.1., respondents are asked to answer the question, "Overall, would you rate the police service in the two to three blocks around your home as outstanding, good, adequate, inadequate, or very poor?" The item is scaled from 1 (very poor) to 5 (outstanding). On the other hand, the hypothesis 3 tests the halo effects in police service survey. Another outcome variable is thus citizens' evaluation on three smaller traits of the police service—its courtesy (model 3), equal treatment (model 4), and honesty (model 5).

Independent Variables

In testing the first two hypotheses, the key explanaotry variables are expectation (model 1) and expectation disconfirmation (model 2). First, expectation of police service is measured by asking citizens how much they agree with the statement that talking to public officials in their community will not result in satisfaction. If citizens strongly agree with this statement, we assume that they have a low expectation of police service. On the other hand, citizens are considered as those with the highest level of police service expectation, if they strongly disagree with this statement. Table 3.1 shows that those with lowest expectation are coded 1 while respondents with highest expectation are coded 5.

Second, expectation disconfirmation is defined when the expectations are disconfirmed by real experience. To measure expectation disconfirmation, we use the subtractive method which has been widely used in citizen survey studies (e.g. James 2009; Van Ryzin 2004, 2006, 2013). As shown in table 3.1, experience of public service minus expectation variables indicates

the expectation disconfirmation. Experience is measured by asking respondents how much they are satisfied with what the police did when they (or their member of household) called the police for help. As same as the expectation variable, experience is also scaled from 1 (very poor) to 5 (outstanding). Since both expectation and experience use the same five-point scales from 1 to 5, the potential range of disconfirmation variable is from -4 to 4. For example, 4 shows the case when citizens' real experience exceeds their prior expectation. If a respondent has 4 in the disconfirmation, we can assume that they have great experience on public service (*experience*=5), but had low expectation (*expectation*=1). On the other hand, -4 is response from those whose experience falls short of their previous expectations. In this case, respondents rate 5 in their expectations and 1 in their experiences.

One notable thing is that respondents are asked to rate the public service performance at the end of the survey. It enables us to test how respondents' expectation and feelings of discrepancies from that experience influence their subsequent performance appraisals. Table 3.2 illustrates the cross tabulation of two variables—expectation and experience. We could see that 57 respondents in the table 3.2 had low expectation on the police (*expectation*=1), but rated the highest score after they experienced the police (*experience*=5). Also, 30 respondents had high expectation on the police (expectation=5), but gave the lowest score on their experience of the police service (*experience*=1). In particular, 454 respondents (48+31+9+205+161) out of 1,404 citizens appear to have no feelings of disconfirmation between their expectations and experiences. Also, it turns out that respondents are more likely to reveal their preferences clearly both on their expectation and the experience on public service rather than to give neutral responses. Considering that expectation disconfirmation is measured by experience minus expectation, we could see that citizens who have high expectations on public service tend to have

good experience with the service as well.

As stated, the hypothesis 3 examines the halo effects in police service survey. The outcome variable this time is citizens' evaluation on three smaller traits of the police service—its courtesy (model 3), equal treatment (model 4), and honesty (model 5). The key explanatory variable in measuring the halo effects is overall quality of police service, which is addressed by the question, "How would you rate the overall quality of police services in your neighborhood?" The item is placed at the very beginning of the survey, which enables to estimate how respondents' general impression on police creates the halo and influences their subsequent evaluation of the three aspects of the police. Again, this item is measured by the conventional five-point scales from 1 (very poor) to 5 (outstanding).

Control Variables

To test the suggested hypotheses, all models also include other variables to control for the effects of respondents' demographic characteristics such as their age, race, gender, income, and education years (see table 3.3). Previous study shows that older, white, and female citizens are likely to assess police service performance more favorably (Percy 1980). It has been also reported that citizens with higher levels of income are less likely to be satisfied with police service than those with lower levels of income (Poister and McDavid 1978). Based on previous literature, we can surmise that this tendency will influence citizens' evaluation of the police service performance. This study also considers the perceived decrease of crime in their neighborhood because lower crime rate leads residents to assess police service more positively (e.g., Schafer, Huebner, and Bynum 2003). Furthermore, the regional dummy variables are included at the same time to control the wide variation of regional effects. Table 3.4 shows the

correlations among all discussed variables included in the analysis.

Methods

In analyzing the ordinal outcome variables, scholars have often relied on the proportion odds model which assumes that the coefficient for each predictor remains constant across the categories. To check this, a brant test is performed for ordinal logit model and the outcome shows that the parallel regression (or the proportional odds) assumption is violated. Since the model cannot hold the homogeneous effect of covariates corresponding to each logit, the stereotype logistic model (SLM) is used. Based on the multinomial distribution, SLM allows the effect of each predictor to vary across the categories (Whitford, Lee, Yun, and Jung 2010).

Results

Table 3.5 presents the SLM results for the two models with robust standard errors. Model 1 assesses the effect of citizens' expectation on their subsequent performance evaluations, whereas model 2 shows that the sense of discrepancies between expectations and real experiences influences the police service evaluations. The Wald Chi-Square statistics of each model indicates that both model 1 and model 2 fit the data well. The estimated logit coefficient indciates that citizens' prior expectation and their expectation disconfirmation have a significant relationship with their subsequent performance appraisals, respectively. The SLM results in model 1 reveal that there is a positive relationship between citizens' expectations on poilce service and their evaluation of its performance. Findings confirm that anchoring biases respondents' performance rating, but it turns out that citizens with higher expectations of police service are likely to yield higher evaluations on its service performance. This result challenges some of the previous

studies that reported an anchoring effect of expectation on performance evaluation (e.g., James 2009; Poister and Thomas 2011) and even seems counterintuitive to explain citizens' performance judgements. However, consistent with Van Ryzin's (2004, 2013) arguements, our results also suggest the possibility that expectations could have a positive direct effect on citizens' performance appraisals.

Model 2 demonstrates that citizens' feelings of discrepancies between experiences and expectations are positively associated with their subsequent performance appraisals. When citizens have better experience with public service than their previous expectation, they tend to evaluate public service performance more positively. On the other hand, people who are more disappointed are likely to negatively rate the performmance. As Oliver (1980) explains, people are likely to use their prior expectation as a reference point to make a comparative judgement to their real experience. To further understand the findings, marginal effects are examined, which estimates the logit odds of being in a category relative to a baseline category. Here, we can see the logit odds of being in each category when those answered "outstanding" as the baseline. The marginal effect is measured at the mean of each explanatory variables. Table 3.6 and 3.7 report marginal effects of each explantory variables depending on each response categories. Results show that the effect of expectation on performance ratings is positive both for the "outstanding" and "good" responses while negative for the remaining categories.

Figure 3.1 illustrates the estimated effects of expectations on citizens' subsequent performance judgement. The curve describes the proabiltiy of the average respondents who evaluated police service performance in five categories. We could see that the estimated probabilities for "very poor", "inadequate", and "adequate" decreases the measured level of expectation increases.However, the estimated probabilites of assessing police service as

“outstanding” or “good’ increase when the level of expectation becomes higher. In particular, the probabiltiy of “good” is placed between 0.4 and 0.5, the highest probabilites among the other categories. Considering that citizens who responded “adequate”to performance evaluation have a mixed view on police service, the slope of curves for those who evaluated the service performance as “outstanding”, “good”, “inadequate”, and “poor” show that anchoring hypothesis is rejected.

In a similar vein, the estimated effects of expectation disconfirmation on performance evaluation is presented in figure 3.2. The predicted probabilites of “good”, “adequate”, “inadequate”, and “very poor” decrease where expectations are met or exceeded, while the probabilities for “outstanding” rises under the same condition. The average probability of being “outstanding” shows that citizens whose experience exceeds their expectation yielded a favorable evaluation in average, while the result is opposite for those whose experience falls short of their expectation.

In addition, three halo effect hypotheses receive support. The SLM results on halo effects are presented in table 3.8. Model 4 shows whether and how citizens’ evaluation of police courtesy is colored by the overall perception on poilce service quality. Similarly, model 5 examines whether and how the overall perception on police service quality influences on people’s assessment on the police service in terms of its equal treatment toward the public. Model 6 also investigates the effect of the overall perception on police service quality on citizen’s evlauation of police honesty. The Wald Chi-Square test shows that all three models are a good fit and model 6 provides a better fit than the other two models. It turns out that logit effects of the main predictor variable (overall perceptions on police service quality) on the evaluation of police courtesy, equal treatment, and honesty are statistically siginificant and positive. Citizens’

overall impression of police service is likely to creat a halo and positively affect their subesequent judgement on courtesy, equal treatment, and honesty of the police. Marginal effects of each predictors are also reported in table 3.9. Since the marginal effects are measured only at the mean of explanatory varaibles, an estimated effect of overall perception of police service upon other smaller traits of the police officers—such as their courtsey, equal treatment, and honesty—is positive only for the "outstanding" category in all three models.

The estimated halo effects are graphically presented in figure 3.3 through 3.5. In figure 3.3, the probability of the average respondent who evaluates police courtesy as "very poor", "inadequate", "adequate", and "good" decreases as evaluation on overall quality increases. However, the estimated probabilites for "very poor". "inadequate", and "adequate" are remarkably low (below 0.1) while the estimated probabilites for "outstanding" constantly rises almost close to 0.6 where the evaluation of overall quality for police service is at its maximum.

When we look into the marginal effects of overall perception on police treatment and honesty, the estimated probablites for "good" is largely high and those for "outstanding" rises as citizens positively evaluate the overall quality of the police (see figure 3.4 and 3.5). Although there is a slight difference on the estimated probabilites of "very poor", "inadequate", and "adequate" in three halo models, the results show that there exists a similar pattern on three halo effect models. It seems that people are highly influenced by their overall impression on police when they are asked to make judgements on police courtesy, equal treatmnet, and honesty. Given the fact that the curve of "probability of outstanding " increases in all three halo models, citizens appear to be more likely to answer"outstanding" in their subsequent performance evaluations when the overall perception on the police that they already have becomes higher.

Discussion and Conclusion

Findings in this study have some theoretical and practical significance in understanding performance information drawn from a citizen survey. Considering situational and contextual factors, it is difficult to expect what factors respondents consider as their own anchors, reference points, or halos in their judgement. Not only relevant information but also uninformative or even irrelevant sources can influence performance evaluation by people. Given the fact that people utilize various cognitive heuristics to make sense of uncertain environment, it is highly likely that much of public judgement drawn from a survey is the byproduct of cognitive biases of human being. Raters' cognitive limitations themselves inherently make their performance judgement error-prone, despite potential factors that might influence respondents' cognitive heuristics such as their carelessness, lack of knowledge, or the order of survey items. Therefore, it is desirable to collect as much information from citizens as possible, rather than concentrating merely on performance scores or rating outcomes. Much information from citizens will be helpful for practitioners to map aggregated sense of public opinion, which leads to a better understanding of what public wants.

Our two expectation-related hypotheses offer significant implications for public managers and practitioners. Although our expectation anchoring hypothesis reveals an opposite direction in causation in its outcome, findings still suggest that anchoring biases people's judgement on government service performance. Our result shows that respondents' expectation is positively related to their subsequent performance evaluation. This may sound counterintuitive at the first glance. However, one possible explanation is that citizens' expectation is influenced by another cognitive mechanism, called focusing illusion (Kahneman 2011). We can surmise that the focusing effect occurs when respondents weigh too much importance on a certain aspect of their

expectations that appears conspicuous to each of them. According to Van Ryzin (2013), the focusing effect could make citizens' expectation have a positive direct effect on their subsequent performance judgement.

Another explanation is that citizens who keep a certain level of expectations on their government service basically have some interests in the actions of the public sector. Thus, it is highly likely that these citizens with high expectations will witness that their government makes some effort to improve service delivery, compared to those who have low expectations or are even ignorant about the public sector. In this vein, one strategy for practitioners is to not only raise public expectation but also communicate frequently with citizens to let them know about the actions and efforts made by the government. In the real world, citizens are getting more aware of the rights as public service recipients. People increasingly access or directly request public information on public service provision. Citizens can even compare the administrative practice and government service performance to that of other countries. These growing public interests on the public sector may prompt citizens to have a higher-level of expectations for their government service performance than before. At the same time, the public sector needs to make citizens feel that their expectations are fulfilled by providing what improvement has been made.

For public managers, this may include sharing ongoing processes of public service assistance and proactively seeking citizens' feedback. Public managers leverage this shared understanding between service providers and recipients, which leads to enhancing the image of public officials and improving citizen's trust in government at large. Through this, the public sector can develop citizen-centric service provision in the long run. Of course, it needs to be preconditioned that public managers should not abuse these strategies only to receive better performance evaluations from citizens.

Furthermore, the support for halo hypothesis suggests that public managers and policymakers should make continuous efforts to foster a good impression on public service delivery toward citizens. To better understand service recipients' performance evaluation, public officials may consider including survey items that ask participants' overall performance ratings at the beginning of the survey. This will be helpful for checking the potential halo effects in citizens' performance appraisals. Based on the level of these overall performance ratings, answers from respondents can be differently interpreted. Similar to expectation-related hypotheses, public managers can raise citizens' performance evaluation by creating a more favorable image of public service. One possible way is that frontline bureaucrats who directly interact with citizens in their daily lives could well manage citizens' overall perceptions on public service delivery. It is highly likely that how street-level bureaucrats react and respond to public demand will shape citizens' general impressions of government service. In particular, citizens' evaluation of police service is largely influenced by their neighborhood s, as noted previously, so street-level police workforce can play a critical role for ameliorating the public images of the law enforcement system. Most interestingly, as citizen's overall perception of the public service becomes higher, the probabilities that those citizens yield the most favorable judgement on police service performance increase. It implies that including more citizens who have the highest overall perception on the police in a survey appears to be an effective strategy for practitioners to raise the probability of receiving favorable outcomes on their subsequent performance assessment.

For public administration scholars, it may be beneficial to mount more studies on potential biases in performance assessment. How citizens evaluate the government service is often observed by citizen surveys. Scholars need to look further into cognitive biases underlying

citizen surveys. Perhaps several systematic literature reviews will be a navigator for future prospect of this topic. One systematic review on performance appraisals points out the lack of empirical evidence on cognitive limitations of performance appraisals in the field of public administration (Bellé, Cantarelli, and Belardinelli 2017). Furthermore, there has been effort to synthesize cognitive biases in behavioral public administration by outlining a variety of observable biases discussed in journal articles (Battaglio, Belardinelli, Bellé, and Cantarelli 2019). Much public administration literature has increasingly used psychological and behavioral insights as their theoretical base to enrich the understanding on ratings by people. One major feature of behavioral public administration scholarship is that it borrows its theoretical explanation from psychology and behavioral economics. Such effort will contribute to enhance scholarly understanding on people's perception and cognitive heuristics used in judgement-making in public service performance.

Although findings lend support to some of our hypotheses on expectation disconfirmation and halo effects, it should be noted that the cognitive biases reported in this study will not always uniform in their effect. Further specifications might improve the generalizability of the present results. One suggestion is to expand the examined local service areas such as fire service or healthcare service. Researchers also consider increasing the number of samples. Moreover, a variety of contextual factors also need to be refined because many citizen evaluations are influenced by their own expectation or unique experience, rather than objective performance outcomes. Such expansion of variables and the contexts is also expected to solve the common source bias, inherent in a survey-based study.

Furthermore, we can think about the existence of people's expectation, overall perceptions, and post-disconfirmations on the public service performance and how these factors

influence their subsequent performance ratings. It implies that citizens' evaluation on delivered service is not always on par with actual public service performance. Future studies also need to continue to examine how to minimize the gap between objective performance of service providers and subjective appraisals in the eyes of citizens.

Table 3.1 Survey Items for Key Variables

Key Variables	Survey Items	Coding
Overall quality of police service	How would you rate the overall quality of police services in your neighborhood? Remember, we mean the two or three blocks right around your home. Are they outstanding, good, adequate, inadequate, or very poor?	1: Very Poor 2: Inadequate 3: Adequate 4: Good 5: Outstanding
Performance rating	Overall, would you rate the police service in the two to three blocks around your home as outstanding, good, adequate, inadequate, or very poor?	1: Very Poor 2: Inadequate 3: Adequate 4: Good 5: Outstanding
Police courtesy	The police in your neighborhood are generally courteous. Do you agree or disagree? Do you feel strongly about this? Do you feel strongly about this?	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree
Police equal treatment	The police in your neighborhood treat all citizens equally according to the law. Do you agree or disagree? Do you feel strongly about this?	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree
Police honesty	Policemen in your neighborhood are basically honest. Do you agree or disagree? Do you feel strongly about this?	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree
Expectation	A person can't get any satisfaction out of talking to the public officials in your community. Do you agree or disagree? Do you feel strongly about this?	1: Strongly Agree 2: Agree 3: Neutral 4: Disagree 5: Strongly Disagree
Experience	If yes, how satisfied were you with what the police did? Were you very satisfied, satisfied, neutral, dissatisfied, or very dissatisfied? [Previous question] Since (June/July) 1976, have you or any member of your household called the ___ police for help to been helped by them?	1: Very dissatisfied 2: Dissatisfied 3: Neutral 4: Satisfied 5: Very satisfied
Disconfirmation	Subtract two variables (Experience minus Expectation) Estimates are ranged from -4 through 4 · -4 (=1-5): Bad experience & High Expectation :A respondent expected that people will be satisfied on the service, but very dissatisfied in his/her real experience · 4 (=5-1): Good Experience & Low Expectation :A respondent expected that people can't get any satisfaction on the service, but very satisfied in his/her real experience	

Table 3.2 Cross Tabulation of Expectation and Experience

			Experience					
			Bad				Good	
			1	2	3	4	5	Total
Expectation	Low	1	48	23	15	49	57	192
		2	31	31	12	100	78	252
		3	19	13	9	41	51	133
		4	31	31	24	205	225	516
	High	5	30	18	17	85	161	311
		Total	159	116	77	480	572	1,404

Table 3.3 Descriptive Statistics

Variables	Obs	Mean	SD	Min	Max
Performance rating	11,242	3.70	0.92	1	5
Overall qualiaty	11,062	3.74	0.97	1	5
Police courtesy	11,251	4.29	0.86	1	5
Police equal treatment	10.578	3.88	1.17	1	5
Police honesty	10,745	4.17	0.92	1	5
Expectation	9,712	3.39	1.34	1	5
Experience	1,590	3.86	1.34	1	5
Disconfirmation	1,404	0.49	1.69	-4	4
Percieved crimes decrease	11,796	0.16	0.36	0	1
Number of officers know	11,665	0.82	2.83	0	98
Income	10,071	3.03	1.67	1	7
Education	11,632	12.17	3.19	1	21
Gender	11,783	0.41	0.49	0	1
Age	11,796	48.59	18.29	16	105
Race White	11,796	0.70	0.46	0	1
Black	11,796	0.28	0.45	0	1
Hispanic	11,796	0.01	0.09	0	1
Native American	11,796	0.00	0.06	0	1

Table 3.4 Correlation of Variables

		1	2	3	4	5	6	7	8	9	10	11	12
1	Performance rating	1											
2	Overall quality	.43	1										
3	Police courtesy	.33	.32	1									
4	Police equal treatment	.31	.31	.47	1								
5	Police honesty	.35	.35	.58	.47	1							
6	Expectation	.32	.31	.18	.17	.19	1						
7	Experience	.44	.40	.25	.30	.26	.22	1					
8	Disconfirmation	.08	.06	.05	.09	.05	-.64	.61	1				
9	Perceived crime decreases	.12	.09	.04	.07	.03	.08	.07	-.01	1			
10	Number of officers know	.06	.04	.00	-.04	-.01	-.02	.04	.05	.04	1		
11	Income	.16	.13	.11	.07	.11	.05	.05	-.01	-.04	.01	1	
12	Education	.10	.10	.04	-.00	.07	.10	.08	-.02	-.03	.01	.39	1
13	Gender	-.06	-.07	-.02	-.05	-.04	-.02	-.06	-.03	.02	.03	.18	.10
14	Age	.11	.15	.17	.25	.18	.01	.13	.10	-.02	-.06	-.13	-.21
15	White	.21	.22	.31	.26	.31	.11	.13	.01	-.08	-.02	.22	.20
16	Black	-.21	-.22	-.31	-.27	-.32	-.11	-.12	-.01	.07	.05	-.23	-.20
17	Hispanic	-.02	-.02	.04	.05	.05	-.02	.02	.03	.02	-.02	-.02	-.04
18	Native American	.02	.01	-.06	.01	-.03	-.03	-.04	-.01	.02	.01	-.03	.03

Table 3.4 continued

		13	14	15	16	17	18
13	Gender	1					
14	Age	-.02	1				
15	White	-.01	.13	1			
16	Black	.01	-.12	-.05	1		
17	Hispanic	-.01	.01	-,10	-.03	1	
18	Native American	.02	-.04	-.10	-.03	-.00	1

Table 3.5 Stereotype Logistic Model for Expectation Anchoring and Disconfirmaiton

	Model 1		Model 2	
	DV: Performance rating		DV: Performance rating	
	Coefficient	*Robust* SE	*Coefficient*	*Robust* SE
Expectation	0.64***	0.05	2.13***	0.19
Disconfirmation			1.33***	0.14
Perceived crimes decrease	1.35***	0.16	1.10**	0.37
Number of officers you know	0.19***	0.04	0.07*	0.04
Income	0.10**	0.04	0.33**	0.10
Education	-0.05*	0.02	-0.09	0.06
Gender	-0.39***	0.11	-0.60*	0.29
Age	0.04***	0.00	0.02*	0.01
Race White	0.72	0.53	2.69*	1.23
Black	-0.14	0.54	1.12	1.25
Hispanic	0.03	0.80	1.57	2.05
Native American	1.59	0.82	6.06***	1.74
Region dummies	Included		Included	
φ_1	1.00		1.00	
φ_2	0.85***	0.05	0.82***	0.06
φ_3	0.51***	0.03	0.58***	0.04
φ_4	0.27***	0.02	0.34***	0.04
φ_5	0.00		0.00	
N	7,993		1,215	
Wald chi-square	517.99 (34)***		224.52 (35)***	
Log pseudolikelihood	-9483.61		-1398.63	

*ρ<.05; ** ρ<.01; ***ρ<.001

Table 3.6 Marginal Effects of Expecation Anchoring

	Outstanding	Good	Adequate	Inadequate	Very Poor
Expectation	0.03	0.02	-0.03	-0.01	-0.01
Percieved crimes decrease	0.07	0.04	-0.05	-0.03	-0.02
Number of officers you know	0.01	0.01	-0.01	-0.00	-0.00
Income	0.01	0.00	-0.00	-0.00	-0.00
Education	-0.00	-0.00	0.00	0.00	0.00
Gender	-0.02	-0.01	0.02	0.01	0.01
Age	0.00	0.00	-0.00	-0.00	-0.00
Race White	0.04	0.02	-0.03	-0.01	-0.01
Black	-0.01	-0.00	0.01	0.00	0.00
Hispanic	0.00	0.00	-0.00	-0.00	-0.00
Native American	0.08	0.04	-0.06	-0.03	-0.03

Table 3.7 Marginal Effects of Expecation Disconfirmation

		Outstanding	Good	Adequate	Inadequate	Very Poor
Disconfirmation		0.07	-0.02	-0.05	-0.02	-0.02
Expectation		0.12	0.03	-0.07	-0.03	-0.04
Percieved crimes decrease		0.06	0.01	-0.04	-0.02	-0.02
Number of officers you know		0.00	0.00	-0.00	-0.00	-0.00
Income		0.02	0.00	-0.01	-0.00	-0.01
Education		-0.00	-0.00	0.00	0.00	0.00
Gender		-0.03	-0.01	0.02	0.01	0.01
Age		0.00	0.00	-0.00	-0.00	-0.00
Race	White	0.15	0.03	-0.09	-0.04	-0.05
	Black	0.06	0.01	-0.04	-0.02	-0.02
	Hispanic	0.09	0.02	-0.05	-0.02	-0.03
	Native American	0.34	0.08	-0.21	-0.09	-0.11

Table 3.8 Stereotype Logistic Model for Halo Effect

	Model 3		Model 4		Model 5	
	DV: Police Courtesy		DV: Police Equal Treatment		DV: Police Honesty	
	Coefficient	*Robust* SE	*Coefficient*	*Robust* SE	*Coefficient*	*Robust* SE
Overall quality	0.77***	0.18	0.50**	0.14	1.00***	0.17
Expectation	0.51**	0.16	0.65***	0.13	0.58***	0.15
Disconfirmation	0.29**	0.11	0.44***	0.09	0.30**	0.11
Perceived crimes decrease	0.23	0.33	0.68*	0.21	0.27	0.34
Number of officers you know	0.04	0.03	-0.02	0.02	0.05	0.03
Income	0.19*	0.09	0.08	0.07	0.16	0.08
Education	-0.05	0.05	-0.08*	0.05	0.03	0.05
Gender	-0.17	0.24	-0.16	0.16	-0.10	0.26
Age	0.03**	0.01	0.05***	0.01	0.03**	0.01
Race White	1.39	1.27	1.09	1.11	-0.70	0.56
Black	0.07	1.31	0.20	1.13	-1.98**	0.61
Hispanic	80.70***	16.21	5.35*	2.68	43.79***	6.86
Native American	-1.05	1.91	1.99	1.71	0.53	3.45
φ_1	1.00		1.00		1.00	
φ_2	1.21***	0.26	0.93***	0.11	1.10***	0.12
φ_3	0.80***	0.15	0.67***	0.14	0.82***	0.11
φ_4	0.42***	0.09	0.39***	0.12	0.38***	0.06
φ_5	0.00		0.00		0.00	
N	1,191		1,130		1,141	
Wald chi-square	113.06 (36) ***		157.40 (36) ***		190.28 (36) ***	
Log pseudolikelihood	-1067.21		-1317.69		-1051.52	

*ρ<.05; ** ρ<.01; ***ρ<.001

Table 3.9 Marginal Effects of Halo Effects

Items	Variables	Outstanding	Good	Adequate	Inadequate	Very Poor
Poilce Courtesy	Overall quality	0.08	-0.04	-0.01	-0.02	-0.01
	Expectation	0.05	-0.03	-0.00	-0.01	-0.01
	Disconfirmation	0.03	-0.01	-0.00	-0.01	-0.01
	Percieved crimes decrease	0.02	-0.01	-0.00	-0.00	-0.00
	Number of officers you know	0.00	-0.00	-0.00	-0.00	-0.00
	Income	0.02	-0.01	-0.00	-0.00	-0.00
	Education	-0.00	0.00	0.00	0.00	0.00
	Gender	-0.02	0.01	0.00	0.00	0.00
	Age	0.00	-0.00	-0.00	-0.00	-0.00
	Race White	0.14	-0.07	-0.01	-0.03	-0.02
	Black	0.01	-0.00	-0.00	-0.00	-0.00
	Hispanic	7.99	-4.16	-0.77	-1.65	-1.41
	Native American	-0.10	0.05	0.01	0.02	0.02

Table 3.9 Continued

Items	Variables	Outstanding	Good	Adequate	Inadequate	Very Poor
Poilce	Overall quality	0.05	0.00	-0.00	-0.02	-0.02
Equal	Expectation	0.06	0.00	-0.00	-0.03	-0.03
Treatment	Disconfirmation	0.04	0.00	-0.00	-0.02	-0.02
	Percieved crimes decrease	0.06	0.00	-0.00	-0.03	-0.02
	Number of officers you know	-0.00	-0.00	0.00	0.00	0.00
	Income	0.01	0.00	-0.00	-0.00	-0.00
	Education	-0.01	0.00	0.00	0.00	0.00
	Gender	-0.03	-0.00	0.00	0.01	0.01
	Age	0.00	0.00	-0.00	-0.00	-0.00
	Race White	0.10	0.00	-0.01	-0.05	-0.05
	Black	0.02	0.00	-0.00	-0.01	-0.01
	Hispanic	0.49	0.02	-0.03	-0.23	-0.24
	Native American	0.18	0.01	-0.01	-0.09	-0.09

Table 3.9 Continued

Items	Variables	Outstanding	Good	Adequate	Inadequate	Very Poor
Poilce	Overall quality	0.09	-0.03	-0.01	-0.02	-0.02
Honesty	Expectation	0.05	-0.02	-0.01	-0.01	-0.01
	Disconfirmation	0.03	-0.01	-0.00	-0.01	-0.01
	Percieved crimes decrease	0.02	-0.01	-0.00	-0.00	-0.01
	Number of officers you know	0.00	-0.00	-0.00	-0.00	-0.00
	Income	0.01	-0.01	-0.00	-0.00	-0.00
	Education	0.00	-0.00	-0.00	-0.00	-0.00
	Gender	-0.01	0.00	0.00	0.00	0.00
	Age	0.00	-0.00	-0.00	-0.00	-0.00
	Race White	-0.06	0.02	0.01	0.01	0.02
	Black	-0.17	0.07	0.02	0.03	0.05
	Hispanic	3.75	-1.51	-0.49	-0.74	-1.00
	Native American	0.05	-0.02	-0.01	-0.01	-0.01

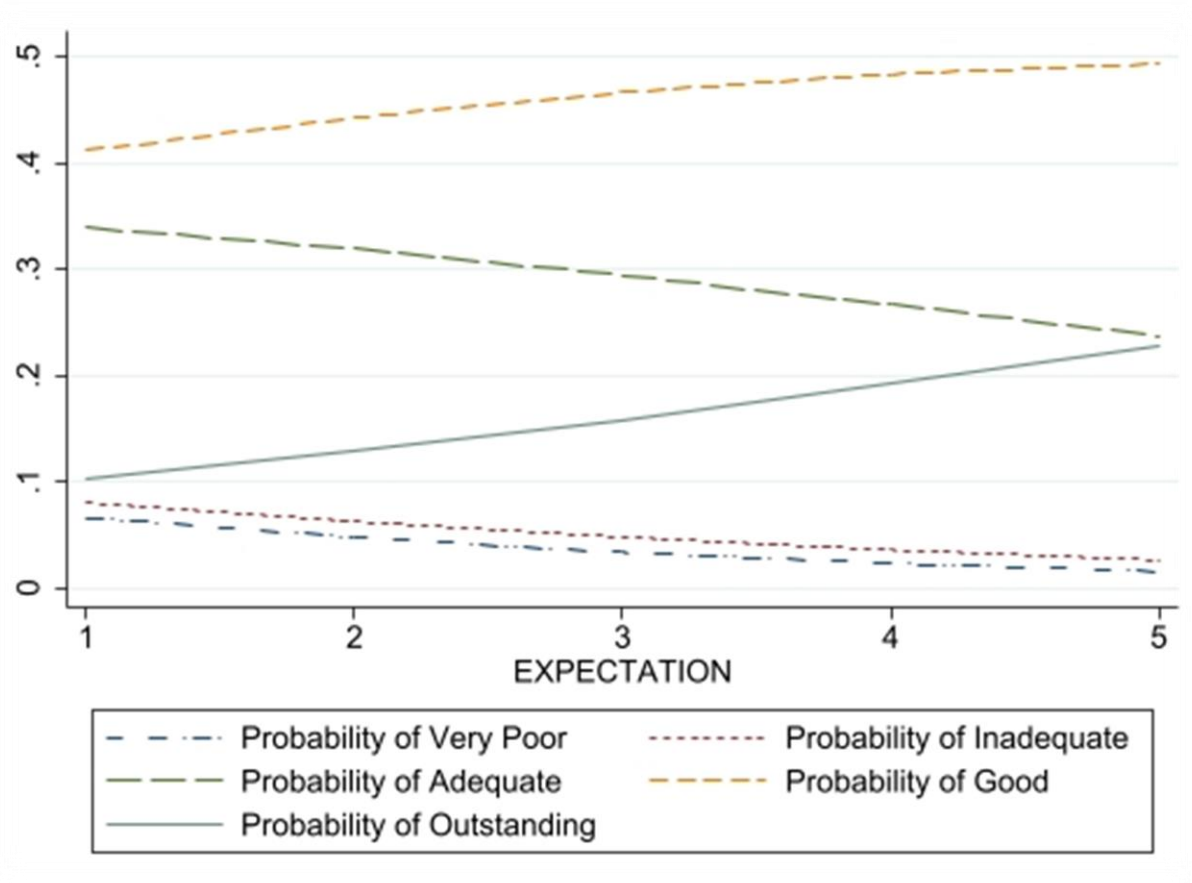

Figure 3.1 Effects of Expectation Anchoring

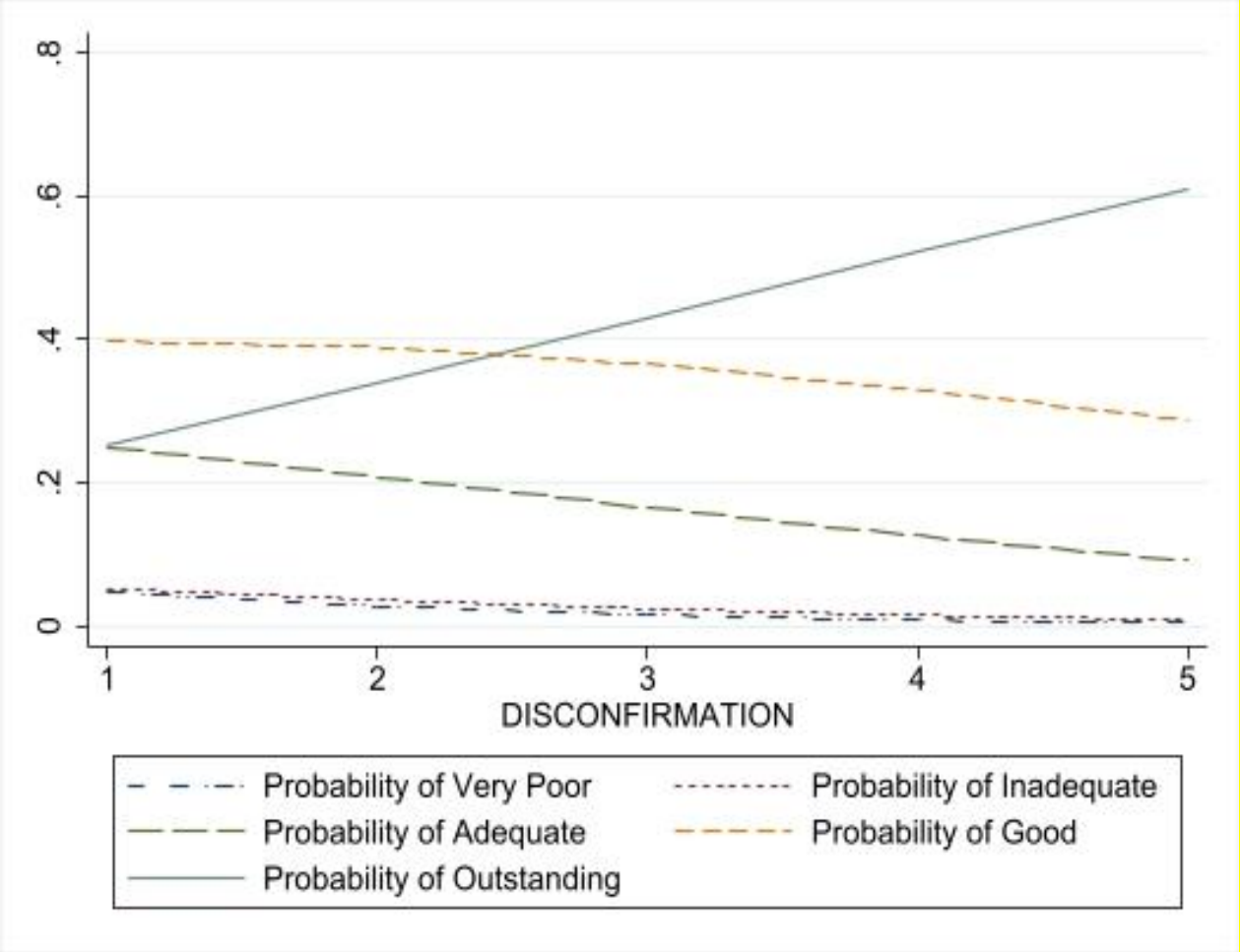

Figure 3.2 Effects of Expectation Disconfirmation

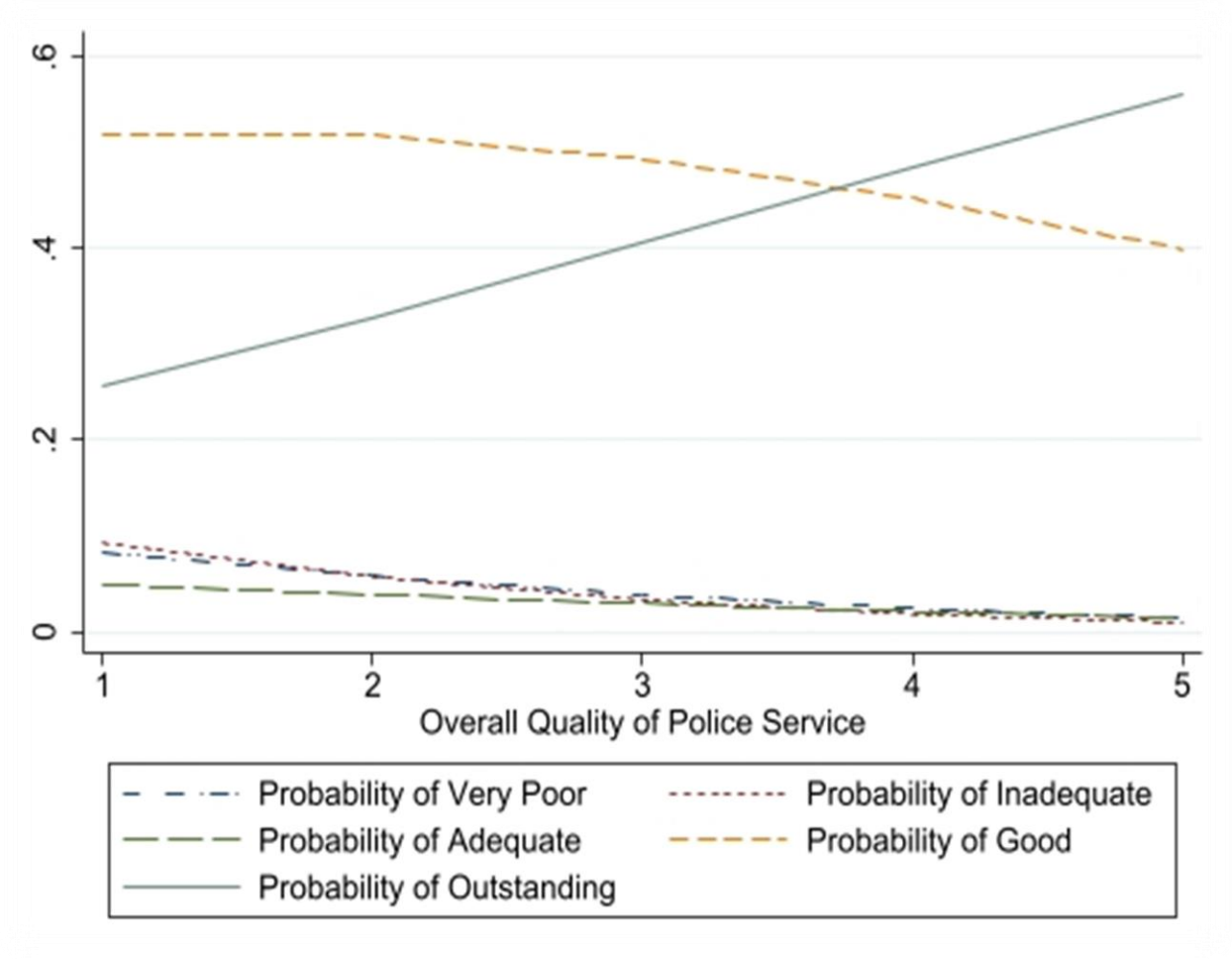

Figure 3.3 Halo Effects on Police Courtesy

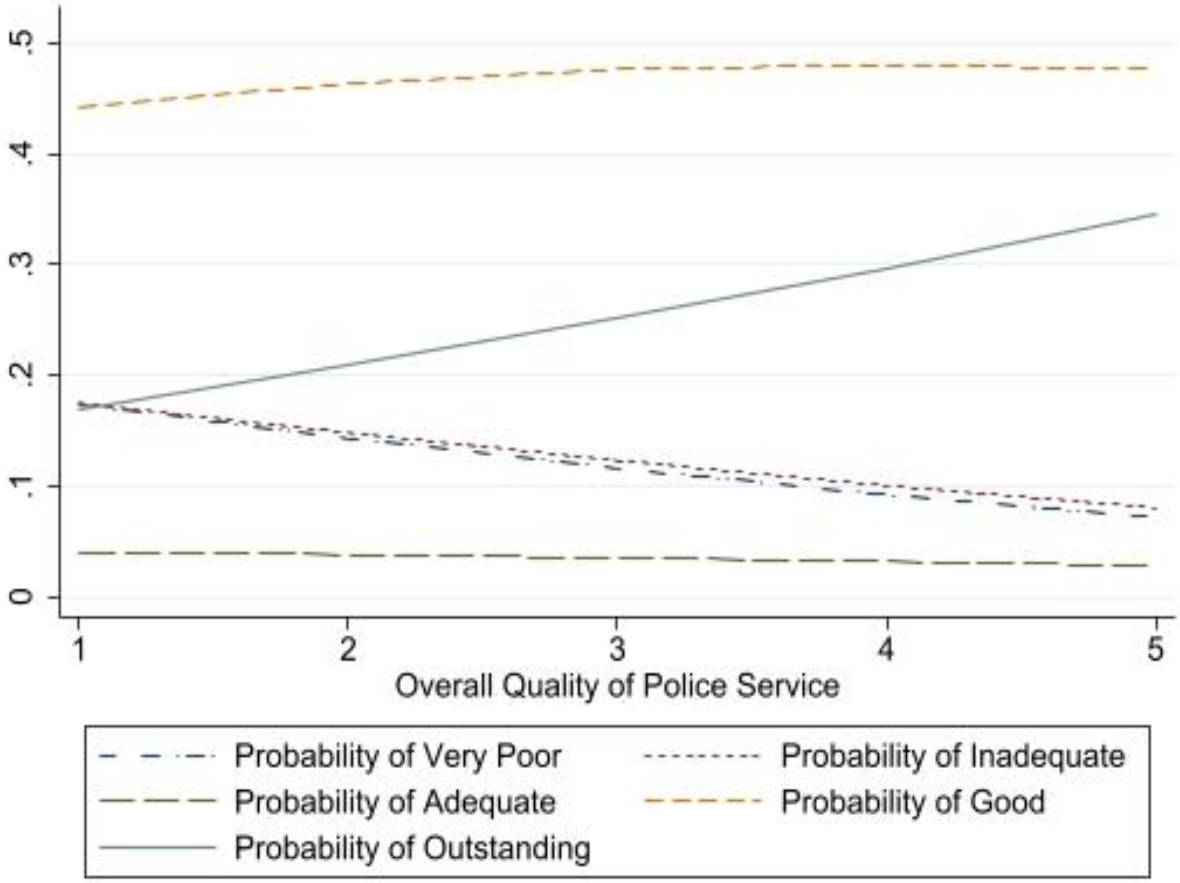

Figure 3.4 Halo Effects on Police Equal Treatment

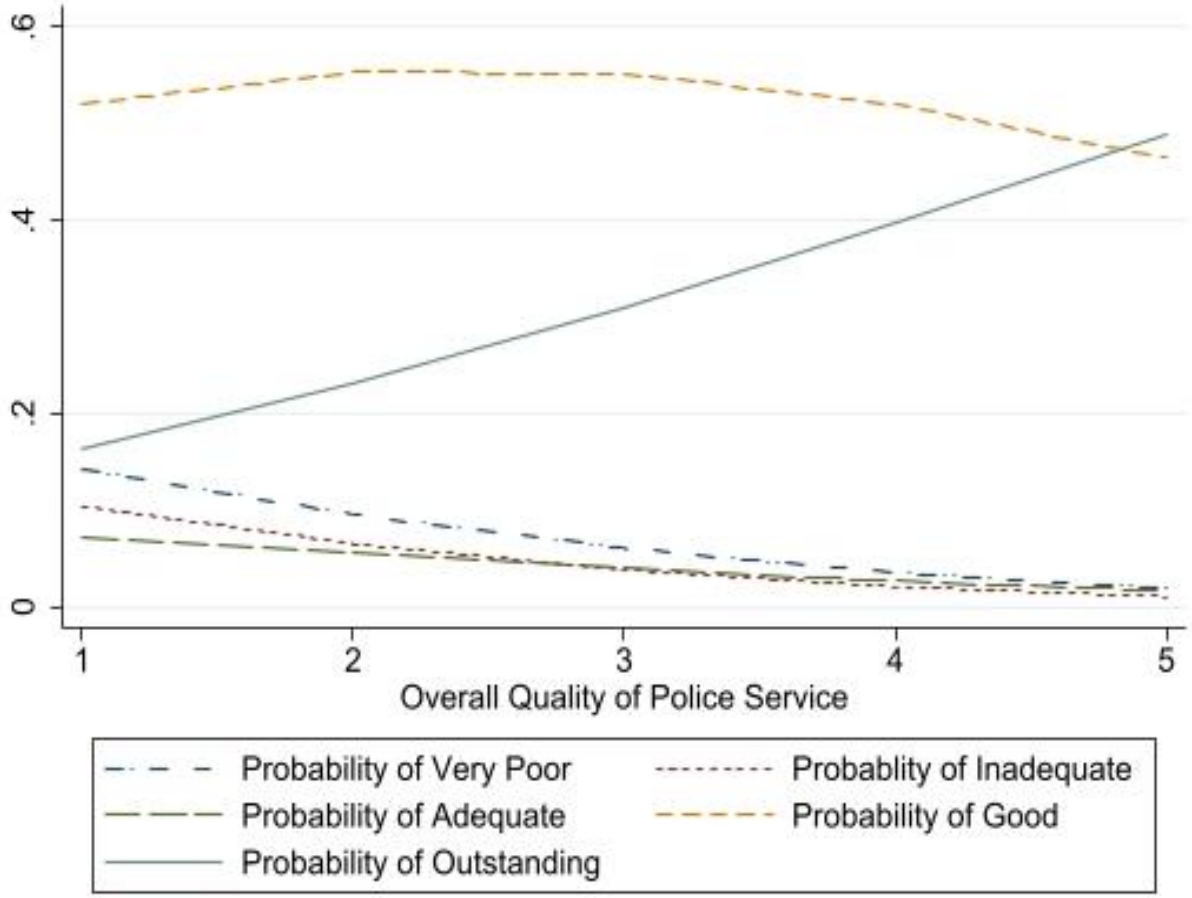

Figure 3.5 Halo Effects on Police Honesty

CHAPTER 4

BLACK TO BLACK: REPRESENTATIVE BUREAUCRACY AND RACIAL DISPARITY IN POLICING

Introduction

Research on representative bureaucracy has demonstrated that passive representation of public bureaucracies would result in active representation in their outputs (Bradbury and Kellough 2008; Krislov and Rosenbloom 1981; Meier 2019; Mosher 1982). A theoretical premise for this argument is that demographic representation in terms of race, gender, or social class will lead to the representatives' advocacy for their constituents' interests and benefits in administrative decisions and policies. Scholars on this topic have demonstrated that translation of passive representation into active representation might be influenced by institutional factors (e.g., Keiser, Wilkins, Meier, and Holland 2002; Meier 2019). It has been suggested that police socialization may hinder the translation of passive representation into active representation (Wilkins and Williams 2008, 2009). Bureaucrats are socialized by an organization they work for and thereby they ultimately follow organizational missions and goals in lieu of pursing their personal values or identities (Downs 1967; Meier and Nigro 1976; Thompson 1976). Also, scholars suggest that critical mass of minority employees is a necessary condition for them to take an advocacy role, which links their passive representation into active representation (Kanter 1977; Meier 1993a; Meier, Wrinkle, and Polinard 1999).

Drawn from these theoretical discussions, this study examines the relationship between

ethnic representation in a force and the force's engagement on racial disparity, particularly in regard to black citizens. Then, we focus on institutional contexts that influence the translation of African American officers' passive representation into their active representation. Bureaucrats engage in active representation by making decisions or taking actions that influence their constituents (Meier 1993a). By analyzing individual black officers' policing behavior on black citizens, we make a close look on black cop' active representation in policing

Racial Disparity in Policing in the U.S.

It is widely recognized that people of color have been subjected to discriminatory practices in the law enforcement system. Throughout U.S. history, African Americans in particular have been more often stereotyped as suspects or criminals—when compared to the other ethnic minorities (Russell 2002; Welch 2007). One possible explanation for the presupposing of criminality originates with the African American history of enslavement and discrimination. African Americans were the main targets of oppressive social marginalization and discriminatory legal systems such as "Black codes" and "Jim Crow laws" in the 19th and 20th centuries. Since the Civil Rights Act of 1964 prohibits illegal discrimination on the basis of race, color, or national origin, both the Fifth Amendment and the Fourteenth Amendment have stipulated the prohibition of law enforcement officers from engaging in discriminatory practices on the basis of race, ethnicity, or national origin.

Nevertheless, racial disparity in policing remains an unsettling problem facing modern American society. A commonly heard term, "Driving While Black", may reflect the public consciousness about racially biased policing that is deep-seated in the law enforcement system. The uneven handling of anyone on a basis of race in criminal justice processing has been

reflected in the term *racial profiling*. It refers to "a police-initiated action that relies on the race, ethnicity or national origin rather than the behavior of an individual or information that leads the police to a particular individual who has been identified as being, or having been, engaged in criminal activity" in a resource guideline released by the U.S. Department of Justice (Ramirez, McDevitt, and Farrell 2000, 3).

In recent years, however, the scope of the racial profiling observed in previous literature is a bit blurry. Some scholars have conceptualized racial profiling by confining the case when law enforcement officers use race in their decisions to make a traffic stop (Meeks 2000; Walker 2001). Other studies further investigate not only traffic stops, but also post-stop activities such as questions, searches, citations, warnings, detention, or arrests (Cleary 2000; Nixon 2001; Smith and Petrocelli 2001).

Although initial traffic stop could yield information on police civilian interactions, post-stop outcomes are also important to be considered for comprehensively grasping the racial disparities in policing (Epp, Maynard-Moody, Haider-Markel 2016). This is because law enforcement officers are street-level bureaucrats, whose jobs are inherently discretionary. Indeed, these field practitioners are selective in their traffic enforcement decisions, not only making stops and initiating searches but also issuing citations for traffic violations or making arrests (Lichtenberg 2002). Harris (2017, 117) suggests that "racially biased policing" might be a better phrase to use rather than racial profiling when we try to look further into law enforcement practice. Given this, this study focuses on police officers' daily routines of law enforcement practice, which includes post- stop activities such as searches, warnings, citations, and arrests of black citizens.

Theory of Representative Bureaucracy

When compared to Congress, the American bureaucracy is the model of representativeness for a civil service, since it reflects the diverse needs of U.S. citizens (Krislov 1974; Long 1952). The bureaucrats can be representative in two ways (Mosher 1982). Passive representation highlights the demographic representativeness of bureaucracies and the extent to which they mirror the whole population. Active representation, in contrast, focuses on how this demographic composition influences bureaucratic outputs. Given the presumption that bureaucrats act on behalf of their constituents, policy outputs are assumed to represent the interests and desires of those whom the bureaucrats are supposed to represent. The theory of representative bureaucracy thus suggests that bureaucrats with discretionary authority are inclined to make policy decisions based on their social and demographic origins, which will benefit those groups they serve (Long 1952; Mosher 1982; Van Riper 1958). That is, passive bureaucratic representation will lead to active representation.

Translations from these two modes of representation require several conditions (Meier and Stewart 1992). First, bureaucrats exercise discretion in policy areas or administrative structures where they feel free to operate using their preferred values. Law enforcement, the primary interest of this study, is a good illustration of bureaucrats with high discretion in public service provision. Lipsky (1980) argues that street-level bureaucrats have discretionary authority to structure the context of their interactions with citizens. A large amount of discretion is afforded to the lowest level practitioners in justice processing. Second, issue areas should be salient to the minority group in question. In the U.S., racial discrepancies in police-civilian contacts are a longstanding problem particularly salient to minority communities. Initiating traffic stops or taking law enforcement actions based on race is no doubt affecting the lives of

people of color in a profound way.

Based on these preconditions, numerous studies on representative bureaucracy have paid their attention to the link between passive representation and the active meaning of representation in bureaucratic outputs (Bradbury and Kellough 2011; Dolan 2000; Meier 1993b; Meier and Nigro 1976; Meier and Stewart 1992; Meier, Wrinkle and Polinard 1999; Selden 1997; Sowa and Selden 2003). In the area of policing, however, evidence has been inconclusive about the link between passive and active representation, especially in black officers' racial representation and their policing tactics. In studies of English and Welsh police from 2000 to 2010, Hong (2017) finds that the presence of black officers leads to a decrease in stop and searches of black citizens. He demonstrates that increasing ethnic representation in police forces will lower racial discrepancies in policing and ultimately change the workplace culture.

On the other hand, the number of studies failed to uncover the link between passive and active representation for race. In their analysis of traffic stops in San Diego in 2000, Wilkins and Williams (2008) find that increasing black officers in divisions leads to more vehicle stops of black motorists. The authors further conduct a group discussion and interviews of black officers, arguing that organizational socialization changes their black citizen identity into "blue cop" identity. In their studies of 20 million traffic stops in North Carolina, Baumgartner and his colleagues (2018) show that African Americans are more likely to be targeted and receive tickets in jurisdictions where the black political powers are high in terms of the proportion of voters, populations, and elected officials. A similar finding was reported in a study of the 100 largest U.S. cities by population. Nicholson-Crotty and his colleagues (2017) examine the relationship between police force composition and police violence by focusing on two counts of police-involved homicide from two different sources. Their first analysis, from 2014 Mapping Police

Violence data, indicates that there is no significant relationship between the proportion of black officers and fatal violence toward black citizens in these 100 cities. The second analysis, from 2015 Washington Post data, however, reveals that increasing the percentage of black officers is positively associated with police-involved homicides of black citizens in the same sample.

Although findings of previous literature are mixed, many studies of traffic stops in the U.S. have shown that hiring more black officers does not always reduce warnings, citations and arrests of black citizens. To better explain the underlying mechanism, we look further into institutional context that might influence black officers' identities or attitudes, which, in turn, affects their traffic law enforcement activities toward black citizens.

Police Identity

Theory and research on representative bureaucracy has dedicated efforts toward understanding employees' perceived roles that reflect the values of the administration. In their study on the Farmers' Home Administration, Selden, Brudney, and Kellough (1998) argue that bureaucrats' organizational roles provide major impetus when demographic representation is embodied into more active forms, such as employees' attitudes, preferences, and substantial work behaviors. In a similar vein, Brudney, Herbert, and Wright (2000) consider an administrator's conceptions of her organizational roles when they elucidate the link between the employment of state bureaucracy and its policy outputs. Their findings also support that organizational values imbued in bureaucrats significantly influence a shift between the two modes of representation. Bureaucrats' attitudes on organizational values and their perceived roles therein are likely to be adapted to their work setting. Given the presumption that bureaucracies are institutionalized strategies for attaining organizational goals, a common set of values and perspectives dominant

in the organization tend to overwhelm the preexisting personal attitudes and thoughts (Downs 1967; Meier and Nigro 1976).

Research on representative bureaucracy in policing has addressed that if minority officers' identity is influenced by police socialization, this would hamper the translation of their passive representation into active provision of policing. Here, socialization refers to a process that individuals acquire knowledge and skills for their roles, and thereby become a member of profession (Parkay, Currie, Rhodes 1992). As a street-level bureaucrat, an individual police officer's values are significant because those personal beliefs are embodied in their discretionary response behavior toward citizens. It has been argued that black officers have both "blue cop" identity and black citizen identity when they operate their functions. Different from the black citizen identity, cop identity is acquired by socialization that largely shapes their attitude and behavior (Barlow and Barlow 2000; Cashmore 1991).

In public organizations, individuals are socialized by internalizing organizational norms and values, so that they can adjust themselves to new or changed roles (Moyson, Raaphorst, Groeneveld, and Van de Walle 2018). Through their work experience, black officers are likely to act in accordance with values and goals of their dominant police organizations. As black officers become more experienced, it is likely that their identity as police officers might outweigh their racial identity. In their interviews with African American officers, Wilkins and Williams (2008) contend that police socialization has diminishing effects on their active representation during vehicle stops. Their finding suggests that when black officers have served long within an organization, their inherent black citizen identity is shifted into "blue cop" identity, which hinders the translation of black officers' passive representation into their active representation in policing.

On the other hand, Hong (2017) demonstrates opposing results. His evidence comes from an empirical test of whether the effects of organizational socialization would counteract the link between passive and active representation. Although Hong (2017) does not deny the mechanisms of the police socialization, his finding provides some implications for reinterpreting minority officers' socialization, namely the possibility that black officers might actively represent black citizens even if the officers have experienced the socialization process in the force. We also acknowledge that socialization itself plays an important role in formulating employees' career identity, as has been suggested in previous literature (Meier and Nigro 1976).

However, marginalized groups' socialization still needs to be carefully reviewed. According to Rosenbloom, and Featherstonhaugh (1977), social characteristics comprise the majority of black federal bureaucrats' role identity. Unlike their white peers, black federal bureaucrats continue to hold their African American identity despite the effects of socialization in the organization. Omi and Winant (1994) distinguish minority bureaucrats' behavior from that of white bureaucrats, demonstrating that racial identity is a salient variable during minority employees' socialization. In her analysis of Texas public school data, Carroll (2017) finds that the presence that both African American and Latino teachers with more years of service is related to enhanced performance of students from the same minority groups. Her findings suggest that minority bureaucrats' exposure to organizational norms and missions increases their socialization, which rather encourages them to learn more about strategies and information that could improve minority students' outcomes.

Since the accumulative evidence is inconclusive, it is difficult to develop a hypothesis that supports only one side. Therefore, we decide to test two hypotheses at the same time. First, we predict that if black officers are more exposed to organizational norms, they will be more

likely to be influenced by the goals and values by the organizations. Such socialization process weakens black officers' racial identity and replaces it with a "blue cop" identity. Therefore, black officers will rely less on their personal identity, but act more in accordance with organizational goals. Although we are not differentiating each policing behavior, respectively, it leads to our first hypothesis that *as a black officer's exposure to organizational norms increases, he or she will be more likely to engage in law enforcement activities involving black citizens.*

However, we also pay attention to the race variable in explaining minority groups' socialization and how their role identity evolves during their service (Carroll, Wright, and Meier 2019). Considering that police officers are unlikely to change their value patterns despite their years of service or varying experience in the field (Bayley and Mendelsohn 1969; Skolnick 1977; Rokeach 1973; Wilson 1978), we can surmise that as black police officers' exposure to organizational norms increases, they will be unlikely to shift their role identity and hold their inherent African American identity. If so, this strengthened racial identity will also influence black officers' law enforcement activities during their encounters with black citizens. This line of logic leads to the second hypothesis that *as a black officer's exposure to organizational norms increases, he or she will be less likely to engage in law enforcement activities involving black citizens.*

Implications of Critical Mass

Given the inconclusive expectation on how the years of service influence minority officers' role identity and their law enforcement activities, we may still need to answer to the question: does more employment of black officers increase racial disparity targeting black citizens? We use a concept of critical mass and its implication on examining black officers' policing behavior

toward black citizens. The concept of critical mass is used in Kanter's (1977) study of women working in a male-dominated corporation. She argues that skewed sex ratio in the organization where the proportion of women is less than 15 percent of the overall group limits women's influence. She also adds that women cannot exert their priorities or influence in their workplace unless they reach a representational threshold of 35 or 40 percent within the firm.

In a similar vein, findings from early representative bureaucracy studies reported some implications for the concept of critical mass as a condition for active representation of race. It has been argued that minority bureaucrats' active representation is more likely to occur when minority bureaucrats work in a close proximity to each other at the street-level (Thompson 1976) and earn political support for an advocacy role in or out of the organizations (Henderson 1979). Based on these arguments, Meier (1993a) finds that Latino teachers are more likely to positively associated with Latino students' performance than are Latino principals and that a critical mass of Latino administrators is required for their active representation. Meier, Wrinkle, and Polinard (1999) find that a school with a minority teacher population of approximately 32.3% or higher promotes the minority teachers' provision of active representation for minority students.

Nicholson-Crotty and his colleagues (2017) also rely on the concept of critical mass for explaining minority officers' active representation. Most interestingly, the authors expand their discussion, arguing that achieving a critical mass of minority representation in the force can relieve pressure on minority officers to take on an advocacy role for their same race citizens. It has been argued that black officers feel "double marginality" between the white-dominant police organizations and their black citizen community (Alex 1969; Carter 1995; Kuykendall and Burns 1980; Sun and Payne 2004). This puts black officers under pressure to treat black citizens as their white peers do. It has been evidenced that racial minority managers behave similarly to their

white counterpart when these two groups hold a similar role identity and have a similar participation in organizational networking (Carroll, Wright, and Meier 2019). Such internal conflict may demotivate black officers less involved in the provision of active representation for black citizens and rather, encourage black officers to engage in harsher treatment of black citizens, as compared to white officers. In their study of officers' race and arrest behavior in Cincinnati, Brown and Frank (2006) show that black suspects were more likely to get arrested when they encountered black officers, compared to white officers. Also, it has been reported that black officers are more likely than white officers to harshly treat black people (Fyfe 1984; Geller and Scott 1992; Leinen 1984).

Based on the arguments so far, it seems likely that black officers' policing behavior on black citizens is largely influenced by the proportion of black officers in the force. As an ethnically marginalized group in the organization, black officers may begin to advocate for black citizens in their law enforcement activities only when there is a sufficiently large percentage of black officers. It is expected that having a great number of black peers in the force makes black officers feel less pressure to act like their white peers and thereby feel more comfortable when they act for the blacks they encounter. It implies that a critical mass of minority officers' presence strengthens the link between their passive representation and active representation in policing. We thus develop our third hypothesis on individual black officers' policing behavior toward black citizens into two statements: *black officers in a force with a greater percentage of white officers will be more likely to engage in law enforcement activities involving black citizens. However, black officers will be less likely to engage black citizens through law enforcement activities when they work on a force with a greater percentage of black officers.*

Data and Methods

Data for this study come from a number of different sources including the part of Stanford Open Policing Project (Pierson, Simoiu, Overgoor, Corbett-Davies, Jenson, Shoemaker, Ramachandran, Barghouty, Phillips, Shroff, and Goel 2019), Florida Department of Law Enforcement, Florida Highway Safety and Motor Vehicles, and the U.S. Census Bureau. This study analyzes 348,820 stops of drivers by state patrol officers in the state of Florida, starting from January 1st to December 31st in 2013. The Florida state patrol is subdivided into twelve troops[8] and primarily enforces traffic laws for motor vehicles and commercial vehicles in the state. This study analyzes the demographic composition of each county's troops and collects the information of 47 out of 67 counties in the region. Our sample contains three race categories—white, black, and Hispanic—for both police officers and citizens, respectively. There are 65,729 African Americans, 71,796 Latinos, and 196,683 white stopped by patrol officers and we focus specifically on black citizens.

Dependent Variable

The dependent variable is Florida state patrol officers' post- stop activities toward black drivers including motorists, truck drivers, and bicycle riders in the state of Florida in 2013. In the real world, vehicle stops naturally involve a variety of police responses. In some cases, an officer stops the vehicle and searches, and then arrests the driver, but other cases show that drivers are

[8] The patrol operations are divided into bureaus of field operations in the North (troops A, B, C, G, and H) and South (troops D, E, F, K, and L), which each troop consisting of two to ten counties. Troops I and J work for the bureau of commercial vehicle enforcement (CVE), which covers the entire state.

arrested immediately after being stopped by an officer and then search is conducted. Also, it is difficult to determine the order of police behaviors in each case. For example, some drivers might be stopped, warned, and searched, but other stopped drivers may experience searches first and receive warnings later. In every police-civilian contact, officers are not limited to only one or two courses of action, and thus fifteen permutations can be derived (see figure 4.1). In order to consider all these possible combinations during traffic stops, we categorize four types of police responses toward stopped drivers—(1) searches, (2) warnings, (3) citations, and (4) arrests. Then, these four items are coded as a dummy variable, respectively. In our sample, 28,497 warnings, 781searches, 51,729 citations, and 3,873 arrests are found between officers and African American citizens during 348,820 traffic stops in Florida in 2013. Although the focus of this study is black citizens, figure 1 describes officers' law enforcement activities affecting white, black, and Hispanic citizens, respectively. Our sample does not contain the order information of each police activity, so figure 4.1 shows the number of police-initiated encounters between cops and black citizens.

Independent Variables

The percentage of black police officers in the force is included as a key independent variable to test the link between passive and active representation. A mean percentage of black officers in our sample is 11.16, with a minimum value of 0 and a maximum of 46.88 (see table 4.1). Concerning the variables of minority bureaucrats' socialization, Selden (1997) suggests several indicators such as amount of training years, length of employment in a current position, and the length of government employment, in her illustration of measures for federal bureaucrats' exposure to organizational norms. Scholars in representative bureaucracy studies argue that if

minority administrators spend the necessary times in the organization, they adopt agency-sanctioned attitudes and thereby employees are socialized (see Meier 1993a; Rehfuss 1986). In the policing context, Wilkins and Williams (2008) also propose that police officers' number of years in service would better reflect how much their identity is affected by organizational norms and settings. Consistent with previous studies, we use officers' years of service as a measure for how long they are exposed to organizational norms and missions and, thus, socialized in their profession.

Control Variables

This study includes several sets of control variables that may influence police behaviors toward citizens—measures of demographic characteristics and community factors. We control for demographic characteristics of officers and citizens, respectively. To this end, officers' race, age, sex, and years of service are included. At the same time, stopped black citizens' age, sex, and the registered state of car plate are also considered. Moreover, four community factors are included to control for the possibility for their influence on police behaviors.

First, overall crime rate per each county is included. Previous literature has demonstrated that racial discrimination in law enforcement gets more intense in the region that had a higher crime rate (Cox, Pease, Miller, and Tyson 2001; Smith and Petrocelli 2001). To this end, violent crime including homicide, rape, robbery, and aggravated assault and property crimes such as burglary, motor vehicle theft, and larceny are used to measure the crime rate.

Second, median house income is included. Previous studies found that higher racial disparity is found in the region with lower median incomes (Cox, Pease, Miller, and Tyson 2001; Smith and Petrocelli 2001). It implies that law enforcement activities focusing on subjects' race

are likely to get intensified in higher poverty areas.

Another variable to control the community variance is the racial composition of the population of each county. Here, white population is included because the region where white populations are dominant is highly correlated to racial disparities against minority citizens. We also control for the unemployment rate, based on the evidence that unemployment rates would decrease vehicle stops of minority drivers (Wilkins and Williams 2009). Table 4.2 displays correlations among each variable of the analysis.

Methods

To test our hypotheses, multivariate probit analysis is used. Each police behavior is discrete and independent but correlates each other. By simultaneously modeling the set of explanatory variables on each different response variable, the multivariate probit analysis enables to estimate jointly correlated binary outcomes. Note that the order of police behavior is not considered since we cannot simply assume that police searches always come ahead of other law enforcement activities such as giving warnings, issuing tickets, or making arrests. For example, patrol officers do not always have a reason to search either a car or a person they have stopped to issue a tick for speeding. Another case is when officers stop a vehicle to give a verbal warning for reckless driving, such as improper lane changes or turns. If officers decide not to let the driver go but to further search the stopped vehicle, other violations such as contraband offense, child restraints, expired/invoked driver's license, or evidence of involvement in other crimes can be found. Officers in these cases subsequently issue a ticket or even arrest drivers who have already been warned. In this regard, this study considers all post-stop behavioral items simultaneously through multivariate probit analysis.

Results

There are three different models in table 4.3. Column (1) presents a standard model that shows the direct effects of each variable, while the rest of two columns present the results that include interaction terms. An interaction term *black officer* × *years of service* is included in both columns (2) and (3) in order to test the first two hypotheses on black cops' role identity. To examine whether individual black officers exhibit different law enforcement activities involving black citizens depending on their demographic disposition of the force, we also include another interaction terms *black officer* × *percent of black officers* and *black officer* × *percent of white officers* in each column (2) and (3), respectively. We test our final hypothesis by comparing black officers' behavior working with a greater percentage of black peers with that of black cops working with a greater percentage of white peers. The Wald chi-square statistics of each model show that a set of parameters fit well in our multivariate probit analysis.

In column (1) of table 4.3, findings show that hiring more black officers rather increases warnings, citations and arrests of black citizens: the coefficient of *percent of black officers* is significantly positive in these three policing outcomes. We also find that there is no significant relationship between black officers' employment and searches of black citizens. As stated, we include the interaction terms both in columns (2) and (3). Results appear to be consistent, showing that hiring more black cops in the force rather increases warnings, citations, and arrests of black citizens in the region, respectively: the coefficients of *percent of black officers* stay positive and there is no significance difference across these three policing outcomes, as same as the baseline model in column (1). Columns (2) and (3) also show that searches of black citizens in the region are not influenced by the employment of more black cops in the force, consistent with the column (1), the baseline model.

Our results imply that black representation in the force does not seem to be helpful to decrease law enforcement activities involving black citizens in the region. However, individual-level variable reveals that, in most cases, a black officer turns out to be less likely to engage in law enforcement activities toward a black citizen. Our baseline model suggests that individual black cops consistently less warn, search, cite, and arrest stopped black drivers on the street: the coefficient of *black officer* stays negative in all four policing outcomes in column (1). However, its significance level varies depending on policing tactics once we include some different interaction terms. For example, column (2) suggests that there is no significant relationship between an officers' race (being black) and searches and arrests of black citizens. However, column (3) still holds the result of the baseline model, showing that individual black cops are less likely to warn, search, cite, and arrest black drivers in the region.

Despite some variance depending on policing tactics, the main result holds even after we include the interaction terms, implying that black cops' passive representation does not lead to their active provision of policing although an individual black officer are less likely to warn, search, cite, and arrest black citizens in the region. We believe that some institutional context in the organization or in the police groups might hinder the translation of individual black cops' passive representation into their active representation in policing. This study thus examines two institutional contexts—police identity influenced by socialization and the critical mass condition in the force.

Concerning our first two hypotheses regarding black police officers' identity, we find mixed evidence linking black officers' years of service and their law enforcement activities involving black citizens. Both columns (2) and (3) present the estimates of *black officer* × *years of service* on black cops' policing behavior. First, no statistically significant relationship is found

between black officers with greater exposure to organizational norms and the number of searches and arrests of black citizens. Second, results imply that black officers with more exposure to organizational norms are less likely to write a ticket to African American citizens. It shows a possibility that black officers hold their racial identity when they issue citations and thereby actively engage in law enforcement practice that influences those they represent. However, black cops with longer exposure to organizational norms are more likely to warn black citizens, but findings are not robustly significant depending on the variables we include.

Taken together, more exposure to organizational norms does not consistently affect black officers' policing behavior that involves black citizens. This runs counter to some findings in the previous literature that experienced black officers tend to hold a strong cop identity, which makes them less engaged in active representation in policing. Further, we can surmise that minority officers' years of service influencing role identity does not fully explain why employing more black officers in a force increases warnings, citations, and arrests of black citizens in the region.

On the other hand, a hypothesis concerning the implication of critical mass is consistently supported by warnings, citations, and arrests. Column (2) illustrates that black officers working in a force with a greater percentage of officers of the same race are less likely to warn, cite, and arrest black citizens. Column (3) describes the opposite case by reporting a different result: that is, if a black officer is in a force that comprises a higher proportion of white peers, he or she tends to engage more in law enforcement activities such as warnings, citations, or arrests of African Americans. By comparing the column (2) and (3), we can understand how different workplace conditions influence black officers' policing behavior when they encounter citizens with the same race. This implies that black officers feel pressure to act like their white counterpart in the white dominant organizations (column 3), but if they work in the group with a

greater percentage of black officers, they will have less feelings of deviance on holding their racial identity and feel less pressure to conform white-dominant police culture (column 2). However, black officers' searches of black citizens are not influenced by this critical mass condition.

Another notable finding is officers' characteristics. We find that older police officers are less likely to search, warn, cite, and arrest black citizens: the coefficient of *officer age* remains significantly negative to all policing behaviors in all three columns. Previous literature explains that as officers get older, they are less likely to engage in law enforcement activities and become less aggressive, compared to younger officers (Sherman 1980). It also turns out that black male officers are more likely to warn and search black citizens than female black cops are. Moreover, regardless of officers' race and gender, experienced cops appear less likely to cite black citizens, but more likely to search and arrest black citizens that might involves physical contacts between officers and drivers. These results stay the same in terms of direction or significance level even after we include the interaction terms. Although numeric data cannot inform the full backstory, it can be reasoned that black citizens may experience discrimination, including racial profiling, in law enforcement practice that involves physical contacts. Perhaps, stopped black citizens might feel that police activities that highly involve physical contacts are more harsh or discriminatory than those without contacts.

When we see the characteristics of subjects, younger black citizens are more likely to be targeted in all vehicle stops when compared to the older black citizens: the coefficient of *subject age* is significantly negative in all policing outcomes. These results robustly significant and the magnitude of the coefficients stay same in all three columns even we add some interaction terms. Moreover, black male citizens are more likely to get arrested and searched, but less received

warnings and tickets, compared to female black citizens. Such outcomes are also robustly consistent in all policing outcomes both in the presence and absence of the interaction terms. This study also considers drivers' car plate as one characteristic of subjects that influence officers' law enforcement activities. In column (1), estimates of *FL plate* suggest that police officers tend to warn more of those black drivers with vehicle plates from the officers' state, but cite, search, and arrest less of those under the same condition. Although the significance of searches appears to decrease across columns (2) and (3), that of other three policing outcomes do not change even when we include the interaction terms

A set of community variables appear to be statistically significant in law enforcement practice involving black citizens. If the crime rate is higher, outcomes of police investigation—warnings, citations, and arrests—toward black citizens increase, as expected. However, searches show an opposite effect. Moreover, black citizens are warned and arrested more in regions where there is a greater proportion of white population, but they receive less citation under the same condition. In case of searches of black citizens, findings are mixed depending on whether to include an interaction term. In neighborhoods with higher median household incomes report higher numbers of searches and warning of black citizens compared to region with lower household incomes. When there are high unemployment rates in a region, findings are mixed depending on policing tactics; black citizens are less likely to be warned, cited, or arrested, but more likely to be searched at the same time. When we include interaction terms, however, it appears that the unemployment rate does not statistically influence the arrests of black citizens in the region.

Discussion and Conclusion

Equal employment opportunity and affirmative action have long served as principles for encouraging workforce diversity throughout U.S. history. In 2015, U.S. Department of Justice and the Equal Employment Opportunity Commission launched a new research initiative, named *Advancing Diversity in Law Enforcement*. The initiative was meant to increase workforce diversity in law enforcement including recruitment, hiring, and retention. Their report released in October 2016 emphasized that diversifying police forces alone is not enough to reduce racial disparity. It recommends that each police agency should recognize some structural and cultural barriers within each organization, as a prerequisite for enhancing the workforce diversity in criminal system. Consistent with this perspective, our results suggest that hiring more black police officers is not a panacea for reducing law enforcement activities that involve African American citizens. It turns out that black officers' passive representation rather increases black citizens who were warned, cited, and arrested, respectively. However, this result does not negate the importance of the representative bureaucracy theory. Rather, we can gain a deeper insight into the transition of minority officers' passive representation into their active modes of representation in policing.

To this end, this study sheds light on how black cops' identities are influenced by the extent of their exposure to organizational norms and how this influence is embodied through their actual policing behavior on black citizens. Some scholars have suggested that more exposure to organizational settings debilitates minority officers' racial identity but strengthen their cop identity, while other scholars have predicted the opposite effect. Results in this study suggest that black officers with greater exposure to organizational norms are more likely to warn African American citizens, but less likely to issue a ticket to them. Also, more exposures to

organizational norms do not affect black officers' searches and arrests of black citizens.

Numerous implications can be gleaned from these mixed findings on police socialization. First, it should be noted that not all socialization processes are assumed to be the same for all minority officers. Given the assumption that the socialization process entails absorbing norms and embracing new perspectives, there must be certain values or cultural norms that would persist at an individual level. A study of police personality has suggested that if recruits bring their established values into their careers, organizational socialization is not influential for them to develop cop identities (Twersky-Glasner 2005). Furthermore, what can be adaptable for a group may not always be acceptable for each individual member (Van Maanen and Schein 1977). It has also been reported that characteristics of people they meet can outweigh the officers' socialization in the force. Oberfield (2010) shows that police officers might depart from organizational norms in their encounters with ethnic minorities.

Another possible explanation is the police cynicism that hinders the linkage between minority officers' identity and their policing behavior. That is, experienced officers are likely to have higher levels of cynicism and such a hard-nosed attitude even results in a punitive disposition in their encounters with citizens (Hickman 2008; Smith and Petrocelli 2001). According to Niederhoffer (1967), police cynicism is resulted from the police socialization, rather than from each officer's personal experience. Although some scholars have reported that the cynicism possibly decreases at the later stages of police career (Lotz and Regoli 1977), it has been argued that the longer the officers serve on a force, the more their police cynicism might increase (Burke and Mikkelsen 2005). Considering that job environment may differently influence, more years of service makes officers less likely to engage in policing practice, but increases their problematic behaviors (Hickman 2008). Therefore, we believe that police

cynicism thwarts the linkage between minority officers' identity and its influence on their policing behavior when are greatly exposed to organizational norms.

In addition to cynicism, police socialization may bring newcomer officers to the dark side of police culture. Ellwanger (2012) contends that police socialization would inadvertently undermine officers' professional values. Chappell and Lanza-Kaduce (2010) point out that socialization processes in police academies tend to highlight an "us versus them" mindset. This misguided mentality is opposite to what is generally expected for socialized police officers and hinders minority officers to develop their role identities. These reasons may explain our inconsistent evidence regarding the effect of minority officers' exposure to organizational norms on their identities and also on their law enforcement activities.

Another institutional factor that we focus on is the concept of critical mass. Drawn from the theoretical discussion of the critical mass, our findings suggest that achieving a sufficiently large proportion of black officers in the force contributes to reduce warnings citations, and arrests of black citizens made by black cops. In a white-dominant organization, individual black officers have pressure to act like their white counterpart (Carroll, Wright, and Meier 2019). Indeed, the demographic disposition of many police forces is white-dominant, which pushes black officers, a marginalized group in the force, to engage more in law enforcement practice on black citizens. As early representative bureaucracy scholars suggested, achieving a critical mass of black representation turns out to be a necessary condition for their active representation in a policing context. In this regard, increasing the recruitment of black cops may become an effective solution for decreasing warnings, citations and arrests of black citizens only if the proportion of black officers is sufficiently large. Our findings are consistent with the result of Nicholson-Crotty and his colleagues (2017) that hiring more black cops becomes effective for

reducing shootings of black people only when the proportion of black officers in the force is sufficiently large.

More specifically, we also attempt to find an inflection point at which black officers might become less likely to discriminate against African American citizens in traffic enforcement. Our multivariate probit analysis does not provide results on this estimation. The mean proportion of black officers in our sample is approximately eleven percent, which is quite a low share of the total police force[9]. Concerning this challenge of specifying the critical mass condition in policing, additional studies need to be conducted by including a sample which includes a large portion of black officers in the organization. Such further efforts would provide police organizations with a more constructive way for understanding the link between passive representation and active representation in policing.

This study contributes to our understanding of representative bureaucracy in policing in several ways. First, we examine bureaucrats' active representation by analyzing an individual bureaucrats' behavior, which is as close to what Mosher (1982) suggests. Much representative bureaucracy literature has used aggregated organizational-level behavior, which makes it difficult to distinguish whether the policy outputs come from bureaucrats' active representation or from other mechanisms (Bradbury and Kellough 2011). By analyzing individual black cops' policing behavior on black citizens, we not only prevent potential ecological fallacy, but also advance the understanding of minority employees' representative role in policing. Another contribution is that this study pays attention to police officers' post-stop activities, which has been analyzed less often in previous literature, compared to traffic stops. Considering all possible situations, four

[9] In the sample, the maximum figure of proportion of black officers is 46.88, but it is an exceptional figure, compared to the rest.

policing behaviors such as searches, warnings, citations, and arrests are simultaneously analyzed. Focusing on post-stop activities enables us to have a broader understanding of the racial disparity in policing that targets African American citizens.

Drawing on representative bureaucracy theory, we also show how institutional factors affect the link between passive representation and active representation in the context of black cops' law enforcement practice. We provide empirical evidence on black officers' identity and how it is influenced by their periods of exposure to organizational rules. Although our result varies depending on policing tactics, we find a possibility that professional trainings in the force or interactions with peers in the field may promote minority officers' active representation, particularly in issuing tickets. Another institutional factor is the critical mass of minority bureaucrats in the organization. Based on the implication of the critical mass condition, we focus on minority employees' pressure within a white-dominant organization and how their policing behavior is affected by the demographic disposition of a force. Although we are not offering a specific percentage of ethnic representation, our findings will provide insight into promoting minority bureaucrats' active representation in an organization.

Despite the potential contribution, some limitations can be addressed. Since our sample covers only the state of Florida in 2013, it is difficult to generalize the findings here as law enforcement practice across the states. If we can extend the regions or timelines, it will become a better test to overview the racial disparity in policing, particularly in regard to black citizens. Another limitation of this study is that the cost of officers' law enforcement activities is not considered in explaining their stopping behavior of drivers on the street. In most cases, police officers are under occupation-related stress with chronic resource shortfalls. It is highly likely that these hidden costs might influence officers' discretionary decisions on whether to initiate

traffic law enforcement actions toward drivers and how to deal with these stopped citizens. If we could have variables that explain these cost aspect of cops, our findings will better explain public encounters between officers and drivers.

Moreover, scholars need to make some efforts to develop a measure of police officers' socialization in the organization. Perhaps, minority police officers adjust themselves to the novel circumstances in a similar way by learning from their senior officers or embodying organizational norms into their field practice. Nevertheless, we need to acknowledge that each officer carries out various socialization processes in a different way. As street-level bureaucrats, many police officers leave their organizations and work on the street for the performance of their shift duty. For police recruits, such isolation reinforces the role of a senior officer who partners their field operations. For example, newly hired black officers' relationship with other black officers is remarkably important since these newcomers could acquire effective information and knowledge on their job from their senior officers (Bolton and Feagin 2014). Therefore, in explaining a black officer's role identity evolved during their service, it is important to consider how many African American peers are working in the same force. Moreover, if it is possible to separate the effect of police socialization in police academies and field trainings, we would better understand the institutional contexts that might condition the link between black officers' employment and their active representation.

Findings of this study suggest some directions for future research. We have to bear in mind that identities of African American cops should not be monolithically understood. Given the assumption that black officers' policing behavior is largely governed by their role identities, this study uses an intersectional lens by focusing on black cops' inherited black citizen commonality and acquired "blue cop" identity at the same time. Nevertheless, there are still other

characteristics such as social class, inequality, or other lived experiences that might shape ingroup heterogeneity (see Breslin, Pandey, and Riccucci 2017; Watkins-Hayes 2009). One avenue would involve unpacking those intersected identities that are underneath black officers' law enforcement activities involving black citizens. This suggestion will help us to gain a more nuanced understanding on active representation of people of color. It would also bridge the extant competing results on police socialization and actual policing outcomes.

Furthermore, scholars need to look further into other structural issues in officers' job environment that might desensitize minority officers' active representation. Our findings suggest that having a critical mass of black cops in the force seems to be one effective way to encourage an individual black officer's provision of active representation in policing. However, as Watkins-Hayes (2011) points out, bureaucratic structure sometimes constraints street-level bureaucrats' racial affinity and their engagement in active representation. In this vein, much more research is needed to understand the dynamics of law enforcement delivery not only in the eyes of citizens but also from the perspectives of police officers. Researchers should continue this line of research before it is too late.

Table 4.1 Descriptive Statistics

Variables	Obs	Mean	SD	Min	Max
Outcome Variable					
Black citizens searched	348,820	.00	.05	0	1
Black citizens warned	348,820	.08	.27	0	1
Black citizens cited	348,820	.15	.36	0	1
Black citizens arrested	348,820	.01	.10	0	1
Officer Characteristics					
Proportion of black officers	319,708	11.16	6.01	0	46.88
Officer race Black	348,420	.16	.36	0	1
Hispanic	348,820	.15	.35	0	1
White	348,820	.70	.46	0	1
Officer age	341,841	38.89	9.85	21	65
Officer sex	348,820	.92	.27	0	1
Service years	348,017	9.16	7.04	1	30
Black officer × Years of service	348,017	1.78	5.17	0	27
Black officer × Percent of black officers	319,708	2.26	5.54	0	46.88
Black officer × Percent of white officers	319,708	11.50	26.56	0	94.53
Subject Characteristics					
Subject age	348,303	37.86	14.61	10	97
Subject sex	348,820	.66	.47	0	1
FL car plate	348,820	.90	.31	0	1
Community Factors					
Crime rate	348,560	3.67	1.07	.77	6.88
Median house income	234,070	471.58	67.93	.77	683.65
Percent of white population	348,820	65.20	13.42	33.2	89.00
Unemployment rate	348,820	7.40	1.24	4.80	14.70

Table 4.2 Correlation of Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Searched black	1													
2	Warned black	.05	1												
3	Cited black	.09	.33	1											
4	Arrested black	.26	.05	.24	1										
5	Black officer	-.01	-.01	.01	-.01	1									
6	White officer	.01	.01	-.01	-.00	-.72	1								
7	Hispanic officer	-.00	.00	-.00	-.00	-.13	-.59	1							
8	Officer age	-.02	-.05	-.03	-.03	.14	-.13	.03	1						
9	Officer sex	.01	-.00	-.01	-.00	.05	-.07	.04	-.01	1					
10	Service years	-.00	-.03	-.03	-.02	.10	-.09	.01	.57	-.03	1				
11	Black officer × Service years	-.01	-.01	-.01	-.02	.80	-.58	-.10	.20	.06	.32	1			
12	Black officer × Percent of black officers	-.01	.00	.03	-.01	.99	-.63	-.11	.13	.05	.07	.68	1		
13	Black officer × Percent of white officers	-.01	-.01	.01	-.01	.11	-.72	-.13	.13	.05	.09	.79	.82	1	
14	Crime rate	.01	.05	.05	.04	.02	-.16	.11	-.09	-.07	-.07	.06	.11	.09	1
15	Median house income	.03	.02	.01	.02	.02	-.05	.05	-.08	.01	.00	.03	-.05	.03	-.00
16	White population	-.00	-.04	-.06	-.01	-.11	.26	-.25	-.05	-.01	-.11	-.10	-.18	-.08	-.43
17	Unemployment rate	-.01	-.01	.01	-.02	-.04	.07	-.05	.06	-.02	-.01	-.05	-.02	-.04	-.02

Table 4.2 continued

		15	16	17
15	Median house income	1		
16	White population	.03	1	
17	Unemployment rate	-.41	.00	1

Table 4.3 Multivariate Probit Estimates of Police Behaviors on Black Citizens

	(1)	(2)	(3)
Black Warned			
Percent of black officers	.023*** (.001)	.024*** (.001)	.024*** (.001)
Black officer	-.113*** (.018)	-.064^{T} (.036)	-.582*** (.111)
White officer	-.000 (.015)	-.001 (.015)	.004 (.015)
Officer age	-.008*** (.001)	-.007*** (.001)	-.007***(.001)
Officer sex	.036* (.016)	.034* (.016)	.034* (.001)
Years of service	.000 (.001)	-.000 (.001)	-.000 (.001)
Black officer × Years of service		.002 (.002)	.003^{T} (.002)
Black officer × Percent of black officers		-.005** (.002)	
Black officer × Percent of white officers			.006*** (.001)
Subject age	-.003*** (.000)	-.003*** (.000)	-.003*** (.000)
Subject sex	-.069*** (.009)	-.069*** (.009)	-.069*** (.009)
FL plate	.076*** (.014)	.076*** (.014)	.075*** (.014)
Crime rate	.051*** (.013)	.049*** (.013)	.049*** (.013)
Median house income	.001*** (.000)	.001*** (.000)	.001*** (.000)
White population	.006*** (.001)	.006*** (.001)	.006*** (.001)
Unemployment rate	-.032** (.011)	-.032** (.011)	-.032** (.011)
Con	-4.011***(.370)	-1.771***(.093)	-1.750***(.093)

$^{T}\rho<.1$; *$\rho<.05$; ** $\rho<.01$; ***$\rho<.001$

Table 4.3 continued

	(1)	(2)	(3)
Black Searched			
Percent of black officers	.007 (.005)	.008 (.005)	.007 (.005)
Black officer	-.419*** (.097)	-.120 (.235)	-1.654^{T} (.873)
White officer	.027 (.067)	.022 (.067)	.030 (.067)
Officer age	-.026*** (.003)	-.026*** (.003)	-.026*** (.003)
Officer sex	.447*** (.108)	.446*** (.108)	.446*** (.108)
Years of service	.022*** (.004)	.021*** (.004)	.021*** (.004)
Black officer × Years of service		.002 (.010)	.016 (.010)
Black officer × Percent of black officers		-.025 (.015)	
Black officer × Percent of white officers			.016 (.011)
Subject age	-.018*** (.002)	-.018*** (.002)	-.018*** (.002)
Subject sex	.328*** (.042)	.328*** (.042)	.328***(.042)
FL plate	-.087^{T} (.053)	-.087 (.053)	-.087 (.053)
Crime rate	-.197* (.080)	-.198* (.080)	-.199* (.080)
Median house income	.004*** (.001)	.004*** (.001)	.004***(.001)
White population	-.005 (.006)	-.005*** (.006)	-.005 (.006)
Unemployment rate	.124* (.057)	.125* (.057)	.124* (.057)
Con	-4.012*** (.370)	-.311*** (.081)	-3.977***(.371)

$^{T}\rho<.1$; *$\rho<.05$; ** $\rho<.01$; ***$\rho<.001$

Table 4.3 continued

	(1)	(2)	(3)
Black Cited			
Percent of black officers	.015*** (.001)	.017*** (.001)	.017*** (.001)
Black officer	-.033* (.016)	.125*** (.031)	-.695*** (.097)
White officer	.004 (.013)	.003 (.013)	.012 (.013)
Officer age	-.001** (.000)	-.001** (.000)	-.002** (.000)
Officer sex	-.000 (.014)	.003 (.014)	.003 (.014)
Years of service	-.005*** (.001)	-.004*** (.001)	-.004*** (.001)
Black officer × Years of service		-.006*** (.002)	-.005** (.002)
Black officer × Percent of black officers		-.007*** (.002)	
Black officer × Percent of white officers			.010*** (.001)
Subject age	-.009 ***(.000)	-.009*** (.000)	-.009*** (.000)
Subject sex	-.066 ***(.007)	-.066*** (.007)	-.066*** (.017)
FL plate	-.097 ***(.012)	-.098*** (.012)	-.099*** (.112)
Crime rate	.036** (.012)	.037** (.012)	.037** (.012)
Median house income	.000 (.000)	.000 (.000)	.000 (.000)
White population	-.004** (.001)	-.003** (.001)	-.004*** (.001)
Unemployment rate	-.043*** (.010)	-.043*** (.010)	-.044*** (.010)
Con	-.310*** (.081)	-.311*** (.081)	-.273** (.081)

$^{T}\rho<.1$; *$\rho<.05$; ** $\rho<.01$; ***$\rho<.001$

Table 4.3continued

	(1)	(2)	(3)
Black Arrested			
Percent of black officers	.023*** (.002)	.025***(.002)	.025***(.002)
Black officer	-.304*** (.043)	-.079 (.088)	-1.535*** (.288)
White officer	-.029 (.034)	-.031 (.033)	-.019 (.034)
Officer age	-.012*** (.001)	-.013*** (.001)	-.013*** (.001)
Officer sex	-.000 (.032)	.002 (.032)	.003 (.032)
Years of service	.005** (.002)	.006** (.002)	.006** (.002)
Black officer × Years of service		-.007 (.005)	-.007 (.005)
Black officer × Percent of black officers		-.011** (.004)	
Black officer × Percent of white officers			.017*** (.004)
Subject age	-.014*** (.001)	-.014*** (.001)	-.014*** (.001)
Subject sex	.222*** (.020)	.222***(.020)	.222*** (.020)
FL plate	-.106*** (.028)	-.108*** (.028)	-.109*** (.028)
Crime rate	.060* (.024)	.060* (.024)	.060* (.024)
Median house income	.000 (.000)	.000 (.000)	.000 (.000)
White population	.013*** (.003)	.013***(.003)	.013*** (.003)
Unemployment rate	-.011* (.023)	-.010 (.023)	-.011 (.023)
Con	-2.567*** (.223)	-2.566***(.223)	-2.521***(.223)
County Dummies		Included	
N		202,373	
Wald chi2	9,692.85***	9,743.76***	9,771.30***
(N)	(176)	(184)	(184)
Log likelihood	-131,922.1	-131,895.88	-131,873.48

Tρ<.1; *ρ<.05; ** ρ<.01; ***ρ<.001; Standard errors are reported in the parentheses.

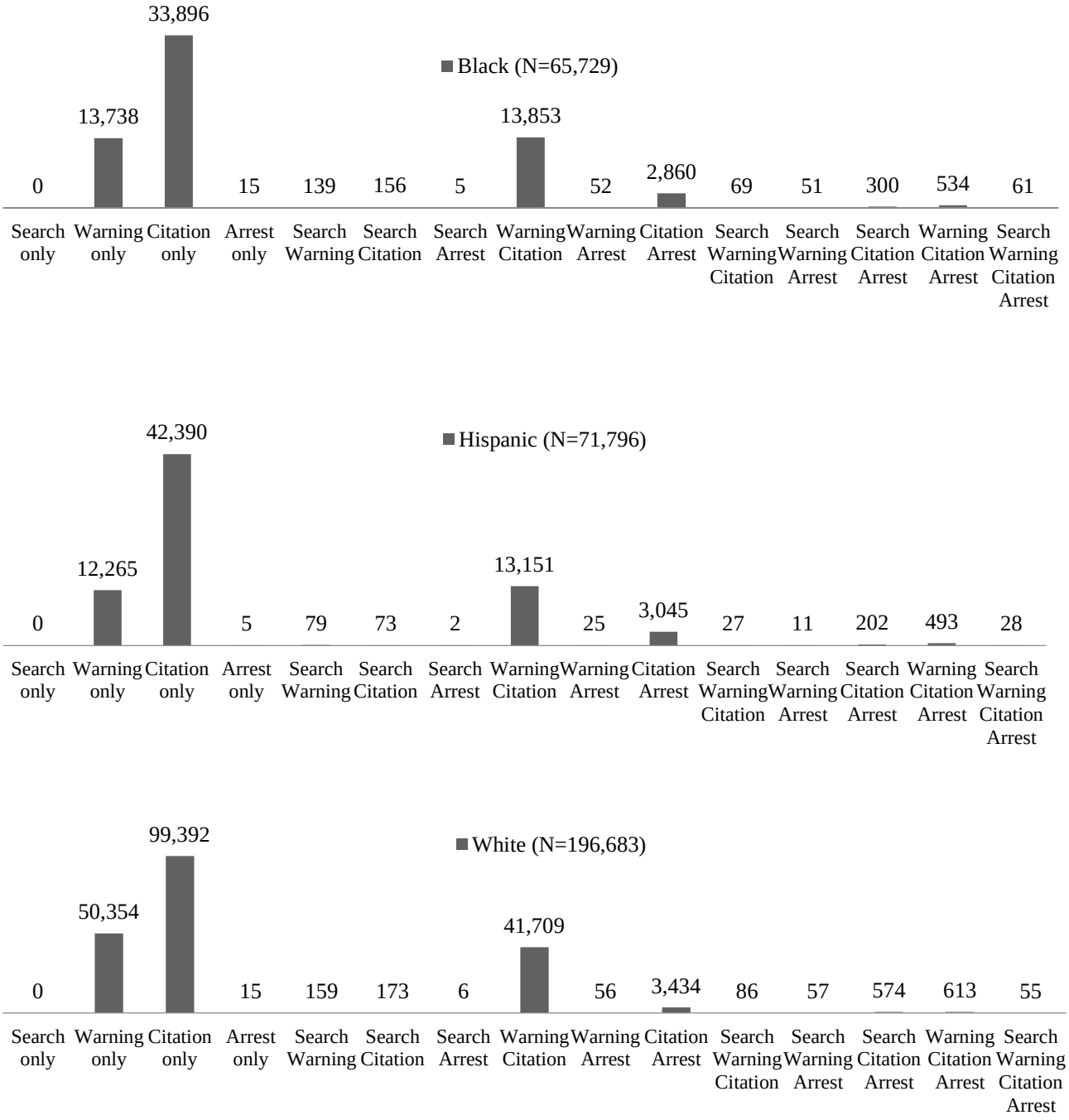

Figure 4.1 Police Behaviors toward Citizens per Race

CHAPTER 5

CONCLUSION

Findings and Contributions

This dissertation makes several contributions both theoretically and practically. Above all, the topic of public service bureaucracy is more important now than it has ever been. Amid an ongoing global pandemic in 2020, many countries around the world experienced nationwide lockdowns or unexpected challenges in providing public service assistance. Notwithstanding such obstacles, frontline bureaucrats including healthcare workers, emergency medical responders, firefigthers, and law enforcement officers have made enormous efforts to readjust the way in which public services are delivered to the general public. Their role at the boundaries of the public sector has contributed to minimizing the disruption of public service delivery and further, provided support to their communities.

Though the data discussed in this dissertation comes from pre-2020 studies, the topics covered remain imperative for better understanding publci service bureaucrats' work both during and after our current global healthcare crisis. In this disseration, I examine public service bureaucrats at the frontlines of the government and how they interact with citizens. I believe that each of the three essays included here provides useful information and knowledge of street-level bureaucrats' behaviors and citizens' evaluations of their encounters with those bureaucrats.

Chapter two, the first essay of the dissertation presents the first formal model of public service bureaucracy in the field of public administration. A major contribution of this chapter is

its extension of the existing theory of street-level bureaucracy. As Knott and Hammond (2003) explain, formal theory is a process of developing new theories about insitutions, organizations, or individual actors by using mathematical logic. Although not all formalization leads to a good theory, the model could contribute to expanding the exisitng theories when it is empirically testsed and proved by scholars. Another merit of formal theory is that it enables scholars to develop and explore theories and improve the quality of empirical tests (Hammond 1996). Also, the formalization approach also encourages scholars to precisly review the assumptions made by extant theories. As such, formal theorizing could supplement both informal theorizing and empricial testing. Despite these strengths, relatively little effort has been made to adopt a formalization approach in public administration. In this regard, I attempt to apply the formal logic to one of the core topics in the field of public administration in chapter two.

Chapter three, the second essay of the dissertation, offers implications for understanding performance information that is reported from citizen surveys and for developing strategies to enhance government service performance in the eyes of citizens. Across the globe, public surveys or public opinion polls are widely used to obtain citizens' feedback on public service performance. The results of the citizen surveys become popular tools for public managers and policy practitioners to evaluate their public service delivery. Given the subject nature of human being's judgmental heuristics, this essay starts from the assumption that citizens' cognitive biases need to be considered in understanding performance information drawn from a citizen survey. In this chapter, I focus on three cognitive biases including anchoring, reference points, and halo effects. Findings of this chapter have several practical implications.

When practitioners design citizen surveys evaluating government service performance, including some questions about respondents' expectations and former experience regarding the

service allows for more nuanced analysis of survey results. If possible, government officials who design a citizen survey need to consider putting some questions that ask public expectation or experience ahead of questions on citizens' performance rating. This will allow practitioners to interpret performance information more precisely than before.

Moreover, findings of the second essay also confirm that there is a halo error that may bias citizens' performance appraisals. Therefore, including more citizens who already possess some positive perceptions of overall public service in surveys can be an effective strategy for practitioners hoping for favorable performance evaluations. Of course, this tactic does not seem to be always desirable in some extent. Again, I want to emphasize that this essay ultimately aims to find a way to interpret performance information reported from a citizen survey more precisely. If we more understand the underlying mechanism of cognitive biases that citizen might have in their answering surveys, this will make public service agencies more accountable to the general public. Also, public managers could have more accurate information from citizens' feedback.

The final essay of this dissertation offers practical guidance for law enforcement organizations and politicians who try to eliminate racial disparities particulary in regard to black citizens. Particularly in the U.S., white police officers' deadly use of force against unarmed black citizens in recent months has reinvigorated a public debate about racism in law enforcmenet. Some government officials and media outlets contend to reform the law enforcement system in the states by defuding or even abolishing police organizations. People may think that more employment of minority bureaucrats is helpful in improving the interests of those minority citizens. In reality, however, hiring more black cops itself may not become a perfect solution to reduce racial disparities against African American citizens. In this regard, this chapter first begins with investigating the relationship between ethnic representation in a police force and the force's

engagement in racial discrepancies against African Americans in the state of Florida. It finds that hiring more black cops rather increases warnings, citations, and arrests of black citizens.

To explain this counterintuitive finding, this chapter first tests whether more exposure to organizational norms strengthens black officers' cop identity, which obstructs the link between passive and active representation. However, the results do not provide strong evidence on this hypothesis. Then, this chapter uses the implication of critical mass condition to examine individual black officers' law enforcement activities involving black citizens. Results suggest that when white officers comprise a greater percentage of a force, African American cops on that force are more likely to warn, cite, and arrest black citizens; however, when black officers form a high enough percentage of a force, warnings citations, and arrests of black citizens made by black cops decrease. Since most police departments and state patrols are white-dominant organizations, individual black cops are likely to have difficulties representing black citizens in their law enforcement activities. Sometimes they even treat black people more harshly, compared to their white peers.

This essay implies that it is important to focus on eliminating internal barriers in the police organization that might hinder black cops' passive representation into their active representation in policing. Furthermore, this last chapter contributes to our understanding of the theory of representative bureaucracy in a law enforcement context. By highlighting the institutional contexts, this chapter contributes to identifying conditions that might influence the link between minority bureaucrats' passive representation and their active modes of representation. Another contribution is that this study uses an individual-level data, which clearly examines an individual black cop's policing behavior in his/her encounters with black citizens. A micro-level analysis enables to precisely examine how and when minority frontline workers

substantially engage in active representation on the street.

Another contribution of this chapter is that it provides some insightful findings that explain black cop's law enforcement activities that involve black citizens. When we focus on other explanatory variables, we could find that drivers' plate information also significantly influences minority' officers' provision of active representation in policing. For example, it turns out that a black cop is less likely to arrest and cite black drivers when they have vehicles with the same state of the officer. Moreover, if the crime rate becomes higher, black police officers in those regions are more likely to involve law enforcement activities such as warnings, citations, and arrests of black citizens. This may imply that community environment is also important for understanding conditions that might influence minority cop's translation of passive representation into active representation.

Limitations and Implications for Future Study

Despite the contributions of this dissertation, there are several limitations. However, these limitations also suggest possible future research agendas. One major drawback of this dissertation, particularly for the two empirical chapters, is that the public service area is limited to law enforcement. In the real world, a variety of public service is delivered to citizens. For enhancing the general applicability to other policy contexts, future studies need to be conducted in many other frontlines of the government. In addition to street-level bureaucrats that have traditionally been examined such as police officers, teachers, or social welfare workers, other types of frontline practitioners including postal service workers, coast guards, or emergency medical technicians are worth examining. Future research could build upon this point by shedding light on many different types of pubic service bureaucrats whom we interact with in our

every day lives.

Chapter two, the first essay of the dissertation, needs more elaboration on some subtopics. Even though the purpose of this chapter was originally applying a formal theory to one of the core topics in public administration, suggested subtopics such as bounded rationality or social optimality need to be thoroughly examined. To improve the quality of the formal approach, more rigorous literature reviews need to be included in the future research. Another limitation is that the second essay dervies its sample from secondary survey data which was collected in 1977. Using old data sometimes makes providing practical implications of the findings difficult. In this regard, researchers need to continue to

Also, other types of cognitive biases should be considered as part of understanding the results of performance information reported from a citizen survey. Since the nature of people's heuristics of decision making is complex and uncertain, future research needs to look further into other cognitive biases. As discussed previously, the three essays examine only the sample state of Florida in the year of 2013. Therefore, findings of this chapter may not be applicable to other areas or contexts. Due to data availability, this study only investigates a limited sample. Future research needs to consider more regions and expand the years of the sample, which would improve the external validity of the findings.

Although the specific research questions of the three essays in this dissertation are distinct, all essays ultimately aim to examine how frontline bureaucrats interact with citizens in the daily course of their job and how we, as citizens, evaluate their public service performance. As people are growingly interested in the importance of public service delivery and the role of frontline workers, both scholars and practitioners should continue to pay attention to the intersection between citizens and the government.

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