State, Street, and Public Goods: A Theory of Misgovernance

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Submitted to the Department of Urban Studies and Planning
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Public Policy and Environmental Philosophy
at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
September 2022

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Abstract
Using extensive fieldwork in three of India's major state bureaucracies and building on innovative strategies to measure corruption, this dissertation answers the questions of why corruption exists and persists in government bureaucracies. I argue that corruption in government bureaucracies could be better conceptualized in the form of grand and petty corruption and that grand corruption causes petty corruption. I show that these two kinds of corruption are organized around bureaucratic transfers. The existence and stability of the linkages between grand and petty corruption explain why corruption exists and persists and why anti-corruption reforms meet with limited success in the developing world. I provide a critique of the agency theory and discuss why the theory is not suitable to capture the dynamics of corruption in large government bureaucracies. Alternatively, I suggest that the dynamics of corruption in government bureaucracies could be better understood as occurring through social networks of rational actors who work to maximize their preferences under structural incentives and organizational constraints. These arguments together help us understand why top-down approaches to addressing corruption are unsuccessful. Finally, I provide a set of recommendations to address corruption based on the findings of my work.

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Acknowledgments

I express my sincerest gratitude to my dissertation advisors, Janelle Knox-Hayes, Larry Susskind, Sally Haslanger, Chap Lawson, Bish Sanyal, and Asya Magazinnik. They constantly encouraged me to pursue my research inquiry with utmost rigor and originality, and made this six-year journey a memorable pursuit of knowledge. I am so grateful for everything and feel truly blessed. I am grateful to DUSP for allowing me to pursue an interdisciplinary focus in Public Policy and Environmental Philosophy. DUSP provided me the perfect environment to pursue my research where I could also immerse in its unique values of equity, inclusion, and justice. I could never ask for more. I feel honored and thankful.

Janelle has been an excellent mentor who encouraged me to explore what MIT has to offer and I ended by up taking 40 courses in different MIT and Harvard departments. We discussed these courses, their relevance for important questions of the day, and how to apply interdisciplinary paradigms for my research and to draw insights about the timeless questions. She inspired me to pursue foundational questions and her positive attitude and infectious optimism made my MIT stay the highest blessing. Larry's a constant inspiration. I remember when I was applying for a Ph.D. and was in the process of choosing which graduate school to apply to, one of my mentors, himself an MIT graduate in engineering, mentioned that if he were to do his Ph.D. all over, he would like to do so with Larry. Now, I understand why he said it so convincingly. Larry shaped my work, my thinking, and taught me the power of deliberation and consensus building in examining and addressing human problems, and impacted me—forever—far more than I can ever express in words. Sally helped me more than I can express to find a connection between my current research and important philosophical questions. Her guidance in my work on global justice, on Rawls, Kant, and Foucault's theory of power, especially its disciplining element, had huge influence on me as a researcher and thinker. Sally inspired me to be a researcher who does not have a degree in philosophy but ended up taking more courses in philosophy than many students in that

discipline normally take. Chap motivated me to pursue corruption questions, helped me in research design, and taught me the nuances of elite interviews about sensitive questions. I can never thank him enough for his immense contribution that made me the researcher I am. Bish always guided me to look for practical implications of my work. I learned so much from him. He asked critical questions about my work that brought so much rigor into my research both theoretically and practically. Asya helped me in connecting my work to the larger question on institutions and shaped my research, which afforded me an opportunity to make some original contributions to the field.

I also had the honor of working closely with other faculty members not part of my formal committee, but who had an overarching influence on my work and left an indelible mark on me as a researcher and as an individual. Amartya Sen's famous series of philosophy courses at Harvard with Eric Maskin and Barry Mazur, especially his lectures on David Hume, Adam Smith, Mary Wollstonecraft, John Stuart Mill, and Karl Marx made me more aware of epistemological difficulties in our current paradigms, taught me the art of logical reasoning and the role of philosophy in examining human problems, and showed me a path of engaging more deeply with important social questions. My term paper on vector utility that I developed under his guidance will always remain the dearest work for me. I find it difficult to express my gratitude to him because words fall short. As Wittgenstein said, *What can be said at all can be said clearly, and what we cannot talk about we must pass over in silence.* I prefer to remain silent in this case. I also thank Susan Rose-Ackerman for inviting me to Yale and going through the several drafts of my work on police corruption and offering comments, which proved immensely helpful. Avinash Dixit of Princeton University has been extremely kind and his quick feedback helped me on numerous occasions to move forward when I found it difficult to make progress. I am deeply indebted to Michael Lipsky, who helped me find a connection between my work on corruption and the question of additional constraints that street bureaucracy faces in the developing world. I express my utmost gratitude to Noelle

Selin. Noelle is a great mentor, and despite her hectic schedule due to the many hats she wears at MIT, she has steadfastly helped me. My experience of working as a Teaching Assistant for Noelle twice in her *Science, Technology, and Policy* course was instrumental in improving my teaching skills and allowed me to learn more about her seminal work at the intersection of science and public policy. Noelle, I can never thank you enough for your kindness and generosity. I am thankful to Jeeyang Baum of the HKS for sharing her feedback on a number of occasions and for her generosity in really shaping my paper on police corruption. I also thank Frank Dobbin and Jason Beckfield of Harvard's Sociology Department for helping me connect the question of corruption with the classical sociological theories. Frank's help in finding a resonance of my work on institutional inertia with Alexis de Tocqueville's *Ancien Regime*, Karl Marx's *Eighteenth Brumaire*, and Thorstein Veblen's *Theory of the Leisure Class* was very helpful, and I look forward to exploring it more in the future. Jason is one the kindest persons I ever met. He inspires confidence, is very generous with time, and has the highest patience to listen to students before offering great advice. Thank you, Jason, for the best seminar course and exposing me to the concepts of plural causality. I thank Diane Davis for her insights on the bureaucratization of welfare, which helped me in the theoretical framing of my work on corruption in government bureaucracies. In addition, Diane's scholarship on sensemaking to analyze environmental justice in disadvantaged groups helped me theorize Indigenous environmental justice using the capability approach. I take this opportunity to express my gratefulness to Roberto Fernandez for taking the time to help me understand the conceptual foundations of organizational theory and the conditions under which organizational behaviors deviate from abstract Weberian principles. Roberto, your comments on the paper on police corruption helped me a great deal, and I am indebted.

Corruption is a highly sensitive topic and my work would not have been complete without the help from serving and retired government officials who spoke with me on the topic even if many of them were not part of my formal interviews. They helped me in situating my

findings in the right perspective. I am especially grateful to B.K. Chaturvedi, India's former Cabinet Secretary, who spoke with me more than 50 times during the course of my work and shared his understanding of corruption and misgovernance in India. I am also thankful to Vikram Singh, retired Director General of Police, and Amitabh Thakur, retired Inspector General of Police, for sharing their experiences about the police and a general condition of the state bureaucracy in India. Gratitude is due to D.D. Basu for patiently explaining the complex architecture of environmental governance in India on numerous occasions. I also take this opportunity to thank the former President of India, Pranab Mukherjee, for his kind remarks about my work on corruption when I first had the honor of visiting him at the President House in July 2015 to share my work that I wrote in response to the ongoing debate on corruption in India at that time.

I am thankful to several friends of mine at MIT, Harvard, and Brown University, for their enriching conversations and all the laughter we had together even during difficult times. I'll cherish that forever. I also can't thank enough the help provided by the MIT Writing Center, especially by Betsy Fox, Bob Irwin, and Susan Spilecki. They really helped me write my argument coherently and made me a better writer.

Finally, I am most thankful to my parents who motivated me and provided me conditions to pursue studies. My mom never went to school, but inspiring me to attend a good school was her only dream and a continuous endeavor. She taught me that the ultimate purpose of life is to be a good human and to live an examined life. I did not understand it as a kid, but with every passing day, I see the purpose of my life summarized in this statement. I had my own questions about the inevitability of human suffering and often took refuge in my parents' optimism in a world which I otherwise found totally pessimistic. They taught me how acknowledging the feebleness and frailty of human existence could help me find synergy with the mighty cosmos, for the world's not what Leibniz says, but what Voltaire says, what

Schopenhauer says, what Dostoevsky says or what Kafka says. I could realize how suffering could be beautiful and a privilege. It is my suffering that inspires me and motivates, and sustains my pursuit of knowledge. Sleeping under an open sky in my village as a kid and planning for school with my parents was a daily affair for me; time flies, but that glitter of stars and the eternal optimism of my parents continues. I owe everything to them.

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Chapter 1

Introduction

1.1 Corruption remains high in most of the developing world

The harmful impacts of corruption, that is, misuse of public office for personal gain, are well documented (Aidt 2003; Myrdal 1968; Nye 1967; Rose-Ackerman 1999; Tanzi 1998). The massive amount of corruption is a major problem worldwide, especially in the developing world. Using household- and firm-level data, the World Bank assessed the primary annual global cost of bribery to be $1 trillion (Rose-Ackerman 2004). As Svensson (2005) argues, even if we account for uncertainties in the estimate, the scale of it is still worrisome. Despite the adverse impacts of corruption on development, distribution, and our democratic institutions, corruption continues unabated and anti-corruption instruments continue to fail in most developing countries.

In 1985, India's then Prime Minister, Rajiv Gandhi, in an election rally, lamented that for every 100 cents spent by his government on the welfare of the poor, only 15 cents reached

the intended beneficiaries. The rest was lost in corruption and wastage[1] as the money flowed through massive federal and state bureaucracies. Three decades later, India's Supreme Court, with reference to Gandhi's statement, observed that the share of welfare money reaching the poor might have only diminished over time. Over the years, the statement has metamorphosed into a folklore of bureaucratic inefficiencies and public sector misgovernance more generally. Gandhi's statement received particular attention as it was coming from a sitting prime minister. However, similar observations about systematic corruption have been made by different government-appointed expert committees, including one in 2009 that estimated that it was not 15 cents that reached the poor, but 16 cents.

Even today, corruption in India remains high (Bussell, 2013; Sukhtantar and Vaishnav 2015). Recent cases of big-ticket corruption have exposed the nexus between the politicians and the bureaucrats. Two of the biggest corruption cases in India's recent history, colloquially known as the 2-G Case and Coalgate, show how the politicians and bureaucrats together tweaked policies and bent rules to give away the precious natural resources to private players in exchange for bribes and in the process caused a loss of billions of dollars to the national exchequer. These cases were documented by the government's national auditor (CAG 2010), and the Supreme Court after a long, drawn-out trial canceled most of the licenses granted to the private players and acknowledged corruption in the allocation. There are plenty such examples of high corruption in the world.

The role of bureaucracies in a government's welfare agenda cannot be overstated, especially in the poor countries. Be it their road to freedom or the road to serfdom, a march

[1]Some of the leakage in welfare services is also due to poor infrastructure. For example, wheat, pulses, rice, etc., are delivered by the government to the doorstep of the poor through ration shops. A part of it is never available for distribution because it is wasted due to the lack of storage. So, a sharp division between wastage and individual corruption is unclear; however, taken together, they are an indictment of the public delivery system of the country.

towards modernity or descent into misery, the bureaucracy oversees as societies progress. Ranging from health and education to employment and subsidized foodgrains, bureaucrats design and implement important development programs. Their role has been long recognized; it has only grown in importance in recent years, and will continue to be so in the years to come as governments expand key welfare programs and improve the efficiency of their public service delivery systems. For the general public, the government is these bureaucrats, not the elected officials occupying high public offices in the capitals. As such, the questions of red tape, excesses, corruption, constraints, and political pressures in government bureaucracies remain of quintessential interest to academics and policymakers for understanding what ails their effective functioning and developing successful reform proposals.

In November 1927, the British Government under Prime Minister Stanley Baldwin appointed a seven-member commission, the Indian Statutory Commission, headed by John Simon and Clement Attlee, to inquire into political conditions and examine possibilities of constitutional reforms in India. The Commission made telling remarks about the general nature of the district administration, the lowest unit of the Indian administration, tasked with the implementation of welfare policies, revenue collection, and general administration on behalf of the government. The Commission observed that in the eyes of the inhabitants of the district, not the state or the federal, but the district officer, was the government (Indian Statutory Commission 1930).[2] Ramsay McDonald, Labour Prime Minister of Britain,

[2]In describing the roles of the district administration, the Commission observed: "The district officer has a dual capacity: as Collector, he is head of the revenue organization, and as magistrate he exercises general supervision over the inferior courts and in particular, directs the police work. In areas where there is no permanent revenue settlement, he can at any time be in touch through his revenue subordinates with every inch of his territory. This organization in the first place serves its peculiar purpose of collecting the revenue and of keeping the peace. But because it is so close knit, so well established and so thoroughly understood by the people, it simultaneously discharges easily and efficiently an immense number of duties. It deals with the registration, alteration, and partition of holdings; the settlement of disputes; the management of indebted estates; loans to agriculturalists; and above all, famine relief. Because it controls revenue which depends on agriculture, the supreme interest of the people, it naturally serves also as the general administration staff" (pp. 286-287).

was even more outspoken about the oversized role of the district officer, his burden of responsibilities, and his role in governance by likening him to "the tortoise on whose back stood the elephant of the government of India." The district officer depends on a number of specialized district-level government departments, who—even if they have their own district chiefs—support him in effectively running the district administration. All these departments organize their policy enforcement through street-level bureaucracies. Close to a century later, the centrality and the influence of the district administration on the lives of the common people loudly echo McDonald's words.

1.2 Corruption impedes development, undermines fairness, and corrodes society's moral foundations

There are two schools of thought on the role of corruption in the efficiency of economic and political outcomes. On one side, there is the "grease the wheels" hypothesis, which suggests that corruption increases efficiency (Huntington 1968; Leff 1964; Weiner 1962) or gives more political and economic power to the neglected social groups (Merton 1957). Samuel Huntington contended that a little bit of corruption may be helpful in a second-best world to grease the wheels of cumbersome, inefficient, and ill-functioning institutions.[3] He argued that corruption can address government failure caused by red tape by creating incentives for bureaucrats to not cause delays and work harder in exchange for bribes (Huntington 1968). Weiner (1962) also made an economic efficiency-enhancing argument about corruption and wrote, "Many economic activities would be paralyzed" in India "were it not for the flexibility which baksheesh [small amount of money or present] contributed to the complex,

[3]Huntington wrote, "In terms of economic growth, the only thing worse than a society with a rigid, overcentralized, dishonest bureaucracy is one with a rigid, overcentralized, honest bureaucracy. A society which is relatively uncorrupt—a traditional society for instance where traditional norms are still powerful—may find a certain amount of corruption a welcome lubricant easing the path to modernization" (Huntington 1968, p. 69).

rigid, administrative system." Similarly, Robert Merton's "strain theory" viewed corruption as a means to political and economic empowerment for the disadvantaged groups when there is a "strain" between culturally-inducing goals and legitimately available institutional means. Merton suggested that when people cannot achieve legitimate goals of economic success through legitimate means of hard work, they are more likely to commit deviance or acquisition crimes, and to engage in corruption (Merton 1937, 1957). However, empirically, there is only weak evidence in support of the greasing the wheels hypothesis (Aidt 2009). More recent research shows that corruption lowers development, which supports the "sands the wheels" hypothesis (Mauro 1995; Shleifer and Vishny 1993). According to this hypothesis, corruption has both direct and indirect effects and its net effects are always negative. It can help entrepreneurs on certain occasions, but at the same time it creates an uncertain regulatory environment harmful to foreign direct investment. Rose-Ackerman (1978) cautions that it would be difficult to restrict the effects of corruption only to economically desirable situations.

Corruption has both development and moral dimensions. In terms of development, corruption suppresses economic growth (Mauro 1995; Wei 1999), exacerbates income inequality and poverty (Gupta et al. 2002; Rothstein 2011; You and Khagram 2005), and misallocates talent from productive to non-productive rent-extraction activities (Murphy et al. 1993). Furthermore, corruption aggravates mistrust in society (Rothstein and Uslaner 2005), corrodes the culture of democracy (Thompson 1995; Warren 2004) and undermines the legitimacy of political institutions (Anderson and Tverdova 2003; Seligson 2006). Corruption also harms social and economic institutional arrangements that are prerequisites for the Rawlsian (or other social contract-oriented conception) of justice, which Rawls defines as "the first virtue of social institutions, as truth is of systems of thought" (Rawls 1971). Whether we take a development or moral perspective, corruption adversely affects the well-being of society, and hence remains important not only to political scientists, economists, sociologists, and

anthropologists, but also to the philosophers who look at corruption as an impediment to social justice.

1.3 Research puzzle: The argument

There have been concerns about corruption throughout human civilization (Brioschi 2017; Noonan 1984). From the highest public functionaries to the street-level bureaucrats and from the richest to the poorest, no country has been immune to corruption (Bardhan 1997; Glynn et al. 1997; Lipset and Lenz 2000). From antiquity to modern times, political thinkers, such as Aristotle, Polybius, Machiavelli, Montesquieu, Madison, and Hamilton, have grappled with the challenges of corruption in public life. Chanakya, an ancient Indian philosopher and a contemporary of Aristotle, described almost forty different kinds of embezzlements of which public servants could be guilty.[4] Gibbon provides a poignant account of what he calls "incurable corruption" in the Roman empire and its role in the decay of religious, judicial and political institutions (Gibbon 1993). The American perception that the British government was highly corrupt played a key role in the American Revolution (Wallis 2004). Post-independence, key concerns in the eighteenth century state politics in America[5] included limiting individual and institutional corruption for a flourishing polity. The Framers of the American Constitution discussed corruption more often than factions, violence and instability during the Constitutional Conventions. Their views were influenced by the writings of Plutarch, Machiavelli, and Montesquieu, all of whom held corruption as a threat to politics,

[4] "Just as it is impossible not to take the honey (or the poison) that finds itself at the tip of the tongue, so it is impossible for a government servant not to eat up at least a bit of the King's revenue. Just as fish moving under water cannot possibly be found out either as drinking or not drinking water, so government servants employed in the government cannot be found out (while) taking money (for themselves)" (as quoted in Bardhan 1997).

[5] Wallis (2004) quotes John M. Murrin's essay "Escaping Perfidious Albion" to describe how corruption became a key part of public discourse in state politics: "In the process, the rhetoric of corruption emerged as the common grammar of politics, so overwhelming that it became difficult to discuss public questions in any other language. The age of Jefferson bequeathed to the United States an obsession with corruption that still deeply colors the way we think about politics" (Murrin 1994, p. 104).

opposite to virtue, and oxymoron to self-government.[6] In his later writings, Tocqueville also became a harsh critic of corruption and excesses in America and viewed corruption as a serious threat to its democratic institutions (Tocqueville 2009). Edmund Burke, in his indictment of Warren Hastings at the British Parliament, provides a detailed account of corruption in appointments and contracts in British India (Lock 2006). Even today, a cursory glance at daily media reports shows that despite several national, regional and global anti-corruption efforts, the problem of corruption persists. This raises the puzzle of why corruption remains a timeless societal vice despite our relentless anti-corruption efforts. Why does corruption exist and persist in government bureaucracies, and more importantly, why are anti-corruption reforms challenging to implement? This dissertation provides an answer to these long-standing questions in the political economy literature.

1.4 Theoretical and empirical challenges in studying corruption

There are empirical and theoretical challenges in studying corruption (Banerjee et al. 2012). The empirical challenges refer mainly to the measurement problems, definitional issues, and causal determinants of corruption. Some of the theoretical challenges include the challenges in understanding various manifestations of corruption, its dynamics, and its interactions with various social and economic settings beyond the mere moral hazard problem in organizations. There is no universal definition of corruption, for what constitutes corruption depends on traditionally accepted norms that vary from one culture to another. Researchers criticize that the most commonly used definition in the literature, the misuse of public office for private

[6] In Book VIII of his *Spirit of Laws*, corruption is an indispensable theme in Montesquieu's examination of preferred criminal laws and preferred commercial laws. Bailyn (1990) writes that for the Framers of the Constitution, the "chief authority, insofar as they needed any authority to document what seemed to them such obvious ideas, was Montesquieu, whose name recurs far more often than that of any other authority in all of the vast literature on the Constitution" (Bailyn 1990, p. 241).

gain, without clearly defining what constitutes misuse, public office, or private gain, makes the concept of corruption quite broad and open to subjective interpretations. In addition, most definitions in the academic literature limit corruption exclusively to the domain of public officials and misuse of public power, leaving out the private sector from the definition. Nonetheless, corruption almost always involves some form of misuse of public office. It varies in the degree of malfeasance. It can range from traffic policemen demanding bribes for petty infractions, to street officials extorting money for welfare services, to senior officials awarding government contracts and state capture.

Heidenheimer (1989) classifies major definitions of corruption into three categories: market-centered, public-office-centered, and public-interest-centered. Most prevailing definitions of corruption fall into one of these categories. Nye (1967) provides a public-office-centered definition that is used widely in the literature.[7] Johnston (1996) divides major definitions of corruption into classical and modern. While the classical definitions focus on the "moral vitality" of whole societies, the modern definitions focus more on behavior classification. He concedes the inadequacy of the behavior-oriented definitions of corruption, and concludes, "Not only are these modern definitions matters of dispute; at another level, they have come to seem incomplete, or even irrelevant to the episodes that spark public outcry" (Johnston 1996, p. 321). In classical definitions, moral vitality here refers not to individual actions but to the general moral health of societies. It refers to the relationships such as the legitimacy and sources of the state power, relationship between the rulers and the subjects, distribution

[7] "Corruption is behavior which deviates from the formal duties of a public role because of private-regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence. This includes such behavior as bribery (use of a reward to pervert the judgment of a person in a position of trust); nepotism (bestowal of patronage by reason of ascriptive relationship rather than merit); and misappropriation (illegal appropriation of public resources for private-regarding uses). This definition does not include much behavior that might nonetheless be regarded as offensive to moral standards. It also excludes any consideration of whether the behavior is in the public interest, since building the study of the effects of the behavior into the definition makes analysis of the relationship between corruption and development difficult" Nye (1967, p. 419).

of resources, nature of institutions, etc. In modern definitions, morality refers to the unjust use of public office and harm to the society. It is around this changing notion of morality in corruption that Johnston attempts to connect classical and modern definitions. Sociologists define corruption as a characteristic of social exchange, for corruption represents an exchange between individuals or between individuals and organizations. Whether these exchanges imply corruption depends on the meanings and norms of these exchanges. Furthermore, in any corrupt exchange, violation of trust or misuse of public office and personal gain are causally connected. The misuse of office or violation of trust also manifests when individuals misappropriate organizational resources (Granovetter 2004).

As such, it is difficult to have a universal definition of corruption because what constitutes corruption could be quite different across countries, particularly due to the prevailing societal norms and cultural beliefs. However, it is important to have a workable definition for the purpose of an empirical analysis because what is measured and modeled depends on how it is defined in the first place. This study uses the definition of corruption which lies at the intersection of public-office- and public-interest-centered definitions of corruption given by Friedrich (1966) and Nye (1967).[8] Both of these classical definitions of corruption are captured in the definition of corruption given by the Government of India's committee on corruption in the Santhanam Committee Report (1964). It defines corruption as "improper or selfish exercise of power and influence attached to a public office or to a special position one occupies in public life." This definition of corruption entails betrayal of public trust and misuse of discretionary powers by public officials. This behavior undermines the provision

[8]Nye (1967) defines corruption as "(the) behavior which deviates from the formal duties of a public role because of private-regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence." Friedrich (1966) writes that "The pattern of corruption can be said to exist whenever a powerholder who is charged with doing certain things, i.e., who is a responsible functionary or officeholder, is by monetary or other rewards not legally provided for, induced to take actions which favor whoever provides the rewards and thereby does damage to the public and its interests."

of public goods and creates opportunities for bribes and political influence to serve vested interests for personal monetary and non-monetary gains. I acknowledge that this definition may not capture diverse forms of corruption that occur—or could possibly occur—within a government bureaucracy. However, it captures the important kinds that are recognized in the political economy literature, which include the misuse of public office to benefit someone in the expectation of some tangible benefit.

Corruption is an illegal activity that is carried out clandestinely. The illegal, secretive and unethical nature of corruption coupled with definitional difficulties make its objective measurements difficult. Further, measurement challenges are both conceptual and methodological. Conceptual challenges refer to those that arise from the difficulties in definition because what is measured or modeled and analyzed depends on how we define corruption in the first place. Methodological challenges refer to the practical difficulties in measuring corruption and resulting endogeneity from measurement errors. Those practical difficulties include problems in getting data using direct methods (or based on experience) due to the sensitive and secretive nature of the topic. In such situations, eliciting truthful responses from public officials on corruption is a challenge. They may falsify their preferences (due to social desirability bias), be non-responsive to sensitive questions, or not be accessible at all to researchers. For these practical difficulties, the use of perception-based measurements (or subjective opinions) of corruption are prevalent. However, these subjective opinions are prone to confounding with other factors. Scholars raise substantial concerns about relying on expert opinions and methodological objections in aggregating these opinions into a single homogeneous measure to capture the corruption level in a country (Anja 2009). The Control of Corruption Index of the World Bank and Corruption Perceptions Index of Transparency International are two examples of perception-based indicators of corruption. Despite their popularity, there is

evidence that they fail to capture the true extent of corruption.[9] Furthermore, these measures are cross-national, giving just one number for the level of corruption in each country, and do not consider its sub-national variations. So, for these indices, the city of Boston and rural Louisiana in the United States, as well as New Delhi and rural Bihar in India, have the same level of corruption. Due to these limitations, most empirical studies rely on relevant proxies (Bertrand 2008; Olken 2007), departmental audit reports and voluntary disclosures (Bobonis et al. 2010; Ferraz and Finan 2008; Pereira et al. 2009), and court conviction data (Glaeser and Saks 2006) to study corruption. There are indeed concerns with these proxies also, but in the absence of actual data on corruption, these are only the second-best choices.

Corrupt exchanges are essentially dyadic micro-exchanges. However, we can conceptualize corruption at macro level as well. Micro perspective refers to myriad individual-level interactions, whereas macro perspective views corruption as a phenomenon embedded in social relations determined by social and economic structures—e.g., corruption in a community, bureau, state, or country. This assumes that structural factors shape individual behaviors and they can adequately characterize the nature of social exchanges in a society.

There is now an extensive literature on micro, macro and relational forms of corruption (Aidt 2009; Andvig 1991). Inspired by the earlier works on bureaucracy (Downs 1966; Niskanen 1971; Tullock 1965) and the economics of criminal action (Becker and Landes 1974), the formal economic analyses of micro corruption were started with the seminal paper by Rose-Ackerman (1975). These rational choice analyses of corruption treat corruption as a

[9]Using an example of a road-building project in Indonesian villages, for example, Olken (2009) finds evidence of differences in perceived corruption (based on the responses of villagers about the corruption in the project) and the actual corruption (measured as the missing expenditure in the project). Lin and Yu (2014) studied 13 Asian countries and found that the perceptions of citizens and the experts are only moderately aligned. Razafindrakoto and Roubaud (2010) argues, using an example of sub-Saharan Africa, that perception-based surveys do not really reflect the corruption on the ground. Similarly, Bergh et al. (2017) argue that corruption in Sweden—which is consistently ranked as one of the least corrupt countries on all the major perception-based surveys—is significantly higher than what is captured in surveys.

form of pure market transaction and individuals as self-interested, undersocialized, solely driven by profit motives only minimally affected by social relations (Granovetter 1985). These models rely on the expected utility-maximization behavior of bureaucrats to identify constraints and opportunities for corruption. Examples include the administration of public goods (Shleifer and Vishny 1993), allocation of scarce public resources (Banerjee 1997), enforcement of government regulations, public contracts (Macrae 1982), queue rationing (Lui 1985; Rose-Ackerman 1978), etc. These models assume that bureaucrats work under an exogenous institutional environment and their corruption is based on the narrow calculus of private costs and benefits. These models are more suitable for analyzing the corruption of street bureaucrats because of the assumptions of the exogenous institutional environment and not of the senior officials who can manipulate institutions. In contrast, Svensson (2005) reviews major empirical approaches to study macro corruption. Relevant structural factors for macro corruption are income levels, nature of political and economic institutions, social norms (Reisman 1979), historical factors, religious traditions, nature of economy, etc.

Regarding the literature on the structural determinants of corruption, one variant focuses on income (GDP per capita) as a strong predictor of corruption in a country. Rich and educated states are less corrupt (Glaeser and Saks 2006; Lipset 1960) and corruption decreases as the income levels of countries increase (Abed and Davoodi 2002; Ades and Di Tella 1999; Dreher et al. 2007; Herzfeld and Weiss 2003; Persson et al. 2003; Wei 1999). However, some studies, especially when they include fixed effects, also find a reverse causal relationship between corruption and income—i.e., income increases corruption (Braun and Di Tella 2004). Similarly, Brown and Shackman (2007), using an error-correction model for 100 countries over a period of 20 years, find that between income and corruption, causality is present in both directions. They find that income actually increases corruption in the short run while in the long run it decreases corruption. Another variant argues that corruption levels also depend on the colonial heritage because the colonial experience has an influence on countries'

institutions (Acemoglu et al. 2001; Hall and Jones 1999; Rodrik et al. 2004) and income inequality (Angeles 2007). However, the results are mixed. Gurgur and Shah (2005) argue that corruption is higher in former colonies whereas Herzfeld and Weiss (2003) suggest that corruption is lower in the countries with a colonial past. There are also regulatory theories of corruption that emphasize factors like import and export dependence of a country's GDP; whether the economy depends on the natural resources (Ades and Di Tella 1999; Bhattacharyya and Hodler 2010; Wei 1999); economic freedom; and the degree of political and fiscal decentralization. Finally, some argue that corruption depends on culture, religion and moral values. Bonaglia et al. (2001), La Porta et al. (1999), and Treisman (2000) argue that countries with a high percentage of Protestant population have low corruption. Lipset and Lenz (2000) also find evidence that "Protestantism reduces corruption, in part, because of its association with individualistic, non-familistic relations."

Finally, in relational studies of corruption, which are neither macro nor micro but more like in between, they view corruption as in informal exchange between individuals behind the formal organizational structures (Jancsics 2014). Wade (1982, 1985) explained corruption in the irrigation departments in south India due to the connections between the corruption of politicians, street and senior officials. An important point to note is that in micro analysis, individual behavior depends on an individual's understanding of the phenomenon and the meaning assigned to it by the individuals. However, in macro analysis, the individual's positions within social structures, such as their status, role, and institutions, determine their behavior.

What emerges from the literature on the determinants of corruption is that there are two sets of empirical challenges. First, most empirical studies consider only a particular set of explanatory variables, which lose statistical significance as well as their explanatory power once other important variables are incorporated into the empirical models. Second,

the determination of causality is another big problem mainly occurring due to measurement errors, endogeneity, and difficulties in finding proper instrumental variables. In an attempt at identifying explanatory variables which maintain statistical significance even when other variables are added into the empirical models, Seldadyo and de Haan (2006), Serra (2006), and Treisman (2000) use sensitivity analysis to identify such variables from all those reported in major studies on corruption in recent decades. As Leamer (1978) quotes Ronald Coase to make a point about the caution one should exercise in empirical studies about the explanatory powers of variables, "If you torture data long enough, Nature will confess." It emerges that when taken together, only a few variables show a statistically significant robust relationship.

1.5 Analytic assumptions in anti-corruption policies about the motivations of public officials and government structure are normative in nature and deviate from social reality

At the core of all anti-corruption policies is our understanding of micro (dyadic) relationships between various branches of the government and between the government and citizens. These micro relationships are often understood within an agency framework (Banfield 1975; Jensen and Meckling 1976; Klitgaard 1988; Mitnick 1973; Ross 1973)[10] and analyzed as a delegation or risk-sharing problem between rational actors (Ugur and Dasgupta 2011). The presence

[10]A simple framing of agency theory is the principal-agent relationship. We can use this relationship to conceptualize several real-world organizational relationships, e.g., CEO and shareholders, bureaucrats and government, politicians and electorate. Agency theory concerns solving two simultaneous problems faced by the principal arising due to moral hazard, adverse selection and agent opportunism. First, there is a conflict in goals of the principal and the agent. Second, it's costly for the principal to verify and monitor what the agent is actually doing. Due to these problems, under the assumptions of individual self-interest, bounded rationality, risk aversion and information asymmetry, the agency theory becomes a problem-solving exercise to develop a contract to align the objectives of the principal and the agent. Eisenhardt (1989) provides an excellent review of agency theory and its numerous contributions in organizational theory research.

of a benevolent superior[11] and a single-entity government are two distinct features of the way these micro relationships are characterized in agency theory in its application to public sector corruption (Persson et al. 2010; Rothstein 2011).[12] However, these two assumptions are not generally true. In many parts of the developing world, corruption exists at all levels in the bureaucratic hierarchy and politicians and bureaucrats often act in cahoots with each other in their individual self-interests.[13] Under such circumstances of systematic corruption, the assumption of a benevolent principal does not hold true. Similarly, the single entity government assumption is almost always untrue. Even in the smallest of countries, there are large, multilayered bureaucracies. Reducing these complex bureaucracies to a single atomized entity presumes a perfect alignment in interests between bureaucrats at different levels in the hierarchy. Probably the most important critiques of these two assumptions come from Leonid Hurwicz and Avinash Dixit. While questioning the assumption of a benevolent social planner,

[11]The assumption of a benevolent ruler has been found to be realistic only in some cases (Di Tella and Schargrodsky 2003; Klitgaard 1988; Olken 2007) but remains highly questionable in weak institutional environments (Marquette and Peiffer 2018; Mungiu-Pippidi 2011; Persson et al. 2013; Rothstein 2011). Some studies do indeed recognize the existence of corruption in the government at the level of the social planner, but still assume that a disproportionate level of corruption occurs at the bureaucratic level (Shleifer and Vishny 1998).

[12]Who the principal is and who the agent is depends on the context. For example, in bureaucratic corruption, political elites are often modeled as principals and bureaucrats as agents (Rijckeghem and Weder 2001), while in the case of political corruption, political elites are often modeled as agents and citizens as principals (Myerson 1993; Persson and Tabellini 2000). There could be multiple principals and multiple agents working simultaneously. These models assume that the benevolent principal, which could be an individual or an entity like the public or an organization, embodies public interests while only the non-benevolent agent is susceptible to corrupt transactions (Acemoglu and Verdier 2000; Banfield 1975; Klitgaard 1988; Rose-Ackerman 1975, 1991; Tirole 1994). Corruption happens when the agent betrays the interests of the principal to pursue self-interests by violating the rules in exchange for bribes. As Rose-Ackerman (1978) writes, "while superiors would like agents always to fulfill the superior's objectives, monitoring is costly, and agents will generally have some freedom to put their own interests ahead of their principals'. Here is where money enters. Some third person, who can benefit by the agent's action, seeks to influence the agent's decision by offering him a monetary payment."

[13]This shows that in the early years of independent India, corruption was becoming widespread, and several anti-corruption measures were put in place to check the growth of corruption. However, despite these anti-corruption measures, corruption continued unabated. Myrdal (1968) in his research on the nature and causes of the persistent poverty and slow development in South Asian countries argued that everything in the post-independence era has resulted in incentives and opportunities for corruption. Similarly, Bayley (1969) in his work on police corruption in India presented an even more grim picture. Decades after these seminal works on public sector corruption in India, even today, corruption remains high (Bussell 2012; Sukhtantar and Vaishnav 2015).

Hurwicz (2007)[14] refers to Plato and the Roman poet Juvenal in posing an interesting puzzle: Do we need to guard the guardians, and to what extent should they be subject to public scrutiny in our current world of technical analysis for policy implementation? Plato had an optimistic view of the rulers of the city-state and opined that one ought to be able to trust them, while Juvenal was distrustful of the guardians. Dixit (2010) questions this single-entity government assumption and underscores the need for more research into the internal structure of bureaucracy and its decision-making, rather than treating it as a monolithic Weberian entity, for a more accurate structural understanding of the policy implementation process.[15]

Consider an example of the prevalence of corruption in India and how these assumptions are not true. The first government led by Prime Minister Jawaharlal Nehru attempted to address the problem of corruption by strengthening the Prevention of Corruption Act 1947, which had become law only a few months before independence. In the first few years after the Act came into force, between 1949-50, several ministers and bureaucrats were prosecuted for corruption and various new inquiry commissions were set up to investigate high profile corruption cases. The number of cases investigated for corruption during 1950-60 doubled. As more corruption cases came to light, in June 1962, the Ministry of Home Affairs of the Government of India constituted the Santhanam Committee to study "the growing menace of corruption in administration" and make recommendations to strengthen the country's anti-corruption laws. The committee examined several witnesses, including ministers, civil servants, civil society activists, experts, and journalists. The committee stated that the state of corruption in the country was such that "[t]here is a general impression that it is difficult

[14]This refers to Leonid Hurwicz's Nobel Prize lecture.

[15]Dixit writes, "Our understanding of government and public policy stands to gain much by studying in greater detail the internal structure of the organization that makes and implements public policies. This 'opening the black box of policy administration' is analogous to what occurred in the theory of the firm. Our view of the firm has changed for the better, from a mechanical maximizer of profit (or some other objective in cases of managerial or labor-managed firms) taking technology and factor prices as given, to an organization that must tackle manifold problems of internal governance and incentives. Analysis of the process of policy implementation promises similar progress."

to get things done without resorting to corruption." About the prevalence of corruption in public life, the committee said that "[t]he tendency to subvert integrity in the public services instead of being isolated is growing into an organized, well-planned racket." Other government committees, constituted around the same time to investigate public sector corruption, had similar views on the organized or systematic nature of corruption. For example, the Report of the Railway Corruption Enquiry Committee (1953-55) observed, "[t]he lower staff, while admitting corruption among their ranks, said that they had to satisfy the illegal demands of higher officials. They also asserted that those among them who did not fall in line with current practices or exposed corruption were victimized by their colleagues and sometimes even by higher officials. They further stated that they were tempted to accept illegal gratification because of the low wages paid to them and the temptations held out by the public, especially by the rich mercantile community."

1.6 Empirical strategy

Advancing our theoretical and practical understanding of corruption requires addressing at least four significant challenges. First, what corruption is differs widely across cultural contexts.[16] Smith (1964) observed that "what Britons saw as corrupt and Hausa as oppressive" in Northern Nigeria, "Fulani might regard as both necessary and traditional." This threat to external validity limits the scope of findings in different social contexts and demands the recognition of corruption as a context-dependent cultural phenomenon.[17] Second, mea-

[16]In many cultures giving expensive gifts to and receiving them from members of the same social groups is within acceptable standards or even expected in some case. However, in some cultures, especially in the West, it's frowned upon. When Edmund Burke was giving his speech in British Parliament in 1789 to indict Warren Hastings of corruption in India, an important allegation was Hastings' acceptance of expensive gifts from local landlords and rulers. Burke pleaded, "It is necessary that your Lordships should see that Mr. Hastings has made use of a perversion of the names of authorized gifts to cover the most abominable and prostituted bribery."

[17]Barr and Serra (2010) conducted a bribery experiment and found that propensity to giving and receiving bribes depends on the level of corruption in the country in which the participants grew up. Fisman and Miguel (2007) also find evidence of cultural factors in corruption behavior as they find a connection between

surement of corruption is a challenge. Perception-based data does not reflect the actual level of corruption in a country. Proxy indicators are helpful but their usefulness depends on the strength and independence of institutions. India's largest state only reported 30, 58, and 84 corruption cases under the Prevention of Corruption Act in three years during 2016-18 (NCRB, 2019). At the same time, in 2019, Transparency International India, in the largest national survey, found that about 51% of people admitted to giving bribes in the last 12 months for basic public services (India Corruption Survey 2019). This data shows the gap between the state of corruption and what is being investigated by the anti-corruption agencies. Third, analyzing micro relationships between different branches of government and government and the public—an essential input to anti-corruption reform strategies—within an agency framework using principal-agent characterization leaves several questions unanswered. Such characterization examines the incentive structures that make the occurrence of corruption more or less likely under the assumptions of a principled principal and single-entity government. However, it does not consider multi-layered bureaucracies and the existence of unprincipled principals or the skepticism that Chanakya or Juvenal expressed about senior public officials. Finally, a better understanding of micro corruption, micro-macro linkages, and how these linkages develop and mediate through social relations is essential from the descriptive and prescriptive points of view of macro corruption.

We require direct measurements of corruption, and ought to focus more on the micro relationships and the interests of the actors forming these relationships, on the influence of macro variables on these relationships, and on the nature of micro-macro linkages. A more descriptive approach of corruption as embedded in social relations would help in understanding the whole lifecycle of corruption and also identifying why corruption exists and how it persists over time. Macro-level corruption is a manifestation of myriad micro dyadic

the parking violations by diplomats and the level of corruption in their home country.

relationships connected through social networks. Such linkages between micro-level exchanges and underlying networks might be the key to understand why anti-corruption reforms are generally difficult to implement, and why such reforms often fail to address corruption. This is because at the center of anti-corruption reforms are our understanding of the relationships and interest motives between different actors in the government and the public. These insights are important for explaining the limited successes of most anti-corruption strategies, and also for developing more effective future approaches.

In the existing literature, grand vs. petty is the primary distinction that is used (Rose-Ackerman 1999). Grand corruption is "the abuse of public power by heads of state, ministers and senior officials for private pecuniary gain" (Moody Stuart 1994). In this kind of corruption highly placed public officials in the state hierarchy are involved (Atkinson 2011; Doig and Theobald 2000; Rose-Ackerman 1996). Petty corruption, on the other hand, refers to the corruption by street-level bureaucrats in local government offices, who are responsible for the delivery of basic public services, the kind of corruption ordinary citizens face while interacting with the state (Rose-Ackerman 1978). Grand corruption involves huge sums of money and fewer actors, is well organized, and the transactions are less frequent. In contrast, petty corruption is more pervasive and involves more routine payments, and the sums are small. However, both petty and grand kinds of corruption involve the misuse of public office and could be driven by monetary as well as non-monetary considerations, including advantages for promotion and electoral benefits. Several factors determine whether corruption is grand or petty. These factors include institutional locations of the officials in the state hierarchy, frequency of corrupt transactions, sums of bribes exchanged (Morris 2011; Scott 1972), and whether corruption influences the setting up of a policy or its implementation. (Wilson and Damania 2005). Ideally, there is no clear boundary between the two kinds of corruption; it is more of a continuum.

Understanding these linkages between grand and petty corruption and whether one kind of corruption forces the other or they are mutually reinforcing has implications for anti-corruption strategies. A street-level bureaucrat might be corrupt and share his ill-gotten money with public officials at the senior-level who control his transfers and other service rules in order to keep them in good humor. This could happen as part of a mutual understanding, or out of compulsion to stay put in his posting. In such a situation, pursuing anti-corruption measures specific to petty corruption without considering the grand corruption and its connection with the petty corruption are unlikely to succeed. This is because anti-corruption campaigns need to recognize that the misuse of office at the street level and the misuse of office by the senior-level officials are interlinked. In such cases, senior officials would tend to protect street-level officials out of their self-interest. However, if the street-level bureaucrat is acting on his own and no such linkages with senior-level officials exist, the same anti-corruption policies, which are specific to petty corruption, would have a greater probability of success. Thus, understanding the whole system—petty and grand forms of corruption and their linkages—might point to a very different set of recommendations for anti-corruption measures from those we might make if we did not understand the whole system.

The question of linkages is an important one in the corruption literature. However, the question is not well understood. Rose-Ackerman (1996) suggests that grand corruption can occur even if there is relatively little petty corruption. Andvig and Fjeldstad (2001) argue that in most cases, they (petty and grand corruption) go hand in hand and might have a mutually reinforcing effect. Wade (1982, 1985), in his work on corruption in India's canal irrigation system, identified a connection between the top-level and bottom-level corruption—his characterization of grand and petty. Ruhl (2011), using an example of Latin American countries, however, finds no linkages or at best only an ambiguous relationship between grand and petty corruption and argues that the two are not always connected. Developing a systematic view of these linkages—how they are formed, sustained and causally linked—is

a major objective of my doctoral research work. The quantitative studies provide useful knowledge of the working of the corruption in bureaucracy. However, they offer only limited insights into how bureaucracies at different levels respond to corruption with regards to their specific opportunities and constraints when their corruptions are linked. This requires an understanding of the internal decision-making of the bureaucracy and how the interests of various hierarchies are intertwined. Rose-Ackerman (1978) was the first to develop separate models for higher- and lower-level officials under different sets of constraints and opportunities. To explore the linkages between petty and grand corruption (and the possibility of their mutually reinforcing effects) in the bureaucracy is the next obvious theoretical question for a more nuanced and fuller understanding of corruption. The understanding of the linkages would not only advance our theoretical understanding of the motives of low- and high-ranking public officials for indulging in corruption, but also answer the important policy question: Can the guardians be trusted to guard the lower bureaucrats or do we need to guard the guardians themselves? It would shed light on the efficacy of increased oversight as a policy measure to control corruption. For this, we need to relax the assumptions of single-entity bureaucracy and the independent existence of petty and grand forms.

There is a widespread consensus in the literature that politicians use discretionary powers to control bureaucratic transfers to advance their interests. In weak institutional environments of developing democracies, there are incentives for politicians to steal from the state to fund their election campaigns (Bussell 2013). However, politicians who wish to capture rents from the state's development programs need the cooperation of the bureaucrats (Brierley 2020). Brierley argues how the propensity of the bureaucrats to engage in corruption is dependent on their perceptions of politicians' discretionary control of their transfers. Oversight powers of politicians over bureaucrats allow them to co-opt bureaucrats. The prevalence of bribery and political influence in bureaucratic transfers, as well as in the enforcement of the policies by street officials, are also well documented. However, the linkages between these two

kinds of corruption, i.e., grand corruption in transfers and petty corruption in enforcement, remain understudied. By the nature of the linkages, I mean whether grand and petty occur independently, one causes the other, or they are mutually reinforcing. To answer my research questions, I study the market for corruption in transfers and in policy implementation by three of the major state government bureaucracies in India: the police, the public works department, and the environmental bureaucracy. The purpose of examining corruption in three of the major government bureaucracies is to show how petty and grand corruption and their linkages are not specific to one particular bureaucracy, but a salient feature of the Indian polity.

1.7 Scholarly contributions

My dissertation makes three original contributions that advance our empirical and theoretical understanding of corruption.

1.7.1 Measurement-related contributions

Corruption is a conceptually contested complex phenomenon defined as the "misuse of public office for private gain" (Jain 2001; Rose-Ackerman 2008; Treisman 2007). It is a highly sensitive topic despite the ubiquitous and systematic presence of corrupt social exchanges in the lives of the people in the developing world. Direct measurement of corruption is a challenge because corruption involves illegality and is carried out only clandestinely. Officials have no incentives in disclosing their own corruption, or even worse, they face disincentives, and are likely to falsify their responses on others' corruption. In the face of these measurement challenges, scholars rely on indirect proxies of corruption such as government audit reports (Ferraz and Finan 2007, 2008), government data on conviction in corruption cases, and

perception-based surveys.[18] These proxies suffer from errors at three levels: First, there are methodological problems that result in biases in these data sources. The audit reports are based on the degree of missing funds assessed by comparing funds received vs. funds spent and the perception of the local people about the quality of services provided in randomly chosen local governments. Such data can have biases as the local officials could misuse their offices in exchange for bribes without misappropriating resources themselves and the locals' perception about corruption in services can be different than the actual corruption in projects (e.g., Olken 2007). The government data on conviction suffers from underreporting as the conviction rate is very low in high-corruption places where judicial infrastructure is weak and compromised, for such institutions might themselves be corrupt. The perception-based surveys have been found to differ significantly from the actual level of corruption (Lin and Yu 2014; Razafindrakoto and Roubaud 2010) and this difference results in empirical errors as is shown in sensitivity studies (Seldadyo and de Haan 2006). Second, there are measurement problems due to conceptualization of corruption. These proxies generally assume corruption to be a uniform phenomenon whether it involves street or senior officials or heads of government and make no distinction in the corruption of officials possessing very different authority. Third, there are measurement errors due to the missing role of political influence as a co-measure of corruption. Corruption is limited to bribery or a perception of bribery, and, in fact, in countries with systematic corruption, political influence for its perverse role in the misuse of public office is an important measure of corruption that not only decides the level of bribery, but coexists with bribery as a form of corruption. These proxies ignore the role of political influence.

[18]There are several regional and global databases of corruption that use perception-based surveys such World Values Survey, International Crime against Businesses Survey (ICBS), Crime and Corruption Business Surveys (CCBS), Global Competitiveness Survey, World Bank's Enterprise Survey, Political Risk Services' International Country Risk Guide, Transparency International's Corruption Perceptions Index, and World Bank's Control of Corruption.

1.7.2 Theorizing corruption in government organizations

I provide a theorization of how corruption exists and persists in government organizations. Corruption is organized in the form of grand and petty corruption. The *causal nature* of their linkages helps us understand the existence and persistence of corruption and the *strength* of their linkages decide the level of corruption that exists in a bureaucracy. Using deductive reasoning, I argue that *grand corruption causes petty corruption*. Inductively, I make a case that this causality might very well be a general feature of the state government bureaucracies. Furthermore, the interests of the street and senior officials could be captured by the rational choice theory in that these actors work towards maximizing their utility functions. However, their choices are shaped by highly complex and severely constrained preference architecture, which is influenced by organizational environment and is embedded in their social and material realities. The preference architecture of these officials is determined not only by individual psychology but by structure-generated incentives (Satz and Ferejohn 1994). The preferences of the senior officials include capturing of local institutions responsible for implementing public services through street officials while the preferences of street officials include opportunities for corruption, choicest postings, and larger control of organizational resources at the interface of the government and the citizens. In both these cases, the preferences are constrained by organizational goals, public pressure, judicial institutions, etc. The causal structure works as follows: risk-neutral senior officials sell offices to those street officials who help the seniors in expanding their control over the implementation of public services. Depending on the interests of different officials and external constraints, multiple corruption equilibria exist in a bureaucracy.

1.7.3 Agency theory fails to capture corruption dynamics in government organizations. I provide an alternate account of how corruption works and survives in government bureaucracies.

Agency theory is a normative and methodological individualist paradigm to analyze social interactions that emerge when one individual, the "principal," delegates authority to act for or on her behalf to another individual, the "agent," such that the decisions of the agent affect the welfare of the principal (Arrow 1985; Mitnick 1973, 1975, 1980; Moe 1982; Ross 1973; Scholz and Wei 1986; Wood 1988; Wood and Waterman 1991). The theory *implicitly* assumes that there is a conflict between the interests of the principal and the agent and that there is information asymmetry in that the agent possesses more information. Agency theory works well where these assumptions hold and where principals and agents are clearly identified, and their preferences are static, well-defined, and quantified. The theory collapses the *dyadic* problem of contract between the principal and the agent to the incentive problem in that the analytical purpose reduces to develop an incentive mechanism that aligns the objectives of the agent to those of the principal. Government bureaucracies are highly complex organizations and reducing them to dyadic superior-subordinate problems takes away the complexity, which is essential to understand how government organizations behave the way they do (Moe 1987; Wilson 1989). It is true that under very simplifying assumptions, the agency theory has been extended to well beyond just a three-person problem (principal, agent, and client) to include multiple principals and multiple agents (Attar et al. 2007). Including multiple competing principals is feasible, but the theory does not tell us which principals the agent should respond to and which she should ignore in a situation of conflicting goals. The theory also rules out externalities in the sense that the actions of one principal do not affect other principals or agents and only impact the agent that is in dyadic relationship with the said principal (Waterman and Meier 1998). The agency formulation also does not take into account the dynamic roles of principals and agents—a situation in government bureaucracies an actor

acts as agent to some principals and the principal to some agents at the same time. For example, the middle-level bureaucrats could be principals to street officials and agents to the minister or the citizens. Finally, the assumptions of goal conflict while making sense for a marketplace, may not always be true for a government bureaucracy. Bureaucrats and politicians often align for common goals of capturing bureaucracies and engagingly jointly in corruption as I find in India's state bureaucracies in that seniors and street officials develop a situation of mutual dependency rather than acting as balancing forces. As Waterman (1998) argues, "while the principal-agent model raises interesting questions for the study of political control of the bureaucracy, it is far from a generalizable model of bureaucratic politics."

I show that the agency theory fails to capture the dynamics of corruption in complex government bureaucracies. I argue that key agency theory assumptions such as methodological individualism, absence of externalities, information asymmetry, and static nature and preferences of principals and agents do not hold as well for real-world bureaucracies. I provide an alternative analysis of how corruption is organized in the form of stable social networks that exist and perpetuate between actors engaging in grand and petty corruption. Grand corruption occurs in the form of market for corruption in transfers and petty corruption occurs in the forms of several corruption markets in the implementation of public works. The street officials participate in the market for grand corruption in transfers by forming connections with the actors that are in control of the transfer market such as senior bureaucrats, politicians, and their associates. The street officials create and control implementation corruption markets in which private parties participate for furthering their interests by forming corrupt linkages with the street officials. I show that these markets largely function based on structural incentives, which explains why and how these networks (and corruption) survive even if the actors keep on changing.

1.8 Structure of the dissertation

The rest of the thesis is organized as follows. Chapter 2 includes the motivation, research puzzle, empirical strategy and research contributions. Chapters 3, 4, and 5 provide a detailed descriptive account of corruption in three of India's major bureaucracies: the police department, the environmental bureaucracy, and the public works department. Chapter 6 discusses the main results of the study. The final chapter reflects on the implications of the main findings for our understanding of corruption and anti-corruption efforts, including a brief note on future research.

Chapter 2

Dissertation Fieldwork

2.1 Introduction

The data for my dissertation comes from four sources: publicly available government audit reports, in-depth semi-structured interviews, randomized response surveys, and ethnographic fieldwork. This field guide provides the empirical strategies to test the three hypotheses based on my research puzzle, data collection protocol, ethical and reflexivity considerations, and the three normative dimensions of research transparency—data transparency, analytic transparency, and production transparency—to allow the work to be reproducible by other scholars. My purpose has been to fully observe—or even exceed—the transparency standards recommended by the American Political Science Association (2012). The standards require researchers (1) to publicize evidence on which findings are based, (2) to provide measurement, interpretive, and analysis descriptions, and (3) to clearly articulate details of research design and method. The adherence to these high standards of transparency becomes possible mainly through creative research design. Reproducibility remains a concern in qualitative research, but the nature of my research questions and the study design—which are mostly about processes and their qualitatively thick descriptions, and less about quantification of those processes—give me confidence that our study design makes it possible for other scholars

to reproduce most of its findings. The field guide has six sections: research puzzle; study design; fieldwork mechanics; hypothesis-specific empirical strategies; reflexivity; and ethical considerations.

2.2 Research puzzle

Even though the term "corruption" is a modern construct, there have been concerns about the phenomenon throughout human civilization. Despite these concerns and the application of numerous anti-corruption measures over the years, corruption remains high in most of the developing world, and forms a puzzle: Why are anti-corruption reforms difficult to implement? Why does corruption remain entrenched in the system? I examine the delivery of public goods (environmental goods, the rule of law, and rural road infrastructure) provided by three independent bureaucracies in one of the largest states in India to develop a theory of misgovernance that explains government failure in terms of red tape, lack of incentives, and systematic existence and persistence of corruption in government departments. To answer the research puzzle, I test the following three hypotheses:

H_1: *There exist both petty and grand corruption in the state bureaucracies and the existence of these two kinds of corruption is a general feature of Indian polity.* This hypothesis allows me to make the claim that petty and grand forms of corruption in India are not specific to a certain bureaucracy but a characteristic of all of India's major state bureaucracies.

H_2: *These two kinds of corruption—grand corruption of the senior officials and petty corruption of the street officials—are organized around the market for corruption in bureaucratic transfers.* The discretionary power of senior officials[1] in matters of appointments, transfers,

[1]These senior officials could be politicians of the ruling party or senior bureaucrats who work at the highest levels in the bureaucracy.

and promotions provides them with the *disproportionate* control over the general service conditions of the street bureaucrats. Senior officials through the misuse of their discretionary authority create a market for corruption in transfers in which they sell offices to exploit the strong preferences of the street officials for certain places and positions. These street bureaucrats then use their participation in the market for corruption in transfers as a source of *legitimacy* to create several corruption markets in the implementation to compensate for—and extract beyond—the cost of their participation in the market for corruption in transfers. This cost is incurred on the public welfare provisions. I use this hypothesis to infer that the market for grand corruption in transfer causes markets for petty corruption in implementation. This hypothesis also contradicts the (normative) agency approaches in the literature of conceptualizing corruption as a principal-agent model or some other similar conceptualization in which only the bureaucrats are generally accused of corruption while politicians or social planners are assumed to be benevolent.

H_3: *The linkages between petty corruption and grand corruption are mutually reinforcing. The reinforcing nature of the linkages explains why a certain level of corruption exists in a bureaucracy, for the interests of politicians and bureaucrats are best served when the equilibrium between the two kinds of corruption is stable.* The equilibrium corresponds to a complex arithmetic of the interests of bureaucrats, politicians and the organization. This hypothesis sheds light on why anti-corruption reforms fail. It also contradicts the conventional understanding of assuming corruption at different levels in bureaucratic organizations to be largely independent of one another, for these are *causally* linked.

2.3 Study design

In this research, I am concerned with that kind of corruption that systematically (and stably) exists in a bureaucracy. In other words, I am not attempting to explain the nature or

causes of specific scams or scandals in government organizations. What I am concerned with is examining the existence of a certain level of corruption and its persistent nature in a government bureaucracy. This line of research helps us understand why some bureaucracies are more corrupt than others and even within a single bureaucracy why some departments or bureaucrats are more corrupt than others. This study classifies corruption as a species of misgovernance because in my analysis I also include those instances of malfeasance in the provision of public goods in which direct evidence of quid pro quo between the actors is difficult to establish, such as the discretionary appointment of officials to certain positions by politicians belonging to the same social group without any immediate tangible returns. My research design is aimed at examining the causal interaction between the corruption market in bureaucratic transfers and the corruption market in the implementation of public goods. While testing the three hypotheses, the goal is to focus more on the processes, on the dynamics of corruption, on the qualitatively thick description of the linkages between petty and grand forms of corruption, and on the underlying mechanisms to demonstrate how the whole network of corruption operates and sustains itself in the bureaucracy. Once we enter into the realm of multi-level government with divergent interests at different levels in the bureaucracy, the quantitative approaches face limitations in identifying distinct interests of actors at various levels and identifying the possible mechanisms that link them and the nature of these linkages. I rely on qualitative methods to focus more on the thick description of how corruption works in the system as a whole and how it is linked and through what mechanisms. However, I code a part of the interview data only to make limited statistical claims.[2]

[2]While I use conventional empirical approaches to examine the robustness of my inferences, the larger methodological paradigm for this work is inspired by Alexis de Tocqueville's approach to understanding the American way of life and its social, economic, cultural and political institutions. I use similar lenses to understand how corruption occurs in the system without invoking analytical paradigms like principal-agent, collective action, or anything similar. (Tocqueville 1838, p. xxiv) writes, "Whenever a point could be established by the aid of written documents, I have had recourse to the original text, and to the most authentic and approved works. I have cited my authorities in the notes, and any one may refer to them. Whenever an opinion, a political custom, or a remark on the manners of the country was concerned, I

2.4 Organizational structure of the three bureaucracies

The structure of the bureaucracies is organizationally the same across the state government departments in India (Figure 2.1). There is a senior minister at the top for the overall control of the department, who is assisted by the department secretary in administrative matters. Down in the bureaucratic structure, there is a district chief, who heads the district-level bureaucracy and is one of the senior bureaucrats in the state. The district-level bureaucracy implements the state's development programs. A number of junior officials assist the chief in the policy implementation and it is only through these "street officials" that the general public interacts with the state. Across bureaucracies, these street officials have little chance of promotion and never reach the position of the district chief in their career. For example, in the state police bureaucracy, constables are the lowest in the departmental hierarchy and constitute 85% of the police force. In their entire career spanning several decades, they are at most promoted to the position of senior constable. Similarly, in the environmental bureaucracy, also known as the State Pollution Control Board, Junior Engineers are the lowest in the hierarchy and are at best only promoted to the level of Assistant Engineer, and only rarely to the position of the district chief, known as the Regional Officer. It is the same case in the Public Works Department in which Junior Engineers are the lowest in the hierarchy and are never promoted to the position of the district chief, also known as the Executive Engineer. However, these street officials are very important in the policy implementation, for they are the link between the state and the general public.

I am taking as given the underlying structure of the Indian bureaucracy, which is hierarchical and based on the ideals of a competent, impartial civil service—but has been undermined in practice. I study the market for public office and the provision of public goods in the

endeavored to consult the most enlightened men I met with. If the point in question was important or doubtful, I was not satisfied with one testimony, but I formed my opinion on the evidence of several witnesses. Here the reader must necessarily believe me upon my word."

three bureaucracies to test the three hypotheses. I investigate these policies also as processes (and not just outcomes) from their design to their implementation, and how the interests of various parties interact and influence each other at different stages of the policy process. In other words, rather than fitting misgovernance into the worlds of a principal-agent model, a collective action framework, or something similar, I focus on individuals and their choices. The idea behind choosing three bureaucracies is that the findings of this study are not specific to a particular government department, but reflect a general characteristic of the Indian polity.

The state of Uttar Pradesh, the largest state in India with more than 220 million people, registered only 84 cases of corruption. According to the latest government-reported crime statistics, India registered only 4256 corruption cases in 2018. Even among the underreported corruption cases, many states failed to secure a single conviction (NCRB 2019). Besides these limitations, while these datasets might help in the minimal identification of petty and grand corruption by looking at the hierarchy of the officials indulging in corruption, they still provide no information about the linkages between these two kinds of corruption. To the best of my knowledge, this is the first study in India—except for a similar attempt by Wade (1982) on corruption in the irrigation sector—involving direct interviews of officials on corruption rather than relying on indirect measures or proxies. In the next section, I describe the three bureaucracies in more detail. In the next section, I describe the three bureaucracies in more detail.

2.4.1 State police bureaucracy—Uttar Pradesh Police Department

The state of Uttar Pradesh is the largest state in India with a population of about 200 million or 16.7% of the country's total population. It has a total police force strength of 181,000 against the sanctioned strength of 363,000—hence, operating only at 50% of the sanctioned strength. There are 17 specialized police departments; however, the largest of them all is the civil police, which is responsible for maintaining law and order in the state. The

Director General of the Police (DGP) heads the state police, and is the highest-ranked officer in the state, appointed by the Chief Minister from among the pool of senior police officers.[3]

The state is divided into 75 districts for the purpose of general administration. The state is further divided into 8 zones within which there are a total of 18 sub-zones (ranges) and each sub-zone has 4-5 districts. Each district is headed by an Indian Police Service Officer, who is the head of the police administration and controls the entire law-and-order machinery of the district. For the effective discharge of duties, the SP is assisted by Additional Superintendents (ASPs) and Deputy Superintendents of Police (DSPs). The number of ASPs and DSPs varies with the size, population, and nature of police work in different districts. A district is again subdivided into sub-divisions, also known as circles. A circle is headed by a DSP and comprises 2-5 police stations, and each police station is headed by a Station House Officer (SHO). The SHO is assisted by various Sub-Inspectors, Assistant Sub-Inspectors, Head-Constables, and Constables, all of whom carry out the normal policing and patrolling in the designated areas of the district. Regarding the distribution of vacancies in the police force, a majority of them in any district are for police constables—lowest in the hierarchy of the force—who carry out daily activities on the ground. They constitute about 95% of the police force; the remaining 5% are DSPs and above. The police department is among the most corrupt in India and remains infamous for its politicization, incompetence, brazen misuse of power and corrupt practices. The salaries of its lowest-ranked officials, constables, are abysmally low, opportunities for promotion rare and working hours erratic.

[3]The DGP is highest-ranked, but not always the most senior officer in the state. There have been allegations of nepotism and all sorts of favoritism in the selection. On some occasions, the most senior officer has even resigned in protest against a junior officer being chosen for the highest administrative position in the police bureaucracy.

2.4.2 State environmental bureaucracy—Uttar Pradesh Pollution Control Board (UPPCB)

The Uttar Pradesh State Pollution Control Board, an autonomous body under the control of the Department of Environment, state government of Uttar Pradesh, headquartered in the state capital, is responsible for the environmental management in Uttar Pradesh. The Board enforces federal environmental laws, formulates state-level effluent and emission standards following environmental standards of the federal government, and identifies, assesses, and monitors sources of pollution. It is endowed with huge discretionary powers when it comes to enforcement, including being equipped with civil and criminal powers to prosecute the erring industries.

The Board is headed by a chairperson (appointed by the ruling party) and assisted by a Member Secretary, a member of India's civil service. In the decreasing order of bureaucratic hierarchy, the state is divided into seven circles and twenty-eight regional offices. A circle consists of more than two regional offices and a regional office consists of several districts. These divisions are based on the number and the nature (pollution characteristic) of industries. A circle is headed by a Chief Environmental Officer (CEO) and a regional office by a Regional Officer (RO). There are a total of nine CEOs in the state—one for each of the seven circles and two additional CEOs for administration and the central research lab. The lowest unit of the administration is the regional office where all air and water pollution-related policies are implemented by the Regional Officer assisted by Assistant Environmental Engineers (AEEs) and Junior Engineers (JEs). The CEO acts as an administrative link between the regional office and the Board.

The head office sets up policies and provides technical, administrative and financial support and guidelines to the regional offices. Important responsibilities of the regional office include inspection of existing and proposed industries from the environmental point of view,

monitoring of water bodies, waste water, and ambient air and stack emissions, technical assessment of environmental compliance, cess collection, initiating penalties against erring industries, and other services as directed by the head office. The department revenue comes from two main sources—the cess imposed on goods and services, and fees collected from the state industries as part of the Consent to Establish and Consent to Operate services of the state.

The recruitments for the bureaucratic machinery are made only at the level of a Junior Engineer and Assistant Engineer. The minimum academic qualification for a Junior Engineer is an engineer diploma (in the appropriate academic discipline) while for an Assistant Engineer an undergraduate degree in engineering is required. An Assistant Engineer can be promoted up to the rank of a Chief Environmental Officer; however, it takes at least three decades for promotion up to this post. A large number of officers retire before reaching that stage. Part of the reason is that promotion depends on the available vacancies.

2.4.3 State Public Works Department (PWD)

The Public Works Department is responsible for the construction and management of the road transportation infrastructure in the state. It is responsible for connecting villages with roads and constructing roads and bridges, and in some cases state government buildings. In addition to spearheading the state's efforts in road infrastructure, it also implements federal road projects. The head of the department is a senior minister (an elected official, known as the Minister for Public Works), who is aided by a secretary (a senior bureaucrat). Further down in the administrative hierarchy, there is one Engineer-in-Chief each for Development, Design and Planning, and Rural Roads. These three offices work under the direction and supervision of the minister and the secretary. For effective planning and execution of road infrastructure, the seventy-five districts of the state are grouped into eighteen administrative

zones and thirty-two circles. Each of the administrative zones has a zonal office headed by a Chief Engineer; a circle is headed by a Senior Engineer. The lowest administrative (implementation/enforcement) unit of the department is a District, which is headed by an Executive Engineer, assisted by Assistant and Junior Engineers.

2.5 Identification strategy of petty and grand forms of corruption in the three bureaucracies

Two important theoretical concepts central to this study are petty and grand corruption. In the literature, we find a broad range of their definitions. In this section, I describe the two concepts and how I use them in my analysis. Grand corruption is "the abuse of public power by heads of state, ministers and senior officials for private pecuniary gain" (Moody Stuart 1994). In this kind of corruption highly placed public officials in the state hierarchy are involved (Atkinson 2011; Doig and Theobald 2000; Rose-Ackerman 1996). Petty corruption, on the other hand, refers to the corruption by street-level bureaucrats in local government offices, who are responsible for the delivery of basic public services, the kind of corruption ordinary citizens face while interacting with the state (Rose-Ackerman 1978). Grand corruption involves huge sums of money and fewer actors, is well organized, and the transactions are less frequent. In contrast, petty corruption is more pervasive and involves more routine payments, and the sums are small. However, both petty and grand kinds of corruption involve the misuse of public office and could be driven by monetary as well as non-monetary considerations, including advantages for promotion and electoral benefits. Several factors determine whether corruption is grand or petty. These factors include institutional locations of the officials in the state hierarchy, frequency of corrupt transactions, sums of bribes exchanged (Morris 2011; Scott 1972), and whether corruption influences the setting up of a policy or its implementation (Wilson and Damania 2005). Going by this characterization of petty and grand corruption, the corruption of the senior officials is grand corruption and

that of the street officials is petty corruption. Also, corruption in transfers is grand corruption because the transfer decisions are made by the senior officials, and the rent-seeking by street officials in implementation of public projects is petty corruption. I provide more details on the identification of grand and petty corruption in the bureaucracy-specific chapters on corruption.

2.6 Fieldwork strategy

Corruption is a *highly* sensitive topic and it is obvious that officials have no tangible incentives to disclose to an outsider how corruption works in government departments. They are even less likely to admit their own corruption. Even if someone agreed to speak on the topic, they were generally cryptic in their responses and often left out important details. Obtaining data that is reliable and adequate for my study was the most important challenge for my research. I provide greater details of my approach in the Appendix of this chapter, but encapsulate the main strategy for the reader in this section. The fieldwork was conducted in three phases. The first two phases were complete before COVID and the third phase was carried out during COVID, which required a significant change in the field strategy, including hiring a survey agency after duly consulting with the dissertation committee (Table 2.1). There were three major elements of my fieldwork strategy.

First, my policy work with India's National Planning Commission as an associate of a state minister-rank official for about four years was helpful in establishing good relationships with a number of federal and state officials. This work also afforded me opportunities to visit states and speak with the officials there on numerous occasions as part of the policy conversations between the federal and state planning commissions. The questions of corruption did not emerge explicitly in those conversations, but came up *indirectly* while discussing the inefficient implementation of various social policies. Furthermore, in the year 2011, when

there were large-scale country-wide protests about corruption in India in the wake of several corruption scandals, I was tasked by the retired Cabinet Secretary (my reporting officer at the Commission) to prepare a working paper on corruption's impact on various development indicators, a comparative analysis of anti-corruption strategies in different countries, and why some countries were successful in fighting corruption while others struggled at it. This gave me ample time to interact with him and other officers and discuss the issue of corruption at the highest level in the government. I did not know at that time that I was going to research corruption for my Ph.D., but those interactions provided me a good background knowledge about the inner structure of government bureaucracies, including rapport with these officials on whom I relied immensely during my Ph.D. work.

Second, I belong to the same state in India where this research has been done and knew several officers through personal acquaintances working with the state bureaucracy, mostly at the street level. Belonging to the same social milieu was also helpful as during my visits to the offices and interviews, I did not come across as a *total* outsider. These street officials not only shared their own experiences, but also introduced me to their colleagues and helped me with the randomized survey at the later stage of the fieldwork. Furthermore, the ethnography of the marketplace was less difficult as I did not find much difficulty in speaking with the locals because I could speak in their language and also these locals, and the general public, were quite forthcoming in sharing their experiences on corruption.

Third, when COVID spread out in March 2020, it disrupted my field visits, and I had to look for alternative plans. By this time, I had completed the first two phases of the fieldwork (Table 2.1). After a discussion with the committee, I decided to hire an agency (ESRO),[4] a

[4]Registered Office: A-325, Gali No.2, Near 25 Futa Road, A-Block Meet Nagar, Delhi 110094; Branch Office: 20/509, Subhash Nagar, Baraut (Baghpat) U.P. 250611; +91-9868825876, 8447633672, 8696919284, 09412834186; Email: esroindia@gmail.com, esrobaraut@gmail.com

social organization in the state to conduct interviews on my behalf. This reliance on others to conduct interviews also presented several challenges and I had to train them in data collection and observe the highest standards of data collection protocols. This organization has been working with other universities in the US, so they were aware of many of the ethical challenges. At the same time, as part of their community work, they also engage with government officials and had connection with officials in the public works and the environmental bureaucracy. In most cases, they wrote down the responses as the officers answered the questions. In others, the officers asked them to leave the question paper and collect it later, which they did. However, while collecting responses, the interviewers got a chance to ask for clarifications.

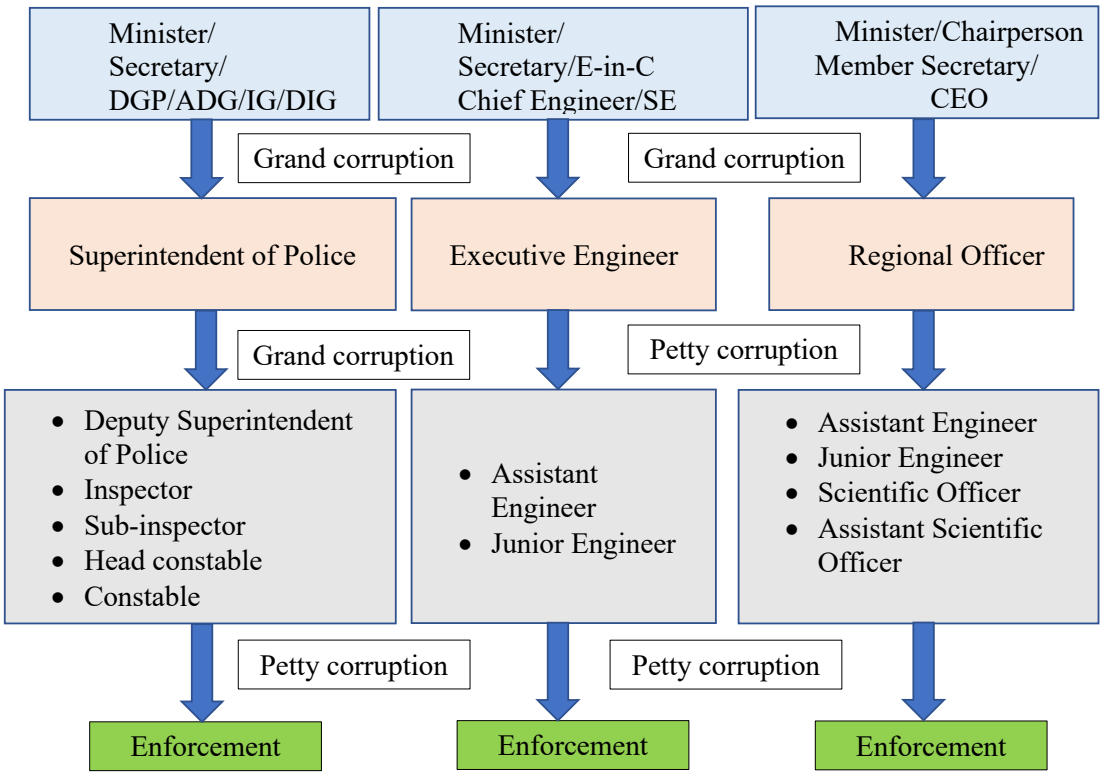

Figure 2.1: Organizational structure of the three bureaucracies

Table 2.1
Fieldwork timeline

Phase	**Details**	**Timeline**
Phase-I	58 serving street officials in the chosen district	May-August 2018
Phase-II	50 street vendors at an informal marketplace in the same district	June-August 2019
Phase-III (a)	20 serving and retired street and senior officials of the Public Works Department and five contractors	November 2020
Phase-III (b)	25 serving and retired street and senior officials of the State Pollution Control Board and 12 brick industry owners	December 2020
Phase-III (c)	125 serving and retired street police officials randomly chosen from the 18 zones of the state	December 2020-April 2021
Phase-III (d)	Six serving Public Works Department official and seven public contractors	March 2021 and July 2021
Phase-III (e)	Three retired Public Works Department official and three public contractors	August 2021

Appendix A

Appendix to Chapter 2: Additional Materials

A.1 Fieldwork mechanics

The fieldwork landscape evolved as the study progressed. Before starting my fieldwork, I spent a significant amount of time extensively reviewing the literature and speaking with the scholars working on corruption for the purpose of sharpening my research question and building compelling hypotheses, and learning about the nature of possible challenges in doing fieldwork on corruption. Once I had the question and the hypotheses, I started zeroing in on the research design, which also included the fieldwork strategy to get the requisite data while simultaneously observing the highest possible standards of research transparency during the course of the work. When the basic research design was in place, I spent the summer of 2017 to conduct a two-month long pilot to assess its implementation feasibility. My own work with the Indian Government's National Planning Commission and interactions with the bureaucrats was useful. Many of these bureaucrats are retired now from senior positions, including one as Cabinet Secretary—India's senior-most civil servant. I have been in continuous conversations with them for several years now and have frequently sought their

inputs as impartial spectators of these findings, often framing my question: "do my findings on corruption resonate with your experience of working with the government?"[1]

There is a huge literature on challenges in measuring corruption—due to which researchers resort to the second-best approach of using perception-based surveys or proxies (e.g., court convictions, tax evasion data). As mentioned earlier, perception-based surveys do not capture the true extent of corruption, and many scholars have found a misalignment between what these surveys say and what the actual corruption is. Similarly, using proxies for corruption is also a challenge because, in countries with high corruption, the institutions reporting these proxies might themselves be corrupt. Due to the sensitive nature of questions, among other issues, social desirability bias becomes an important challenge in getting reliable data. I carefully examined these challenges in my pre-analysis and feasibility during the pilot.

At this time, I also spoke extensively with several senior bureaucrats with whom I have worked, including those who come to MIT and Harvard's Kennedy School for their mid-career programs, to discuss not only the prevalence of corruption but also to get a sense of how to effectively conduct my fieldwork on such a sensitive topic. Speaking with Professor Robert Wade of London School of Economics, who conducted one of the early field studies on corruption in India's irrigation sector, was also helpful. It led to substantial changes in my research question, hypotheses and fieldwork strategy, and only when I started getting a sense of theoretical saturation in terms of the nature of challenge that could possibly arise, I finalized my question and hypotheses. By the time I completed my pilot, I had unstructured conversations with more than twenty senior officials on corruption, and most of them were direct, in which I asked about their experience about corruption in the government. I did not have an interview instrument at this stage because these conversations were informal,

[1] I had regular conversations with them to draw on their rich experiences. Getting access to these officials is one of the strengths of my fieldwork.

open-ended, and just meant to refine my research question and hypotheses.

Based on the feasibility study and conversations with the officials and the guidance of my distinguished dissertation committee, I included three elements in my field strategy. First, senior bureaucrats are often unwilling to speak on the record. At the same time, both junior and retired bureaucrats are a lot more forthcoming about their experiences in the bureaucracy. They are also more likely to answer straightforward questions on corruption and its various forms when approached via recommendations of someone who knows me and them well. Second, senior bureaucrats are willing to answer questions if they believe that the intentions of the research are not likely to indict individuals and that the only purpose is to advance academic understanding of issues. Also, personal recommendations go a long way in getting access to senior bureaucrats. Finally, the middlemen that negotiate on behalf of public officials and private parties are useful sources of information. I approached the fieldwork with the full recognition of the fact that eliciting truthful responses from public officials on corruption is a challenge. They may falsify their preferences (due to social desirability bias), be non-responsive to sensitive questions, or not be accessible at all.

Due to COVID-19, several additional, unforeseen challenges emerged during the course of the fieldwork. After consulting with my dissertation committee members and with the help of the financial support from MIT-India and MIT Science Impact Collaborative, and to be able to conduct the remaining interviews in a timely manner, a part of the fieldwork was delegated to a research and community organization, based in the State of Uttar Pradesh. I hired an organization[2] to conduct 45 interviews of officials—20 interviews from the Public Works Department and 25 interviews from the State Pollution Control Board. In addition, I also conducted a small number of interviews on my own, but a large part of the interviews in

[2]Head Office: Environmental and Social Research Organization (ESRO), 20/509, Subhash Nagar, Baraut (Baghpat) U.P. 250611, http://esroindia.in

these two bureaucracies were done by them (Table A.1). All the interviews were in-depth and semi-structured.

Data for the police were collected in three phases. The first two phases (2018 and 2019), which included detailed semi-structured interviews with 58 street officials in a district and an ethnography of the marketplace in the same district were done by me. However, due to COVID travel restrictions, the final phase, which involved the randomized response survey of the one hundred twenty-five police officers were done by the five street police officials themselves who were part of the first phase of fieldwork and had agreed to help me in my academic work. While they were reaching out to the officers themselves from the theoretical universe of the cases, I also joined many surveys to ensure that the work was going smoothly. Also, to avoid the hassle of reading out the survey instructions, we simply played a pre-recorded audio to the interviewees. I built a very good rapport with these officials during the initial part of my fieldwork and ever since then, they have been kind enough to share their experiences as much as they could. These officials are currently posted in different districts of the state. I have been in constant conversations with these officials during the course of my fieldwork in the past four years. I also want to mention that they did not take any money, except for the expenses incurred in purchasing mobile phones, audio recorders, and logistics. How this affected the mechanics of interviews and surveys and how I ensured transparency, is discussed in the latter sections.[3] Support from these street officials was extraordinarily helpful in surveying both junior and officials across the eighteen administrative zones (seventy-five districts) of the state.

Delegating fieldwork comes with several challenges. Developing robust data collection protocols, hiring an agency, training its workers, and establishing necessary transparency checks and balances, was a concern. I had separate training sessions for the police officials

[3]Alex (Moradabad), Charles (Lucknow), David (Lucknow), Robert (Bijnor), Samuel (Bareilly, retired now). I am changing names of the officers to protect their identity.

and for the company (ESRO) fieldworkers. For ESRO workers, I held six extensive training sessions in October/November 2020 in which we discussed the interview questions in detail, ways to reduce biases in responses with an eye on details on the necessary surroundings, and practiced test interviews. These surrounding details were often used as secondary evidence to corroborate or question the interviewee responses. For example, during the visit to the brick industry owners to speak on corruption in the enforcement of environmental standards, on several occasions, the owners mentioned that they paid bribes to avoid regulations of planting requisite plants inside the factory to absorb pollutants. In response to this question, we could actually see whether there were plants or not. Similarly, if an officer mentioned that he has got postings in all good cities throughout his career, we could check by ourselves his postings from the available database.

A.1.1 Research transparency

Moravcsik (2014) identifies three components of research transparency—data, analytic and production transparency. Data transparency requires access to the data that is being used to make empirical claims. I aim to make a substantial part of the data accessible to the reader—starting with those interviewees who have given me consent to make the data public—some in raw and some in coded form. This allows readers to appreciate the depth of the evidence based on which the claims are made and whether there is proper analysis behind those claims. In other words, transparency demands scholars to provide access to their data and a clear description of analytical methods on which conclusions are based. While there are arguments on both side regarding DA-RT guidelines, I agree with Elman and Kapiszewski (2014) that greater transparency is further going to help qualitative researchers in convincing their fellow researchers about the analytical depth of their claims. They (p.43) note:

> Our central message is that if qualitative scholars take a more self-conscious, deliberate, and expansive approach to data access and research transparency (DA-RT), they can demonstrate the power and rigor of their work more clearly

> and empower a much larger audience to understand and interpret their research on its own terms.

However, such efforts remain largely absent in most qualitative research. Elman and Kapiszewski (2014, p. 43) express doubt about the current level of efforts by qualitative researchers to provide data about the connection between the claim and the data even for "well informed interlocutors to fully appreciate their arguments." In such a situation, most of the readers are not aware of the nature of the data researchers refer to in their analyses. Moravcsik (2014, p. 48) notes:

> Authors rarely cite sources verbatim and almost never copiously enough to judge whether specific lines were cited in context. Those who would understand, critique, or extend existing work usually find it impractical to track down original sources. Incomplete or page-numberless citations are distressingly common: in a recent graduate seminar, my students found that even in the most highly praised mixed-method work, many sources (often 20% or more) could not be located by any means, including contacting the author.

I aim to put the data/transcripts (subject to the final consent of the remaining participants) online within a reasonable time period. This is consistent with APSA's Data Access and Research Transparency (DA-RT) recommendations. However, in doing so, as Monroe (2018) argues, I am committed to being careful about the ethical dimensions of sharing the data—the most important of which is protecting the human subject—and the time (to clean any identifying information) and cost required before sharing the data. Privacy of sources is another concern.

There was no noticeable reluctance in sharing data during Phase-I and Phase-II of my fieldwork, and I am in a position to share data in due course after removing individual identifiers and obtaining the written consent of the interviewees. Only during Phase-III, some

were concerned about their individual identity disclosure; some were open to giving consent after due diligence and as long as my inferences were about the system and did not focus on individual indictment, and were consistent with the COUHES guidelines (which I had explained to them before starting the conversation); only about 10% of the total (Phase-III) seemed prima facie reluctant at the interview stage. However, I also gave my interviewees an assurance to not release the data in raw form or before they give written consent because what they shared was based on the mutual trust. For example, before starting the pilot, I was working with India's Minister for Railways under MIT-India's summer program. My work helped me in connecting to the street police officials. It was done not by formally asking the Minister (that might have made the street officials wary about what they shared) but informally through his staff and their connections. Assuring these street officials about the end-use of the data and the necessity of honestly sharing their experiences with corruption in the bureaucracy was something the Minister's staff helped me to convey to these officials. The result was a benign and sympathetic view of my research and assurance by these street officials to honestly share their experiences. Similarly, in Phase-III, we assured the two retired officials of the environmental bureaucracy, one district chief in the Public Works Department, and three senior police official about not disclosing personal identities without their consent, and only then did they connect us with their colleagues and share their rich experiences.

A.1.2 Reproducibility and replicability of results

We believe that a discussion on the theoretical universe of cases and sampling strategy, clearly articulating the analytical approach and our attempts to reduce biases, can help in not only bringing more transparency to the research, but also aiding reproducibility and replicability efforts by fellow scholars.

A.1.2.1 Theoretical universe of available interviewees

State police bureaucracy—Uttar Pradesh Police Department There are 231,443 street officials in the police department and 406 officers of the rank of district chief and above. There are seventy-five districts in the state, which are further organized into eighteen administrative ranges for the management of law and order in the state. The number of street officials in a district mainly depends on the size of the district. However, regardless of the size of the district, there is only one district chief in each district who is responsible for the overall administration of the district and the conduct of the officials, including having the authority to transfer them within the district, suspend them for misconduct, and assign them responsibilities.

Environmental bureaucracy—Uttar Pradesh Pollution Control Board (UPPCB) In the state pollution control board, there are one hundred-twenty street-level and senior officials against the sanctioned strength of one hundred eighty-one. It is the smallest of the three bureaucracies included in this analysis. Another notable feature of the environmental bureaucracy is that in the case of the other two bureaucracies, there is a district chief for each of the seventy-five districts of the state; however, in its case, a couple of districts are combined to form clusters. There is a Regional Officer for each cluster responsible for the environmental management of districts within the cluster. The state's environmental bureaucracy is grouped into seven Circles and twenty-eight Regional Offices. As mentioned earlier, while the Regional Offices are responsible in matters of general policy enforcement, the Circles mainly work towards a smoother administrative coordination between the Regional Offices and the state. The Circles also guide the Regional Offices in matters on penalties imposed on the erring industries identified by the Regional Offices. Regional Offices can only recommend penalties; the final decision lies with the Chief Environmental Officer. The theoretical universe, in this case, is Chief Environmental Officers, Regional Officers, Assistant Engineers, and Junior Engineers.

State Public Works Department (PWD) In this case, the theoretical universe of the available cases includes Executive Engineers, Assistant Engineers, Junior Engineers, and public contractors. There are 486 sanctioned posts of officers of the rank of district chief and above (Executive Engineer and above) and 4176 street officials (Junior Engineers) in the Public Works Department (PWD).[4][5] For the PWD, I have mentioned sanctioned posts because the actual number of officials is not in the public domain and no interviewees could mention actual number of officers with full confidence. However, they mentioned that on average there might be a shortage of at least 30% officers in the department.

A.1.3 Sampling strategy

Aligning sampling strategies with research goals by identifying what is relevant from the available universe of cases is an important element of research design, especially when due to resource constraints, conducting a large number of interviews is not possible (Mosley 2013, p. 38). Hochschild's (1981) semi-structured non-elite interviews in Connecticut to understand justice in economy, social life, and politics, Fenno's (1978) elite interviews of 18 Congressmen to understand how their views of their constituents influenced their political behavior, Lane's (1962) non-elite interviews to examine the formation of political roots among the general public, and Putnam and his colleagues' interviews of 112 Italian regional councilors and 126 community leaders (Putnam 1993) helped craft strategies for our interviews. While we have ensured a reliable representation of the bureaucrats from these three bureaucracies, we are aware of the fact that it is not merely the numbers that matter, but also the inclusion of a particular case and the involvement of those actors who influence the administrative events

[4]http://uppwd.gov.in/pages/en-topmenu/about-us/organization-structure/name-and-number-of-sanctioned-post

[5]I have referred to only the civil engineers here. There are electrical and mechanical engineers also in the department, but in the development and maintenance of the road infrastructure that I am concerned with they are not directly involved.

of our interests in the state bureaucracies. Brady and Collier (2004) and King et al. (1994) deal with these methodological criteria.

State police bureaucracy—Uttar Pradesh Police Department

In the state police bureaucracy. I did three sets of interviews. In Phase-I, I mainly focused on the in-depth interviews of the street officials and also interviewed a limited number of senior officials for triangulating my data sources and to ensure the consistency in the broader claims about the senior officials and the department made by the street officials. Again, the main focus was on the street officials to understand (grand) corruption in their intra-district transfers. The interviews with the senior officials helped in understanding the motives for corruption of the district chief and also the motives for corruption of senior elected officials and bureaucrats in the transfers of district chiefs.

The sample strategy for recruiting the street officials in Phase-I was aimed at ensuring the availability of the officials and their openness to truthfully sharing their experiences about corruption in transfers and their motives for participating in the market for corruption. It also included several controls to lower the degrees of freedom. The controls included the socioeconomic backgrounds of the individuals and the number of years spent in service. For the socioeconomic backgrounds, specific controls were income levels, education levels, family incomes, and whether they were personally related to politicians, government officers, or businessmen who were in a position to influence their transfers. The data to control for service length was obtained from the publicly available departmental records. These controls were aimed at limiting extraneous variations and minimizing variability in the baseline to ensure that street officials had similar means to secure transfers. The years in service was a way to ensure that the officials stood at the same position in the bureaucratic hierarchy. Those officials who could not pass controls were still interviewed for triangulation and recommendations to suggest potential interviewees. A total of 58 street officials were interviewed

for examining this hypothesis.

Sampling strategy for the Phase-III (survey) revolved around the proper representation of the eighteen administrative ranges of the state while simultaneously ensuring adequate sample size to be enough to make statistically valid inferences based on the power analysis (Figure A.1). To test the first hypothesis on the state-wise existence of petty and grand corruption, we conducted a randomized response survey of state police officials (Greenberg et al. 1969; Kuk 1990; Warner 1965). Being aware of the general unwillingness of the officials (especially the senior officials) to answer questions on sensitive topics like corruption, the randomized method allowed me to elicit responses from the officials by adding random noise of known statistical parameters in their responses. The noise incentivized truth-telling by officials by allowing them privacy and consequently, they were more open to answering sensitive questions. The survey consists of questions about individual experiences of officials concerning corruption as well as their perception of corruption in the department in general (Appendix A.5, Q. 1-5). The power analysis (Blair, Imai and Zhou 2015; Warner 1965) shows that as long as theoretically there are 35% or more bureaucrats indulging in corrupt practices, we need a minimum sample size of seventy-five for making robust estimates of the prevalence of corruption in the bureaucracy. However, based on the literature review, we infer that the actual percentage of corrupt officials in the state bureaucracy is higher than 35% (e.g., Bayley 1969; Wade 1982, 1985). So, to use the randomized survey method to assess the prevalence of corruption in the department, we need a sample size of at least 75 officials. With these considerations, we took a much larger sample size of 125 for the survey of police officials spread across the eighteen ranges. There are at least five officials and at least one official of the rank of district chief in each range. The third set of interviews was of those officials who were not formally a part of the interviews but were used (1) to further test the emerging evidence by asking the same set of questions, and (2) requesting them to act as impartial spectators to confirm whether the findings around corruption in the department resonated

with their experience.

State environmental bureaucracy—Uttar Pradesh Pollution Control Board (UP-PCB)

Sample selection strategy from the universe of available cases involved three factors: (1) willingness of officials to share their experience in some detail rather than mere cryptic "yes," "no," or "I do not know," which we realized was often the situation while reaching out to the officers to check their availability for an interview; (2) a good representation of the state's seven circles; and (3) a good mix of the street officials (Assistant Engineers and Junior Engineers) and senior officials (Regional Officers). The sample also included a recently retired Chief Environmental Officer to better understand the interests of senior officials, especially when penalties are involved, which are beyond the jurisdiction of the Regional Officer.

Rather than relying on the randomized response survey method as in the case of the state police bureaucracy, I rely on semi-structured interviews because of the smaller theoretical universe of the available cases. As we see from the power analysis, under the assumption that there are about 20-30% corrupt bureaucrats in the department, we need a sample size of a minimum of seventy-five. Due to the small size of the bureaucracy, recruiting seventy-five officials (based on the power analysis estimates) for interviews was not possible. For these reasons, we decided to abandon the randomized response survey method and used in-depth semi-structured interviews. Instead, we interviewed 25 officials (both retired and serving) and twelve industry owners (Appendix A.11). However, to avoid biases due to the small sample size, we paid special attention to ensuring that interviewees were more willing to share their experiences, and the conversations were more detailed. There were two interviewees (one retired Regional Officer and one serving Chief Environmental Officer) who were very well known to the ESRO (the data collection firm). These two officers became our starting point because they not only openly shared their experiences but also connected us with the other

officials in the department, including convincing them of the need to truthfully share their views with us.

State Public Works Department (PWD) Similar to the case of the environmental bureaucracy, the size of the Public Works Department is also significantly smaller than the state police bureaucracy. Due to the smaller size of the theoretical universe of cases and difficulties in choosing a large sample size, rather than relying on a randomized response survey, we relied on in-depth semi-structured interviews. In my sample, there are a total of thirty-two respondents for this bureaucracy, which includes 25 government officials and fifteen contractors. I decided to cover more officials than contractors because most of the contractors work throughout the state on different government projects, so they are in a position to also speak about geographical variations in the extent and nature of corruption. The officials in the sample have been in service for ten years or more. While choosing officials, my focus has been on availability and willingness to answer sensitive questions. These officials have also been posted in several districts of the state during their careers, and some of them have been in service for three decades or more. Similarly, the contractors were chosen such that they were experienced and have been in services for a decade or more, and have executed government projects in all the administrative zones of the state (Appendix A.10).

A.1.4 Empirical strategy

A.1.4.1 First hypothesis

The first hypothesis examines corruption as a characteristic of the Indian polity. This hypothesis is equivalent to two propositions that occur simultaneously: (1) There exist both petty and grand forms of corruption in state bureaucracies; and (2) they are not an aberration of a specific place, time, or department, but more of a general feature of the state bureaucracy.

State police bureaucracy—Uttar Pradesh Police Department

To examine the hypothesis in the case of the police bureaucracy, I rely on a randomized response survey. The details of the survey question and the implementation strategy are in Appendix A.5. All the participants were assigned a random three-digit identity. Personal details that included their name, age, the year of joining the service, place of birth, and education levels were noted manually on a separate survey sheet. Survey responses (yes or no) are binary; they were stored in a mobile device and finally stored in a password-protected file.

The empirical strategy involved implementing a survey with specific questions on the existence of petty and grand corruption in the state bureaucracy. Our questions included both the personal experiences as well as the perception of the officials about the department. For example, we asked, "In your career, have you used at least once either bribery or political influence to secure your transfer?" We also ask, "Is corruption in transfers (use of political influence, bribery or both) widely prevalent? By prevalence I mean a situation in which it's very difficult to secure a transfer without paying a bribe or exerting political influence." We further ask, "X further makes a claim: regardless of who is in power, he would still be able to get his transfer. Do you agree with his claim?"

Using the survey, we estimate the prevalence of corruption in the police bureaucracy in terms of the percentage of officials who agree about the corrupt practices in the department. An advantage of working with the police bureaucracy was that it is a large bureaucracy, so we recruited only those survey respondents who were willing to share their experiences truthfully. Furthermore, since the survey was being conducted by the street officials (as mentioned in the beginning of this chapter) who had access to the officials and could explain the purpose of the survey more convincingly than an outsider like me, enough officials were coming forward to participate in the study.

State Public Works Department (PWD)

The interview instrument for the Public Works Department officials is in Appendix A.6. The analytical strategy was mixed. We had two sets of questions in our interview that helped us in getting a sense of the existence of petty and grand corruption in the department. One question dealt with the individual experiences of corruption in transfers (grand corruption) and the corruption in the implementation of road projects (petty corruption). The other question asked about the state-wide prevalence of such forms of corruption. For example, we asked "Are bribery and political influence present in transfers of each level of officers, like officers of the rank of Junior Engineer and above? How does it work? Please share some stories from your experience." In addition to qualitatively looking at the patterns using NVIVo, we also coded the interview data to test the statistical significance of specific responses by one-sample t test. NVIVo helps us in sifting through the interview transcript, notes, and secondary evidence (newspaper stories on public corruption) to systematically analyze the evidence that was presented to us (Mosley 2013, p. 36).

We started with the idea of recording all the interviews, and our first set of interviews were with public contractors. While all of the public contractors were comfortable with the recording and shared their experiences, there was a visible discomfort on part of the serving officials; we realized it half way through the first official interview. The responses were cryptic and subjective due to the fact that the whole thing was being recorded even though we provided a written interview instrument and confidentiality assurance to all our interviewees before actual interviews. At this stage, we decided to abandon the idea of recording interviews and instead resorted to taking notes in all the future interviews.

State environmental bureaucracy—Uttar Pradesh Pollution Control Board (UP-PCB) Interviews of the industry owners were recorded (Appendix A.11); however, for all the environmental officials, as in the case of the Public Works Department, we took notes

(Appendix A.7). Several questions for the environmental bureaucracy are similar to the Public Works Department. In fact, these two bureaucracies are quite similar in transfers and policy implementation. For these reasons, the empirical strategy for them is also largely the same.

A.1.4.2 Second hypothesis

The second hypothesis examines how the two kinds of corruption are organized around the market for transfers. Equivalently, I examine the argument that corruption in transfers provides the locus standi for grand and petty corruption in the bureaucratic system. There are two steps in the analysis: First, I provide evidence of grand corruption in official transfers, including how transfers are used as a powerful reward and threat mechanism and its role in perpetuating corruption. Second, I show how (grand) corruption in transfers is used for petty corruption by street officials—known in advance to both the street and senior officials working on the supply and demand side of bribery and political influence.

State police bureaucracy—Uttar Pradesh Police Department

I consider the market for corruption in the intra-district transfers of street officials and the market for petty corruption of street officials in the form of rent they extract from the street vendors at an informal marketplace. As mentioned earlier, the reason I choose a district for my analysis is because based on the identification strategy used in the analysis, it is only at the district level that the grand and petty corruption interact. Intra-district transfers are under the jurisdiction of the district chief, also known as the Superintendent of Police (SP). Petty corruption can occur in many different ways. In my analysis, I consider one such market, which is created by the street officials to illegally raise the rent from the street vendors in exchange for allowing them to conduct their businesses.

The empirical strategy for this hypothesis focuses on two elements: First, I examine

the market for transfers to test the claim that corruption (grand) in transfers is prevalent. Second, I examine the incentive motives of the bureaucrats to use corruption as a means for transfers and how they use corruption in transfers to raise money from petty corruption. Analysis for the most part is qualitative, but I code interview data to make limited statistical claims about the relative use and effectiveness of bribes and political influence in transfers. The data for this hypothesis comes from the 58 detailed semi-structured interviews of street officials, and ethnography of the marketplace.

State Public Works Department (PWD)

The basic empirical design for the Public Works Department for testing the hypothesis is similar to the police bureaucracy. Here also, I examine two markets of corruption. First, as a common element of examining corruption in transfers, I focus on corruption in transfers of street and senior officials in the department that includes Executive Engineers, Assistant Engineers and Junior Engineers. As mentioned in the earlier sections, I proxy corruption with the use of bribery and political influence. The reason I focus on these officers is because only they have an interface with the petty and grand corruption. For example, corruption in their transfers is grand corruption and the corruption of public contractors with whom they interact in executing public projects is petty corruption.

My interview questions focused on both individual experience of corruption as well their perception about their colleagues. Furthermore, as a caveat, I urged interviewees to express their perception only if they are sure about it from speaking with their colleagues and it is something they witnessed themselves and not merely what they think about the department. For example, I ask "Are bribery and political influence present in transfers of each level of officers, like officers of the rank of Junior Engineer and above? How does it work? Please share your experience."

To understand how corruption in transfers is misused to generate opportunities for corruption in policy implementation, I examine corruption in road project implementation by the department. For example, I ask "If officers use bribery/political influence or both for transfers, how does that affect their performance and interaction with the contractors, local politicians, and senior and junior officers? How do officers manage any money they pay for transfers? What about the payback for the political influence they have used in some way? Do you have any stories/experience of how that works, and how prevalent this practice is in the department?" Analysis for this part is qualitative and I use NVIVo to find connections between corruption in transfers and street officials' propensity to indulge in petty corruption.

State environmental bureaucracy—Uttar Pradesh Pollution Control Board (UP-PCB)

For this hypothesis, the analysis strategy for the environmental bureaucracy is similar to the Public Works Department.

A.1.4.3 Third hypothesis

The third hypothesis states that the two kinds of corruption—grand corruption and petty corruption—are linked and have mutually reinforcing effects on each other. To investigate this hypothesis, we need to identify the mechanism that links petty and grand corruption and further explore the nature of the linkages between grand and petty corruption—whether they are independent, one causes the other, or they are mutually reinforcing.

State police bureaucracy—Uttar Pradesh Police Department

There are two steps for testing this hypothesis. First, I identify the two markets of corruption that represent grand and petty corruption. These markets are the market for corruption in transfers and the market for raising rent from street vendors at the informal marketplace

(Appendix A.9). Second, I apply process tracing to trace the networks and the causal linkages between these two markets for corruption. Process tracing helps me in identifying the mechanism as well as the causal nature of these linkages. For process tracing methodology, we rely on several strategies mentioned in George and Bennett (2005). We are cognizant of the fact that George and Bennett do not explore in detail the difficulties with elite interviewing. However, their guidelines work well for street officials, who are central to our efforts to elicit the causal mechanism of linking petty and grand corruption. The use of elite interviews, especially those who largely come from non-probability sampling (retired officials and officials working in other states/departments), we followed Tansey's (2007) work. As part of our process tracing exercise, we used Mahoney's (2000, p. 6, pp. 387-424) suggestion to closely examine the hypothesized causal relationship and various intervening variables relevant to the relationship using histories, archival documents, and interview transcripts. An important part of our analysis strategy to elicit causal mechanisms was to hear stories from our interviewees to generate causal process observations (Brady and Collier 2004). This hypothesis also relies on the data of 58 street officials and the ethnography of the marketplace.

State Public Works Department (PWD)

As with the police bureaucracy, I first identify the two markets for corruption representing petty and grand corruption. These two markets are the market for corruption in transfers and the market for corruption in the implementation of road projects. Process tracing helps me to identify the mechanism that connects petty and grand corruption. I ask specific questions on the motives and the nature of corrupt transactions from both street officials and public contractors to further examine the causal nature of these connections (Appendix A.10).

State environmental bureaucracy—Uttar Pradesh Pollution Control Board (UP-PCB)

The empirical strategy for the environmental bureaucracy is similar to that for the Public Works Department except that the street officials in this case could raise money from the industry owners in exchange for the misuse of their enforcement power of the environmental standards rather than from the public contractors who implement the government's road projects (Appendix A.10).

A.2 Reflexivity

The researcher's familiarity with the case, the willingness of the interviewees to share their experiences, and the recommendations of officials to secure access to potential participants were all likely to add biases at various stages during the fieldwork. This makes reflexivity (Gergen and Gergen 1991; Guillemin and Gillam 2004) or self-appraisal critical. Reflexivity entails continuous self-evaluation and serves as a reminder of how the researcher's own positionality can influence research outcomes (Drake 2010; Kacen and Chaitin 2006; Stronach et al. 2007). In such cases, the balance between the researcher's involvement or detachment vis-à-vis the subjects becomes important for the rigor and the credibility of the findings (Bradbury-Jones 2007). It is essential to account for the researcher's personal beliefs, knowledge, and values (Cutcliffe 2003, p.137). Some of the specific strategies as suggested by Ahern (1999), Berger (2015), Frisina (2006), Russell and Kelly (2002), Smith (1999), and Wade (1982) include longer engagement with the interviewees, triangulation, and repeated interviews. These were part of the research design to address reflexivity concerns. To address biases in interview responses, wherever possible, the responses were corroborated through multiple sources. Davies (2001), Dexter (1970), and George and Bennette (2005) provide frameworks to critically evaluate interviews for biases. However, personal experiences can also be advantageous in building rapport with the subjects. Ritchie (1995) discusses how her experiences of facing racism helped in gaining rapport with low-income African-American communities to get insights into their lives. These considerations formed an integral part of

the research design.

Critical reflection after each interview helps in reflecting on the performance of both the interviewer and the participant in the narrative, to avoid personal biases in the narrative (Watt 2007). Our approach was to reflect on interviews immediately as suggested by (Elo Kyngas 2008); however, in some cases, some information was also added later when we approached our interviewees for more clarification (Berger 2015). Since the survey part of the fieldwork was led by street officials who also participated as interviewees in the first phase of the fieldwork, we needed to describe their dual roles, as biases are likely to occur at this stage.

A.3 Challenges to inferences

As mentioned in the earlier sections, this study aims to describe the networks of corruption in the state government bureaucracies, and also makes a causal claim about the linkages between petty and grand corruption. Some of the important challenges to inferences come from the reliability of the data, transcription of the data, and the interviewer-specific biases and inter-coder consistency. I discuss these elements below to explain how I addressed or minimized these concerns in my fieldwork.

A.3.1 Reliability of the data

When it comes to the reliability of the data on corruption, in addition to the issues related to the definition and measurement problems, reliability of the interviewees is just as important. We were fully aware of this problem and made efforts to minimize the problems. I defined corruption as the misuse of public office either through bribery or political influence. While explaining our study to the interviewees, we informed interviewees about what we mean by corruption not only by clearly articulating the definition, but also through practical examples.

Furthermore, direct measurements of corruption based on individual experiences addressed perception-related challenges in our corruption data. The final pillar of the data reliability rested on our ability to ensure the truthfulness and sincerity in interviewees' responses. We adopted several strategies for this, including choosing only those who passed our selection criteria and agreed to truthfully share their experiences around corruption with us. Also, we started with the ordinary (non-elite) interviews and gradually moved to elite interviews. Our first rounds of interviews were with the 58 street officials. There were 72 officials who had passed our controls and agreed to participate in the interviews. Our interview guide was highly detailed (Appendix A.8) and in the face of any apparent reluctance from interviewees due to either privacy concerns or time constraints, we moved to the next interviewee.

In the end, we have a group of 58 officials who shared their experience, in some cases with supplementary evidence. For example, some of them took me to the district chief's office to show how openly official corruption happens. I remember a supporting staff demanding a share from a street official (not part of the interviews) for approving medical bills. I could hear the conversation clearly. The place was crowded and nobody even cared to notice my presence. Anybody could come in and go out without restrictions and the interactions were happening quite informally and in a disorganized fashion—clearly supporting the evidence of exactly the way it was described by several street officials. Another factor that ensured the reliability of interviewees and data is that I have been in touch with 20 or more officials ever since the first phase of the interviews in 2018. They have continued to ask me about the progress of my research and show their commitment in reminding me of their availability, in case I need further information. It was only due to this rapport built over time that five of them took the lead in implementing the randomized response method survey in the final phase in 2020. Similar approaches for interviewing officials were adopted for the other two bureaucracies. Even though these departments are smaller as compared to the police bureaucracy, we could find some retired and serving officers through recommendations. These

officials helped us find other officials for interviews and shared secondary evidence, including some official documents that are not classified but are difficult to find in the public domain.

A.3.2 Transcription of data

Transcription of data is important, for we want to ensure that we understand what was said by the interviewees and will therefore use it in the same way it was meant. This was a challenge. To address these concerns, we started with a long interview guide in the first round in which we repeatedly asked the same question from different angles and tested the truthfulness of responses only if there was inconsistency in the responses. Frankly, we found that our interviewees were quite open in sharing their responses. Paraphrasing interviewees' responses was usually adopted during the fieldwork to ensure that we were interpreting the information correctly. Only when the interviewees clearly said yes to our interpretation or nodded in agreement, did we include it as a response. Going back to officials for clarification happened quite often during the first phase of the interviews, which not only made us confident about our interpretation, but also ensured a foolproof strategy for the subsequent rounds of interviews. As Davies (2001) argues that even when interviewees are reliable, using multiple sources to corroborate their data is a good strategy. Initially, we had plans to record all the interviews, but we could see how the fact that the whole conversation was being recorded made the interviewees apprehensive. Probing every response with the follow-up questions was helpful in not only eliciting relevant information, but also in ensuring that what we took note of is quite clear in the end. The presence of such interviewees with whom we had detailed conversations about the bureaucracy, its functioning, and interests, also conveyed to us that our setting was reliable. Hence, we were able to approach interviewees as ourselves being adequately informed about corruption in the bureaucracies.

Field notes are an important part of qualitative research (Creswell 2013; Patton 2002). For us, they were especially important due to the descriptive focus of the research. A re-

porting statement accompanying the field notes is important and adds to the robustness of the qualitative research (Tong et al. 2007). Phillippi and Lauderdale (2017) provide a list of useful strategies for taking notes of contextual information as well as interviews, including the details of important functions of research notes. Emerson et al. (2011) provide the same from an ethnographic perspective. For a more historical development of note-taking approaches, refer to Ottenberg (1990).

For the randomized response survey, transcription of data was not much of a challenge. This was because responses were binary—yes or no—and only the interviewee typed the response in the mobile device. We merely coded those responses as "1" or "0." Also, the survey was led by five serving street officials. Police being a large bureaucracy, with serving officials at the forefront, our strong rapport with several street officials and senior officials ensured that we had little difficulty in recruiting the required 125 willing officials for the survey.

A.3.3 Interviewer-specific biases and inter-code consistency

There were four interviewers involved. I did the first two phases, and only remotely supported the third phase. Training the leads for the third phase adequately, including sharing with them the objectives of the research, participating together in the interviews with them, and discussing with them all the minute details of the interviewees, their responses, and the context—all these actions helped in ensuring reliability among coders. We were specifically sensitive to those interviewees where we were getting different perspectives. We also wanted to avoid interviewer-specific biases. In the final phase, since there were three people doing the interviews of the environmental bureaucracy and Public Works Department and five doing survey in the police department, participating together ensured that there was consistency in interpretation among interviewers. Deliberating over the responses together also minimized variance in among the interviewers.

A.4 Ethical considerations

According to the COUHES guidelines, the project was of minimal risks and the informed consent was written and oral, and sufficiently understandable for our interviewees. Despite COUHES' suggestion that the project required no formal permission from them due to its minimal risks to the interviewees, we still decided to obtain their permission, which helped in developing rapport with our interviewees in assuring them that the sole purpose of the interviews was academic. We also identified no financial or non-financial conflict of interest of our interviewees. As mentioned earlier, we were fully aware of the time and energy spent by our interviewees, but we offered no compensation. We only reimbursed street officials for the costs of the survey, which was incurred in logistics and recording.

A.5 Randomization response survey questions

For randomized response survey implementation, an audio recording was played in front of the respondent. It said: For this question, I want you to answer a yes or no. But I want you to consider the number of your dice throw. Consider the following three scenarios: if you get 1, answer me no. If you get 6, answer me yes. However, if you either 2, 3, 4, or 5, answer me the question that I am going to ask after you throw the dice. In fact, I'm going to look away when you throw the dice. Repeat the same process each time you answer a new question. Now, throw the dice. I DON'T NEED TO KNOW WHAT COMES OUT. However, please don't forget what comes out of the throw. Have you thrown the dice? Take a note of the outcome.

1. In your career, have you used at least once either bribery or political influence to secure your transfer?

2. Is corruption in transfers (use of political influence, bribery or both) widely prevalent? By prevalence I mean a situation in which it's very difficult to secure a transfer without paying a bribe or exerting political influence.

3. X further makes a claim: regardless of who is in power, he would still be able to get his transfer. Do you agree with his claim?

4. Is the market for bureaucratic transfers the primary source around which corruption is organized in the bureaucracy?

5. We have observed corruption in enforcement, like street officials taking bribes from street vendors for allowing them to conduct their businesses. Is it specific to a place or a state-wide phenomenon?

Estimation of the population having a sensitive characteristic

Respondent answers a forced "yes" with a probability $p_1 = 1/6$

Respondents answers a forced "no" with a probability $p_0 = 1/6$

Respondent answers the sensitive question (corresponding to the outcome of 2, 3, 4, or 5) with a probability $p = (1 - p_0 - p_1) = 2/3$

Because a certain proportion of respondents are always expected to say "yes" or "no" regardless of their response to the sensitive question, it ensures anonymity of the respondents who answer sensitive question.

Suppose Z_i represents the binary response to the sensitive question for respondent i. Further suppose, Y_i represents the observed response.

$p(Y_i = 1) = p_1 + (1 - p_0 - p_1)p(Z_i = 1)$

Upon simplification: $p(Z_i = 1) = \frac{p(Y_i=1)-p_1}{(1-p_0-p_1)}$

A.6 Semi-structured interviews of Uttar Pradesh Public Works Department officials

1. Tell us something about yourself, e.g., your hometown, educational background, etc.?
2. How long does it take for promotions from Junior Engineer to Assistant Engineer to Senior Engineer to Chief Engineer to Engineer in Chief? Is the promotion procedure entirely transparent?
3. Is there any role of politicians in the promotion process—formally or informally? How do politicians play any role(s) in the promotion process?
4. When did you join the department? At what post did you join?
5. Tell us the chronology of your career. How long did you work on each of the earlier posts in your career?
6. What are the main duties of the officers of your rank? Who do they report to? What about the other officers? Briefly mention the duties of the officers of the rank of Junior Engineer and above.
7. How many officers of different ranks of the level of Junior Engineer and above are there in the department? How many sanctioned posts are there for different levels?
8. What are the reasons for the shortage of officers at different levels? Has the shortage increased or decreased in recent years? What are some important reasons for shortages? Do the shortages affect the work?
9. How are the officers transferred in the department? Who is the transferring authority for the officers of the rank of Junior Engineer and above? Please tell us about each of them separately.

10. Do officers have preferences/choices for certain districts more than others? What are the preferences?

11. How frequently are the officers transferred in the department?

12. Where was your longest/shortest tenure?

13. Are there well-defined rules/guidelines for these transfers? Are the transfers transparent? By transparent, I mean are the transfers consistent with the established guidelines, if any?

14. Most departments see large-scale transfers when there is a change in the state government. Is it true for the PWD as well?

15. Is there political influence in transfers? Is there bribery in transfers? Or both? Bribery or political influence—which one is more prevalent, and why? The reason I ask is because bribery and political influence are highly prevalent in other departments in transfers as we see from news reports frequently; Does that happen in your department as well?

16. Are bribery and political influence present in transfers of each level of officers, like officers of the rank of Junior Engineer and above? How does it work? Please share your experience.

17. If officers use bribery/political influence or both for transfers, how does that affect their performance and interaction with the contractors, local politicians, and senior and junior officers? How do officers manage any money they pay for transfers? What about the payback for the political influence they have used in some way? Do you have any stories/experience of how that works, and how prevalent this practice is in the department?

18. How often do you interact with local politicians on matters of PWD projects? Can you tell us anecdotes about your interaction with politicians based on your experience or your colleagues' experience? Again, you don't need to mention any names, just the story of what happened? Maybe you can mention both positive and negative experiences.

19. Do politicians try to affect the tendering process? Do they influence the tendering process at all? If yes, how?

20. Many contracting companies in India are owned by politicians or by people associated with them. Do they try to influence policy implementation/enforcement/granting of licenses in any way? Do they use money/threats to get things done, which are against the rule/guidelines? Can you share any experience/stories?

21. What if the officers ignore their threats or warnings? Would retaining the post be a challenge if these politicians are well connected to the senior politicians? Politicians make open threats of transfers to officers in other departments if these officers don't submit to their demands/orders. Is that present in your department as well? Stories? Anecdotes?

22. What percentage of officers use political influence or bribery for transfers or to stay put in a particular post/district?

A.7 Semi-structured interviews of Uttar Pradesh Pollution Control Board officials

(a) Tell us something about yourself, e.g., your hometown, educational background, etc.?

(b) What is the bureaucratic structure of the state pollution control board? Tell us about the officers of the rank of Junior Engineer and above.

(c) How is the recruitment done for different positions in the department? Direct, via promotion, or both? How long does it take for promotions for various posts?

(d) When did you join the state pollution control board? At what post did you join?

(e) Tell us the chronology of your career. How long did you work on each of the earlier posts in your career? How long does it take for promotions?

(f) What are the main duties of the officers of your rank? Who do they report to? What about the other officers? Briefly mention the duties of the officers of the rank of Junior Engineer and above.

(g) How many officers of different ranks of the level of Junior Engineer and above are there in the department? How many sanctioned posts are there for different levels?

(h) What are the reasons for the shortage of officers at different levels? Has the shortage increased or decreased in recent years? What are some important reasons for shortages? Do they affect policy implementation?

(i) How are the officers transferred in the department? Who is the transferring authority for the officers of the rank of Junior Engineer and above? Please tell us about each of them separately.

(j) Do officers have preferences/choices for certain districts/regions/posts more than others? What are the preferences?

(k) How frequent are the transfers of the officers in the department?

(l) In how many districts have you been posted in your career so far? Where was the longest/shortest tenure?

(m) Are there well-defined rules/guidelines for these transfers?

(n) Most departments see large-scale transfers when there is a change in the state government. Is it true for the pollution control board as well?

(o) Is there political influence in transfers? Is there bribery in transfers? Or both? Bribery or political influence—which one is more prevalent, and why? The reason I am asking is because bribery and political influence are highly prevalent in other departments in transfers as we see from news reports frequently. Does that happen in your department as well?

(p) Are bribery and political influence present in transfers of each level of officers, like officers of the rank of Junior Engineer and above? How does it work? Please share some stories from your experience.

(q) If officers use bribery/political influence or both for transfers,, how does that affect their performance and interaction with the local industries, local politicians, and senior and junior officers? How do they manage any money they pay for transfers? What about the payback for the political influence they have used in any way? Do you have any stories/experience of how that works, and how prevalent this practice is in the department?

(r) What are the barriers to policy/pollution guideline implementation, granting licenses, giving NOCs, auditing industries, penalizing them for non-compliance, etc.? Can you describe the main challenges?

(s) How often do you interact with local politicians on matters of air and water pollution? Do they influence policy enforcement? Can you tell us anecdotes about your interaction with politicians based on your experience or your colleagues'

experience? Again, you don't need to mention any names, just the story of what happened. Maybe you can mention both positive and negative experiences.

(t) Many industries are owned by politicians or by people associated with them. Do they try to influence policy implementation/enforcement in anyway? Do they use money/threats to get things done, which are against the rule/guidelines? Would you share any experience/stories?

(u) What if the officers ignore their threats or warnings? Would that be a challenge to retain the post if these politicians are well connected to the senior politicians? Politicians make open threats of transfers to officers in other departments if these officers don't submit to their demands/orders. Is that present in your department as well? Stories? Anecdotes?

(v) What percentage of officers use political influence or bribery for transfers or to stay put in a particular post/district?

A.8 Semi-structured interviews of street officials of Uttar Pradesh state police bureaucracy

Note: It may take up to 60 minutes. I am happy to come at a later time of your choice whenever you have this much time to spare. If something comes up suddenly that requires you to leave, no worries, we can stop it, and resume the rest of the conversation at a later time.

First-order question	Second-order question	Third-order question	Fourth-order question
Building rapport			
Tell me something about yourself (your hobbies, educational background, family background).			
Who all are in your family?	How often do you visit your family? Would you like to visit them more often? What one specific change in your job would make that possible?	Are any of your family members or relatives working in the government? Where? (the state government or the central government, name of their department.)	
Was this your first job?	What was your motivation to join the police?	How long have you been in the service? (cross-check it with publicly available records)	Where in the district are you posted right now, and for how long? cross-check it with publicly available records)
Questions about the police department and its corruption			
Where all have you been posted during your years in service? (name of the districts/departments) cross-check the names of the districts with publicly available records)			

In terms of leaves/working hours, how is the police department different from other government departments?	Are you satisfied with your working hours? How do they affect your daily work? Family life? Social life in general?	How often do you get leaves? Is there a minimum number of leaves that you and your fellow officers are entitled to have on a weekly, monthly or yearly basis? Do you actually get them? What about emergency leaves?	
Are you enjoying it?	What are the top three changes that you would like to see in the police service that would improve your job satisfaction level? Which one is the most important?		
Here is the latest NCRB Report (show them the annual corruption stats in the state, in the police department); it shows that corruption remains a serious concern in the state in general, and the police department in particular. Do you think corruption is a big problem in the police department? Why and why not?	The NCRB report, however, shows only a few cases of corruption as compared to the various survey reports on corruption. Why do you think this there a difference exists? (As you know, that the survey captures the actual prevalence of corruption based on citizens' perception/experience while the NCRB captures the cases officially registered for investigation and finally convicted.)	What are the different sources of corruption in the police department? (starting from the highest level to the lowest level officials, no personal angle in this!). What have you seen, experienced, and heard?	What about the corruption at the district level? What are the different sources of corruption? Who are the different actors?
Questions about corruption in transfers			

What are the rules/guidelines regulating the district-level transfers of street officials?	Who frames these rules? Who changes these rules?	How transparent are the transfer rules? Is everything about transfers decided by rules? Can one get himself/herself a transfer by just relying on the rules?	How long does it take to get a transfer? What are the criteria?
How big a concern are transfers in general, and why?	I have been hearing that bribery and political influence remain two most important channels of transfers. Do you agree, why or why not?	What does your experience say about corruption in transfers? How frequent are bribes and political influence in transfers? Which one occurs more often, bribes or political influence, or both?	
Do you have friends/colleagues who have secured transfers following only the rules?	Using bribery? Using political influence? Using both? Please mention only those cases about which you are fully sure. It is okay if you have not heard of such cases.	If yes, what is the range of bribes used? Range of political influence? Was it just the local politicians or even the ministers who were approached?	

Did you get a transfer of your choice in the district? In previous districts where you were posted, Did you use political influence, bribery or both? What if you had not used these things and had instead just relied on rules?	Why did you not get your transfer? What were/are the main reasons? Were you not eligible as per the rules? What does that say about the political influence and bribes often used for transfers as you alluded to earlier? Is it just bribes or political influence and/or social factors (like ethnicity, caste) that also influence transfers? What about the role of these factors at the senior levels?	Did you pay? What kind of political influence did you use, and why? Why do politicians help in transfers? What are their interests? (It is okay if you want me to come to this question later on!)	How do you get your transfer cost back from your limited salary? Do you just absorb the cost by yourself or try to extract that from the postings of your choice? Is that the reason why many police officials seek transfers of their choice? What decided the amount of bribe and political influence needed to secure a particular posting? (I can 'll come back to this question later on also).
Let us talk about the senior officers. Since the money is taken by their staff members, how sure are you that it reaches the SP's pockets? How can you say that the SP gives permission to the staff-members to sell transfers? Evidence? Stories?	Have you worked closely with any SP in the past? What is their working like? How do their transfers happen?	Anything else that you would like to share about corruption in general in the district police?	
Questions about the marketplace			

Have you heard about the marketplace (X) in the district? If yes, go to the next question, if not, then stop.	Are you currently posted there? Have you ever been posted there in the past? Would you like to get posted there? Are any of your friends posted there?	Why are there so many vendors? The Vendors Act prohibits large gatherings, but still it happens, why? How long has it been going on? (cross-check a part of this with the vendors' responses)	
Have you heard about money being collected there by some people from the vendors? What if the police stop that practice?	Who are those people collecting money from vendors? Do the police know them and this whole practice?	Why do the police allow it?	Who do they handover the money to? The police, politicians, or do they keep it themselves? What is the role of the politicians in this whole practice?
How many policemen are in that police station? Do you know how many have paid for their transfers? How many used political influences?	How many got there just by following the rules?	Would they still use political influence or bribes if the marketplace didn't happen or bribes from vendors stopped?	Why and why not?

Note: These responses are strictly for my research; maintaining full confidentiality about the interviewee is my responsibility.

A.9 Vendors' interview guide

Note: It may take up to 45 minutes. I'm happy to come at a later time of your choice whenever you have this much time to spare.

First-order question	Second-order question	Third-order question	Fourth-order question
Questions about the marketplace			
How long have you been coming to this market?	Do you sell the same products or change depending on the demand?		
What has changed in the marketplace in the recent years? (Size, crowds, number of vendors)	Do these numbers go up or down depending on the season or do they remain the same on average year round?		
I have seen you at the same place in the last few weeks. Others also seem to be at the same place. Is this the case for everyone in the marketplace? What if you or someone try to change their place?	Who owns the spot?	What do we need to start a business here? Certificates from the municipal authority? How long does that take to get? Are certificates the only requirement? Are you aware of the government's Vendors Act? If yes, what is that about? (If not, explain it to them in a minute).	
Questions about the middlemen			
Who are those people roaming around the market with a wad of cash? Middlemen?	They have been collecting money from each vendor. Does it happen each week? What specific service are they providing?	Do you also give money to them? Why do you pay these people? Have you ever tried to not pay them? What about others? What if you all decide not to pay?	Who are they working for? Why do you think so? Evidence?

What is your relationship with other vendors?			
Perception about corruption and the legitimacy of the middlemen			
Isn't this payment a form of corruption? (Yes/No, why and why not?)	Where does this money go? All of it or part of it?	How long has it been going on?	Who is responsible for it? Police? Middlemen? Politicians?
Why do you vote for such a politician (local leader) rather than voting for someone who can get rid of this practice? Does that matter to you?	What are your views about the local elected leader?	What role does he or she have here?	
What do you think is the relationship between the middlemen and the politicians? Isn't what they do illegal?			
How good is your relationship with the middlemen? Who authorizes them to do what they do? What more can you tell me about them?			.

Note: These responses are strictly for my research; maintaining full confidentiality about the interviewee is my responsibility.

A.10 Public contractor interviews

1. Tell us something about yourself, e.g., your hometown, educational background?
2. For how many years have you been taking contracts now? Do you work in a particular district or throughout the state?
3. How many contracts have you executed till date? What is the estimated value of those contracts? Please give us the range.
4. Assume for a moment that I want to participate in the tendering process. What are the steps involved? Please tell me the details and eligibility of each step.
5. Are all the processes online?
6. Tendering process must be very competitive. Are all of these processes transparent?
7. In recent years there have been several instances where public officials have been blamed for the poor quality of projects. Do you believe those allegations? Why do roads have that poor quality?
8. If everything is online, how does corruption happen? Please tell our experience or stories you have heard from credible sources you are certain about.
9. Government guidelines say that you can earn up to 10% profit on a project. Do you get all 10% on all the projects that you work on? Can you earn a profit of more than 10%?
10. Do you have a union of contractors? What is the need for a union? If you do, is it an all-India union or only for the state?
11. Where is the corruption in the department, and how does it work? Tell us from your experience—who takes bribes, and how much? What if you don't give any bribe to the officers? Where do you get the money to bribe officials, from your profit or by investing in inferior quality material?

12. Is approval of your bills easy or difficult? Is getting money for your work from the department an easy process? How does it work? There have been reports in the media about the difficulty in getting money from the government. Why do you think it happens?

13. Are you affiliated with a political party? Does it matter whether one is associated with the ruling party?

14. Are local politicians of any help to you in your work? If so, how?

15. Do you think the local politicians can influence the tendering process? Inspection process?

A.11 Industry owners interviews

1. Tell us something about yourself, e.g., your hometown, educational background?
2. For how many years have you been running this industry? Do you have other branches in other districts of the state or in other states of India?
3. What is your understanding of the environmental issues in India, such as challenges and opportunities?
4. How has the environmental governance, mainly around the enforcement of the environmental standards, changed over the years?
5. Are all the processes related to the project permission and environmental compliance procedures online? Are you satisfied with the way it works; can it be made better?
6. What are the different kinds of environment-related licenses one needs to secure before starting a business like the brick industry? Please tell us the details of each step and the procedure.
7. Can you please tell us the details of various environmental standards and how you ensure compliance with them?
8. How do environmental standards in the brick industry differ from other industries—are they easier or more difficult to comply with, and why?
9. How does the state enforce enforcement?
10. What if one is unable to comply?
11. Why doesn't the state enforce 100% compliance?
12. What is your assessment about the governance in the department? Tell us your personal experience / stories.

13. Does corruption in the department undermine enforcement? What are the different avenues of corruption? How does corruption work in the department? Give personal experience/stories? Please share only what you know credibly.

14. We have heard about corruption in transfers. Does that affect your work? How?

15. The National Green Tribunal is often very critical of the brick industry for the general lack of compliance with the environmental standards. Some activists even allege corruption in enforcement. What are your views on this?

16. Are you affiliated with a political party? Does it matter whether one is associated with the ruling party?

17. Are local politicians of any help to you in your work? If so, how?

18. Do you think the local politicians can influence compliance? What about the inspection process?

19. Anything else we should know?

A.12 Appendix Figures

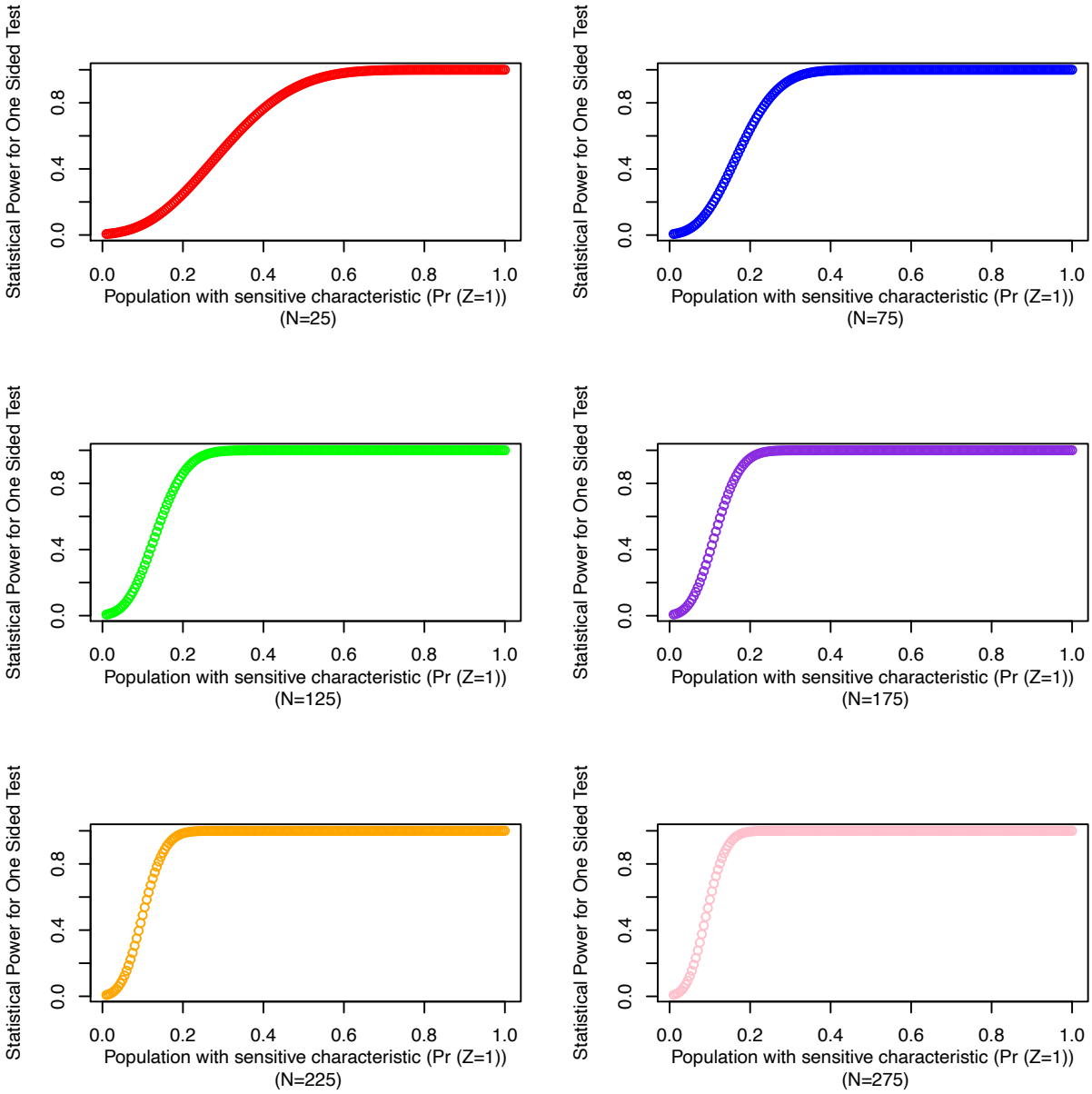

Figure A.1: Power analysis to estimate the minimum sample size needed to detect the officials with the sensitive (corruption) characteristic

A.13 Appendix Tables

Table A.3
Fieldwork timeline

Phase	Details	Timeline	Purpose	Fieldwork
Phase-I	58 serving street officials in the chosen district	May-August 2018	Mechanism identification that links petty and grand corruption	I conducted the fieldwork.
Phase-II	50 street vendors at an informal marketplace in the same district	June-August 2019	Mechanism identification that links petty and grand corruption	I conducted the fieldwork.
Phase-III (a)	20 serving and retired street and senior officials of the Public Works Department and five contractors	November 2020	Existence of petty and grand corruption	ESRO conducted these interviews.
Phase-III (b)	25 serving and retired street and senior officials of the State Pollution Control Board and 12 brick industry owners	December 2020	Existence of petty and grand corruption	ESRO conducted these interviews.
Phase-III (c)	125 serving and retired street police officials randomly chosen from the 18 zones of the state	December 2020-April 2021	Existence of petty and grand corruption	Conducted by the four serving and one retired street official.
Phase-III (d)	Six serving Public Works Department official and seven public contractors	March 2021 and July 2021	Existence of petty and grand corruption	I conducted these interviews.
Phase-III (e)	Three retired Public Works Department official and three public contractors	August 2021	Existence of petty and grand corruption	I conducted these interviews.

Chapter 3

Corruption in State Police Bureaucracy

3.1 Introduction

This chapter analyzes corruption in India's state police bureaucracy. The organizational structure of the bureaucracy is given in Figure 3.1. I chose the police bureaucracy because of its sheer size and monopoly over critical functions of the state like maintaining law and order and policy implementation. The broader empirical approach to test the three hypotheses has already been mentioned in detail in Chapter 2. However, I recapitulate its key details and the rationale behind the case selection.

In order to test the first hypothesis—the existence of petty and grand corruption in the bureaucracy—I use a survey of state police officials based on the randomized response method (Warner 1965), in-depth semi-structured interviews of the 58 street officials, and an ethnography of an informal marketplace.[1] More specifically, I use the semi-structured

[1]These informal marketplaces are known as *bazaars* in India and are the common feature of Indian towns and cities. These are the places where vendors gather to sell fruits, vegetables, and other groceries.

interviews and ethnography to show the existence of the two kinds of corruption at the district-level[2]—the smallest administrative unit of the state. Further, I use the survey to show that the existence of petty and grand corruption and their linkages as enunciated in the interviews and the ethnography is not a district-specific phenomenon, but a general characteristic of the bureaucracy. The second and third hypotheses concern the identification of the mechanism of how these two kinds of corruption are organized around bureaucratic transfers and the causal nature of their linkages. For these two hypotheses, I again use the data from the semi-structured interviews and the ethnography. For identifying the causal mechanism, I use within-case process tracing and rely on the methodology of Collier (2011) and George and Bennett (2005) focusing on careful description (Mahoney 2010, pp. 125-131), and the sequence of dependent, independent, and mediating variables. Furthermore, using Miles and Huberman's (1984) analytical strategy for qualitative data, the study also codes a portion of the case interviews to conduct statistical analyses to make some specific claims about corruption in transfers, but the case study and the ethnography are principally designed to describe the system as a whole. Ethnography, for its utility to discern the complexity of social structure (Jeffrey and Troman 2004), and ability to better capture lived experiences of the communities (Cohen et al. 2007), is used to study (petty) corruption at the informal marketplace by researching the lives and behavior of the street vendors and their interaction with the state. The data collection method for the vendor population is participant observation (Delamont 2009) and a mix of semi-structured interviews and open conversations (Gillham 2000).

The unit of analysis for testing the existence of petty and grand corruption and their linkages is a district for two reasons. First, the district is headed by the Superintendent

[2]The district is the smallest unit of administration in the country. Each state according to its population and geographical areas is divided into districts. Across India, states and districts have a similar organizational structure.

of Police (SP), who is a career bureaucrat and the highest public official in the district, appointed by the state government, and is part of India's elite civil service.[3] Second, street police officials through whom the citizens interact with the state, also known as constables, are members[4] of the district police force, and they come under the complete administrative control of the SP. Only he has the authority over the intra-district transfers of the street officials and has powers to suspend or even terminate the service of the erring street officials for their professional misconduct. Several factors determine whether corruption is grand or petty. These factors include institutional locations of the officials in the state hierarchy, frequency of corrupt transactions, sums of bribes exchanged (Morris 2011; Scott 1972), and whether corruption influences the setting up of a policy or its implementation (Wilson and Damania 2005). We should note that there is no sharp distinction where petty corruption flips into grand corruption, for it is a continuum in reality. However, based on the frequency and quantities of bribes, the institutional location, and the relative power differential between the SP and the street officials, the corruption of street officials is categorized as petty corruption and the corruption of officers of the rank of SP and above as grand corruption. As such, a district is a relatively bounded system where these two kinds of corruption—grand corruption of senior officials and petty corruption of street officials—interact, and hence it presents an opportunity to systematically investigate their linkages.

[3]The SPs are part of All-India Civil Services. There are two main channels of their recruitment. The main channel is through a highly competitive nationwide exam by the Union Public Service Commission, a Constitutional body that directly reports to the President of India. The other channel is through promotions from State Public Services. Through State Public Services, the officers are appointed to a relatively junior position and after spending about two decades or more, some of these junior offices are promoted to the rank of an SP. However, regardless of their channel of recruitment, their transfers to different positions in the states are under the control of the state governments.

[4]These street officials are recruited by the state government. After the recruitment, they are posted in different districts by the government. They are the lowest in the hierarchy in the state police bureaucracy. Once they are in a district, their service rules are under the complete control of the district chief as long as they serve in the district. The majority of these officials retire at the same hierarchical position at which they are first appointed. Even though their emoluments increase with the time spent in the service, they are rarely promoted in the bureaucratic hierarchy.

The case selection is a two-stage process. In the first stage, a state is chosen followed by a district. To select one of India's thirty-six states, I rely on strategies for case selection[5] discussed in Flyvbjerg (2006), Ragin (1992), Rosch (1978), Stake (1995), and Yin (1981, 1984). In this study, besides standard case selection techniques relying on the research objectives (Gerring 2007) and the feasibility[6] factor suggested by Burgess (1991) and Morse (1994), the researcher's familiarity with particular social facts also influenced the case selection. This makes it possible to more fully observe the complexities of corruption in its various manifestations and aids a deeper engagement with the research context. It also facilitates following the suggestion of Yin (2009) to interpret the information in real time and adjust the data collection activities according to the dynamic ground realities. With these criteria, the State of Uttar Pradesh was chosen.[7] Followed by the state selection, a district was chosen using necessarily controls. A detailed basis behind the district selection is provided in Chapter 2.

The semi-structured interviews of the street officials and the ethnography of the marketplace give us two datasets that include data on the petty corruption of street officials in the form of bribes extracted by them from street vendors, and the grand corruption of the SP in the form of bribes from street officials for intra-district transfers. The two

[5]The case method has inherent interpretive strengths (Feagin et al. 1991; King et al. 1994; Mahoney and Goertz 2006), and hence it is more suited to capture the complex details of corruption and intertwined interests of various actors in the state police bureaucracy. Gerring (2004) calls the strength of a case method to capture the depth of a phenomenon its "primary virtue."

[6]The feasibility element in the case selection addressed the gaps in empirical research that arise from the use of perception-based data. Using fieldwork data from Indonesia, Olken (2007) finds that perception-based corruption differs significantly from actual corruption. Similar results in other countries have been reported by Bergh et al. (2017), Lin and Yu (2014), and Razafindrakoto and Roubaud (2010). For these reasons, the study uses interviews of the officials—both at the demand and supply sides of bribery and political influence—to fetch actual corruption data. To the best of my knowledge, this is the first study in India—except for a similar attempt by Wade (1982)—involving direct interviews of officials on corruption rather than relying on indirect measures or proxies. However, in the systematic exploration of linkages using formal research design, this study goes beyond Wade both in terms of the number of interviews and a robust triangulation of observations using insights from both serving and recently retired officials. The study conducts data source triangulation (Denzin 1984) through multiple sources of data (Yin 1984) using Jick's (1979) within-method triangulation continuum design strategy to ensure validity, reliability, and objectivity, and a broader internal validity as well as to present a more complete portrayal of the phenomenon under study.

[7]It is the largest state in the country with about 17% of the country's total population.

corruption datasets are analyzed to examine the existence of the two kinds of corruption and identify and characterize the linkages between the petty and grand forms of corruption. By characterization, I refer to how these linkages between petty and grand corruption are formed and sustained. This approach specifically advances our theoretical understanding of corruption in two ways. First, most theorizing of corruption is usually done as a dyadic exchange. This approach helps us to understand how agency-centric approaches to corruption break down in cases of systematic corruption, and how the role of social networks becomes important for understanding corruption in such situations. Second, the study can capture the actual prevalence of corruption—not only whether it happens, but also how it happens if it does—to allow making empirical claims about the linkages and the mechanism.

3.2 Data collection

After the pilot study, the fieldwork was organized into three phases. In the first phase, during May-August 2018, a total of 58 semi-structured interviews of street officials were conducted in the chosen district. In the second phase (June-August 2019), ethnographic research involving interviews (Britten 1995) and observations (Mays and Pope 1995) of vendors at the weekly informal downtown market- place in the same district were carried out. During September-December 2019, the major findings were triangulated through semi-structured interviews and open conversations with additional officials who had agreed to offer insights but were not part of the interviews. Finally, during September-December 2020, a randomized response survey was implemented in the state to interview 125 police officials to assess the prevalence of grand and petty corruption in transfers in the state police bureaucracy. The data from the first two phases is aimed at identifying mechanisms that link petty and grand corruption and their organization around bureaucratic transfers, while the third phase assesses the prevalence of petty and grand corruption as a general feature of the state police bureaucracy. While the first two phases for the data collection were conducted in person, the triangulation process

was mostly done using electronic communication. The third phase was a mix of in-person and online interviews. Details of the three phases are in Table 3.1. Finally, even though my data collection method revolved around semi-structured interviews, the format of the interviews nevertheless allowed me to do some more systematic coding. All relevant COUHES guidelines were strictly observed during the fieldwork.

In the first phase, the selection of interviewees (street police officials) from the list of available participants included several controls to lower the degrees of freedom. The street officials were probed about their personal experience in the police department, their observations of colleagues, juniors, seniors, and the influence of bribes and political influences on intra-district transfers. Also, in those instances when I was invited home for an interview, if it was possible, I had open-ended conversations with their family members about whether they had heard from the members of the community (family members of other constables) about bribery and political influence in transfers. The idea behind the semi-structured form of interviews was to understand the phenomenon of corruption from the perspective of interviewees and to get detailed insights about why they came to have that perspective.

In the second phase, observations and interviews took place in an informal weekly marketplace for twelve consecutive weeks near the district center. These observations were systematic. The selection of the participants was based on the size of the business of the vendors. This included categorization of the vendors into four categories based on the number of employees managing the business space (1, 2, 3, 4+).[8] Consistency checks helped in developing strong substantiation of emerging constructs and hypotheses. These checks became possible as the responses were being documented in response to the same set of

[8]During the pilot study, it emerged from the conversations at that marketplace that the money taken by the police in exchange for allowing vendors to do business depended on the amount of space taken by the vendor and some rough estimate about the size of the business. Also, during my visit, I rarely found vendors with more than four employees managing the space.

questions directed to the vendors. I also noted what these vendors say in comparison with what they do. I chose the weekly informal marketplace because it provided me access to a highly organized economic activity where I could study the prevalence of petty corruption and how it is organized through local politicians, police officials, and their agents. The selection procedure for the randomized survey in the third phase ensured a robust representation of all the 18 administrative zones of the state police bureaucracy.

3.3 State-wide existence of grand and petty corruption

This section provides some general estimates of corruption in the state. It includes the prevalence of both grand and petty forms of corruption. A total of 75.2% of the officials participating in the randomized response survey (95% CI: 67.5 to 82.8%) report that corruption remains widely prevalent in transfers—grand corruption—across all the levels of bureaucracy and that it is difficult to get an important posting without resorting to either bribery or political influence. About 70.4% of officials (95% CI: 62.3 to 78.5%) also admitted to have themselves resorted to using either bribery or political influence or both at least once in their career to secure transfers of their choice. A large percentage of officials (82.4%) reported (95% CI: 75.6 to 89.2%) that petty corruption like street officials taking bribes from street vendors is not a district-specific phenomenon, but they are quite aware of similar practices in other districts also. About 80% of the officials (95% CI: 72.9 to 87.1%) in the survey also agreed that the market for corruption in transfers remains the principal pillar around which corruption is organized in the bureaucracy (Figure 3.2).

While I provide the estimates of the prevalence of corruption in transfers and the existence of petty corruption in implementation of public policies, similar arguments about corruption in transfers have also been made by several other scholars. The use of transfers to different posts of varying power has been a key mechanism of bureaucratic control in India (Iyer and

Mani 2012). Politicians interfere in bureaucratic transfers at all levels of the administrative hierarchy. Banerjee et al. (2012) in a study of the police bureaucracy of the State of Rajasthan, argue that, while appointments of police officials should de jure be done by police management, they are de facto controlled by the politicians. De Wit (2016) quotes Kishwar (2005) on the deep-rootedness of corruption in transfers. He says that "[a]ppointments, postings, and transfers are in fact big industry—with politicians and bureaucrats routinely making crores of rupees from it. If one were to audit a senior bureaucrat's or a chief minister's working day, one is likely to find that 90% of their workload pertains to handling these job auctions and transfer deals." Bardhan (2015) also argues that transfers and postings remain a major source of corruption in India. Similar findings emerged in an internal survey of the Government of India sent out to its 18,432 elite civil servants belonging to the police and other administrative services (Table 3.4). About 26% of officials responded to the survey sent out via both post and email. Of the respondents belonging to the police service, 84% of the officers either "agreed" or "strongly agreed" that corrupt officers manage plum postings. More strikingly, about 92% either "agreed" or "strongly agreed' that (grand) corruption often happens through the collaboration between the bureaucrats and the elected public officials (Civil Services Survey 2010).[9] In summary, politicians (mis)use their authority over transfers to punish and reward the bureaucrats and it is through this threat and reward instrument around transfers that corruption perpetuates in the system.

[9]For more detailed survey responses to the different corruption questions, please refer to Table 3.3. While the survey refers to the general state of grand corruption in the country, it does not provide details of how it occurs and sustains itself in the system. The survey included the same set of questions that were part of similar surveys in Canada, United States, United Kingdom, Australia, and Romania.

3.4 Grand corruption in intra-district transfers—the existence of grand corruption

The street officials are at the bottom of the administrative hierarchy in the police bureaucracy.[10] The interview data suggest that the posting preferences of these officials can be broadly categorized into specific police departments and specific places.[11] These two sets of preferences are influenced by three competing factors: possible avenues to earn bribes, daily workload, and opportunity to stay close to the family members to be able to visit them frequently. However, the order of these two sets of preferences differed across officials. Their preference for staying close to the family is due to financial insecurity and their strong ties with their families. What also emerged from interviews was that barring a few postings at the district-level, there were no weekly holidays and working hours were also not fixed. They all unanimously agreed that their job is literally round the clock, affecting their social lives and taking a toll on their health.[12] Even senior officers agreed about the stressful jobs of

[10]The salaries of these officials are very low, working hours are erratic, avenues for promotion are limited, and outside employment opportunities are rare. However, they are important actors in the law-and-order machinery, and it is only through these officials that the ordinary citizens mostly interact with the state, for they enforce the law on the ground, investigate crime, and are the first to respond to a public law and order emergency.

[11]By specific departments I mean specific units of the district police force. They all are part of the same force and work under the same SP, but deal with specific tasks. By specific places I mean various police offices/stations within the district. There is a huge variation in the sizes of the districts in the state of Uttar Pradesh. The place one is posted at in a district can have implications for how close one is to his family members. This is because these officials are not provided with government vehicles to commute, and the dilapidated road infrastructure of the state makes things worse. Furthermore, where one is posted in the district also determines one's administrative powers to inspect both formal and informal local economic activities, and hence opportunities to earn through corruption.

[12]These street officials work under multiple principals, which makes their work exceedingly challenging. Many stakeholders apply constant pressures and try to influence their decisions, which includes senior bureaucrats in the state and federal governments, civil society members, local, state and federal politicians. When there are multiple principles of an agent who act independently and do not collude among themselves, the power of incentive varies almost inversely (Dixit 1996). James Q. Wilson captured this conundrum of bureaucrats working under multiple principals brilliantly. "Policy making in Europe is like a prizefight. Two contenders, having earned the right to enter the ring, square off against each other for a prescribed number of rounds; when one fighter knocks the other out, he is declared the winner and the fight is over. Policy making in the United States is more like a barroom brawl: Anybody can join in, the combatants fight all comers and sometimes change sides, no referee is in charge, and the fight lasts not for a fixed number of rounds but indefinitely or until everybody drops from exhaustion. To repeat former Secretary of State George Shultz's

these officials, but they said that the blame lies with the political leadership for not recruiting new officials. So, for many of them settling into a posting of a comparatively lighter workload was a priority.[13]

When nudged to pick their three top shortcomings of the police bureaucracy adversely affecting their job satisfaction, transfer problems along with long working hours and low salaries figure in the top three for a vast majority of the street officials, although not in any was a priority. In addition to these preferences emerging in the interviews, I also observed particular order.[14] In addition to these preferences emerging in the interviews, I also observed officials revealing these preferences during my visit to the SP's office where they gather in large numbers scouting for channels for transfers.[15] There I heard conversations of these officials about the dissatisfactions with their jobs. By channels, I essentially mean two things: the search for political influence, and attempting to connect with the SP's staff members who could help with the transfer in exchange for a bribe. Of the interviewees asked about transfers, 72.4% acknowledged paying a bribe, 43% admitted using political influence, and 22.4% admitted using both. In other words, 93% of them had used either a bribe or political

remark, 'It's never over'" (Wilson 1989, pp. 299-300). As Dixit argues, the policymaking is expected to be worse than the United States given the complex political landscape of India (Dixit 2012).

[13]The sanctioned police strength in the state is 155.27 per 100,000 people while the actual strength is 64.82 per 100,000 people. In terms of absolute strength, the number of constables in the state is 103,082 (42%) of the sanctioned 245,100. Although there have been demands in the past to allow weekly holidays to these officials, because of the lack of manpower and increased demand for policing, as of August 2019, there is no roadmap yet to implement the weekly holiday provision.

[14]Wade (1982) had observed that in the state irrigation department transfer postings, staying in a town/city with better civic infrastructure was also a preference for officials. In the police, however, this did not figure prominently. I suspect part of the reason for this is most towns in Uttar Pradesh suffer from poor infrastructure and hence it does not make a decisive difference where one is posted.

[15]These conversations were facilitated by the officials who were accompanying me to the SP's office to corroborate and present further evidence of what they had themselves mentioned in interviews. Officials were chatting informally about not getting postings of their choice with transfer request applications in hand. When asked about the reason for not formally applying for a transfer by following the required rules, the response was that nobody knows if there are intra-district transfer guidelines. They neither know themselves nor has anyone ever mentioned it to them. When the question of guidelines was put to one of the senior-most police officers in the state capital who had been heading the rules and manuals division of the police bureaucracy, he responded that "while the state prescribes some guidelines, they allow ample discretionary powers to the SP."

influence or both at some point in their careers for securing a place of their choice. The rest (7%) of the officials, suspected the bribes for transfers as a "widespread" practice, but they did not acknowledge personally indulging in it. One of them said, "I know it happens. I also know people who have done so and still do so, but I personally avoid it because once we are caught in the cycle, it becomes difficult to come out of the network." However, some of the interviewees in response to their colleagues' resolution to not pay bribes or use political influence for securing transfers sounded skeptical. They thought that their colleagues were either falsifying their preferences or simply lacked the wherewithal (bribery or influence) to secure a transfer.

For bribes, there are staffers in the SP's office who act as a conduit between the SP and the street officials seeking transfers. These staffers decide the terms and conditions of the bribe and the amount depending on the place of transfer, for some transfers are more expensive than others. The majority of the officials agreed that once bribes are paid, transfers most likely happen, but in some cases, it might take an extended time. However, there were only a few such cases. How fast a transfer is done depends on the seniority and the reach of the staff member to whom the bribe was paid. If someone directly pays the SP's senior-most staff—someone who works most closely with the SP on administrative matters, that is, a senior member of his secretarial staff—the process is faster and smoother. When the bribe is paid to other staffers, the process becomes cumbersome and even ineffective in some rare cases, and the bribe money might well be lost. As one official said, "in the crowd of staff members, finding the right person is difficult because at the SP's office all his staff members claim to be close to the SP and ready to cheat the gullible constables who are ready to pay for transfers. In cases when money is paid to the wrong person, it is simply lost. One cannot even complain about it for bribery is a crime whether you accept it or offer it." Even when

the money is not lost, outermost staff[16] members[17] always demand a higher amount than what the norm is for transfers, for they wish to keep some of it for themselves.

The second channel of corruption in transfers of the street officials is political influence. Many of these officials develop transactional relations with the local politicians during their work. Inter-district transfers of street officials are not frequent. Staying in the same district for several years is common for these officials. Of the 58 street officials interviewed in the first phase, all of them have been in the same district for three or more years. In contrast, the transfers of senior officers of the rank of SP and above are very frequent. For example, in 2015, the average tenure for the district police chief in the state was merely six months (Bureau of Police Research Development 2016). These politicians could be State Assembly Members, Members of Parliament, or their representatives in the district who derive their influence by their proximity to the political and administrative machinery of the state. The politicians help the officials in their transfers, and the officials, in turn, help them in their illegal activities or in organizing rent-seeking activities, e.g., renting out public spaces with the help of the police, getting away with petty or even serious crimes, or running organized criminal rackets.[18] To what extent these politicians can influence the transfer process by exerting pressure on the SP depends on many factors—e.g., whether their party is in power, how powerful they are in the party hierarchy, and how well connected they are with the

[16]The staff members function in concentric circles with the SP being at the center, and then different staff members, depending on their administrative position and work in the SP's office, can be imagined as if they are arranged along these concentric circles. The innermost circle yields the most influence and the outermost the least. The desire of the officials looking for transfers is to get in touch with the person located in a concentric circle as close to the SP as possible. However, this is usually difficult as the SP's staff is not immediately accessible to these officials.

[17]The SP's staff size is quite large and varies with the district size. These staffers assist him in his administrative work related to the management of the district. The size of the SP's personal staff in some districts is as big as 50 or even more in districts like the capital of the state. In the district where the study was conducted, the size was 15.

[18]Association for Democratic Reforms (ADR) data based on electoral affidavits of the winning candidates in the 2019 Parliamentary Elections show that 43% of the 542 Members of Parliament have criminal cases against them. Similarly, in the last State Assembly election in Uttar Pradesh, 27% of the Members of the Assembly have declared serious criminal cases against them.

bureaucracy. Senior politicians influence administrative activities in their constituencies through the local politicians (their representatives), and it is only due to this connection that these local politicians attempt to exert pressure on the local administration to get undue benefits or bending of rules. Politicians also threaten those officers who question their activities with transfers. The 1980 National Police Commission (1980) had observed that "[t]he threat of transfer/suspension is the most potent weapon in the hands of the politician to bend the police down to his will."

These two channels of corruption—bribery and political influence—are, however, not mutually exclusive. Officials looking for transfers sometimes use both bribes as well as influence to increase the likelihood of their transfers, especially in those cases where a transfer is difficult. To find the relative success of bribery and political influence in transfers, the interview data were coded (Figure 3.3) as described in the methodology section (Table 3.2). The results show that the expectation that a transfer will be successful is the highest in the scenario when a candidate uses both political influence as well as a bribe and the lowest in the case when a candidate uses neither a bribe nor political influence and is intermediate in the remaining scenarios (Table 3.3).

However, the use of bribery and influence in transfers are mutually independent and the interviewees were found to have random opinions about the efficacy of these two means. They used either one or both depending on their individual preference and resources. The difference in means of successful transfers between bribe and influence is statistically significant ($p < .005$).[19] The sample means of the two groups are 0.88 and 0.52, respectively. This indicates that a statistically significant higher majority successfully secures transfers using bribes as compared to those using political influence. The reason that a bribe is a more

[19]We perform Welch's t-test to accommodate the unequal sample distribution variance of the two population groups.

effective means to secure a transfer as compared to political influence is because even in those cases when transfers are made under political influence, they are not smooth. One official recounted how his transfer took days even though he had the help of a senior politician, who in turn spoke to the SP. The reason is that the bribe is shared among various actors in the transfer process. However, when transfers are done under political influence, the persons handling the transfer process other than the SP still expect a bribe. This results in a deliberate delay in the transfer process-related documentation that indirectly forces the officer to pay a bribe. To avoid these hassles, officers find it convenient to pay a bribe at some stage of the transfer process. The amount of bribe and the political influence depend on several competing factors—e.g., earning potential of a particular posting, price tag fixed by the staff members (which is usually quite rigid because the demand for transfers always exceeds supply), the seniority of the staff member to whom the bribe was paid, the propensity for corruption of these actors (for some officials are more corrupt than others), and information asymmetry[20] between them, etc. An official can also be willing to pay a higher bribe for a particular transfer if he sees its earning potential or the level of competition is high for the posting, or if he strongly prefers the place. An SP's office can demand a higher bribe for allocating a certain place as compared to that of his predecessor or successor. In addition, there is also an interplay of the interests among local politicians, senior politicians, local businesses, and civil society. It is not uncommon to see people protesting against corruption. So, the whole exercise of corruption is managed in a way that does not disrupt the ongoing arrangement of interests and does not become a cause of public anger. In the interviews, I found that the median amount paid for transfers was Rs. 4700 and the maximum amount paid was Rs. 13,000. These figures are equivalent to 29% and 81% of the starting salary of these officials.

[20]The existence of information asymmetry makes it difficult to observe how much of a bribe an actor keeps to himself and how much he actually delivers to the next person in the case when the bribe is paid to staff members other than the senior-most staffer. Ultimately, it is senior-most staff members who have access to the SP to actually initiate the transfer process.

On the question of the extreme influence that bribes and political influence could play in transfers, officials claim that they have limited resources, but in case one has enough money to bribe or can deploy the highest level of influence, transfers can be done quickly without hassle. Officials told about some of their colleagues who secured transfers by giving large sums of money or by applying the influence of very senior politicians in the ruling party. In a nutshell, it emerges that postings essentially go to the highest bidder, which makes the process look like an auctioning mechanism at a marketplace. However, in the second-best world, which is the closest to how the police bureaucracy actually works, the officials have limited resources, and the interplay of hassles, delays, the roles of bribes and political influence, and how different actors negotiate is more complex.[21]

Many serving officials emphasize that the SPs either need to be very close to ruling politicians or pay a hefty bribe (or mostly both) to stay as district chief. They also claim that only those officials (SPs) are appointed who do not provide any friction to the flow of bribes or the corruption of the ruling politicians. An overwhelming majority (86%) of the 58 street officials who were interviewed believe that the politicians and senior officials earn a lot of money and are highly corrupt and run transfers like an auctioning industry. Even those

[21]Holmstrom (1989), Holmstrom and Milgrom (1991), and Tirole (1994) developed formal models of how multi-tasking negatively affects organizational performance. Their work shows that to offset the negative impact of multi-tasking on organizational output, there is a need for stronger monitoring and higher incentives to inspire agents. Dixit (1997) builds on these models to derive an agent's behavior subjected to the control of multiple principals. He assumes i principals with constant risk aversion r_i $(i = 1, 2, 3 \ldots n)$. The risk aversion for the agent is r_a. The cost function of the agent is $\frac{1}{2}X'CX$. Here C is a positive definite $k \times k$ matrix. Further suppose that the agent makes k-dimensional unobservable effort X and Y is the m-dimensional verifiable output vector. $Y = F(X) + (0, \Omega), \Omega$ is the variance-covariance matrix for the error term. Further define the matrix $G = FC^{-1}F'$. If the principals do not collude and act separately, let α_i is the marginal incentive of the agent. Suppose α^s is the equilibrium sum of all α_i. For simplification, we assume all the principals have equal risk aversion R. Then, $r_0 = \frac{R}{n}$ where r_0 is their joint risk aversion when they collude. Dixit (1997) derives the incentive condition when principals are acting separately: $[G + n(r_0 + r_a)\omega(\alpha^s + b_a) = G + n(r_0)\omega(b_0 + b_a)]$. In this equation if we assume $n \to \infty$ (the number of principals to be very large), then being the constant risk aversion of each principal, nr_0 does not change and is still equal to R. However, nr_a approaches ∞ and hence $\alpha^s + b_a = 0$, which makes $X = 0$. In other words, when principals cannot collude, and the number of principals is very large, the best strategy (under a sub-game perfect equilibrium) for the agent is to do nothing. This explains why in India, it is a common saying that the police choose to do nothing under pressures from different interest groups, especially in high profile cases.

who did not directly speak about it (9%) admitted that it is difficult to survive at plum posts like that of a district SP unless you are corrupt or at least do not interfere with the web of corruption. One serving IG (inspector general of police, who is significantly senior to an SP in years of service) concedes, "I have never been appointed to key positions in important districts because my record shows that I have always fought against malpractices of everyone within my jurisdiction without favor or partiality. Not only have I suffered unusual delays in promotions but I have also had many charges filed against me by the politicians who were adversely affected by my actions. In the end, even though the charges have been proven false, it led to both personal and professional trials and tribulations." When further pressed about the lack of fear of illegality among politicians and their reason for generally not following the rules, he responded, "It is not the question of rules; it is that the king can never be wrong." While the statement of the IG can seem self-serving, there is some truth in his statement. It is commonly seen that some bureaucrats serve long stints as district chief or similar prestigious postings and they are not necessarily the most effective bureaucrats by any means. There are always bureaucrats who are known for their close relationships with the politicians, many of them accused of serious corruption, yet continue to secure the choicest postings. High prevalence of state-wide (grand) corruption in official transfers at all levels of bureaucratic hierarchy also emerged in the randomized response survey of state officials (Figure 3.2). As part of the data triangulation to further test the robustness of the inferences, there was a discussion with five recently retired officials and six senior serving officials (SP and above in seniority) about their insights into the corruption of street officials and SPs. The retired officials included two Deputy Superintendents of Police (Dy. SP) and three street officials. A Dy. SP works directly under the district SP and reports to him while a street official, as mentioned earlier, is at the bottom of the administrative hierarchy in the police. These retired officials had worked with more than 25 different SPs and under the government of different parties in the State. Also, they had worked in different districts, including where the study was conducted, during their service period. These retired officials were approached

through recommendations, which helped them to trust me and feel they could freely share their views on corruption. Their narratives of corruption matched closely with the major findings of the study around actors, the role of bribery and political influence, and the vertical corruption linkages in the police bureaucracy. Their insights served to reinforce the finding that the webs of corruption are independent of individuals. Simply put, these networks of corruption function regardless of who occupies positions in the administrative hierarchy. They underscored the point, also mentioned by a serving IG,[22] about the presence of big-ticket corruption in the appointments of SPs. These retired officials emphasized that "those SPs who do not fit into the web of corruption are immediately transferred, and it is for everyone to see how some of the corrupt bureaucrats against whom there remain several ongoing serious corruption investigations continue to occupy plum posts and those who are regarded as honest rarely get any post worth mentioning." When this statement was presented to the serving officials participating in the data triangulation exercise, some of them agreed, but none denied it. These observations support the data on transfers and postings. Some officers who are known to be honest and have been awarded national and international prizes for their fight against corruption in the bureaucracy are also the most frequently transferred in their career and only occupy positions that have limited influence in the bureaucratic system. Bayley (1983) argues that due to increasing political interference in police management at the highest level, there "is now a pervasive sense of disillusionment and loss of elan." He further argues[23] that the new recruits "recognize clearly the compromises that the system will require." It is remarkable how even five decades later, Bayley's observations reverberate loud and clear on the ground.

[22]The IG said that "he had heard of corruption in the transfer of SPs" but did not disclose the bribe amount. He agreed about the network of corruption and the close nexus between politicians and bureaucrats in transfers, something which repeatedly emerged in interviews.

[23]Bayley is referring to the recruitment into the elite police service, also known as Indian Police Service. The district SPs are members of this service.

Finally, an important feature of these intra-district official transfers is that the prevalence of corruption in transfers is largely independent of the district SP and the party in government in the state—only the degree of political influence and amount of the bribe differs. In fact, in the randomized survey, 78.4% (CI: 71.0% to 85.7%) agree that corruption in transfers is largely independent of who is in power in the state (Figure 3.2). Like street officials in interviews, these officials participating in data triangulation are largely unanimous in their assessment that partisan transition does not affect the systematic corruption within the police bureaucracy; only the actors change. The officials agreed that irrespective of the party in power or the SP in the district, corruption networks persist. The retired officials narrated a number of stories of these corruption networks and their persistence from across the state. While the presence of these networks and their perpetual nature clearly emerged in the district under study, the stories of the retired officials and additional serving officials suggested these networks were essential features of the police bureaucracy.

3.5 Corruption in the informal marketplace—the existence of petty corruption

The ethnography of the weekly informal market explores the existence of petty corruption at the interface of the police bureaucracy and the citizens. In the marketplace, citizens (street vendors) interact in large numbers with street officials. Vendors sell vegetables, fruits, and other household consumer products on both sides of a congested road along the periphery of a large suburban area in the district. There are about a thousand vendors at a typical weekly gathering. The street vendors are regulated by the Uttar Pradesh Scheme for Street Vendors 2016, under the Government of India's Protection of Livelihood and Regulation of Street Vending Act 2014. Under the Act, after paying a certain fee as decided by the Municipality or Town Vending Committee, the vendors are issued a certificate allowing them to conduct their businesses. The certificates, at expiry, can be renewed by paying the fee. The role of the

police is limited to ensuring the enforcement of the Act, which includes no dense gatherings and making sure that the vendors possess the necessary certification. The officials misuse their position to monetize the public space and admit the vendors in exchange for bribes in violation of some of the provisions of the Act.

There are some notable features of the marketplace. The vendors' spatial distribution is self-enforcing. They come and occupy exactly the same place each week. There is competition for space; the vendors currently not a part of the marketplace want some space for themselves. Many vendors can easily be seen at the outskirts of the marketplace ruing the lack of space and ready to pay to obtain a temporary space inside. So, as with any limited normal resource, ideally, one should expect something like first come, first served or some other form of a competitive mechanism for the limited space available, but neither is in evidence. Even more surprisingly, a spot lies vacant when a vendor who regularly occupies it does not come in a given week. It is like a strong invisible hand at work that organizes the vendors according to a pre-decided mechanism.

However, beneath the invisible facade of self-enforcement lies a well-structured informal yet organized political economy controlled by a network of police officials, politicians, and middlemen. A group of middlemen can be seen going around vendor to vendor with a cash wad in hand gesturing towards vendors for money. Most of the vendors have the money ready to give in the first instance. This raises five questions. First, who is monetizing the public resource? Second, why is there a large congregation of vendors against the spirit of the Act? Third, who is collecting the money, and for whom? Fourth, why are the vendors giving money when they have permits for their businesses? Finally, what is the source of legitimacy of these middlemen who are collecting money from the vendors?

The vendors confide that these middlemen enjoy the patronage of both the police and

the politicians. They narrate that the practice has been going on for as long as they can remember. "Actors change; the practice persists," they say unanimously in response to the question about when they had started paying money to the middlemen for doing business. In the agency theory framework, these middlemen are agents working for their two principals, the police and the politicians. The most important resource of these middlemen is the information about the marketplace and the network they forge with the vendors. The vendors recall how the police intervene in case a vendor tries not to pay, occupies other than his usual place or starts doing business without an allocated space which essentially means occupying someone else's space. This is very rare and none among the 50 interviewees admitted ever having done so. Due to the administrative and state patronage to these middlemen and a degree of autonomy[24] they enjoy, the vendors cooperate with them without challenging their locus standi. The amount of bribe paid by the vendors varies. At various locations of the marketplace, vendors from among the four categories of businesses said it was between Rs. 200 and Rs. 1200 with a median of Rs. 450. The amount depends on the size of the stall and the location in the market, for some places are closer to the residential areas and hence attract a larger number of customers. These amounts are about one-quarter of the income for most vendors. Similar payments from vendors take place in other cities too. Mulye (2014) notes slightly higher charges (between a quarter and one-third) collected by the police from street vendors in Mumbai.

The question of legitimacy can be viewed through the complex web of interests of the three main actors in the marketplace: the police, politicians, and vendors. It is a source of continuous income for the street police officials. The vendors emphasize that "all [the money] goes to the police and only a fraction of the total goes to the middlemen." There is a significant degree of information asymmetry between the middlemen and their two principals.

[24]The police intervene when the middlemen complain about the vendors. It is the middlemen who attempt to address the issue first.

"However, they have a difficult job of maintaining a tenuous balance between how much they can raise from the vendors over the fixed share of the police and the willingness to pay of these vendors," suggests an old vendor who is a second-generation vendor and proudly claims to know the way things work in the marketplace. His two neighbor vendors nod about his knowledge of things and proximity to some of the middlemen. A vast majority of vendors who responded to the question of interest and legitimacy agree that these middlemen represent the interests of the politicians and are their loyal foot soldiers. When probed further, in support of their arguments, they say that these middlemen can be seen canvassing and holding rallies for the politicians during elections. "That these middlemen gain the patronage of the politicians is a way of returning favors by these politicians," they emphasize. When asked to elaborate further, they direct me to look at the big political banners dotting the space. On these banners, some of these middlemen could indeed be seen sharing the space with many senior politicians of the state. About the question of the conspicuous absence of the police in the marketplace when they are the beneficiary of the illegal money being raised, the vendors reply that "it is only the politicians through middlemen who manage the affairs of the market, and the police rarely get involved in its micro-management." Only when "there are conxations do the police intervene, but we know they do so only to protect their interests and the interests of the politicians. However, as long as things are in order, the marketplace governs itself." I saw policemen on only two occasions; they were simply roaming around with an air of authority without speaking to any vendor.

The question of why vendors do not oppose this practice and just shell out money even when they know it is illegal, elicits some puzzling answers. A large majority (74%) of the vendors only reluctantly admit that the bribe to the police through the middlemen is corruption. The vendors are self-aware that a part of what they are doing amounts to illegality. They know that their congregation causes inconvenience to the residents and such a large congregation is against the spirit of the Act. And many of them even sell different things

than what's mentioned in the certificate. So, the rent they are paying is only to avoid the prosecution under the law and they cannot complain about it. A significant majority of them (about 82% of those who agreed to respond to the question) concede that the "middlemen are only helping us with our livelihood and to avoid prosecution. Hence, we do not necessarily oppose what they do; in fact, we want this arrangement to continue as long as we can earn something net for our family." Some of them (about half of these 82%) even go on to say that "we vote for whoever these middlemen tell us because if someone else comes up tomorrow, who knows if we may be stopped doing our business or the newly elected person might favor others in our place." The relations among middlemen and the vendors are manifestations of such informalities. While speaking to the local elected official was not possible on the issue, the conversations with the senior officials[25] who were part of the data triangulation were insightful. They argue that public officials—both elected and bureaucrat—are aware that they cannot provide these vendors a designated space if the erring vendors in response to their prosecution hit the street demanding their rights to earn a livelihood. The current arrangement meets the selfish interests of everyone: the vendors do their business at a place where they would not be doing it if the law were enforced; the police are getting their stream of income, and the politicians are getting electoral support and goodwill. So, it is in the interest of all these actors to continue maintaining this delicate balance of interests. It also reduces the pressure, these officials claim, "for meeting the welfare needs of these vendors who do not have other sources of income."

While the role of the police and the politicians in this practice is largely invisible, the middlemen take the center stage. The relationship between them can be understood based on the resource and favor flow system between different social classes. Granovetter (2004) argues that in a setting where politicians come from a relatively higher social class as compared to

[25]Many of these officials have worked at high positions both in the state and the central government. Two of them have been personal secretaries of senior union ministers.

the middlemen, and there is an expectation of a continuing relationship, then employment and public works flow downwards from politicians to their supporters while political support, loyalty, and votes flow upwards. In such social situations, where lower-status individuals cannot pay higher-status politicians with cash and other favors, the former repay benefits through loyalty and subordination. These middlemen work closely with the vendors and form a good working relationship. There is rarely a vendor blaming these middlemen for corruption. They think that these middlemen only do it "out of compulsion with magnanimous support of the politicians" to keep the police happy; otherwise, they would force the vendors to leave the marketplace and disrupt their livelihood. Among urban poor and other social groups, who are left out of the state security net, there are networks of reciprocity and patron-client relations that create an informal security system that these groups use to access welfare services of the state (Lomnitz 1977, 1982). The vendors have a positive or indifferent view of the politicians for they think their agents (middlemen) are only helping them to evade their eviction from the marketplace, and for the bribe, it is the police who are largely to blame. This leaves the politicians and the middlemen regarding corruption at the marketplace as a semblance of welfare activity of the state. For this reason, the bribe is not a commercial transaction, but a fee to participate in the state's welfare system.

Finally, what happens if someone decides not to pay the middlemen? The vendors flatly deny it ever happens. They argue that there is an agreed-upon mechanism among themselves to collectively exact a high cost on free-riders. They said that the money goes to the police and if they do not pay, it will impose a cost on all of them, for "they" (the middlemen and the police) would ask everyone to leave the place or "create such conditions as would make doing business difficult." All of this would disrupt "our livelihoods." So, while "we have the freedom to opt-out, we cannot [free-ride],"[26] said several vendors. Since the cost of individual

[26]The exact word used by vendors was *muft khori*, which translates exactly to free-riding.

free-riding is collective, this forces vendors to make sure that there are no free-riders in the first place. So, vendors themselves are the bulwark against fellow vendors who attempt free-riding. When a few vendors were slow in turning over money to the agents (not refusing to pay but needing extra time because they did not have the required amount on hand), their fellow vendors were quick to threaten them with consequences–like not allowing them to participate in the market.

3.6 Linkages between petty and grand corruption

The existence of grand corruption in transfers and petty corruption at the marketplace raises an important question: are these two kinds of corruption linked or are they isolated characteristics of the state police bureaucracy? There are broadly two categories of corruption sources in the street-level bureaucracy. The first category refers to those sources of corruption where the police extract money from individuals in discharging their administrative functions, which reflects a systematic malaise of street-level bureaucracy. Some examples include demanding a bribe to file an FIR; in issuing documents to citizens, which they need to obtain certain state benefits like a passport; in issuing a general security clearance to citizens, etc. The second category includes those sources where the police monetize their enforcement powers for personal gain. They demand bribes rather than legally punishing offenders for the violation of the law. The violators could be an individual, an organization, or a group of individuals. Some examples include helping an individual to get away with a punishable criminal offense, allowing illegal activities in exchange for money (gambling), conducting a flawed criminal investigation to help someone, taking a bribe from an organization in exchange for violating the state or federal laws, bribe extraction by monetizing public resources (marketplace), etc.

The sources of corruption under the second category can also be termed as rent-earning hotspots. The hotspots refer to the places where the state laws are being violated by individ-

uals or organizations in exchange for bribes or those places where the police extract bribes in exchange for allowing the people to use idle public resources. These hotspots differ in their intensity (earning potential), for some places offer a bigger opportunity to earn a bribe. Many of the corrupt police officials keep an eye on these hotspots and look for transfers to the police stations which have jurisdictional control over them. The higher the intensity of a hotspot, the greater the demand, and the more difficult is the transfer. A salient feature of the jurisdictional areas that consist of corruption hotspots is that transfers to such places are difficult. A street official with an experience of working in the SP's office confides in me that "the first thing SPs often do after taking charge is to inquire about the hotspots in the district from their office staff. They often use this information only to ensure that the transfers are priced commensurate with the intensity of the hotspots." Ben Olken and Abhijeet Banerjee mention having heard about similar hotspots in Indonesia and India respectively in their field experiments.[27]

Both systematic malaise and hotspots of corruption plaguing the functioning of the police are not something that is exclusively in the knowledge of those who interact with the police but are rather common folklore. Even informal conversations with random individuals and their narratives consistently capture the two categories of corruption and their prevalence. About half a century back, Bayley (1969), in his work on police development in India, found evidence of widespread corruption in the conduct of the police. He says that "along with brutality, corruption is the issue most prejudicial to the image of [the] police" (Bayley 1969). The narratives of common people and their folklore convey insights into the nature of corruption in the two categories and underscore some important details emerging from the interviews and ethnographic observations. Many of these people have their relatives and family members in the police and some have seen corruption transactions themselves because,

[27]They shared their insights during a discussion on this paper.

on some occasions, these transactions are not secretive. For the systematic malaise, they attribute it to the general character of the police by simply saying, "the police is corrupt," indicating some kind of homogeneity in the functioning of the police. For corruption at the hotspots such as the marketplace, they attribute it to the organized racket of corruption being operated by the police and the politicians through their agents. They suggest that those police officials or their agents who are extracting rent from the public are only doing so because they have paid the higher officials and hence have their sanction to do so. Simply put, they underline the linking of corruption of the senior officials and street bureaucrats.

Empirically, the linkages have been analyzed using a process tracing method by coding the interview responses of the officials following the methodology by Beach and Pedersen (2013), George and Bennette (2005), and Rueschemeyer et al. (1992) by exploring the sequence of events. The attempt here is find out the mechanism and to test whether the linkages are mutually reinforcing (Figure 3.4). In other words, the analysis focuses on the causal connection between the opportunity of receiving weekly payments due to corruption in the marketplace and the cost of transfers to the police station administering the marketplace. About 16% of the 58 officials who participated in the case method were currently posted at the police station that administers the marketplace area. About 9% of these officials had served there in the past. The station housed a total of 28 street officials in August 2019. These officials maintain that almost all (as far as they can recall about their current and past colleagues) officials posted at the station had to either pay a bribe or use political influence for their transfer or both. In other words, securing a transfer to the station X involves an opportunity cost that has to be borne by the official. During the visit to the SP's office, this was further confirmed by even those officials who were still struggling to get a transfer of their choice and were going from pillar to post in the SP's office. Many of them could name their colleagues posted at the station when they were asked specific questions about the marketplace and the corruption by the officials who were accompanying me to the office.

They narrated how their colleagues secured transfers by paying to the "right" people in the SP's office or using their political connections, and how it gave them the opportunity "to earn much more than they had paid."

An interesting feature of these hotspots is that corruption at such places is highly organized. Fixed amounts are delivered to the police stations at an agreed-upon time by the middlemen who collect money on behalf of the police and politicians. An official recalled that once he was posted in place of his friend at one of such hotspots, and how "pleasantly" surprised he was when he received Rs. 1000 in an envelope as part of the weekly collection money. It underscores the fact emerging from the interviews that the money coming to the police from the middlemen through the corruption network is independent of who occupies the place in the police station. This feature of the corruption networks—that they do not depend on the actors connecting the various nodal points of networks[28]—causes their perpetuation. So, once the officials through corrupt means (bribery and political influence) get transfers to such hotspots, they start earning their shares in bribes. In other words, the source of petty corruption or hotspots, to a great extent,[29] could be traced to the grand corruption in transfers. This also shows that the means of corruption in transfers (bribery and political influence) emerge in even more delinquent forms in the functioning of street-level bureaucracy. As it was mentioned earlier, in the jurisdiction of each police station, there are many such hotspots and each hotspot contributes to the money received by the station shared by the officials there. The marketplace studied here is just one of many such hotspots. However, the marketplace demonstrates the general organization of corruption in the police bureaucracy (Figure 3.4).

[28]By nodal points I mean individuals/actors at various places in corruption networks.

[29]This qualifier has been used because in a few cases street officials were able to secure transfers without resorting to bribery or political influence. However, such cases were atypical because in these cases the officials had emergency health and family emergency.

The primary anti-corruption law in India that regulates the corrupt practices of the public officials is the Prevention of Corruption Act 1988. The Act defines misuse of office for personal gain by a public official as a criminal offense. However, the Act allows huge discretionary powers to senior officials. For example, an important feature of the Act is that it requires a prior sanction of the "competent government" to investigate and prosecute corrupt officials except for the cases when an officer is caught red-handed. In cases of street officials, the competent authority for investigating corruption charges can be granted by an official of the rank of SP or above. This means that even if there are corruption complaints against street officials, the SP holds immense discretionary power to decide whether to start an investigation or not.

Such discretionary powers of high officials to decide on the complaints of corruption charges against street officials "weaken the anti-corruption efforts,"[30] admits a senior police official who has served in the state in various capacities for more than a decade, including the district chief, and is now working with the central government. This is because self-interested senior officials might misuse their discretionary powers as it would also affect their own corruption in case the sources of their grand corruption and petty corruption are linked. The overlooking of the wrongdoing of street officials by senior officials illustrates the argument of Cadot (1987) that high-ranking officials cover up the corruption at lower levels in exchange for bribes. In the State of Uttar Pradesh, only 30, 58, and 84 corruption cases have been reported under the Act in three years during 2016-18 (NCRB 2019). At the same time, in 2019, Transparency International India in an only national survey finds that about 51% of people admit to experiencing corruption in the last 12 months for basic public services (India Corruption Survey 2019). This data shows the gap between the state of corruption and what is being investigated by the anti-corruption agencies.

[30]These views were further reinforced by a former highest-ranked civil servant in the country who was interviewed as a part of the triangulation process.

3.7 Discussion

Corruption in the state police bureaucracy is organized around bureaucratic transfers. Corruption meets the interests of different actors—politicians, bureaucrats, and citizens—by achieving a state of equilibrium and none of the actors has incentives to unilaterally destabilize this equilibrium. It helps politicians to achieve their strategic control over the bureaucrats and also maintain electoral influence through their agents who often act as their trusted eyes and ears in their electoral constituencies. In the process the bureaucrats get desired postings, opportunities to earn money and good social standings among the peers. Citizens get access to scarce public resources (like marketplace) that allow them to earn their livelihood often against the provisions of the law. The stable nature of the equilibrium explains why corruption persists in the state police bureaucracy because it meets the interests of all in a second-best world.

There are two further questions to understand the stability and the nature of this equilibrium: First, what determines the duration of an official at an earning hotspot after the official is transferred to such a place? Second, can an official remain at the earning hotspot indefinitely? It emerges that the SP can still transfer the street officials at any time. The same holds true for the transfer of SPs as well who can be transferred by the ruling party anytime if the demands of its local leaders are not catered to. Both the street and senior officials say that staying put at a place which has significant earning potential requires a critical balancing act. First, these officials need to ensure that the crime rate and other related law and order issues around the hotspot are no worse than the rest of the district. Second, in an attempt to raise money, these officials need to find an equilibrium between the bribes they extract and the need of the people who give them these bribes to meet certain expectations. For example, in the case of the marketplace, while it may be tempting for the street officials to demand more money from the vendors, the officials need to ensure that the complaints of these vendors and residents do not become a rallying point and a political issue that comes to the notice of the officials in the state capital. This means that the officials

have an incentive to correctly map the ability to pay of these vendors and make demands accordingly while simultaneously ensuring some facade of good governance. If the balance breaks and residents or vendors start complaining, the SP can appoint other officials at such places who are better at such maneuverings. Next, beyond the previous two points, street officials also need to divert a constant share of their net earnings per hotspot back to the SP's staff members. While a good amount going to the SP's office may help these street officials at a hotspot, the need for minimizing the complaints from the hotspot area is equally important. SPs too can be seen doing their best to be in the good books of the senior politicians of the ruling party. For these reasons, corruption in transfers is not a one-time transaction, and it requires continuous efforts by officials to stay put and do everything possible that does not antagonize their seniors—whether in the administration or in the ruling dispensation. This point underscores the nature of a mutually reinforcing effect of petty and grand corruption, and how the relevant actors strive to maintain an equilibrium. Finally, what happens to the street officials who do not wish to pay for their transfers? There are departments in the police bureaucracy that have low demand for transfers. The data reveals that such places are characterized by poor working conditions, absence of earning potential, and long and erratic working hours. Those who are unable to secure transfers remain in such departments. In the interviews, one such department was the District Police Line where street officials are kept in reserve, their services are used as and when they are needed, and they have minimal interaction with the citizens. Similarly, many SPs can be attached with offices what are generally regarded as "inconsequential" postings. This points towards a possible explanation for why some departments are more corrupt within a single bureaucracy.

3.8 Conclusion

The findings of this study have both theoretical and policy implications. On the theory side, it suggests that in weak institutional environments, public corruption does not conform with a

delegation problem with a benevolent social planner at the top who can simply incentivize the interests of the Weberian bureaucracy to align with his own interests. In such environments, we need to consider the social network of actors whose corruption is linked. Such networks are independent of actors, for actors change but the networks persist. The existence of linkages between petty and grand corruption shows why oversight by a guardian as a policy measure has only a limited effect in controlling corruption. More broadly, it explains why anti-corruption policies remain difficult to implement. To the extent that such networks of corruption exist in other bureaucracies of the country, the impact of corruption on India's development may be larger than is currently understood.

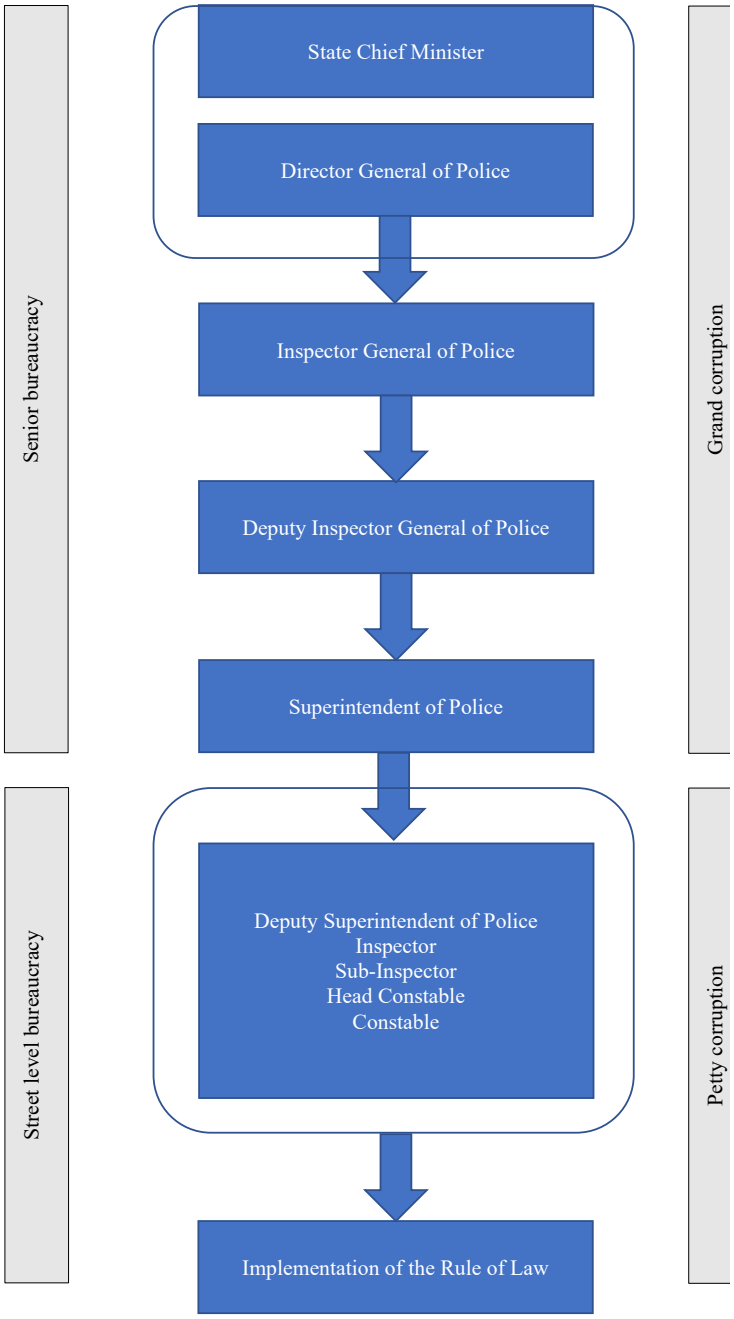

Figure 3.1: Organization structure of the state police bureaucracy

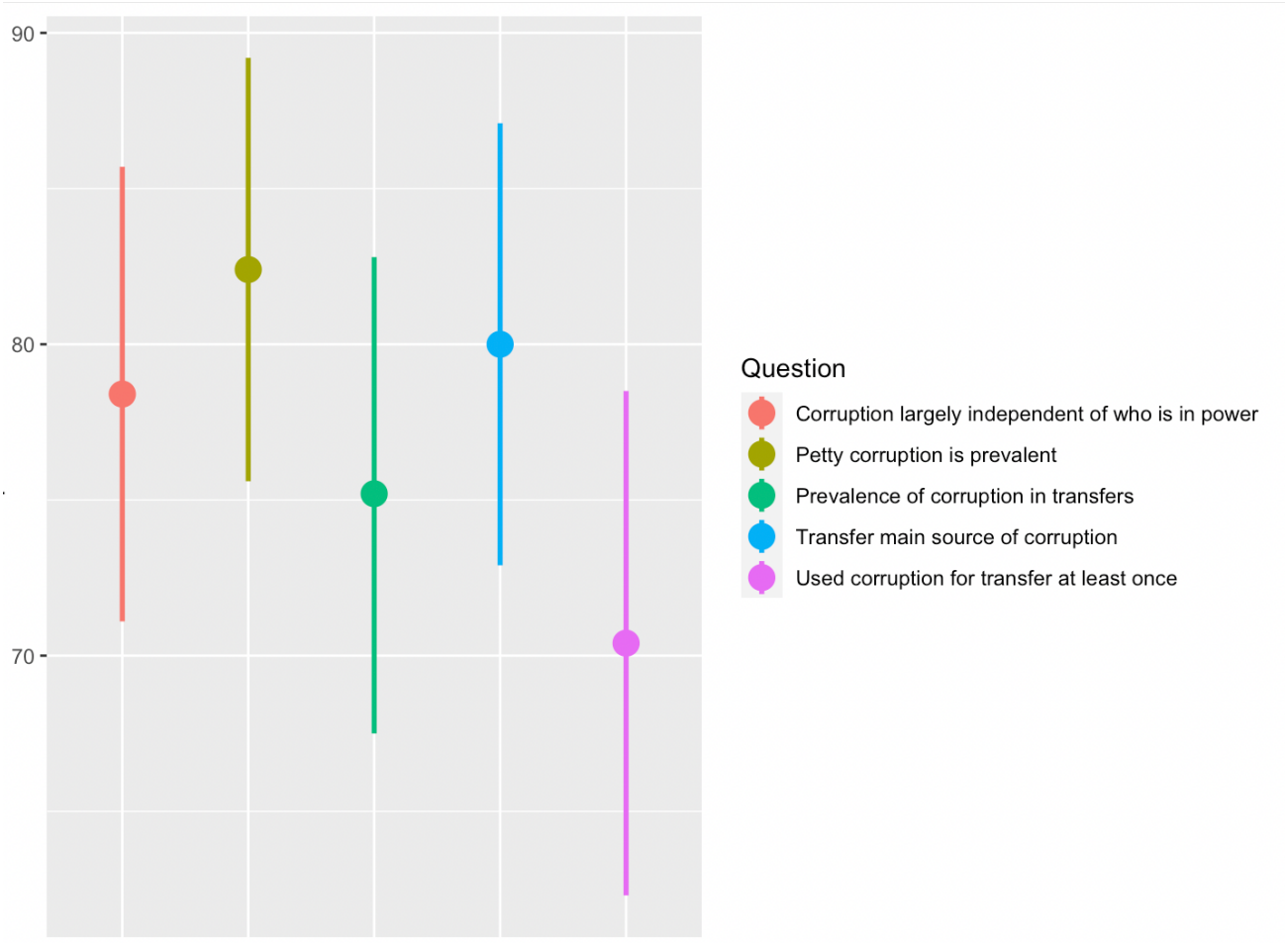

Figure 3.2: Randomized survey responses

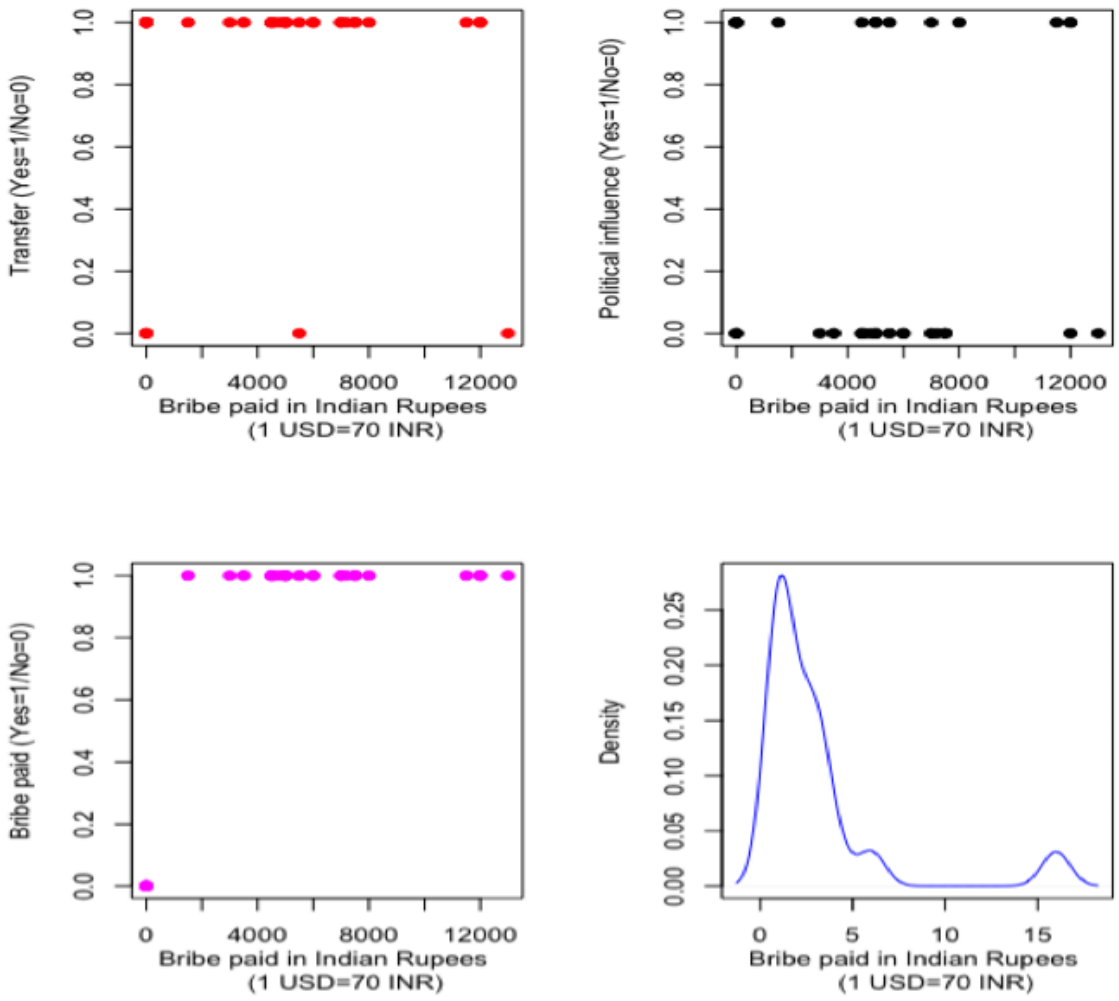

Figure 3.3: Coded data based on the interviews

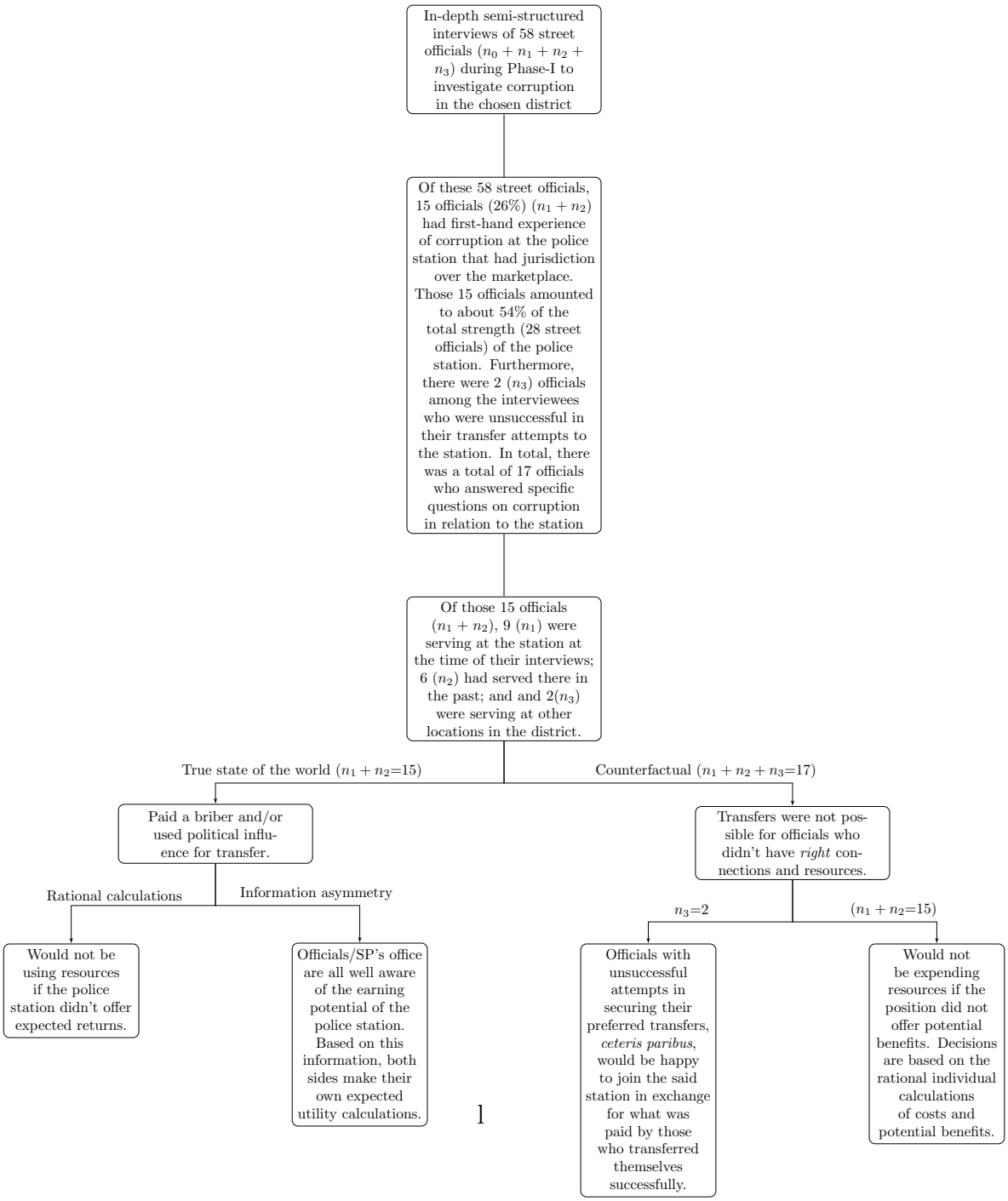

Figure 3.4: Schematic process tracing diagram of corruption linkages

Table 3.1
Phase-wise fieldwork details

Phase	**Details**	**Timeline**	**Purpose**
Phase-I	58 serving street officials	May-August 2018	Mechanism identification that links petty and grand corruption
Phase-II	50 street vendors	June-August 2019	Mechanism identification that links petty and grand corruption
Phase-III	125 serving and retired officials randomly chosen from the 18 zones of the state	September-December 2020	Existence of petty and grand corruption

Table 3.2
Descriptive statistics for the district-level data

Variable	**Mean**	**Standard deviation**	**Min**	**Max**	**Number of observations**
Transfer	0.8965517	0.3072033	0	1	58
Bribe	0.7241379	0.4508512	0	1	58
Influence	0.4310345	0.4995461	0	1	58
Amount	4342	3784.075	0	13,000	58
Service	8	0	8	8	58

Table 3.3
Conditional expectation of transfer

	Bribe paid	**Bribe not paid**
Political influence used	1	0.917
Political influence not used	0.931	0.250

Table 3.4
Corruption among elite civil servants in India

Opinion on unethical practices	Rating	Service											Total	
		IAS	IA &AS	IFS	IFoS	IPS	IPoS	IRPS	IRTS	IRS (C&CE)	IRS (IT)	NR	N	%
Corrupt Civil Servants generally escape sanction/punishment	SA	20.8	23.1	14.1	23.3	34.5	15.7	24.7	25.3	12.1	15.8	33.3	914	21
	A	42.9	34.5	42.3	44.5	44.8	45.8	41.9	39.6	31.8	37.7	33.3	1749	40.1
	NAD	22.3	24.9	32.9	19.7	13.6	20.3	18.3	18.8	26.5	26.2	33.3	973	22.3
	D	12.7	13.2	9.9	11.1	6.6	16.3	15.1	14.3	24.2	16.9	0.0	621	14.2
	SD	1.1	4.4	0.9	1.4	0.5	2.0	0.0	1.9	5.5	3.3	0.0	104	2.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4361	100.0
Obtaining financial favours is alright as long as one is efficient	SA	1.1	1.2	0.0	1.4	2.2	1.3	2.2	1.3	0.9	0.2	0.0	50	1.1
	A	4.4	2.9	1.9	7.4	5.3	3.3	4.3	5.2	4	3.3	0.0	197	4.5
	NAD	8.3	7.6	7.9	15	7.7	10.5	5.4	5.8	13.5	13.1	0.0	461	10.6
	D	40.1	33.7	34.9	44.5	43.3	37.9	35.5	41.6	47.5	45.4	33.3	1844	42.3
	SD	46.1	54.5	55.3	31.7	41.4	47.1	52.7	46.1	34.1	38	66.7	1807	41.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4359	100.0
Honest civil servants are harassed through baseless complaints and investigations	SA	23.4	16.8	9.3	27.3	19.3	13.1	28.3	28.4	16.4	19.5	33.3	890	20.4
	A	36	31.2	33	37.9	38.9	42.5	41.3	32.3	35.7	40	0.0	1606	36.8
	NAD	20.6	26.8	39.5	17.4	20.7	21.6	15.2	19.4	23.4	21.9	0.0	963	22.1
	D	17.3	19.1	15.8	15.1	17.9	19.6	15.2	14.8	20.7	16	66.7	766	17.5
	SD	2.8	6.2	2.3	2.3	3.1	3.3	0.0	5.2	3.9	2.6	0.0	140	3.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4365	100.0
Corrupt civil servant manage plum postings	SA	30.5	18.2	10.7	41.1	38.1	19.6	38.7	29.2	22.8	29.6	66.7	1290	29.6
	A	45.5	35.2	37.7	43.7	46.3	41.8	41.9	40.9	41.3	42	0.0	1858	42.6
	NAD	17.6	27.6	37.7	10.7	11.1	28.8	15.1	20.1	25.3	20.2	0.0	849	19.5
	D	5.5	14.4	12.1	3.8	3.6	8.5	4.3	8.4	8.8	6.3	33.3	300	6.9
	SD	0.9	4.7	1.9	0.6	0.9	1.3	0.0	1.3	1.8	1.9	0.0	65	1.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4362	100.0
Political corruption takes place because there are always civil servants willing to collaborate	SA	51.1	36.4	31.6	53.2	57.7	35.3	46.2	41.8	29.9	34.1	66.7	1895	43.5
	A	36.4	36.1	48.8	35.5	34.4	47.1	37.6	41.2	39.1	39.1	33.3	1654	37.9
	NAD	7.4	17.6	14.9	9	5.5	13.7	11.8	10.5	20.5	15.6	0.0	535	12.3
	D	3.8	5.9	4.7	1.7	1.4	3.3	4.3	5.2	7.5	8.7	0.0	202	4.6
	SD	1.4	4.1	0.0	0.6	1.1	0.7	0.0	1.3	3.0	2.4	0.0	75	1.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4361	100.0

Rating Legend: SA - Strongly Agree, A - Agree, NAD - Neither Agree nor Disagree, D - Disagree, SD - Strongly Disagree

Chapter 4

Corruption in the State Environmental Bureaucracy

4.1 Introduction

Corruption is widely prevalent in environmental policy design and implementation (Welsch, 2004). There is an inverse relationship between corruption and the stringency of environmental policies (Damania et al. 2003; Lopez and Mitra 2000; Pellegrini and Gerlagh 2006). It remains the key factor behind environmental degradation in the developing world (Wilson and Damania 2005). In Brazil and Cambodia, for example, more than 80% and 90% of timber harvesting is illegal in that village elites bribe local forest officials to harvest more than their legally permitted share (Winbourne 2002). Similar cases of bribery in illegal timber harvesting have been reported in India (Robbins 2000), Africa (Gore et al. 2013; Siebert and Elwert 2004), Indonesia (Smith et al. 2003), and Latin America (Alemagi and Kozak 2003). Allowing illegal timber harvesting by street officials for bribes is one testimony of how corruption impacts environmental misgovernance. However, corruption permeates all spheres of environmental policymaking (Lisciandra and Migliardo 2017).

This chapter analyzes corruption in the environmental bureaucracy in Uttar Pradesh,[1] India's largest state with a population of over 200 million people. The environmental bureaucracy of the state, also known as the Uttar Pradesh Pollution Control Board (UPPCB),[2] is a statutory body[3] responsible for the enforcement of the environmental regulations of the Government of India within the jurisdiction of the state of Uttar Pradesh, including designing and implementing the state's own regulations. Originally named Uttar Pradesh Water Pollution Prevention and Control Board, the environmental bureaucracy was established by the state in 1975 under the Water (Prevention and Control of Pollution) Act, 1974 of the Government of India for addressing the pollution-related problems in the state to ensure public health and the protection of the environment.[4] It was later rechristened as Uttar Pradesh Pollution Control Board in the year 1982 after the enactment of India's Air (Prevention and Control of Pollution) Act, 1981. In addition to these two Acts, the Board also draws its powers from India's Water (Prevention and Control of Pollution) Cess Act, 1977[5] and the Environmental Protection Act, 1986.[6] The Board is endowed with powers

[1]The environmental degradation in the state remains a huge concern. Many cities in the state consistently rank high in the list of most polluted cities both nationally and internationally that results in the loss of life expectancy across all demographics, but more among women and children.

[2]I use the terms "environmental bureaucracy" and "Board" interchangeably. They refer to exactly the same thing in this chapter.

[3]The statutory bodies are non-constitutional bodies because they are not based on specific clauses or articles in the constitution. Instead, they are created and empowered by an act of Legislature or Parliament for implementing certain legislation on behalf of the state or the country.

[4]The Water Act led to the institutionalization of pollution management in India by establishing the Central Pollution Control Board (CPCB) and the State Pollution Control Boards in the country.

[5]The Cess Act was aimed at strengthening the financial strength of the Board by requiring industries to pay cess on their water consumption. There are two main sources through which the Board meets its financial requirements. First, it raises its own resources through water cess, fees collected while granting consents to industries, sample testing fees, interest on investments, and penalties. The second source is in the form of grant-in-aid from the central and the state governments, project-based grants from the CPCB, etc.

[6]The Bhopal Gas Tragedy, India's first major industrial disaster led the fierce debate on environmental justice in India. This incident precipitated the promulgation of environmental acts in India and played a major role in the Environmental Protection Act, 1986, and the strengthening of institutional mechanisms to manage harmful pollution in the country. For instance, as the tragedy unfolded, the Government of India's Department of Environment was changed to the Ministry of Environment, Forest, and Climate Change, and was given more powers. In this incident, about 30 tonnes of highly poisonous methyl isocyanate was leaked, turning the city of Bhopal into a gas chamber. This caused the death of 15,000 workers and affected more than 600,000 city residents.

to monitor the compliance of environmental provisions under various Acts by industries, municipalities, etc.; collect and inspect samples of effluents and emissions to decide on compliance as well as to report the general health of the natural environment (e.g., rivers, water bodies, ambient air) in the state; and grant, reject, or withdraw consent to establish (CTE) (Appendix B.1) or consent to operate (CTO) (Appendix B.2, B.3, B.4, B.5, and B.6) to any industry in the state.[7] The state has a monopoly over the CTE and CTO approvals, and without obtaining these certifications, no industry can *legally* operate in the state.

As guardian for the environmental management in the state, the Board acts as a nodal agency of the state for planning, coordination, prevention, and control of pollution. The Board has six principal functions encompassing administrative, technical, regulatory, financial, advisory, and educational powers. Under its administrative work, the Board issues (and also withdraws and renews) approvals for starting new industries and regularly monitors their environmental compliance. Under the technical role, the Board identifies sources of air and water pollution by examining the quality of effluent and emission samples to assess the ambient air quality and the health of the water bodies for specific cases as well as by generally monitoring the water bodies at thirty-four places and ambient air quality at nineteen places in the state. It also works on the development of environment-friendly technologies. In its regulatory work, the Board, in consultation with the state and federal government bodies, issues effluent and emission standards and pursues legal proceedings against the defaulters for non-compliance. In its financial powers, the Board assesses and collects Water Cess and imposes penalties on the erring industries and public bodies. As an advisory body, it advises the state government on environmental matters. Finally, as an educational body, the Board

[7] A consent to establish or the CTE is the first order clearance required before commencing the process of establishing an industry, plant or process in the state. It is followed by the second order clearance known as consent to operate or the CTO given by the Board to ensure industry's environmental compliance. The CTO is given for a maximum period of five years and requires periodic renewal after its expiry. In the CTO application, the industry provides all the details that it agreed to in its CTE application. The Board may also add additional conditions depending on the local circumstances.

carries out massive awareness programs in the state towards better air and water management by encouraging the masses to engage in individual actions. The Board is not an *entirely* independent body in that it is constrained by the regulatory directions and guidance from the Central Pollution Control Board (CPCB) and the state government, but still enjoys *immense* discretionary functional powers.

The organizational structure of the bureaucracy is given in Figure 4.1. The Board is headed by the chairperson and supported by the member secretary. There are eleven members on the Board. These members include politicians nominated by the ruling party to represent public interests and *ex officio* heads of key state government departments, corporations, and local bodies. The role of members is *merely* advisory and part of the Board's outreach program toward more inclusive environmental policymaking. For the administrative purpose, the state's 75 districts are divided into seven circles and twenty-eight regions. Each circle is headed by a chief environmental officer (CEO) who supervises the work of three or four regions. The regional offices are the smallest unit of the state's environmental administration, and each region consists of three or more districts depending on the district population size and industrial concentration. Each region is headed by a regional officer (RO), the ultimate implementation authority of the state and federal environmental policies. The regional officer is supported by assistant engineers (AE) and Junior Engineers (JE) in the administrative work and by the scientific officer (SO) and assistant scientific officers (ASO) in technical work needed for environmental administration. Technical support is critical for important functions of the regional office, such as conducting environmental impact assessments for granting licenses, inspecting environmental compliance of industries, and identifying pollution sources to penalize the erring industries, and developing new guidelines to keep pollution levels below hazardous limits. As such, the Board has a two-tier structure in that the policymaking work occurs at the headquarters and implementation work at the regional office. The circle coordinates between the headquarters and the regional office.

The recruitment process for officials in the environmental bureaucracy is different than in other state bureaucracies in that the process is irregular, and the recruitment guidelines are unclear and prone to frequent government interventions. The Board chairperson[8] is a member of the ruling party and the member secretary is a senior member of the civil service. However, their selection process is political because they are appointed by the cabinet. For the remaining staff members, the bureaucracy has its own recruitment mechanism. There is no direct recruitment for the RO and CEO positions. The recruitment takes place only at the level of the AEs and JEs on the administration side and ASOs on the technical side. It is only through promotions that AEs move up in the bureaucratic hierarchy to the positions of the ROs and CEOs. However, JEs never become CEOs, generally, retire from the AEs position, and only very rarely become ROs. Similarly, the ASOs only become SOs and stay in the same role for their entire career unless they decide to take the regular AE exam, which can then open up additional promotional opportunities for them. The AE reports to the RO, and works under his supervision on the implementation of the policies and guidelines as directed by the Board. Some examples of his work include coordinating with the RO on the CTE and CTO certifications, working with the JE towards ensuring adherence to the environmental standards by the industrial units, working with the RO to send legal notices to the erring industries, and penalizing defaulters and prosecuting them under the law. The duties of the JE include extensive field visits, preparing technical reports; conducting compliance checks, and helping industries understand environmental regulations. The CTE and CTO certifications are extremely elaborate procedures, which require a lot of documentation. JEs and AEs exercise huge discretionary control at every step of the process. JEs and AEs submit their inputs to the RO who finally issues CTE and CTO certifications. They assist the RO in the environmental governance at the regional office level consistent with the overall vision

[8]The chairperson used to be a distinguished technocrat in the initial years of the formation of the Board. However, in recent years, he is a person of the ruling party.

of the bureaucracy.

4.2 Research design and methodology

The environmental bureaucracy is smaller in resources than the other more established state bureaucracies. Its organizational structure is also *slightly* different than the other bureaucracies in that the smallest unit of the administration is a regional office as opposed to a district in other bureaucracies. However, organizationally, at least theoretically, the environmental bureaucracy adheres to the Weberian ideal type of bureaucracy. The bureaucracy is characterized by heavy regulatory responsibilities, limited institutional and technical capacity, incomplete rules, little to no public scrutiny, immense political interference, and huge discretionary powers. The bureaucracy has 340 scientific and technical staff members to oversee environmental regulation of 3048 red-category industrial units, 5704 orange-category industrial units, and 3646 green-category industrial units of which 85% have valid CTO (National Green Tribunal 2018).[9] The district-wide industry profile of the state is highly uneven. The revenue-generating industries are largely in the Western part of Uttar Pradesh near Delhi and most of them are highly polluting industrial clusters such as distilleries, pulp and paper, sugar, tannery, and brick plants. Of the 2180 grossly polluting operational industries in the country—characterized by high levels of air pollution and discharge of harmful chemicals into the water bodies—the share of Uttar Pradesh is 1088 or about 50%. These conditions create several markets for corruption in the bureaucracy, including: in transfers as some officials prefer for places that afford them to be in the control of the high-revenue industrial clusters; in policy design as some officials misuse their positions to provide regulatory latitude to

[9]Different industrial sectors—depending on their pollution potential, the consumption of raw materials, the nature of the manufacturing processes involved, and the emitted pollutants—have been grouped into red, orange, green, and white categories, based on a pollution index prepared by the bureaucracy. The industrial sectors with a pollution index of 60 or more are in the red category, those between 41 and 59 are in the orange category, between 21 and 40 are in the green category, and less than 21 are in the white category. Based on the classification, 60 industrial activities fall into the red category, 83 in the orange, 91 in the green, and 192 in the white. The details are available at:

industries; in implementation in that street officials misuse their powers to allow polluting industries to get away with violations in exchange for bribes. These markets collectively contribute to environmental misgovernance in the state (Figure 4.2, Table 4.1, and Table 4.2).

4.2.1 Identification of grand and petty corruption

The literature suggests several criteria to identify whether a corrupt exchange is grand or petty. The criteria include the level of organizational hierarchy at which the exchange occurs (Heineman and Heimann 2006); frequency and magnitudes of bribes transacted; the level of the misuse of bureaucratic and political office (Moody-Stuart 1994; Morris 2011; Rose-Ackerman 1996; Rose-Ackerman 2010; Scott 1972); the extent of harmful consequences; and whether corruption pertains to policy design or policy enforcement (Wilson and Damania 2005). However, in reality, corruption exists as a continuum, and there is no *sharp* distinction between grand and petty forms of corruption. I conceptualize the grand vs. petty distinction as an analytical construct and exploit the distinction in corruption of street officials and senior officials as an instrument to determine whether an instance of corruption is grand or petty. By street officials, I refer to those bureaucrats who provide important public services that affect the lives of the people; *generally*, work at the lower levels in organizational hierarchy; whose work involves a *relatively* high degree of discretion and regular interactions with citizens; who work at a rather "problematic[10]" place in the political system;[11] and represent the

[10]Lipsky (1969) uses the word 'problematic" to refer to that place in a bureaucracy where governments meet citizens.

[11]Lipsky (1980) describes street bureaucrats as an analytical construct. He identifies five conditions that characterize street bureaucrats and their work. First, these officials work under chronically limited resources corresponding to the task they are expected to perform. Second, demand outweighs supply of the services these officials implement. Third, the departmental goals toward which these officials work are ambiguous, vague, and often conflicting and unattainable ideals. Fourth, performance of these officials towards goal achievement is difficult to measure because they work on many different things at a given time and an objective evaluation criterion of their performance is a challenge. Finally, the clients they serve are non-voluntary because these officials often implement the essential services of the state, and citizens visit them only to avail these services. For example, a convict goes to a judge only because the judge has to

government to the people. The work of the regional office, which consists of JEs, AEs, and an RO that provides essential environmental services to the public, fits into the description of street officials by Lipsky's construction. The senior officials of the bureaucracy include the member secretary, members, senior politicians, and the chairperson at the headquarters. They have little interaction with the public, command huge resources, and make important policy decisions as policymakers in the traditional sense.

For measurement, grand corruption is the corruption in transfers in that it includes decisions at the highest level in the bureaucracy either by the member secretary or chairperson, and petty corruption is the corruption in enforcement in the works of the regional office. Further, at the level of the regional office in the bureaucracy, the two kinds of corruption—grand corruption of seniormost officials and petty corruption of street officials—interact. On one side, the street officials are participating in grand corruption by purchasing offices from the seniormost officials in the bureaucracy; and on the other side, they are extracting rent from local industries by engaging in petty corruption. As such, a regional office presents an opportunity to systematically investigate their linkages.

4.2.2 Case selection and empirical strategy

The fieldwork included 37 semi-structured interviews, which consisted of 25 street and senior officials (Table 4.3) and twelve industry owners (Table 4.4). We divide twelve industries into three categories: micro industries; small industries; and medium industries.[12] Recruiting 75 interviews as suggested by the power analysis for the randomized response survey as

decide his parole or quantum of punishment. To what extent these conditions are actually present depends on the context. For example, in an elite, homogeneous, and high-income neighborhood, these officials could implement their services with relative clarity. However, in a poor neighborhood, with a very heterogeneous population, all these conditions might prevail.

[12]The Government of India specifies the investment and turnover criteria of categorizing micro-, small-, and medium-scale industries. These limits in Indian rupees are 100 million and 500 million for micro industries; 200 million and one billion for small industries; and 500 million and 2.5 billion for medium industries.

discussed in Chapter 2 demands a response rate of 62.5% if we just focus on the engineering staff who spearhead the environmental administration and 22% if we take all the officials in the bureaucracy except the clerks and other supporting staff. Due to the small size of the bureaucracy, selecting an *adequate* sample size is a challenge.[13] As such, I decided not to rely on the frequentist, randomized sampling method for choosing regional offices from among the state's 28 such offices followed by selecting *sufficient* street officials from within those regional offices. Instead, I resorted to the Bayesian rationale of case selection that emphasizes the iterative dialogue with the data in small-N case research; selecting the information-rich cases for maximizing the expected information gain (Bennett 2014; Rohlfing 2014); and including those participants that best represent the topic (Morse et al. 2002). In addition, I focused on those cases that provided a good representation of the bureaucracy and where officials were *more* forthcoming in sharing their experiences. The key strength of my interviewees has been a continuous engagement with them to learn more about the functioning of the bureaucracy, corruption, and other challenges. I noticed that even when I spoke with the same official multiple times, each new interaction elicited new insights leading to the accumulation of critical information. Several of these officials had the experience of three decades or more. They not only explained the environmental misgovernance in the state at the place of their current postings but also provided a historical overview of why and how corruption established its roots in the department over the years. The pilot before the fieldwork provided me with important *a priori* information about misgovernance and the organization of corruption in the bureaucracy. It helped me formulate the three specific hypotheses and strategize gathering the necessary data to examine the likelihood of those hypotheses.

[13]There remains a debate on the sufficient sample size in the qualitative methods literature. There remain two main approaches to determine the number of participants: some think of achieving a form of saturation in responses while the rest determine the sample size *a priori* (Sim et al. 2018). The recommendations about the sample size include 15 or more (Bertaux 1981, p. 35); 12 to 20 (Lincoln and Guba 1985, p. 235); 25 (Charmaz 2006, p. 114); 20 to 30 (Warren 2002); 50 or less (Ritchie et al. 2003, p. 84). Mason (2010) examined 561 doctoral dissertations that used qualitative methods and found the mean sample size to be 31.

H_1: *There exists both grand and petty corruption in the environmental bureaucracy.*

H_2: *Both grand and petty corruption are organized around bureaucratic transfers.*

H_3: *Grand corruption causes petty corruption.*

While Bayesian causal techniques for small-N quantitative research are well established in the social sciences methodology literature (Gellman et al. 2013), their applications for small-N qualitative research remain works in progress (Fairfield and Charman 2017).[14] Bennette (2015) and Humphreys and Jacobs (2015) apply the Bayesian method for process tracing using simplified pieces of qualitative evidence. A key advantage of the Bayesian approach is the flexibility it affords to the qualitative researchers to refine—or even change—the hypotheses going back to the initial stages of Bayesian reasoning through what Stephen Gulls calls "a dialogue with the data."[15] In this section, I encapsulate my approach for testing the three specific hypotheses.

4.2.3 Empirical strategy for the first hypothesis

The grand corruption in official transfers in the form of the sale of offices under political influence and bribery is just one example of grand corruption. Other examples include corruption in policy design to give undue advantages to influential private interests over public interests; misuse of discretion in policy decisions by senior officials to serve private interests; and capturing of regulatory institutions or co-optation of high-ranking bureaucrats by powerful private interests through structural (money, investment) or instrumental (political) power (Rose-Ackerman 1996). However, as compared to these different channels, grand corruption in transfers *uniquely* allows me to gain insights into the interplay of public

[14] I also wish to note that scholars of political methodology remain divided on the question of whether qualitative studies can be used for causal inferences (Beck 2010; Goertz and Mahoney 2012). However, an emerging view is that both qualitative and quantitative methods merely use different methods of measurement and the same logic of causal inference can be applied to both the methods (King, Keohane, and Verba 1994).

[15] It has been quoted in Sivia (2006).

and private interests of politicians and bureaucrats and the convergence and divergence of interests of bureaucrats between different levels in the organizational hierarchy. These insights are necessary for understanding the whole lifecycle of corruption; for investigating the questions of the existence of grand corruption; and for examining the linkages between grand and petty corruption and how these linkages are pivoted around bureaucratic transfers.

Petty corruption refers to those corrupt exchanges in the work of the regional offices that take place during the implementation process. The regional offices have responsibilities such as the environmental inspection of the industrial units, local bodies, and hospitals; monitoring emissions, ambient air quality, the health of rivers and water bodies; conducting technical analysis of the proposed industrial sites from the environmental viewpoint and granting the CTE and CTO approvals to industries; and investigating public complaints against industrial units for violating environmental norms. It also assesses, collects, and amends Water Cess on small-scale industries under the Water Prevention and Control of Pollution Act 1977, identifies sites for the hazardous waste disposal, initiates legal actions against the defaulting industries, collects and analyses chemical samples, and other things as mandated by the pollution board for the effective environmental management in the state. Due to the incompleteness of environmental guidelines, enormous discretionary powers of street officials in the interpretation of environmental regulations, costly environmental interventions demanded from the industries under the law, and limited public scrutiny of the erring industries, there emerge several opportunities for petty corruption for street officials. For the measurement of petty corruption, I rely on the interviews of street officials and industry owners. Industry owners provide data on how they achieve environmental compliance and engage with street officials in the event of non-compliance or partial compliance with environmental standards. Similar data comes from street officials. These two sets of interviews provide insights into petty corruption in enforcement and motives of street officials behind engaging in corrupt practices.

4.2.4 Empirical strategy for the second hypothesis

The testing of the second hypothesis demands an examination of several causal likelihoods. An instance of transfer of street official X by senior official Y might be decomposed into several empirical possibilities. To prove the proposition that the corruption of both X and Y are pivoted around transfer provisions, I investigate the following chain of propositions: (1) Y undermines rule-based transfers in the bureaucracy misusing his discretionary powers; (2) Y misuses his position to transfer X in exchange for money or under political compulsions for some immediate or future expected benefits through X; (3) Y's misuse of his transferring authority (to sell office to street officials) places X in a position of unfair advantage that furthers X's private interests at the expense of public interests. X transfers a share of those private interests to Y; (4) Y's misuse of his transferring authority leads X to derive private benefits by offering legitimacy to X's illegal actions; (5) the corrupt transactions between X and Y undermine Weberian notion of strict hierarchy to create corrupt linkages between public and private interests, resulting in government failure; (6) X pays Y for his transfer in commensurate with the rational calculation of some immediate or expected future benefits; Y has information of X's expected dividends resulting from his transfer; and (7) X pays Y in a competitive market and offers better exchange value of the office being sold to X. Other corrupt transactions such as regulatory capture would only show the connection between public and private interests in particular instances but not the whole life cycle of corruption and how these corrupt connections have their roots in transfers. For these reasons, corruption in transfers is emblematic of grand corruption that spurs and is at the root of the misuse of public positions for private benefits in the environmental bureaucracy.

4.2.5 Empirical strategy for the third hypothesis

For the third hypothesis, I apply logical Bayesian reasoning for causal inference using process tracing. The Bayesian reasoning for qualitative data works in three steps (Fairfield and Charman 2020). First, we formulate rival hypotheses $\{H_i\}$ and assign them prior probabilities

$p\left\{\frac{H_i}{B}\right\}$ under the environment of limited information based only on the background data (B) that could come from a range of sources, including existing scholarship, archives, experience, and the pilot. These probabilities are not objective numbers but represent the degree of our rational beliefs in different hypotheses $\{H_i\}$. Second, we estimate the likelihood of evidence $p\left\{\frac{E}{H_i}\right\}$ if the hypotheses $\{H_i\}$ were to be true. Finally, we estimate posterior probabilities $p\left\{\frac{H_i}{EB}\right\}$ or the likelihood of the hypotheses based on our evidence from the interviews or other methods and the background information.[16] These posterior probabilities, especially their ratios, help us assess the relative strengths of competing hypotheses. For example, we can compute the posterior odds on H_a vs. H_b using the evidence (E) and the background data (B) by applying the relative odds ratio using the Bayes rule $\frac{p\left\{\frac{H_a}{EB}\right\}}{p\left\{\frac{H_b}{EB}\right\}}=\frac{p\left\{\frac{H_a}{B}\right\}}{p\left\{\frac{H_b}{B}\right\}}\times\frac{p\left\{\frac{E}{H_aB}\right\}}{p\left\{\frac{E}{H_bB}\right\}}$ (Fairfield and Charman 2020, p. 366).

4.3 The existence of grand corruption in transfers

The street officials in the environmental bureaucracy face common difficulties as they emerge in their preference architecture. In the majority ranking of the three topmost challenges, securing the choicest postings[17] remains the most important challenge, followed by the low salary levels and uncertainty in promotions, and overwhelmingly high workload. Even if the majority of the officers rank a transfer choice high in the priority list, they accord different weights to their choices in the decision arithmetic. Their posting preferences could be categorized into three distinct groups preferred by roughly equal numbers (33%) of officials. These three categories of preferences are to be in: the control of a region that has a large concentration of high revenue-generating industries; those regional offices that have good urban infrastructure to live and raise a family; and the places that have less workload, less

[16] We can also express Bayesian rule in terms of conditional probabilities: $p\left\{\frac{H_i}{EB}\right\}=p\frac{H_i}{B}\times\frac{p\left\{\frac{E}{H_iB}\right\}}{p\left\{\frac{E}{B}\right\}}$

[17] By posting, I refer to the place of their appointment, which could be at any of the 28 regional offices or at the headquarters.

political pressure, and are closer to their hometown. There is little variation in the share of the three categories of preferences across the rank hierarchies. The third preference is *strongly* correlated with the years left until the retirement. These bureaucrats' personal preferences add to the established literature, which emphasizes that bureaucrats have preferences even if what they prefer or the sources of their preferences vary (Iyer and Mani 2012; Wade 1982, 1985). These strong posting preferences of street officials further incentivize politicians and senior officials to expand their already strong control over the bureaucracy, especially through their discretionary powers, in matters of transfers to monetize offices for furthering their own private interests.

As such, the officials in the bureaucracy characterized by the three personal preferences respectively work towards gaining more control over industries; or focus on personal growth by staying in places with good urban infrastructure; or accumulate social capital by staying closer to their communities. The first and third category of officials—with the dominating characteristic of gaining control of industries or staying closer to their hometowns—are *purely* self-interested rational actors and could be termed as "climbers" or "conservers" (Downs 1965). The second category of officials are "mixed motive" officials who pursue a wider set of personal and professional priorities. Further, climbers generally focus on goals such power, income, prestige, and security, while conservers work towards sustaining the status quo. The propensity to participate in the market for transfers and purchase an office vary among officials even if the three categories still focus on maximizing their utility, for their utility function encompasses a plurality of complex goals that include their individual aspirations as well as organizational and societal goals.

As per the departmental transfer guidelines, transfers of officials *normally* happen every 3-5 years; however, unscheduled transfers—sometimes within even months and some officials staying at the same post for an extended period—are not uncommon. The member secretary

transfers the JEs while the chairperson transfers the AEs, ROs, and CEOs. Officials across hierarchy, including those who *themselves* got (or did not get) their choicest posting, acknowledge that the flouting of these guidelines—often at the behest of politicians of the ruling party or under the influence of bribery— happen. Working in a small bureaucracy, officials are well aware about the preferences of their colleagues and the means they deploy in their work, transfers, and promotions. Unscheduled transfers (or an extension of existing tenures) generally happen in two cases and such transfers are *highly* discretionary. First, officials use bribery and political influence to secure a better transfer or extend their existing tenure. Second, an officer has a fall out with a politician or senior officer, and is shunted out to another place, which officials colloquially refer to as "punishment postings." The punishment postings happen to those officials who ignore political instructions,[18] especially of those who wield significant clout in the ruling dispensation, or fail the departmental *benchmarks*.[19] Street officials complain about the constant political interference in their work and pressures to ignore environmental violators or let them get away in exchange for payments. Those officials who keep staying at the same place are well connected with their seniors and politicians, and one senior RO says, "it absolutely happens."

For transfers, officials approach the Board headquarters either through a local politician of the ruling party or the staff members of the seniormost officials working at the bureaucracy's

[18]Politicians have no formal role in the departmental functioning. Their interference happens in the garb of safeguarding public interests and is informal.

[19]I initially took the term "benchmark" to be self-explanatory in my interviews. However, when this term was mentioned several times, I curiously asked an official that when there is so much focus on benchmarks, why is still high pollution in major cities. It was then the officer explained that benchmarks refer to two things. First, it demands maintaining cordial relations with the fellow officials and getting things done following the instructions of the seniormost officials and doing favors to certain industries they have connections with. Second, it requires often visiting the headquarters with gifts, etc. Street officials usually do not get instructions from the top to deal with the violators. However, in case of big industries, such calls are common as the owners approach the headquarters directly to avoid penalties or to expedite certain approval process. One RO mentioned the example of Pepsi Inc, which happened a few years ago. A local NGO found that there was pesticide in the drinks, which became a huge controversy. The official recalled pressure from the top to bury the matter and slowly the case disappeared from the media.

headquarters. The officials emphasized the utility and prevalence of both political influence and bribery in transfers, even if some (16%) were quick to dismiss personally using such means while some proudly accepted doing so. They are of the opinion that both bribery and the political influence are used, but political influence is more effective. In support of their claim of political influence being more effective, they argue that because the chairperson is a political appointee, it is only obvious to reach out to him through political representatives who are from the same political party. Before bribery happens, making inroads to his office is essential, and that usually requires the help of his staff members, local politicians, or their representatives. Their estimates of the percentage of officials who use political influence or bribery or both in transfers is in the range of 15% to 25%. Even if a fraction (20%) of the officials declined to answer the question *directly*,[20] they did not deny the existence of corruption in transfers. Furthermore, this figure of 15% to 25% refers only to those who are successful in obtaining a transfer of choice. It does not include those officials who provide some money to the supporting staff in the offices of senior officials for receiving information, forwarding their files, etc., even if their transfer applications are unsuccessful. If we include them both, the actual figures will go up significantly, agree the officials. Similarly, the state industry and the retired officials, who were more open and detailed in sharing their experiences, said that corruption in transfer is significantly higher than accepted by the officials. They say that the 15% to 25% figure correspond only to the climbers that are pure market-based high-cost transactions and for the regional offices that have high concentration of industries and are good cities to live in. Others also pay or use influence, albeit of a lesser degree. Some officials went into remarkable details about their experiences and those of their colleagues they knew first-hand to shed light on two main mechanisms of securing the choicest postings. They mention that getting the first preference, especially when it is

[20]They rather made gestures such as laughing or saying you know or everybody knows what happens in our society or other departments. Despite taking long route to explaining things, they claimed they cannot answer the questions.

generally the most preferable, requires three things: strong connections with relevant officials and politicians, bribe, and a continuous connection with the headquarters to keep them in favor through gifts and whatever one could do, all in that order. While getting such a choice is a challenge, staying put in that post requires a sustained effort. In some cases, the officers, especially the climbers and the conservers who did not get their first choice in the first attempt get themselves placed at the headquarters even without any official responsibility. Officials term their postings at the headquarters as inconsequential, but they find it useful to develop better relations with the top officials for a more favorable decision in the next transfer cycle. Being at the headquarters allows them to develop connections with the top officials through their associates, often JE and AE rank officers, to get better postings in the future. Transfer to the eastern part of the state, which remains low on industry concentration and poor in infrastructure often require little payment and in most instances being in the good books of the senior officials suffices. This region also includes punishment postings of officials.

The officers are reluctant to suggest a specific amount paid (or needed to be) for choicest transfers for several reasons. First, it depends on the place, but is highest for the regions that have good infrastructure and good concentration of industries. Second, it also depends on the political influence and how well the officer is connected with the officials at the top of the bureaucracy and his service record. The service record is important because in addition to rent-raising, the top management expects effective environmental governance to the extent possible. This requires effective coordination between the industry and the regional office to comply with obvious and low-hanging environmental goals and partially complying with the rest, especially those goals that are expensive but difficult to monitor and escape public eye. Finally, the transfer of ROs requires high-level of liaisons that include money and political influence and ability to maintain consistently good relationship with the headquarters. It is less so in the case of AEs and JEs. However, for AEs and JEs, it is important how well they

coordinate with the RO on governance matter, including following the dictates of the senior officials to favor certain polluting industries that are connected with the officials at the top.

4.4 The existence of petty corruption in the bureaucracy

The implementation work of the regional office generates two major markets for corruption arising from the licensing and enforcing monopoly of the environmental bureaucracy. The work of the bureaucracy that is short-staffed, lacks training, and is subject to little public scrutiny[21] render the licensing work sub-optimal and prone to delays and uncertainty. To start operations in the state, an industrial unit requires a range of approvals from multiple government authorities for obtaining the CTE and CTO licenses from the environmental bureaucracy. These licenses are pre-requisite for industries to start and continue operations provisional upon the successful compliance with the state and federal environmental regulations. Obtaining the CTE is relatively straightforward, but the CTO and its periodic renewal are cumbersome processes not only requiring a lot of paperwork, but also having rules being open to subjective interpretations.[22] Industries are left wondering about the requirements like what they need to do and how. There are up to 50 different steps in some cases that require approval to successfully obtain a CTO license (It depends on the

[21] Environmental quality has *still* not emerged as an electoral issue in the state, which limits incentives of elected officials to work on improving environmental quality, and public scrutiny about the state of environmental governance remains limited. There is little public engagement on air and water issues in the state, and these concerns are limited to only certain environmental organizations. "It can be understood from the fact despite the state having largest number of most polluted cities in the world as ranked by the World Health Organization, no party raised it during elections," argues an environmental activist working on the rejuvenation of a tributary of the Ganges in Western India. Banerjee et al. (2014) using a field experiment to find changes in voter preference find that providing more information about the candidate changes voters' preference on ethnic politics. However, priming voters on corruption in public goods implementation does not change the electoral outcome.

[22] Only green, orange, and red category of industries are required to obtain the CTO certification. The white category of industries due to their small environmental impacts are exempt from the certification.

type of the industry and its pollution profile.). These steps include physical and technical specifications of the industry, emission profile, pollution management, and relevant certificates from other government offices and community governments regarding land acquisition, and sustainable water consumption. Even if a majority of the steps for the licensing process such as submission of necessary documents are online now, approvals at all intermediate steps still involve bureaucratic discretion, which ultimately decides when—and whether—these industries obtain licenses. The industry owners unanimous claim that these CTE and CTO licenses are an invitation to bribery at every step of the way because of their lack of clarity in what is expected from the industry. These delays and uncertainty in licensing decisions are very costly for the industries.

The enforcement powers of the environmental bureaucracy are characterized by high discretionary power[23] and large transaction costs.[24] These conditions generate rent seeking opportunities for street officials. There are both similarities and differences in the nature of corruption across the three kinds of industries. Medium industry owners claim—and also explain in detail how—they follow all the guidelines diligently; the micro and small industry owners, however, disagree. Small and micro industries concede to adhering to about 85% or less and about 65% or less of the guidelines respectively. A standard argument coming from the micro and small industries is that even if someone obtains the CTE—the license

[23]Discretion could be exercised for public benefit as well as exploited for private gain. Discretion adds another layer of complexity to the delegation problem in that the principal becomes more risk averse if he thinks the agent is more likely to misuse the discretionary power. In an environment of monopoly and weaker accountability, corruption is an increasing function of discretion (Klitgaard 1988). Corruption is not the only outcome of the misuse of discretion; less trained and skillful bureaucrats could also make bad policy decisions even if they are not necessarily corrupt (Lipsky 1980; Winter 2007). Banfield (1975) argues that limiting discretion may reduce corruption but only at the cost of injuring morale of the honest bureaucrats exercising their discretion for public welfare. The optimum level of discretion depends on the informational advantage of bureaucrats relative to the cost of exploitation for private benefit (Epstein and O'Halloran 1994; Decarolis et al. 2020).

[24]The conviction rate of environment-related crimes in the country remains 97.2%. However, conviction is complete only in very few cases, which is reflected in high pendency rate. The average pendency rate of environment-related crimes in the country was 75% for the year 2020 (Table 4.5).

to start an industry—it is almost impossible to follow the elaborate set of guidelines given their limited resources and a lack of clarity around what exactly is to be done.[25] They further argue that medium industries can allocate 2% to 3% of their profit to environmental management, but micro and small industries might need 20% to 50% of their revenue if they were to follow all the environmental guidelines, and even that may not often suffice. Poor training of the street bureaucrats and the subjectivity of the rules make it even worse for these industries because the interpretation of these rules differ widely. As such, under these circumstances, the second-best strategy for the industry is to work out an arrangement of money at regular frequency so that they are not troubled by show cause notices or arbitrary penalties for not following the guidelines. Small and micro industries accept making an annual payment in the range of INR 10,000 to INR 25,000 depending on the size (and the nature) of the industry and degree of environmental violations and whether they provide these payments directly to the street officials (often the JEs) or through the politicians. These arrangements are quite stable and carried forward even if there is a change of street officials or the government. In exchange, the street officials help the industry in optimally meeting the environmental guidelines without penalizing them for some "violations." These terms are generally negotiated *only if* there are new regulations. Medium industries on the other hand mentioned no such stream of money. However, they confided that they remain under constant pressure—and in some case they succumb to that pressure as well—from the street officials to employ their kin in exchange for reducing delays in environmental clearance that are required at regular intervals and for minor infractions. They do not want to get anything done illegally, but merely want to expedite the cumbersome and dilatory processes

[25]The Brick Kiln owners interviewed for this study explain how some of the guidelines could not be effectively met to the satisfaction of the bureaucracy. For example, Brick Kiln industries are expected to spray water to subside dust and ash in the event of particulate matter concentration going up beyond permissible levels. However, they are unsure whether this particulate matter is coming from their factory or from some other source due to the lack of source apportionment studies and adequate technical infrastructure. Furthermore, due to the lack of electricity, they rely on diesel pumps to spray water, which only adds to the pollution, especially when the contribution of the other sources is significant. Such requirements not only add to the extra costs but are subjective to assess whether the steps taken by the industries are significant.

in many cases, also known as "speed money" in the parlance of state bureaucracies. The "speed money" phenomenon has been normalized in bureaucracies as if it is a legitimate demand.[26] Senior officials apply pressure to manage "street officials" in exchange for favors such as employment.

The discretionary power becomes more significant in the enforcement that requires choosing certain industries for collecting samples, deciding time for such investigation and imposing penalties for non-compliance. Due to the limited technical capacity, officials cannot monitor all the industries for all the regulations, and hence they optimize their routines by randomly choosing certain industries for compliance check to maximize their performance. Due to the incompleteness of rules and limited resource capacity, street officials use their discretion to develop routines to optimize their performance (Lipsky 1980). The prevalence of discretion is supported by the evidence that the Board sent show cause notices to only 16% of industries for violating environmental guidelines in 2018. The officials in response to the federal government's auditor argue that they could not send notices to all the erring units due to limited resources (National Green Tribunal 2018). The Board also prosecuted less than 4% of the serious Brick Kiln violators while only serving the closure notice to others while allowing them to remain operational (Table 4.6). In situations such as this, the bureaucrats could use discretion to send notices to the most serious violators if they wish to maximize public good or to marginal polluters so that serious polluters avoid scrutiny and continue with their businesses.

The main corruption mechanism between street officials and micro and small industries is of two kinds. The industries either approach the street officials directly or do it through

[26]A Government of India's Report of the Committee on the Prevention of Corruption in 1964 mentioned "speed money" as a general feature of bureaucracies. The report mentioned, "Generally the bribe giver does not wish, in these cases, to get anything done unlawfully, but wants to speed up the process of the movement of files and communications relating to decisions" (Santhanam 1964, p. 9).

politicians to work out a method that makes them less susceptible to penalties and random inspections for environmental violations. Both these arrangements have strengths and weaknesses. The strength is that even if an official is transferred or a politician loses an election, usually the same arrangement continues with the next official and there is a continuity. However, at the time of a transfer—to stop it or when an official is about it go or at the time of an election—there is more pressure on industries for increased payments in cash or kind. In kind payment, for Brick Kiln industry for example, includes providing bricks to these officials or their relatives at cheaper cost. The advantage in case of officials is that they are more approachable and can guide in enforcement and possess information about the department that could be of help to the industry. However, they are always under pressure of a transfer. Politicians are more "accommodating" in addressing industry concerns by way of speaking with street officials and their seniors, but there is an ab initio arrangement in case they lose elections or some street officials—though it is rare—ignore some of their warnings. Politicians through their local representatives collect money from the industries and share some of it with the local regional office to keep street officials in good humor so that they do not "trouble" the industries. The JEs prepare technical reports, conduct compliance checks, deliver show cause notices to industries while the action is taken by the RO based on the report of the JE. AEs coordinate with the office of the RO about the enforcement process and keep him in the loop about the enforcement processes. They submit reports to the RO who takes actions. How much each official receives depends on the nature of the specific case and there is no fixed share as such that is distributed across bureaucratic hierarchy, suggest industry owners.

4.5 Organization of grand and petty forms of corruption

The political control in the recruitment, promotions, and transfers of bureaucrats in the environmental bureaucracy is relatively higher in that the bureaucracy is newly established

and enjoys lesser functional autonomy than the more established state bureaucracies.[27] This gives an additional leverage to the state politicians over bureaucrats in matters related to their service conditions. An important reason why politicians strive to maintain a tighter grip over the bureaucracy is because a major share of the polluting industries in the state, such as Brick Kiln industries, are owned by politicians or their close associates. For this reason, officials across rank hierarchy emphasize that in addition to the continuous interference in the works of the environmental bureaucracy, there are also large-scale transfers with the change in government every five years because politicians rush to appoint their favorite officers in key positions in the bureaucracy to secure their economic and political interests.

Due to uncertainty in hiring and promotions, the recruitment process usually fails to attract talented engineers into the bureaucracy, lament serving officers—a view also unanimously shared by the retired officers based on their long service experience. Over a period of time, these recruitment uncertainties contributed to situation where even if the number of industries expanded exponentially after India's economic liberalization in the early 1990s, the regulatory burden increased, implementation challenges multiplied, the efforts to attract talent did not occur and the pace of the recruitment also did not increase. There is shortage of officers across the ranks, including in engineering, which operates at 66% of the sanctioned strength (Table 4.7). The officials deplore the lack of transparency in promotions and transfers. They complain about not getting postings even if they were promoted to more senior positions as their files kept pending for political clearance or there were no vacancies. The shortage of officers, the officials argue, results in red tape and procedural delays, and has reduced the bureaucracy to merely an advisory body that is unable to effectively enforce the air and water quality standards in the state. These organizational conditions of high political

[27]The environmental bureaucracy was established in 1975 while most of the other state bureaucracies have their origins in pre-independent India. For example, the public works department was established in 1854, the police department was established in 1863.

interference and lack of bureaucratic capacity and incentives for enforcement *make* officials pessimistic about organizational goals. This pessimism steers street officials away from organizational goals towards a plurality of goals in which organizational values rank low in priority.

While there are transfer guidelines in the department, the aberrations in transfers are frequent, point out officials referring to their own career trajectories. Aberrations in transfers are a result of discretionary power of the senior officials over transfers and promotions. Depending on how officials meet the "benchmarks," they could end up in their choicest postings, stay there for an extended period, or be shunted to remote areas as part of their punishment postings. Under these circumstances, rather than optimally assigning posts to achieve organizational goals efficiently, transfer primarily becomes a means to achieve personal ends of bureaucrats and politicians and organizational goals recede to the background. Bureaucrats participate in the markets for corruption in transfer to buy the postings of their preferences. The cost that is incurred in the participation they achieve through rent-seeking from industries or doing the bidding for senior officials. As such, the conduct of street officials is determined not by *purely* organizational objectives, but also how they contribute and advance the private interests of their superiors. A weak institutional environment and high transaction cost further provide enabling conditions to these officials to pursue their private goals at the cost of organizational goals. It is not to say that street officials totally give up on organizational goals, but they face an additional constraint of meeting the private demands of seniors while working towards public goods. Even climbers who participate most actively in the corruption market for transfers have to meet certain levels of organizational goals, and only then comes in the private benefit part. However, as it is obvious, these processes undermine the efficiency (in the sense of Pareto optimality) of implementation of public goods. These are the additional constraints pivoted around the control of transfers and promotions that street officials face in transition economies characterized by systematic corruption in their work on public goods implementation.

4.6 Linkages between grand and petty forms of corruption

In the previous sections, I described the existence of grand and petty forms of corruption in the bureaucracy and how they are organized around the market for corruption in transfers. In this section, I examine the hypothesis that grand corruption causes petty corruption, including identifying the mechanism of how it works. Before I delve into the causal argument, I make a few remarks about petty corruption relevant to the hypothesis. In a government bureaucracy organized around the Weberian ideals, the principal, which could be a state legislature or senior public official, delegates tasks to the street officials to implement policies on the behalf of the principal. Since the principal cannot observe the official *perfectly*, the official could misuse his position for private profit causing a loss of (B) to public welfare. Now it is in the principal's best interest to allocate resource (C) to stop corruption as long as $C \leq B$. In other words, there is some minimum level of corruption C_{min} ($C_{min} \neq 0$) that would exist in the bureaucracy because at that level the cost of fighting corruption would exceed the gains accruing from controlling the corruption. We could call it a good equilibrium. When I refer to petty corruption in my analysis, I am referring to the petty corruption (C) that is higher than C_{min} ($C \geq C_{min}$) or that exists in a state of *bad* equilibrium. I investigate the hypothesis that grand corruption pushes the *good* equilibrium towards *bad* or *worse* equilibrium. I provide the causal examination of the hypothesis using two different methods. First, I make a deductive argument to claim that grand corruption causes petty corruption. Second, I use process tracing using the Bayesian reasoning for qualitative data by applying the framework of Fairfield and Charman (2017).

The environmental bureaucracy is different than the other more established state bu-

reaucracies in terms of political interference in the recruitment, transfers,[28] promotions and *relatively* indifferent public opinion about the functioning of the bureaucracy due to the limited public concerns about environmental goods. Another feature of the bureaucracy is that the weak institutional environment and high transaction cost create conditions in which officials misuse their monopoly and discretion for private interests at the cost of public interests. The uneven concentration of high revenue-generating industries and urban infrastructure in the state skews posting preferences of the bureaucrats because they want to be in control of the industries, stay in cities with good civic amenities, or be closer to their hometowns. Only a limited number of postings fulfill these preference criteria, which creates competitiveness among the bureaucrats for postings. The bureaucrats self-select themselves into different groups based on their posting preferences and vie for them by approaching their superiors who control posting allocations. This vying for favorable postings generates an opportunity for senior officials to exert more control over the street officials for private benefits and create mutually reinforcing incentives for both street and senior officials.

Under these conditions, the senior officials create a market for transfers in which street officials participate competitively to secure a posting of their choice through the use of bribery and political influence. These superiors who make these allocations are also the guardians of the conduct of the street officials and are responsible for the overall governance of the bureaucracy. When they make allocations by misusing their discretionary power to advance their private interests and not by prioritizing organizational goals, they legitimize the misuse of authority by street officials. The street officials then use their participation in the markets for transfers as a form of sanction by their superiors to create various markets for corruption

[28]One AE who was promoted from JE to AE and served in six different districts describes the role of political influence in these words: "The political masters are in charge. Every reasonable person understands for the rationality in transfers, but then there are groups of political who want to block it." An official who joined as JE and is currently working as the RO mentioned that "30% of cases of transfers are related to political influence." Another official who joined as an AE and is working as an RO said, "Yes, political influence works."

in the implementation to extract the cost of their participation and the cost of staying put in the position.[29] What emerges strongly in our interviews is that an allocation to the choicest postings occur *only* through political influence or bribe, or both. In our interviews of 25 officials from the bureaucracy and a senior retired officials from the central bureaucracy, we received responses that either acknowledged that obtaining the choicest posting requires participation in the corruption market for transfers or remained quiet, but did not deny this claim. This was further supported by the industries that share good relationships with the street officials and that these street officials approach for rent for stopping their transfers or making a case of how they already paid and needed to recover that cost. Given the strong top-down control of the bureaucracy and its small size, it leaves *minimum* space for the street officials to engage in corrupt practices (beyond C_{min}) at the cost of organizational objectives without sanction from the top authorities. Without the market for corruption in transfers, the bureaucracy would most likely stay in *good* equilibrium. However, what pushes this bureaucracy toward bad equilibrium is the fact that top officials sell offices to these street officials who only treat this sale as a sanction to extract rent from the industries at the cost of organizational goals of efficient implementation of environmental goods.

In the section, I apply process tracing using the Bayesian technique to investigate the causal linkages between grand and petty corruption.[30] I applied Bayesian reasoning only to

[29]This is captured by a JE who had worked in five districts in these words: "I had to pay around INR15 lakh [1.5 million] for the promotion from JE to AE and to recover that I approached the Brick Kiln industrialists." A JE acknowledges that "once we use political influence for our transfers, a payback is necessary to that person."

[30]Methodologically, the causal inference question can be stated as the following. Suppose there is a population (X_i) of bureaucrats in which some individuals engage in petty corruption. There is a treatment (T), grand corruption, in the bureaucracy. I observe (Y_i), which indicates whether those street officials who engage in petty corruption undergo treatment or not. In other words, do street officials misuse their public positions to engage in petty corruption only because they pay for their transfers? There could be four potential outcomes that Humphreys and Jacobs (2015) term as "adverse," "beneficial," "chronic," and "destined." These respectively denote those bureaucrats that engage in petty corruption if and only if they do not receive the treatment or there is no grand corruption or corruption in transfers; those get transferred if and only if they receive the treatment; those who never engage in petty corruption regardless of whether they receive treatment or not; and those who engage in petty corruption regardless of whether they receive

check the consistency of the causal claims I derived using deductive reasoning in the previous section.

H_1: *Grand corruption causes petty corruption.*

$\sim$H$_1$: *Grand corruption does not cause petty corruption.*

Under the frequentist approach, we just have one single logical negation of the main hypothesis. However, the Bayesian reasoning demands defining a set of mutually exclusive and exhaustive alternate hypotheses. Accordingly, we could represent the alternate hypothesis $\sim$H$_1$ as a set of two mutually exclusive and exhaustive hypotheses H_2 and H_3 such that only one of these two mechanisms could be true. In other words, $\sim$H$_1$=H_2+H_3

H_2: *Petty corruption causes grand corruption.*

H_3: *Grand corruption and petty corruption occur independently of each other and there is no causal relationship between them.*

Step 1

We consider three prior distributions to assign probabilities to the three hypotheses H_1, H_2 and H_3. In the first distribution, we start with the state of maximal ignorance, apply the indifference principle, and assign equal probabilities (33%) to the three hypotheses to avoid any bias or any background knowledge.

$p(H_1)$=0.33

treatment or not. Chickering and Pearl (1997) analogously call these four population groups as "hurt," "helped," "never-recover," and "always-recover." Suppose the share of these bureaucrats in the bureaucracy is Y_a, Y_b, Y_c and Y_d respectively. Under SUTVA assumption, the potential outcomes are $Y(0)$=1 and $Y(1)$=0 for the "adverse" population; $Y(0)$=0 and $Y(1)$=1 for the "beneficial" population; $Y(0)$=0 and $Y(1)$=0 for the "chronic' population; and $Y(0)$=1 and $Y(1)$=1 for the "destined" population (Rubin 1974). We estimate the treatment effect $Y(1)$-$Y(0)$ for a case as the difference in the two potential outcomes corresponding to the treatment and the control conditions. The central challenge in causal inference is that for a given case i, we can only observe one of the two potential outcomes $Y(1)$ or $Y(0)$.

$p(H_1)$=0.33

$p(H_1)$=0.33

Step 2

The second probability distribution considers the background knowledge (B) based on the large body of existing literature. Rose-Ackerman (1996) suggests that grand corruption can occur even if there is relatively little petty corruption. Andvig and Fjeldstad (2001) argue that in most cases, they (petty and grand corruption) go hand in hand and might have a mutually reinforcing effect. Wade (1982, 1985), in his work on corruption in India's canal irrigation system, identified a connection between the top-level and bottom-level corruption—his characterization of grand and petty. Ruhl (2011), using an example of Latin American countries, however, finds no linkages or at best only an ambiguous relationship between grand and petty corruption and argues that the two are not always connected. Using this information, we assign higher probabilities to the hypotheses with the possibility of a connection between grand and petty corruption. In assigning probabilities, we imagine different hypotheses to be distinct states of the world and judge the likelihood of background information (evidence) in those states. As such, we assign equal and higher probabilities to hypotheses H_1 (40%) and H_2 (40%) and a low probability to H_3 (20%).

$p\left(\frac{H_1}{B}\right)$=0.35

$p\left(\frac{H_2}{B}\right)$=0.35

$p\left(\frac{H_3}{B}\right)$=0.30

Step 3

In the third probability distribution, I consider the three pieces of evidence E_1, E_2, and E_3 that contain information about the existence of grand and petty forms of corruption

and their causal linkages (Table 4.8). I consider the information coming out from different sources as different pieces of evidence, e.g., street officials and industry owners. One of the steps in process tracing using Bayesian reasoning is to assign likelihoods $p\left(\frac{E_j}{H_i E_i B}\right)$ to our evidence (E_j) conditional upon the previous evidence (E_i) used in the analysis and the background information (B) and hypothesis H_i ($H_i = \{H_1, H_2, H_3\}$). Assigning probabilities to different likelihoods is a challenge. Fairfield and Charman (2017) provide guidelines for such assignments. $p(\frac{E_1}{H_1 B})$ is the probability of the evidence E_1 to be true conditional upon the hypothesis H_1 and background information B.

Evidence (E_1) Our evidence contains information on how there is grand corruption in transfers of street officials. Bardhan (2015) also argues that transfers and postings remain a major source of corruption in India. Similar findings emerged in an internal survey of the Government of India sent out to its 18,432 elite civil servants belonging to the police and other administrative services. About 26% of officials responded to the survey sent out via both post and email. Of the respondents belonging to the police service, 84% of the officers either "agreed" or "strongly agreed" that corrupt officers manage plum postings. More strikingly, about 92% either "agreed" or "strongly agreed' that (grand) corruption often happens through the collaboration between the bureaucrats and the elected public officials (Civil Services Survey, 2010).

$p(\frac{E_1}{(H_1 B})$=0.40

$p(\frac{E_1}{(H_2 B})$=0.40

$p(\frac{E_1}{(H_3 B})$=0.20

This probability is consistent with the fact that while Wade (1982, 1985) finds a connection between different kinds of corruption, others merely mention the existence of petty and grand

forms of corruption and give only limited information about their linkages. So, I assign equal probabilities to the first two hypotheses. I also assign a relatively lower probability to the third hypothesis, which mentions the independent existence of two kinds of corruption.

Evidence (E_2): Our second piece of evidence contains petty corruption as a means to raise the rent by the street officials to compensate for the cost paid for the choicest postings. It includes direct quotes from the street officials.

$p(\frac{E_2}{E_1H_1B})$=0.60
$p(\frac{E_2}{E_1H_2B})$=0.30
$p(\frac{E_2}{E_1H_3B})$=0.10

We have assigned the highest probability in the first case because our second evidence points to the possibility of grand corruption causing petty corruption than petty corruption causing grand corruption. The likelihood for the third hypothesis is even lower.

Evidence (E_3): Our third piece of evidence contains information about petty corruption coming from the statements of industries. We have taken those statements that shed light on the motives of street officials behind engaging in petty corruption.

$p(\frac{E_3}{E_1E_2H_1B})$=0.85
$p(\frac{E_3}{E_1E_2H_2B})$=0.10
$p(\frac{E_3}{E_1E_2H_3B})$=0.05

We can now apply Bayesian formula to estimate posterior probabilities of the three hypotheses under the evidence. Let us suppose that E is our cumulative evidence.

$$p(\frac{E}{H_1B}) = p(\frac{E_3}{E_1E_2H_1B}) \times p(\frac{E_2}{E_1H_1B}) \times p(\frac{E_1}{H_1B}) = 0.85 \times 0.60 \times 0.40 = 0.159375$$
$$p(\frac{E}{H_2B}) = p(\frac{E_3}{E_1E_2H_2B}) \times p(\frac{E_2}{E_1H_2B}) \times p(\frac{E_1}{H_2B}) = 0.10 \times 0.30 \times 0.40 = 0.015$$
$$p(\frac{E}{H_3B}) = p(\frac{E_3}{E_1E_2H_3B}) \times p(\frac{E_2}{E_1H_3B}) \times p(\frac{E_1}{H_3B}) = 0.05 \times 0.10 \times 0.20 = 0.00125$$

$$p(\frac{H_1}{EB}) = \frac{p(\frac{H_1}{B}) \times p(\frac{E}{H_1B})}{p(\frac{H_1}{B}) \times p(\frac{E}{H_1B}) + p(\frac{H_2}{B}) \times p(\frac{E}{H_2B}) + p(\frac{H_3}{B}) \times p(\frac{E}{H_3B})} = 0.90839695$$
$$p(\frac{H_2}{EB}) = \frac{p(\frac{H_2}{B}) \times p(\frac{E}{H_2B})}{p(\frac{H_1}{B}) \times p(\frac{E}{H_1B}) + p(\frac{H_2}{B}) \times p(\frac{E}{H_2B}) + p(\frac{H_3}{B}) \times p(\frac{E}{H_3B})} = 0.08549618$$
$$p(\frac{H_3}{EB}) = \frac{p(\frac{H_3}{B}) \times p(\frac{E}{H_3B})}{p(\frac{H_3}{B}) \times p(\frac{E}{H_1B}) + p(\frac{H_2}{B}) \times p(\frac{E}{H_2B}) + p(\frac{H_3}{B}) \times p(\frac{E}{H_3B})} = 0.00610687$$

The posterior probabilities of the three hypotheses are 0.91, 0.085, and 0.006, respectively. In other words, Bayesian reasoning also shows that there is the highest likelihood for the hypothesis that states "grand corruption causes petty corruption."

4.7 Conclusion

Environmental bureaucracy has grand and petty forms of corruption organized around the market for corruption in transfers. This market is created by senior officials through the misuse of their discretionary authority to cater to the personal posting preferences of street officials, which in turn generate many other markets in the enforcement to be used by the street officials to extract rent from the industries. The two kinds of corruption exist unevenly in the state, determined by the bureaucratic choices that largely depend on the distribution of industries, infrastructure, and proximity of the bureaucrats to their social community. Several actors influence misgovernance in the bureaucracy, which include elected officials, bureaucrats and the limited public focus. While grand corruption causes petty corruption, their levels are determined by several competing equilibria between private and public interests.

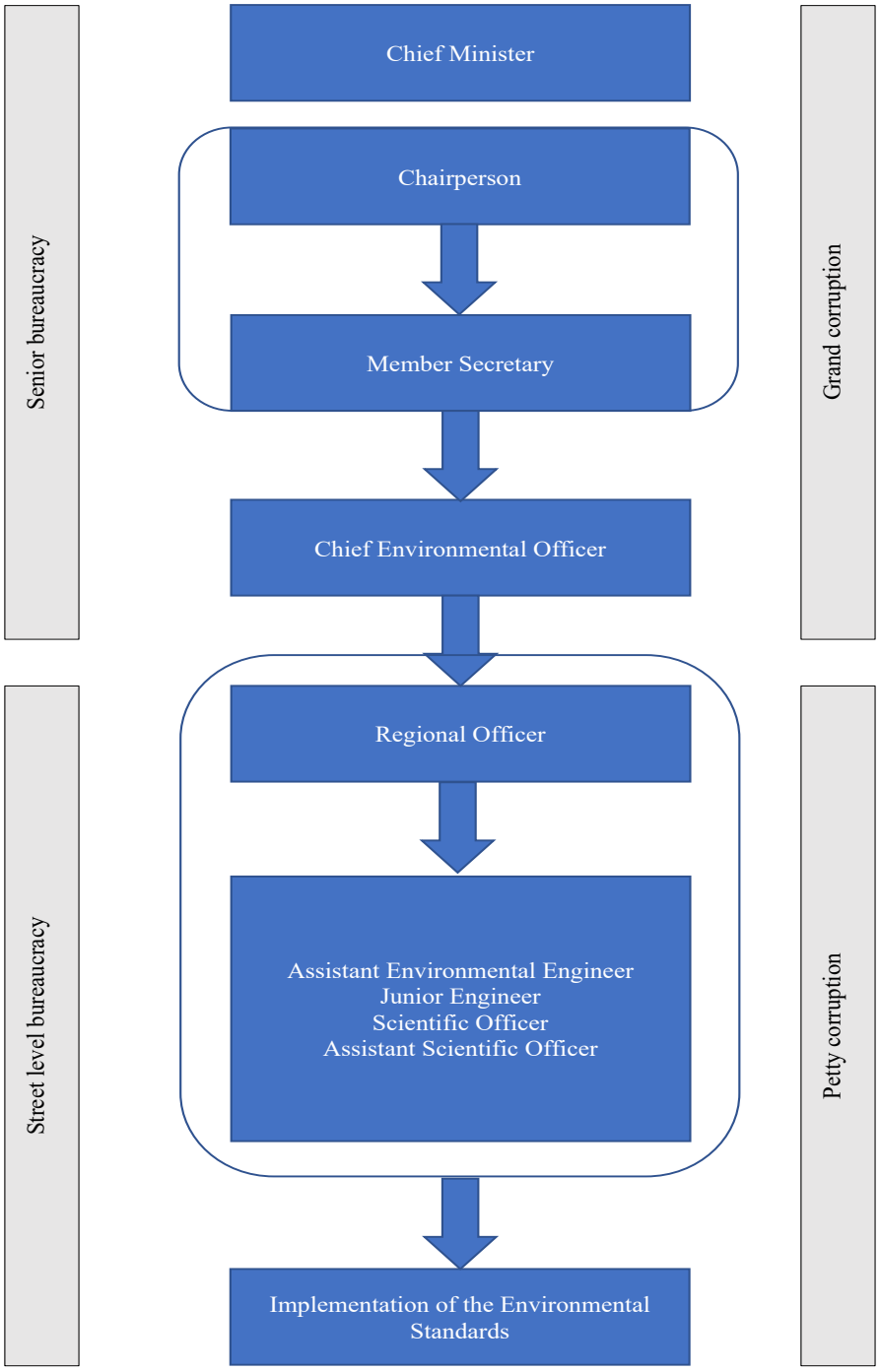

Figure 4.1: Organizational structure of the environmental bureaucracy

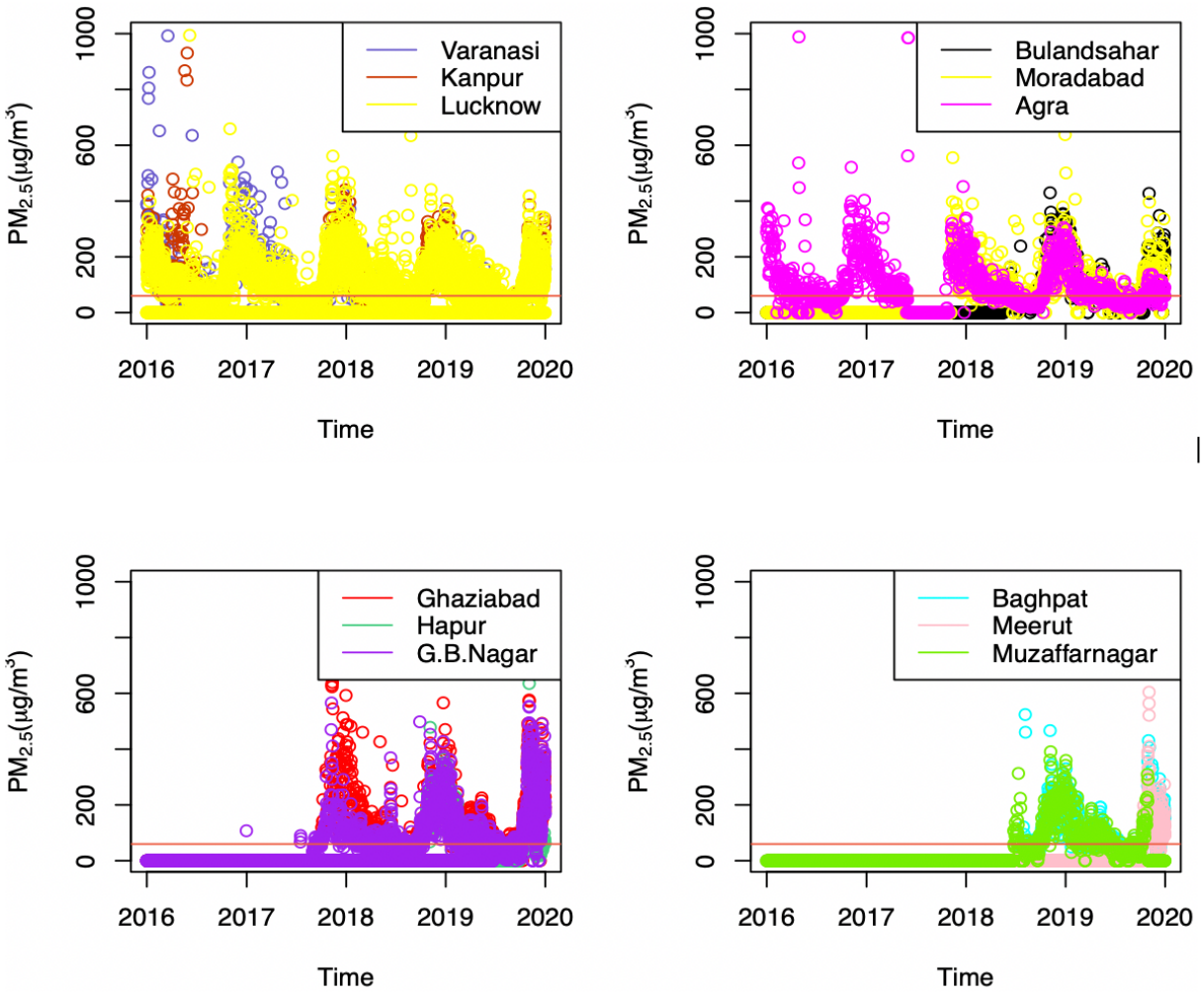

Figure 4.2: The actual concentration of the particulate matter in the major cities of the state vs. what is recommended by the state regulatory authorities

Table 4.1
Mandatory number of inspection visits to industrial units as per the law vs. the actual inspections by the environmental bureaucracy

Year	**Annual target fixed by the environmental bureaucracy**	**Total number of visits needed under the law**	**Difference between the number of visits required and the visits planned by the bureaucracy**	**Difference as a share of visits required (in %)**
2011-12	200	251	51	20.3
2012-13	200	261	61	23.4
2013-14	210	267	57	21.3
2014-15	230	263	33	12.5
2015-16	230	315	85	26.9

Note: The total number of visits required are estimated by multiplying the mandated frequency of visits under the law and the number of industrial units in the state.

Table 4.2
Governance lapses found by the Comptroller and Auditor General of India from the period 2011-12 to 2015-16

S.No. Details	Indicator	Status
Inventory of major pollutants	Not prepared	The UPPCB did not have an inventory of all the industrial units operating in the state. For this reason, the Board failed to identify the sources and the nature of various pollutants.
Water Cess	Failed to assess and collect Water Cess	The UPPCB regularly failed to assess and collect the water cess of municipalities and industries in the state.
Water quality monitoring	Inadequate water quality monitoring	There is a shortage of testing facilities in the state. The UPPCB failed to monitory six out of the nine parameters of water in rivers and river bodies.
Pollution in rivers and water bodies	Subpar quality	The water quality in all the major rivers and water bodies of the state is subpar. The samples failed in the quality check of mandatory BOD and chlorine levels. The Board also failed to take necessary action against the defaulting municipalities and industry.
Air pollution monitoring	Poor monitoring	The UPPCB failed to monitor nine out of twelve parameters of air quality.
Particulate matter (PM) concentration	PM concentration exceeded the national standards in the six major cities of the state.	The average concentration in the six major cities of the state exceeded the prescribed limit. It varied between 87-347 micrograms per cubic meter against the prescribed limit of 60 micrograms per cubic meter.
Solid waste treatment	Only partially	The state could treat only less than 10% of its waste generated. The Board failed to take action against the defaulters.
Biomedical waste treatment	Only partially	The auditor found that about 4.5% of the generated biomedical waste was left untreated. Also, of the 8366 health care establishments of the state, 3362 operated without authorization.
E-waste management	Only partially	Of the 27 e-waste recycling, collection, and generation units, 11 units (48%) of the capacity were operating without authorization. The UPPCB failed to take any action against these units.
Inspection of industrial units	Inadequate	The inspection mechanism of polluting industries of all the categories—red (highly polluting), orange (moderately polluting), and green (least polluting)—was deficient, arbitrary, and against the norms.

Table 4.3
Descriptive statistics of the officials interviewed

Number	**Officials**	**Number of districts in which the officials served in his career**	**Serving or retired**	**Promotion received or not**
1	Junior Engineer	5	Serving	X
2	Junior Engineer	3	Serving	X
3	Junior Engineer	9	Serving	X
4	Junior Engineer	8	Serving	X
5	Junior Engineer	6	Serving	X
6	Junior Engineer	11	Retired	X
7	Junior Engineer	8	Retired	X
8	Junior Engineer	9	Retired	X
9	Junior Engineer	3	Serving	X
10	Assistant Engineer	6	Serving	✓
11	Assistant Engineer	3	Serving	X
12	Assistant Engineer	5	Serving	X
13	Assistant Engineer	11	Retired	✓
14	Assistant Engineer	6	Serving	X
15	Assistant Engineer	12	Retired	✓
16	Assistant Engineer	8	Serving	X
17	Assistant Engineer	10	Retired	✓
18	Assistant Engineer	4	Serving	X
19	Junior Engineer	8	Serving	X
20	Regional Officer	13	Retired	✓
21	Regional Officer	5	Retired	✓
22	Regional Officer	8	Serving	✓
23	Regional Officer	12	Serving	✓
24	Regional Officer	10	Serving	✓
25	Regional Officer	14	Retired	✓
26	Scientist (Central Pollution Control Board)	1	Retired	✓

Note: The Central Pollution Control Board is the federal regulatory body that prepares India's national regulations and guides the state environmental bureaucracies in implementing those regulations.

Table 4.4
Descriptive statistics of industry interviewees

S.No.	Inspection frequency (Actual)	Location	Sector	Experience
1	Annual	Baghpat	Brick Kiln	10
2	Annual	Baghpat	Brick Kiln	12
3	Annual	Meerut	Brick Kiln	22
4	Half-yearly	Meerut	Herbal Products	8
5	Half-yearly	Bulandshahar, Hapur, Meerut, Muzaffarnagar, and Saharanpur	Batching Plant	6
6	Half-yearly	Meerut	Pesticide Formulator	12
7	Half-yearly	Meerut	Ayurvedic Product	18
8	Annual	Baghpat	Brick Kiln	9
9	Half-yearly	Baghpat	Honey Products	11
10	Half-yearly	Baghpat	Recycling Industry	6
11	Half-yearly	Noida	Sugar Factory	51
12	Half-yearly	Moradabad	Paper Products	4

Table 4.5
Descriptive statistics of industry interviewees

Crime head	**Cases pending trial from the Previous year**	**Cases sent for trial during the year**	**Cases convicted**	**Conviction rate**	**Pendency %**
The Forest Act & The Forest Conservation Act	18244	1921	1543	78.0	90.2
The Wildlife Protection Act	3211	507	94	48.7	94.8
The Environmental (Protection) Act	980	838	20	62.5	98.2
The Air & The Water (Prevention & Control of Pollution) Act	237	517	22	100.0	97.1
The Cigarette and other Tobacco Products Act	21040	41821	17208	99.5	72.4
Noise Pollution Acts	6086	7339	6064	99.4	54.5
The National Green Tribunal Act	117	125	0	NA	100.0
Environment & Pollution–Related Acts	**49915**	**53138**	**24951**	**97.4**	**75.1**

Table 4.6
State of legal prosecution of erring Brick Kilns

Name of the regional office	**Total number of Brick Kilns**	**Total number of defaulter Brick Kilns**	**Closure order issued**	**Prosecution under Section 37/39 of Air Act, 1981**
Ghaziabad	439	181	181	26
G.B. Nagar	100	47	47	22
Prayagraj	1303	625	625	21
Banda	16	0	0	0
Jhansi	13	6	6	6
Kanpur Nagar	445	83	83	13
Kanpur Dehat	515	46	46	10
Sonbhadra	366	217	217	10
Meerut	763	304	304	18
Muzaffar Nagar	553	132	132	18
Saharanpur	263	25	25	3
Aligarh	1120	526	526	5
Mathura	227	33	33	0
Firozabad	557	311	311	7
Agra	113	36	36	2
Bulandshahar	410	169	169	13
Lucknow	1091	103	103	25
Raebareli	1230	650	650	13
Unnao	634	118	118	11
Gorakhpur	1420	990	990	6
Basti	834	411	411	27
Azamgarh	1424	1126	1126	10
Varanasi	1844	1200	1200	5
Ayodhaya	1093	507	507	9
Bijnor	576	354	354	16
Moradabad	1012	530	530	27
Bareilly	1034	261	261	4
Total	**19395**	**8991**	**8991**	**327**

Table 4.7
Sanctioned vs. actual strength of officials in the environmental bureaucracy

Official	**Sanctioned strength**	**Actual strength**	**Difference between the sanctioned strength and the actual strength**	**Shortage (%)**
Scientific	214	189	25	11.7
Engineering	181	120	61	33.7
Accounts	41	29	12	29.3
Law	17	9	8	47.1
Clerks and other supporting staff members	366	300	66	18.0

Source: CAG Report, p. 98 [Details]

Table 4.8
Evidence of grand and petty corruption

Evidence	**Details**	**Corruption type**	**Interviewee details**
E_1	Corruption in transfers of the officers of the rank of JE and above	Grand corruption	JEs, AEs, and ROs
E_2	Corruption in the enforcement	Petty corruption	JEs, AEs, and ROs
E_3	Corruption in the enforcement	Petty corruption	Industry owners

Appendix B

Appendix to Chapter 4: Additional Materials

B.1 Appendix Tables

Table B.1
Steps needed for CTE certification.

S.No.	Item required	Details of the item
1	Requisition letter	This document provides the details of the industry and proposed activities.
2	Sale deed/Lease deed	This supporting document provides the possession of the planning site for the industrial activity.
3	Memorandum of Articles or registered partnership deed	Provide a Memorandum of Articles for the public and private sector enterprises and registered partnership deeds for partnership companies.
4	Layout plan	The layout plan schematically provides the details of various manufacturing process equipment such as boiler, generator, and other utilities. It also includes a plan for the effluent treatment plants, waste storage, etc.
5	Schematic diagram	Industries need to provide details of water bodies, roads, residential areas, agricultural lands, educational institutions, ancient monuments, and other sensitive installations within the two-km radius.
6	Manufacturing process details	Include a layout of all the manufacturing processes and their process flow charts.
7	Water balance and wastewater balance process details	It includes the details of all the water balance and wastewater balance for all the processes.
8	Material balance details	Provide material details for all the processes.

..table continued

S.No.	Item required	Details of the item
9	Land use classification	Provide a land-use approval certification.
10	Auditor's certificate	Provide information about the gross fixed assets and provisions for the pollution control measures.
11	Consent fees under Water and Air Acts	Provide a fee payment receipt. The fee depends on several factors, including the size and type of the industry.
12	Ground water clearance from the competent authority	Provide ground water clearance report.
13	Sewage Treatment Plant (STP) proposal	Provide details of the plant, design criteria, technology, disposal processes, etc.
14	Effluent Treatment Plant (ETP) proposal	Provide details of design criteria, treatment methodology, water use, effluent sources, properties of wastewater, effluent disposal mechanisms, etc.
15	Air pollution control (APC) measures	Provide information about fuel use, emission characteristics, sources of pollutants, pollution control measures, etc.
16	Material safety data sheets (MSDS)	Should the proposed activity plan use hazardous material as input, provide details for the material safety for all the relevant input items.
17	Transport of hazardous chemicals	Provide risk assessment report and an onsite emergency pre-preparedness plan.
18	Environmental clearance and environmental impact assessment reports	Those industrial sectors which require environmental clearance from the state and the center provide such details along with detailed environmental impact assessment reports.
19	Statutory clearance regarding eco-sensitive zones, forest areas, Taj Trapezium Zone (TTZ)	Provide approvals for the clearance of eco-sensitive zones, forest areas, and TTZ. The TTP refers to the 10,400 sq km area surrounding the Taj Mahal required to safeguard the monument against the adverse impacts of pollutants.
20	Proposal for the installation of tools for the monitoring of effluent and emissions	Details of online monitoring mechanisms for effluents and emissions are required.

Table B.2
Steps needed for CTO certification.

S.No.	Item required	Details of the item
1	Requisition letter	This document provides the details of the industry and proposed activities.
2	Manufactured product details	Provide details of the production capacity and the month-wise actual production during the past two years.
3	Sewage/effluent generation details	If applicable, provide details of the anticipated sewage and effluent treatment while applying for the consent to establish vs. its actual generation.
4	Details of the changes in the layout	If applicable, provide details of the emissions when applied for the consent to establish vs. the actual generation, including descriptions of the chimney, stacks, etc. layout, if any
5	Industry board management	If applicable, provide details of the industry management, including any changes in the composition of the board management after obtaining the consent to establish.
6	Lab analysis report	If applicable, provide the latest lab analysis reports of the treated effluent and sewage samples.
7	Stack analysis report	If applicable, include the latest lab analysis report of the stack monitoring, ambient air quality, and noise levels.
8	Hazardous waste and biomedical waste compliance report	Include the compliance status of the hazardous waste and biomedical waste authorizations issued to the enterprise.
9	Air and Water Act compliance report	Provide the compliance status of the conditions stipulated under the air and water acts issued to the enterprise.
10	Audited balance sheet	Include the latest audited balance sheet and auditor's certificate that reflect the details of the current assets, liabilities, and fixed assets.
11	Payment details	If applicable, provide details of the payment.
12	Water Cess payment	Provide water Cess payment details.
13	Online monitoring system details	If applicable, provide details of an online monitoring system for effluents and emissions.
14	Zero liquid discharge (ZLD)	Provide full details (and photographs) of the ZLD system and land details in case there is on-land disposal.

Table B.3
Consent to operate (CTO) documents required for trail production after obtaining consent to establish (CTE)

S.No.	**required**	**Details of the item**
1	Requisition letter	This document provides the details of the industry and proposed activities.
2	A CTE compliance statement	Compliance details of the Water and Air Acts
3	Audited balance	Details of fixed assets and current assets and liabilities
4	Details of the effluent treatment and air pollution control measures	Compliance details of the effluent treatment and air pollution control measures along with the photographs
5	Environmental clearance statement	A detailed statement of environmental clearance conditions under the Environmental Protection Act. 1986 (Needed only for certain kinds of industries)
6	Treatment, Storage, and Disposal Facilities (TSDF) and Common Biomedical Waste Treatment and Disposal Facility (CBMWTF) reports	Provide details of hazardous Treatment, Storage, and Disposal Facilities (TSDF); and Common Biomedical Waste Treatment Facility (CBMWTF)

Table B.4
Consent to operate (CTO) documents required for trail production after obtaining consent to establish (CTE).

S.No.	Item required	Details of the item
1	Requisition letter	This document provides the details of the industry and proposed activities.
2	A CTE compliance statement	Compliance details of the Water and Air Acts
3	Details of the effluent treatment and air pollution control measures	Compliance details of the effluent treatment and air pollution control measures along with the photographs
4	Environmental clearance statement	A detailed statement of environmental clearance conditions under the Environmental Protection Act. 1986 (Needed only for certain kinds of industries)
5	Treatment, Storage, and Disposal Facilities (TSDF) and Common Biomedical Waste Treatment and Disposal Facility (CBMWTF) reports	Provide details of hazardous Treatment, Storage, and Disposal Facilities (TSDF); and Common Biomedical Waste Treatment Facility (CBMWTF)

Table B.5
Consent to operate (CTO) documents required for trail production after obtaining consent to establish (CTE).

S.No.	Item required	Details of the item
1	Requisition letter	This document provides the details of the industry and proposed activities.
2	A CTE compliance statement	Compliance details of the Water and Air Acts
3	Audited balance	Details of fixed assets and current assets and liabilities
4	Details of the effluent treatment and air pollution control measures	Compliance details of the effluent treatment and air pollution control measures along with the photographs
5	Environmental clearance statement	A detailed statement of environmental clearance conditions under the Environmental Protection Act. 1986 (Needed only for certain kinds of industries)
6	Treatment, Storage, and Disposal Facilities (TSDF) and Common Biomedical Waste Treatment and Disposal Facility (CBMWTF) reports	Provide details of hazardous Treatment, Storage, and Disposal Facilities (TSDF); and Common Biomedical Waste Treatment Facility (CBMWTF)

Table B.6
Authorization under Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.

S.No.	Item required	Details of the item
1	CTE approval letter	Provide the Consent to Establish (CTE) approval provided by the State Pollution Control Board under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.
2	CTO approval letter	Provide the Consent to operate (CTO) approval provided by the State Pollution Control Board under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981
3	Self-certification of compliance of effluents, emissions, and hazardous and other forms of waste	In case of renewal, provide a self-certified compliance report of effluents, emissions, hazardous and other waste.
4	Emergency response plan (ERP)	Provide a copy of an emergency response plan for fire or chemical spill.
5	Waste characteristics	Provide details of the quantity and chemical characteristics of various forms of waste generated by the unit.

Chapter 5

Corruption in the Public Works Department

5.1 Introduction

Several studies have examined corruption in public works in contracting procedures (Lewis-Faupel et al. 2014), public procurements more generally (Di Tella and Schargrodsky 2003; Ferraz and Finan 2008; Krueger 1974; Rose-Ackerman 1975, 1999), and public service provisions (Shleifer and Vishny 1993). In India, corruption in public works remains a huge concern (Gupta 2017). In the decade after independence, an Indian government-appointed committee on corruption found evidence of 7% to 11% commission by public officials in the construction, purchase, and sales of the centrally funded public works projects (Santhanam 1964). The more recent scholarship provides evidence of worsening corruption in public works. Lehne et al. (2018) use the administrative data to study the contracts and implementation of India's 88,000 rural road projects and find evidence of corruption in the award of contracts and the implementation around social connections between the contractors and the local politicians. They analyze connections (measured in terms of whether the politicians and the contractors share the same "second name") between politicians and contractors to show how the presence

of these connections increases the likelihood of some projects never actually getting built. Even without a formal role in the projects, the local elected officials coerce bureaucrats to secure contracts for their associates. This evidence adds to the literature on how politicians in transition economies misuse their influence in securing contracts and public provisions for those who are socially connected with them (Bohlken 2021; Khwaja and Mian 2005; Mironov and Zhuravskaya 2016).

The literature on corruption in public works broadly studies corruption in its two major manifestations: corruption in the bidding procedures of contracts in which politicians and senior bureaucrats misuse their authority, especially their discretionary powers, to illegally undermine fair contracting mechanisms in exchange for kickbacks; and corruption in the implementation where street bureaucrats take bribes from the contractors for approving their inferior quality projects. These two kinds of corruption are not usually examined distinctly in the literature, but rather as the same phenomenon (misuse of public office for private gain) manifesting differently and also independently in different ways at different levels in the bureaucracy and between different actors. Even if some studies do recognize the distinction in corruption in a public bureaucracy as some version of administrative vs. political (Bayley 1966; Heidenheimer 1970; Heywood 1997; Huntington 1970; Scott 1972; Wade 1982, 1985; Werner 1983) or petty vs. grand (Bussell 2015; Ruhl 2011)—there is limited discussion on the causal dynamics of these different manifestations of corruption and the distinct motives and power structures behind these corrupt exchanges. Another gap is an analysis of bureaucracies' internal controls, e.g., political control of bureaucrats' transfers, and how this control affects the governance of public works projects such as blurring the lines between public and private interests of officials. For instance, control of bureaucratic transfers remains an important lever of coercion in the hands of politicians (Brierley 2020; Gulzar and Pasquale 2017; Iyer and Mani 2012).

Scholars use various typologies of corruption of which administrative vs. political and grand vs. petty are two more important ones (Bussell 2015; Heywood 1997; Jancsics 2019). However, these categories are merely analytical constructs and in any public organization, corruption acts as a continuum, and drawing distinctions is fraught with challenges. I choose to rather focus on the petty vs grand over political vs. administrative distinction for two key reasons. First, there is ample scholarship to suggest that politicians and bureaucrats often indulge in corruption in cahoots with each other. Their corruption is connected and cannot be separated (Bardhan 1997; Kaufman 1997; Rose-Ackerman 1978). Banik (2001), Bussell (2015), Santhanam (1964), and Wade (1982, 1985) mention their connections especially in the Indian context.[1] As such, the political and administrative corruption are not entirely distinct. Second, the political vs. administrative distinction does not also take into account that difference in nature, impact and magnitude of corruption at different levels in the bureaucracy. For example, misuse of discretion by the head of a government or department is not in impact as by the bureaucrats implementing basic services to citizens. The literature on corruption in public works fails to recognize—and examine—the full life-cycle of corruption. I conceptualize petty vs. grand distinction as an analytical construct. I exploit the distinction between the corruption of street officials and senior officials as an instrument to determine whether an instance of corruption is grand or pretty. This chapter studies the systematic linkages among these different kinds of corruption and how they are organized around bureaucratic transfers.

[1] A Government of India appointed a committee in 1964 to recommend ways to address corruption and found a strong connection between the corruption of bureaucrats and that of elected officials after speaking with the number of officials in the country. The committee said, "It was represented to us that corruption has increased to such an extent that people have started losing faith in the integrity of public administration. We heard from all sides that corruption has, in recent years, spread even to those levels of administration from which it was conspicuously absent in the past. We wish we could confidently and without reservation assert that at the political level, ministers, legislators, party officials were free from this malady" (Santhanam, 1964, p. 12).

5.2 Organizational structure of the Public Works Department

The State of Uttar Pradesh Public Works Department (PWD) was established in the year 1854 (Sykes 1958). Over the years, the department's functions have changed. Currently, the department spearheads the planning, design, construction, maintenance, and repair of the built environment, including roads, bridges, and important state government buildings. In addition to its primary focus on the state-planned road transport infrastructure, the department implements a limited number of federal government projects of national importance such as the maintenance of the national highways[2] passing through the state and works on the last-mile connectivity by building all-weather roads connecting all habitations across the state.[3] Due to the pivotal role of modern infrastructure in economic development, the department implements a range of projects through its well-established, financially well-resourced, and specialized bureaucracy organized around Weberian ideals. The department budget for the year 2021-22 was $2.73 billion. The organizational structure of the bureaucracy is given in Figure 5.1.

The department is a special cadre of technocrats with backgrounds in architecture, and civil, electrical, and mechanical engineering recruited through competitive engineering entrance exams conducted by the State Public Service Commission. These officials join at junior positions, receive regular promotions as per their service rules to grow in the department's bureaucratic hierarchy, and serve till their retirement age. Three most senior

[2]The department manages those national highways that are not covered by the National Highway Authority of India (NHAI). The NHAI is a federal agency, which executes federal road infrastructure projects.

[3]The Indian Government launched a nationwide rural road-building program, also known as *Pradhan Mantri Gram Sadak Yojana* (PMGSY), in the year 2000 to connect about 300,000 eligible habitations with all-weather roads as part of heralding an age of development and connectivity. The program is fully funded by the central government but is entirely left to the states for implementation. All the implementing states adhere to the prescribed cost-based competitive auctioning procedures and procurement guidelines of the central government.

officials in the cadre, the Engineers-in-Chief, lead various functions of the department as assigned by the state government. Official seniority in the department for promotional purposes is determined by some combination of the date of joining the service, the date of birth, marks secured in the entrance exam—not necessarily in any particular order—and the career records that reflect whether an officer has faced or is facing any disciplinary action or inquiries such as embezzlement or misuse of public funds. While the state government uses the seniority and career records criteria in matters of promoting officers to the Engineers-in-Chief positions, the government exercises complete discretion in assigning them specific work responsibilities, including in appointing one of them the department head with the designation as the Engineer-in-Chief (Head of the Department and Development). The other two are designated as the Engineer-in-Chief (Rural Roads), and Engineer-in-Chief (Design and Planning) and they assist the department head in the effective management of the department. In addition to being the department's head, the Engineer-in-Chief (Head of the Department the Development) administers all budget and development programs, supervises the complaints and the ongoing investigations into the wrongdoings of the officials, works related to the establishment of Executive Engineer and above, the maintenance and repair of the rural roads, the construction of bridges, and all works not assignment to the other two Engineers-in-Chief. The Engineer-in-Chief (Design and Planning) mainly manages the cadre of Junior Engineers and Architects, oversees planning, design, research, land acquisition, court cases, and buildings related to work of the department. Finally, the Engineer-in-Chief (Rural Roads) supervises project audits, World-Bank- and ADB-funded projects, works of the electrical and mechanical branches of the department and the officers of these branches; and manages Government of India's flagship rural-road development program, works related to National Highways, and works related to the establishment of Assistant Engineers.

As we situate this department or the special cadre in the state government organization, a complex bureaucratic structure emerges based on the functional responsibilities at the level

of the government and at the level of the department. At the level of the department or the special cadre, the key division of the government organization, the Engineer-in-Chief is the head. However, at the government level, the department is accountable to the minister who, as an elected public official and a nominee of the state government, is the guardian of public interest. Also, at this level, the principal secretary is the *de jure* administrative head[4] appointed by the government always from the All-India Civil Service.[5] So, once we add two upward hierarchies to the department, the principal secretary and the minister—both appointees of the government, one from the civil service and the other an elected official—we get a complete picture of the bureaucratic structure of the PWD as a government organization. The principal secretary acts as a conduit between the special cadre headed by the Engineer-in-Chief and the state government represented by the minister. Under the guidance of the minister and in consultation with the three Engineers-in-Chief, the principal secretary translates the development priorities of the state government into specific policies, programs, and time-bound projects. The three Engineers-in-Chief in the department assist the principal secretary in implementing the vision of the state government. As mentioned earlier, the specific responsibilities of these officers are assigned by the state government and the principal secretary may assign them—or change their specific responsibilities—from time to time. Furthermore, the minister as a representative of the government *often* changes with a change in the government. Similarly, the principal secretary as the administrative head could be replaced with another member of the All-India Service anytime at the discretion of the state chief minister. However, the special cadre (the technical unit) is the permanent feature of the organization with its own enduring bureaucratic structure that works on the lines of an internal labor market. A change in the government could only influence

[4]This remains a subject matter of complaints among the special cadre officials as they do not get the opportunity to administratively head the department.

[5]These officers are part of India's elite civil service recruited through a competitive exam held annually by the Union Public Service Commission. These officers serve states and the center in key administrative capacities and go to head various department and ministries.

the department's development priorities and the intra-departmental transfers of these officials.

The department is administratively structured into the headquarter, headed by the engineers-in-chief, eighteen zones headed by chief engineers, thirty circles headed by senior engineers, and 173 divisions headed by executive engineers. For the purpose of the administration, the three Engineers-in-Chief report to the principal secretary who in turn reports to the minister as the state government representative. The department's decision-making mechanism is rooted in its five-tiered hierarchical structure, officiated by bureaucrats of commensurate seniority at different levels. At the top of the decision-making body are the minister, the principal secretary, and the three engineers-in-chief. The minister issues the necessary directions about the development goals, and the principal secretary, with the assistance of the three engineers-in-chief, works on the design and formulation of specific programs to achieve those goals, which are then implemented by the three engineers-in-chief supported by a well-structured cadre of officials in the state at zone, circle, and division levels. The division is the smallest unit of the PWD administration and is headed by an executive engineer. All the work of the department happens at this level. The executive engineer is assisted by one or more assistant engineers and several junior engineers.

5.3 Identification of grand and petty forms of corruption

The department is well-established, goal-oriented, well-resourced, and organized around Weberian ideals[6] of competent, impartial, salaried, and technically sound bureaucracy with a

[6]In the context of expanding rationalization in private and public enterprises, Weber's work on bureaucracy pertains to increasing rationalization in human organizations (Aron 1970). Weber thought excessive bureaucratic coordination as a unique feature of modern social structures. His normative type of rational-legal bureaucracy includes characteristics such as the hierarchy of authority, written rules of conduct, impersonality, rule-bound promotions, specialization-based division of labor, and efficiency. The bureaucracy, Weber argues,

clear demarcation of public and private interests. However, Weberian conceptualization of ideal type of bureaucracy is an analytical construct and might differ significantly in empirical observations. Issues such as corruption, cronyism, personalism, and conflict in private and public interests of officials might have a cascading effect on undermining the ideal type bureaucracy and making it compromized in the real world. This deviation of the real-world bureaucracies from Weber's ideal-type gives the government less control over policies leading to government failure. Corruption often causes this deviation (Tanzi 1994). Weber was cognizant that his ideal type of bureaucracy may only exist in an advanced modern state (Weber 1978, p. 50), so what he presented was normative rather than a description of the bureaucratic reality.

I use the street official vs. senior official distinction as an instrument to identify grand and petty forms of corruption. Such a distinction satisfies the petty vs. grand corruption categorization of the literature, which include frequency and quantum of bribes involved in corruption transaction, degree of political interference and whether corruption occurs in policy design or implementation. As I elaborate in Chapter 1 and Chapter 2, in reality corruption in any government organization occurs in the form of continuum, and assuming a sharp distinction may be challenging. However, I use the petty vs. grand distinction as an analytical construct to differentiate these two forms of corruption. There is a sharp discontinuity in the power enjoyed by the street officials and senior officials, which provides a robust instrument to identify petty and corruption. For measuring grand corruption, I rely on corruption in transfers and for petty corruption, I focus on the implementation of public projects. Also, the project implementation falls under the authority of district-level bureaucracy, hence at the level of district provides an idea unit of analysis to examine these

"is run by hierarchically ordered corps of officials who are recruited and promoted according to objective criteria such as educational qualifications and professional experience; who are paid a regular salary which is graded according to rank and qualifications; and who are allocated fixed jurisdictional areas governed by clearly laid down rules and procedures" (Theobald 1990, p. 56).

kinds of corruption and their potential linkages. There are advantages in using these measures of corruption even if there exist several markets of both grand and petty corruption in the bureaucracy. Grand corruption in transfer is emblematic of corruption in the highest corridors of power and strongly correlates with the other forms of grand corruption such as capturing of the policy-making departmental institutions by private interests and bending of rules to favor private interests. Grand corruption in transfers also creates avenues of corruption in enforcement, thus provides a fertile ground for understanding the motives of senior and junior officials to engage in corruption and how these forms of corruption causally connect. Since the only source of external rent-seeking is money deviated from welfare projects, enforcement presents how corruption affects general implementation of projects.

The department bureaucrats, elected officials, and contractors are the main actors around which different markets for corruption potentially emerge and function in the public works department. There is no directly dealing with the public of these officials and hence politicians make rules, bureaucrats implement and interpret those rules, and contractors work on public goods projects within the remit of these rules. The sphere of the rules in the department includes significant discretion by the bureaucracy in many activities where there are no rigid rules. While the contracting and procurement procedures involve significant automation, the quality control audit includes immense discretion. Furthermore, as in any other state bureaucracy, politicians exercise control over the transfer and promotions of the bureaucrats. We use three sets of evidence E_1,E_2 and E_3 for examining grand corruption, petty corruption, and their linkages (Table 5.1).

5.4 The existence of grand corruption in transfers

I describe the research design for investigating the grand and petty forms of corruption and their causal linkages in the bureaucracy in Chapter 2. However, I recapitulate key

points of my methodological approach and analytical strategy in this section. The data on grand corruption in transfers comes from the semi-structured interviews with 24 street officials that includes both retired and serving bureaucrats and two senior officials (Table 5.2). Corruption is a highly sensitive topic that made the recruitment of the bureaucrats using the randomized sampling method and asking them to share their detailed experiences on corruption an obvious challenge. In the initial stage of the fieldwork, we experienced a situation in that officers agreed—even if they did so reluctantly—to speak with us. However, they were *unusually* cryptic in their responses and gave very little information about most questions and gave a pass to the questions of critical importance for this study. Sensing this as a major limitation to empirically test our theoretical claims, we changed our field strategy and focused more on recruiting those officials who were more forthcoming in sharing their views after we discussed with them the details and objectives of our study. We got a sense that those officers who appeared convinced by the purpose of the study as well as the importance of the truthful responses to all the interview questions participated actively and provided us with rich data, including helping us with relevant audit reports. The reports included key statistics on corruption especially the nexus of officials and contractors. For petty corruption, we interviewed private contractors who have been working with the department on infrastructure projects for at least ten years or more in different parts of the state. The aim to have contractors with at least a decade of experience in executing public projects was to ensure that they could share with us their experience about the department's functioning, especially those features of the bureaucracy that *largely* remain the same despite changes in street officers and the state government. In other words, we wanted to hear from them about those features of the bureaucracy that persist, and their explanation of the persistence.

The street-level bureaucracy consists of JEs, AEs, and ExEns. The recruitments are made at the level of JEs and AEs by the state public service commission. All the positions at the level of AE and above are filled through promotions. The officers tell us that the

minimum time required for the promotion from the AE to the ExEn position is at least a decade. Similarly, the promotion time for JEs to become AEs is up to two decades or more. We came across JEs who have been in the department for more than two decades and were still working at the same positions. Among the street-level officers, the JEs are transferred by the Engineer-in-Chief. The AEs and ExEns are transferred by the public works department minister and the orders are issued by the department secretary. Their transfer recommendations are sent by the department head to the minister's office, but the minister is empowered to make changes in recommendations, and he often does. There are the government guidelines for transfers, but those guidelines also afford significant *discretionary* powers to the department chief and the minister to transfer officers anytime based on the "department's requirements." There are also frequent violations of the transfer rules.[7] There is a shortage of officers in the department, especially the street-level officers (Table 5.3). Officials consider irregular recruitments, promotions, more lucrative opportunities emerging in the private sector, and a general disillusionment of millenials for government jobs, as key factors behind shortage of officers in the department. On average, JEs are transferred every 5-10 years, AEs are transferred every 3-5 years, "but ExEns could be transferred anytime, sometimes within even months," says a senior official and "these actions are *mostly* discretionary under the claim of so-called department's requirement."

The choice architecture of the street officials reveals that they have strong preferences for certain postings[8] more than the others. If their preferences are taken together, then the top three choices are staying in cities offering opportunities to work on more and bigger

[7] In July 2022, in the public works department in Uttar Pradesh, a three-person committee was appointed by the government to investigate large-scale irregularities and allegations of corruption in transfers. In response, the government suspended the department head. There were serious allegations against the minister as well. At the same time, there was serious discontent reported in the other state departments in official transfers (Salaria 2022). Published in July 2022.

[8] For example, if someone is working with the US federal government, they might wish to be in Boston rather than in New York.

public projects; staying in cities with good urban infrastructure; and being close to their hometown. These preferences are roughly preferred by officers in the proportion of 50%, 28%, and 17%, while 5% offered no strong opinion for these preferences. A feeling of prestige attached with the positions that offer opportunities to work on high-cost projects and stay in good cities create competitiveness among the officials in that the occupants of these positions are seen as more successful and more powerful by their colleagues even if these positions carry no extra *official* perks. These conditions lead to lobbying by street officers for their choicest postings. Senior officers in control of transfers receive these signals strongly and accordingly they *normally* face two choices: allocate the postings in a fair way that maximizes the organizational goals or manipulate the fair allocation mechanism to provide advantage to certain officers over others in exchange for private benefits. The senior officials make these competing choices in an environment of weak institutional and public checks and balances and immense discretionary powers. These officials create corruption markets for transfers in which street officials participate to meet their preferences. Both street officials and senior officials behave as rational actors in pursuit of maximizing their utility, but they are driven by different motives. The senior officials wish to expand their control over the local bureaucracies to derive private benefits by capturing the local implementing units while the street officials pursue their preferences of securing their choicest postings and optimizing their personal and organizational goals.

Street officials use two main channels—bribery and political influence—for meeting their transfer preferences. In addition to the bribery, local politicians often make concerted efforts to influence who is posted in their constituency so that they can have an informal say in the projects even if they are not formally a part of the decision-making involved with these projects. They can only send their recommendations for certain projects as public representatives. Securing these choicest postings is highly competitive. The demand for these postings outweighs supply. Street bureaucrats start lobbying with senior officials to influence

transfers. They do not approach the head of the department or the minister directly, but through their support staff, many of whom are senior officials themselves. About 10%-20% of officials concede to using political influence and bribery for transfers, especially the ExEns and the AEs. For JEs, usually the recommendations from the seniors work and they claim not to make payments. There is usually communication from the headquarters with the street officials when transfers are about to happen. About 40% of the street officials admit to paying the supporting staff of the senior officials to seek information during the transfers process, about themselves and the others.

While the majority of the officials take keen interests in postings, there is a minority (12%) who claim to never participate in the transfer market. Their argument is that such participation only brings additional pressure on them for they need to repay in some form if they rely on political influence or rent-seek if they pay in cash. However, it is also true that these officers never end up in postings that are deemed more sought after in the department. Lack of reliable contacts in high offices is also a problem for these officials. There were some officers who disclosed approximate figures that were prevalent for postings. However, these rates are not uniform and are dependent on factors such as the location of the posting, whether a bribe alone is used or is also supported by political influence, and the officer's own connections with the higher authorities. These rates of the bribes varied between 0.2 million to 0.9 million INR. These lower side figures were for the AEs and the upper end was for the ExEns. JEs pay only small amounts and they are not frequently transferred because their connections with the local contractors, their knowledge of local geography and development needs are deemed important and it takes time to develop these skills. These JEs are rarely transferred before 5 years.

5.5 The existence of petty corruption in the implementation of public projects

The project implementation authority in the bureaucracy lies with the division headed by the ExEn. He is supported by the JEs and AEs in implementing public infrastructure projects. The JEs review project estimates submitted by contractors, prepare detailed project reports (DPRs), and submit them to their seniors for approval. The approval authority depends on the project cost.[9] The JEs also prepare and conduct surveys in the division to assess the need for development, prepare tenders, upload them and the other relevant data on the website, test the quality of the construction material to ensure they are as per the standards mentioned in the contract. The AEs supervise ongoing projects in the division to maintain quality, report all expenses to the project manager on a regular basis, manage contractors' disputes, and work with different stakeholders to complete projects in a timely manner.

All the public infrastructure projects in the department are implemented through the private contractors and the department has detailed eligibility guidelines for them. The contractors apply online by providing their details that are approved by the senior officials before they actually become eligible to participate in the bidding process. The department issues tender notifications for projects in different divisions, and the contractors apply for the projects. The contractors prepare project estimates, and submit all the supporting documents online, which are verified by the JEs and AEs. The selection for the successful contractors is made from the competitive bids through a fair and transparent mechanism. There should be at least three bidders for any tender. The contractors' profit margin in different projects is

[9]ExEns can approve projects whose cost is up to 40 lakh ; senior engineers can approve between 40 lakh and 1 crore; and chief engineers approve projects whose cost is more than 1 crore. However, even if the authority depends on the project cost, implementation authority still lies with the division and everything related to implementation after the project approval is in the name of the ExEn. JEs and AEs have no project approval authority. One lakh =0.1 million and one crore=10 million.

up to 10%, which they can officially add in their bids while preparing estimates. There is no direct public involvement in the bureaucuracy in the implementation work. Only eligible contractors work with the street bureaucracy in building the new projects and maintaining the old ones. The contractors work very closely with the JEs and AEs in executing the projects successfully.

All the public infrastructure projects in the department are implemented through the private contractors and the department has detailed eligibility guidelines for them. The contractors apply online by providing their details that are approved by the senior officials before they actually become eligible to participate in the bidding process. The department issues tender notifications for projects in different divisions, and the contractors apply for the projects. The contractors prepare project estimates, and submit all the supporting documents online, which are verified by the JEs and AEs. The selection for the successful contractors is made from the competitive bids through a fair and transparent mechanism. There should be at least three bidders for any tender. The contractors' profit margin in different projects is up to 10%, which they can officially add in their bids while preparing estimates. There is no direct public involvement in the bureaucuracy in the implementation work. Only eligible contractors work with the street bureaucracy in building the new projects and maintaining the old ones. The contractors work very closely with the JEs and AEs in executing the projects successfully.

The sources of corruption in the implementation are only the public projects, say the contractors. They further add that only the project money is shared among the contractors and the officials. They mention two main pathways of corruption. First, a large portion of the 10% profit margin on all projects generally goes back to the street bureaucracy. The contractors earn only by compromising quality of the projects in a way that's not immediately obvious. So, they face an uphill task of maintaining project quality as well as earning *some*

profit for themselves. JEs and AEs work with them and they together find out ways to work under these constraints. Second, the street bureaucracy often works with the contractors to inflate the cost of projects bids and takes back a large share of this extra cost. Towards this end, the street bureaucracy often manipulates the bidding mechanisms that include not inviting three competitive bidders or not giving enough time to the bidding process so that only those to whom they disclose the information can apply for projects. The federal auditor while evaluating the bids made during 2011-16 found that in 75% of the bids only one or two bidders participated, in violation of the prescribed norms (Table 5.4). In the same report auditors also found that in several bidding companies, there were common shareholders. The contractors argue that the street officials in the department have captured the local institutions to the extent that it is impossible to successfully bid and execute projects without working with them because they have the discretion to create hurdles at every step of the way such as stopping the payment or imposing penalties for inferior work, etc.[10] Street and even senior officials sometimes allow contractors with dubious backgrounds to participate in the bidding process by ignoring their incomplete paperwork and the eligibility criteria (Table 5.5). The federal auditor, the CAG, found many such instances where such contractors were allowed to successfully participate in bidding. Contractors emphasize that forming trustful partnerships with the street officials is essential to their success and that it helps street officials equally well. This is well reflected in the fact that even if there is open and competitive bidding, it is very difficult for the new bidders without any experience to successfully bid for projects because street officials exercise significant discretionary influence at every step of the way.

[10]The media reports about the harassment of contractors at the hands of street officials and politicians and not paying their bills without a share in the profit are common. Recently, contractors in Karnataka, India's southern state, alleged that local politicians of the ruling party were demanding a cut of 40% in all development projects. They even wrote to the Prime Minister asking for an independent investigation. Here is one such media report.

5.6 Linkages between grand corruption and petty corruption

In this section, I investigate the causal linkages between grand and petty forms of corruption using process tracing or the intervening steps (Bennett 2008; Collier 2011; Hall 2013; Mahoney 2010). In the previous two sections, we explored the existence of the two kinds of corruption markets in the bureaucracy: the market for grand corruption in transfers and the market for corruption in the implementation process. I apply deductive reasoning to empirically test the hypothesis that grand corruption causes petty corruption. Grand corruption is the independent variable and petty corruption is the dependent variable. I explore whether there is an intervening process (George 1979) between grand and petty corruption to capture their causal nexus in action (Bennett and Checkel 2015).

In the public works bureaucracy, as mentioned earlier, there is no outside source of money as in the case of the environmental bureaucracy where the industries could pay the street officials or the police bureaucracy where the private individuals could pay in exchange for avoiding punishment. In the public works, only a part of the project money is siphoned off and shared among the officials. In our interviews, we heard how the money trail *systematically* goes back to the seniormost officials in the bureaucracy regardless of the government in power. Between governments, there are quantitative differences in corruption in terms of the siphoned off share in the public projects; however, qualitatively things remain the same. It is difficult to make definite assessments of which governments are more or less corrupt given the nature of our interview questions. Although most officers are usually reluctant to suggest any figures for corruption, some of them do mention that a large share of the 10% profit of the contractors, and sometimes all of it, goes back to the bureaucracy, which is further reinforced by the contractors. The contractors compromise with the quality or resort to inflated bids for their share of profit. This share remains largely the same across the state;

only the absolute amount differs depending on the number of projects being implemented in a particular division. The 10%-20% officials who use political influence or bribery for corruption are in those places where there are high-cost projects or those places that are well-developed in terms of modern amenities. Officials are required to make a *high* payoff and use *serious* political influence to secure and keep occupying these postings. "These postings are very, very competitive," and without connections in high office, "nobody stands a chance," says a recently retired ExEn. A serving AE shows us the proof of how the *close* relative of a former chief minister stayed at the same posting for more than a decade flouting all departmental guidelines. The likelihood of occupying the sought-after positions influences officials' conduct at the division level. These positions are occupied only by "those with political connections and deep pockets," said a serving SE while explaining in detail the contours of corruption in the department. The public works department is "the only department where corruption is institutionalized," says a police officer who retired from the seniormost position in the state police.

From peon to executive engineer, a pre-decided commission is shared without asking and does not depend on who occupies the position. However, some officers do further maneuver with the contractors to expand their pie such as manipulating the competitive bidding mechanism by inviting dummy bids and awarding the project to their favorite contractor at a higher price. The quality of the project is also compromised in such projects. The senior officers ignore quality considerations in these projects and do not even make necessary inspection visits, finds the government auditor (Table 5.6). The government auditor has found the prevalence of such practices in many projects across divisions. The maintenance projects are also a major source of corruption given the flexible guidelines in project management and limited oversight; the street officials use such projects for extracting more rent from the maintenance projects than the new projects.

5.7 Conclusion

Infrastructure remains key to economic development. Systematic corruption in the department undermines the welfare of the public. It is remarkable that corruption in public infrastructure projects remains as high as it was when it was first highlighted by the Government-appointed committee on corruption in 1964. However, based on our research we know how and why it exists and persists in the bureaucracies, and that is through the sustained linkages between the corruption of street and senior officials. While the nature of corruption in the public works is slightly different than in other two bureaucracies discussed in the previous two chapters, especially its organization at the street level, the larger dynamic of corruption remains the same. The linkages are more stable and institutionalized in the public works bureaucracy than in the other bureaucracies. This is because the bureaucracy is rarely in the limelight and the public knows very little about their projects and expenditure. There is almost no public scrutiny. The connections between politicians and bureaucrats to jointly engage in corruption face no counterbalancing force from the public.

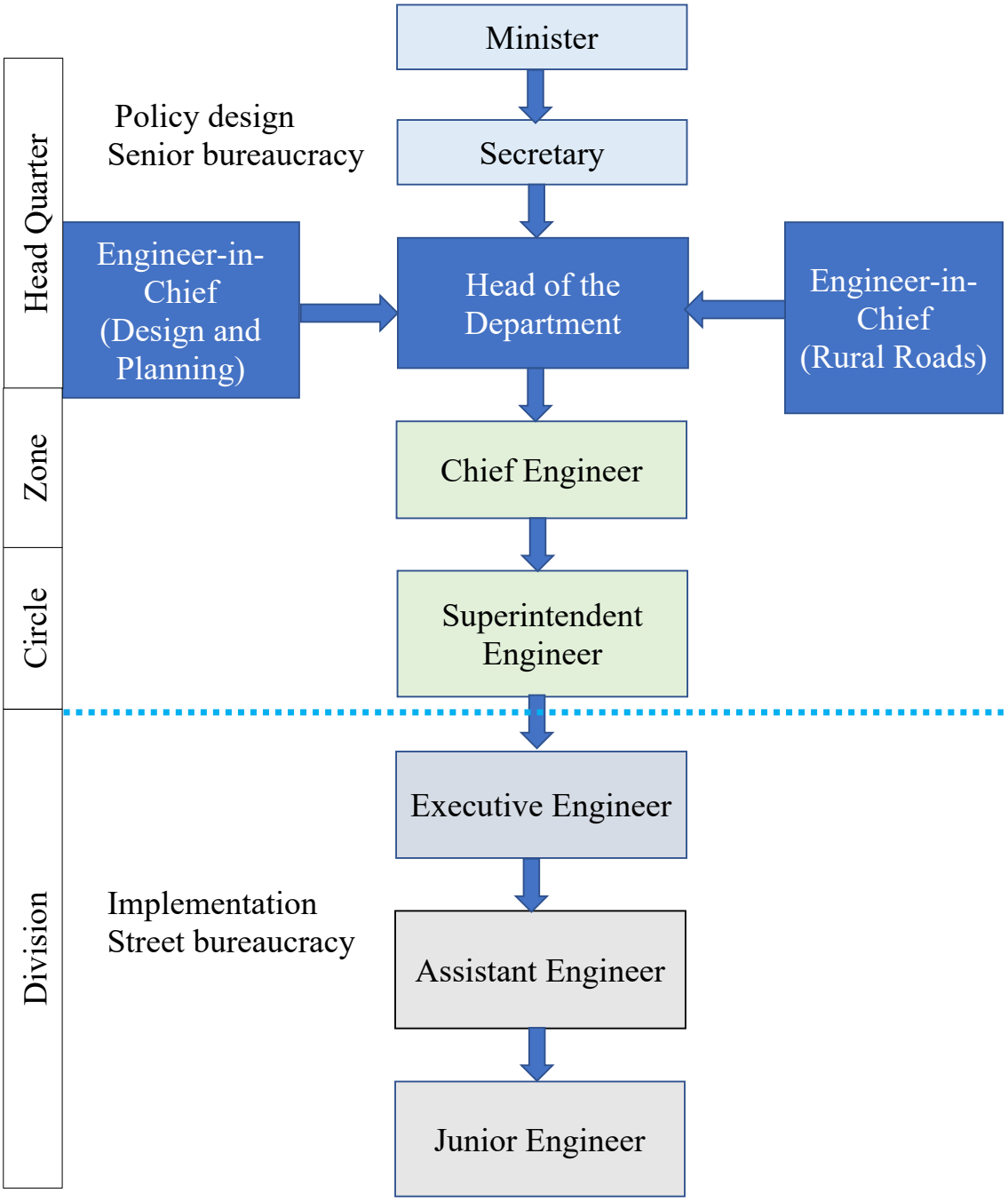

Figure 5.1: Organizational Structure of the Public Works Department

Table 5.1
Evidence of grand and petty corruption

Evidence	**Details**	**Corruption type**	**Interviewee details**
E_1	Corruption in transfers of the officers of the rank of JE and above	Grand corruption	JEs, AEs, ExEns, and SEs
E_2	Corruption in the implementation of public projects	Petty corruption	JEs, AEs, and ExEns
E_3	Corruption in the implementation of public projects	Petty corruption	Contractors

Table 5.2
Descriptive statistics

S.No.	Officials	Length of work experience (years)	Serving or retired	Received promotion or not
1	AE	35	Retired	✓
2	AE	32	Retired	✓
3	JE	18	Serving	X
4	JE	10	Serving	X
5	AE	28	Retired	✓
6	JE	25	Serving	X
7	ExEn	32	Retired	✓
8	JE	10	Serving	X
9	AE	10	Serving	X
10	AE	26	Serving	✓
11	JE	13	Serving	X
12	JE	34	Retired	✓
13	JE	29	Retired	✓
14	AE	28	Serving	✓
15	AE	8	Serving	X
16	AE	12	Serving	X
17	AE	17	Serving	X
18	AE	25	Serving	✓
19	AE	12	Serving	X
20	AE	9	Serving	X
21	AE	14	Serving	X
22	ExEn	35	Serving	✓
23	ExEn	32	Serving	✓
24	ExEn	26	Serving	✓
25	SE	34	Serving	✓
26	SE	31	Retired	✓
27	Elected Official (Ruling)	45	Working	NA
28	Assistant to a Senior Federal Minister	8	Serving	NA
29	Elected Official (Opposition)	32	Working	NA

Note: JE: Junior Engineer; AE: Assistant Engineer; ExEn: Executive Engineer; SE: Senior Engineer

Table 5.3
Sanctioned vs. actual strength of officials in the Public Works Department

S.No.	Officials	Current strength	Sanctioned strength	Shortage (%)
1	Junior Engineer (Civil)	3325	4176	20.3
2	Assistant Engineer (Civil)	225	1125	80.0
3	Executive Engineer (Civil)	159	366	56.5
4	Senior Engineer (Civil)	79	85	7.1
5	Chief Engineer (Level-1)	3	3	0
6	Chief Engineer (Level-2)	35	35	0
7	Engineer-in-Chief	3	3	0

Note: These figures are based on the official numbers mentioned on the department's website.

Source: Public Works Department, Government of Uttar Pradesh [Details]

Table 5.4
State of the competitive bidding (Data from the government audit report)

District	**Number of One bid projects**	**(Total one bid project cost)**	**Number of two bid projects**	**(Total two bids project cost)**	**Number of three or more bids projects**	**(Total three bids or more project cost)**
Agra	1	0.37	83	277.02	20	153.12
Basti	23	21.15	19	237.69	16	38.77
Badaun	5	0.41	21	183.39	9	181.48
Ghazipur	4	26.40	6	36.56	7	20.69
Gonda	4	6.74	11	160.96	3	2.08
Gorakhpur	13	47.94	32	146.83	17	74.92
Hapur	4	.04	38	104.57	7	47.98
Hardoi	1	4.35	9	72.84	4	1.07
Jhansi	2	0.36	41	315.33	20	37.80
Lucknow	1	0.28	26	255.19	29	299.96
Mainpuri	16	55.97	49	333.51	16	201.49
Mirzapur	16	93.94	12	139.57	5	85.46
Moradabad	6	1.18	15	153.99	15	145.99
Sharanpur	7	2.17	24	90.09	21	173.25
Sambhal	1	.01	44	180.49	2	0.85
Siddharth Nagar	5	31.07	9	93.29	4	4.05
Unnao	1	11.86	49	215.83	9	87.82

Note: The project cost is in INR crore (1 crore =10 million).
Source: (CAG Report 2018, p. 51). [Details]

Table 5.5
Contractor selection mechanism (Incomplete or wrong items were submitted by the contractors, which were accepted by the officials.)

Issue	**Engineer in Chief (Head)**	**Chief Engineer**	**Senior Engineer**	**(Executive Engineer)**	**(Total)**
Security	1	8	12	159	180
Solvency certificate	3	6	3	185	197
Character certificate	0	4	1	162	167
Experience certificate	0	24	5	225	254
PAN	0	6	0	21	27
Clearance/TIN	0	20	5	20	45
Balance sheet	3	9	5	0	17
Partnership/Power of attorney	0	6	5	0	11
Time limit	0	4	0	0	4

Source: (CAG Report 2018, p. 93). [Details]

Table 5.6
Monitoring of works by Chief Engineers and Senior Engineers during 2014-20

Official	**Inspections required**	**Inspections conducted**	**Shortfall**
Chief Engineer	56 inspections of 12 works	Eight inspections of six works	86 per cent
Senior Engineer	124 inspections of 12 works	21 inspections of 12 works	83 per cent

Note: These figures are based on the federal auditor's random inspection of twelve projects across the state in seven different districts.
Source: Performance Audit Report on Indo-Nepal Border Road Project–Report No. 23 of 2021 of the Comptroller and Auditor General of India (Chapter 2, p. 26). Available at: Report

Chapter 6

Results and Discussion

6.1 Introduction

Corruption has been extensively documented in India. Despite quantitative uncertainties in the estimates, its qualitative impacts and pervasiveness are fairly well known. A detailed treatise on corruption goes back to 330 BC when Chanakya, a contemporary of Aristotle and the Prime Minister of the *Mauryan* Empire in India and the author of the book, *Arthasashtra*, loosely translated as *Economics*, emphasized the ill influence of corruption on the social well being and the depletion of the state revenues. He also lamented the difficulty in identifying the corrupt individuals and colloquially compared the act of corruption with collecting honey using the tip of the tongue, which becomes impossible not to taste.[1] Thomas Roe, British envoy to India narrated the tales of widespread bribery and corruption in Indian courts in the 17^{th} century in his diaries. In 1790, in a speech in British Parliament, Edmund Burke used a series of evidence from individuals and the East India Company's reports to lament about large-scale corruption in appointments and contracts. In 1964, an Indian government-appointed committee talked about corruption at all levels in the bureaucracy

[1] Just as it is impossible not to taste the honey or the poison that finds itself at the tip of the tongue, so it is impossible for a government servant not to eat up, at least a bit of the king's revenue" quoted in (Brioschi, 2017, p. 22)

that involved both bureaucrats and politicians. Gunnar Myrdal in his work on persistent poverty in South Asian countries argued that everything in the post-independence era has resulted in incentives and opportunities for corruption (Myrdal 1968). David H Bailey (1969) in his work on the formative role the police play in political development in India found evidence of widespread corruption in the police both among junior and senior officials. More recent works on corruption present a similarly pervasive corruption in India (Sukhtankar and Vaishnav 2015). This persistent nature of corruption motivated me to examine why corruption exists and persists in government bureaucracies and why anti-corruption reforms have met with limited success. Here are the main findings of my work with three of India's major state bureaucracies: the police bureaucracy, the public works department, and the environmental bureaucracy.

6.2 State government bureaucracies are highly complex organizations, and deviate significantly from the Weberian ideal types that blur the boundaries between public and private interests, undermine hierarchy, and make working at arm's length challenging.

Government bureaucracies are highly complex organizations in which a multitude of formal and informal individuals or interest groups pursue competing goals. This complexity is essential to understanding their behavioral persistence and outcomes and developing a possible theory of how corruption exists and persists. James Q. Wilson captures this complexity aptly and says, "one cannot explain the behavior of government bureaucracies simply by reference to the fact that they are bureaucracies; the central fact is that they are government

bureaucracies" (Wilson 1989, p. 125). That these bureaucracies only pursue organizational goals, that the objectives of the bureaucrats at different hierarchical levels are *completely* aligned, that these bureaucrats enjoy *total* decisional independence, and that the elected officials are *fully* committed to maximizing public good, are merely normative goals. In reality, especially in under-developed states like India, government bureaucracies depart *significantly* from Weber's rational-legal bureaucracies to compromised collectives in which bureaucrats and politicians pursue private goals, and engage in cronyism and personalism, at the cost of organizational goals leading to sub-optimal outcomes. Corruption is both a cause and outcome of this deviance.

India's state bureaucracies consist of three kinds of officials. First, there are state ministers, who as department heads, are responsible for the overall governance of their departments. Second, there are bureaucrats of the All-India Civil Services, mainly those belonging to the Indian Administrative Services (IAS) cadre,[2] who as the administrative heads of these departments assist ministers in their work, but the *final* decisions require the consent of the ministers. These administrative heads and ministers *generally* change with a change in the state governments every five years if not earlier. It is a common practice that with a change in government every five years, there are large-scale transfers of these officers and the newly appointed ministers bring in their favorite officers from the cadre to assist them. Finally, there are millions of street bureaucrats recruited by the states that *actually* implement their development agenda on the ground. These street bureaucrats serve permanently and are only transferred intra-departmentally. There is a huge difference in the powers, salaries, and service conditions between the All-India Civil Services members and the street officials in that the latter's recruitments and promotions are irregular, salary levels are *very* low in

[2]As of January 2022, there are 5,231 IAS officers in the country against the sanctioned strength of 6,746 (Government of India, 2022). In comparison, the state of Uttar Pradesh has 548 IAS officers and two million of its own bureaucrats working in different departments.

comparison, and the work requirements are very demanding with limited incentives from the state.

6.3 Street officials work at a difficult place in government bureaucracies.

Street bureaucrats as a key determinant of the state capacity are crucial in governments' development agenda and their last-mile service delivery. These officials work under difficult circumstances of resource constraints, incomplete rules, and poorly defined organizational goals (Lipsky 1980). The heterogeneity of society; overwhelming demand-supply gaps in services; constant pressures from senior bureaucrats, politicians, and citizens; and lack of service delivery infrastructure make their work even more challenging. A large part of the extraneous pressure comes from informal actors who have no formal role to play in influencing the work of these officials such as politicians and bureaucrats from other state and federal bureaucracies. These informal actors pressure these street bureaucrats because they control key public services and possess immense discretionary powers to decide eligible beneficiaries for various welfare programs. In the lowest social strata where the development deficit is the largest, who gets access to these services and in what order, decides the social status of the beneficiaries and also adds to the social prestige of those who help them achieve these services. The social prestige and the *ability* to get things done for their family and relatives remain key factors behind the attraction for government jobs in India. Senior officials and politicians pressuring these street bureaucrats to give service priorities to their families, relatives, and related social groups are quite common.

To deal with this multiplicity of work challenges, and social and peer pressures, these street bureaucrats develop routines that purport to optimize their personal and organizational goals. My work contributes to knowledge about the additional constraints (e.g., corruption) that

street bureaucrats face in implementing public goods in developing economies. Furthermore, their decisions are socially embedded and discretionary power socially constructed. They feel pressures not only from their senior bureaucrats and politicians, but also from their family members and relatives. This diffusive nature of power where they face pressure from no one and everyone makes it impossible for them to conduct business at arm's length, a key requirement to avoid corrupt social exchanges.

6.4 Corruption could be better conceptualized as grand vs. petty as opposed to being of uniform nature, political vs. administrative, or parochial vs. social.

The ministers and the senior officials control the transfers of street bureaucrats, including having a say in their promotions. The street bureaucrats control the state's welfare services and could help the politicians in giving priority to their social groups. Politicians possess discretionary power to allot favorite postings to these street bureaucrats. This creates a situation of mutual dependency between them. This dependency incentivizes them to work together for organizational and personal goals, but *still* gives disproportionate control to the politicians for they could always bring in other street bureaucrats in the event of a fall out. They receive very low salaries,[3] rarely receive promotions, have limited outside work options, come from poor backgrounds, and often retire at the same position even after working for decades. This steers them towards personal goals and away from organizational goals. Limited oversight, a weak judicial environment, and high transaction cost further enable them in this pursuit.

[3] "And at the bottom are tens of thousands of constables and head constables, poorly paid and many barely literate," writes Robin Jeffrey on the economic conditions of the street police officials (Jeffrey, 2016, p. 171).

As we have seen, corruption could be better conceptualized in terms of petty and grand forms of corruption rather than treating it as a phenomenon of uniform nature. The corruption of a president, prime minister, or minister is different than that of a traffic policeperson, school teacher, or local judge in its nature and impact. Other widely used conceptualizations such as administrative vs. political or market vs. parochial do not adequately capture the collaborative nature of public corruption in government bureaucracies where bureaucrats and politicians often facilitate each other's corruption rather than acting independently in their own corruption. Furthermore, these categorizations also fail to account for the differential nature of malfeasance at the top, a form of institutional capture, and at the lowest level in the hierarchy where street officials take bribes in exchange for minor policy infractions. As such, we could think of corruption in transfers as a form of grand corruption for it requires major policy decisions. Corruption in the implementation could be viewed as petty corruption. Having said that, these categorizations are analytical constructs that are context-dependent, and in reality, corruption exists as a continuum.

6.5 In an attempt to reconcile personal and professional goals, these street-level bureaucrats develop posting preferences, meaning they prefer to be at certain places more than others.

The street bureaucrats have *unambiguously* strong preferences of staying in postings that give them greater control over the welfare resources of their department, staying closer to their social communities, or being at places with good urban infrastructure for raising families and living a more comfortable life. These are the three most common preferences among the street bureaucrats even though the ordering of these preferences or the weights they

assign to these preferences differ among officials, and across bureaucracies. These choicest postings are limited and their demand always outweighs availability. In response to these preferences from street bureaucrats, politicians and senior officials rather than acting as honest brokers[4] in allocating postings efficiently for maximizing the public good create a market for corruption in transfers in which street officials vie to outcompete their peers to secure their first preference. To recover the cost of their participation in the transfer market, these street officials develop several markets for corruption in the implementation where they extract rent from citizens in exchange for public services. This cost of participation *determines* the extent and likelihood of the rent extraction activities in implementation by street officials. The extent of participation in these transfer markets depends on the bureaucracies. My analysis shows that the maximum participation in transfer markets happens in the police bureaucracy, followed by the environmental bureaucracy and the public works department. The extent of participation of street officials in the transfer market and the implementation help us understand why and how bureaucrats self-select in a way that some are more corrupt than others.

6.6 State bureaucracies have both grand and petty forms of corruption. There are linkages between these two forms of corruption, and these linkages are organized around bureaucratic transfers.

The organization of the markets for grand corruption in transfers *does not* differ across the state bureaucracies because their administrative structures and the mutual dependencies of the politicians and the street bureaucrats remain *largely* the same. However, the dynamics of

[4]The term "honest broker" was first used by the late German Chancellor Bismarck in 1878.

the markets for petty corruption depend on the nature of the services that these bureaucracies provide, which might focus on policy enforcement such as the environmental standards and the rule of law, or on implementation of public projects such as roads, government schools, hospitals, etc. In the former, opportunities for rent mainly come from monetizing enforcement such as not punishing the violators in exchange for bribes, and corruption is decentralized. In the latter, the opportunities come from siphoning off a share of the welfare money in exchange for implementing inferior quality works, and corruption in this case is institutionalized.

There are mutually reinforcing linkages between grand and petty corruption. Even in the first-best scenario, there is some *minimum* level of corruption that exists in government organizations because to reduce it further, the cost of fighting corruption is more than the benefits derived from further reducing it. We could call it a state of *good* equilibrium. However, grand corruption pushes this *good* equilibrium toward a *bad* or even *worse* equilibrium. The equilibrium point is decided by the extent of grand corruption, opportunities for petty corruption, public and private interests of officials, and the strength of anti-corruption mechanisms. These linkages between grand and petty corruption keep the country stuck in the state of *bad* equilibrium and corruption perpetuates in the system, and help us understand why top-down anti-corruption reform strategies are not effective in cases of systematic corruption.

6.7 Anti-corruption reforms in India have met with limited success because they fail to acknowledge the linkages between grand and petty corruption.

At the core of the anti-corruption reforms are the relationships between different actors in the government and the public. These relationships are generally understood based on the

principal-agent theory, which assumes that the principal cannot fully observe the actions of the agent creating a likely situation where the agent could pursue his private interests at the cost of organizational interests (Gailmard 2012; McCubbins et al. 1987). This theorization considers the burden of corruption mainly on the agent, treats the principal as representing the best interests of the public, and reduces the problem of corruption to merely designing the right set of incentives to control the wrong action of the agent. To address this situation of moral hazard, the governments incentivize bureaucrats to align the interests of the officials with that of the public.

However, what emerges in my analysis is that politicians and street bureaucrats have common interests in sharing some part of the welfare money through selling public offices and monetizing implementation. Street officials implement public projects and extract rent from the citizens, a portion of which they share with the senior officials that flows upward in the bureaucratic hierarchy. It's these linkages that bind and sustain the corruption of the senior officials and street officials together and these linkages are independent of who is in power. Bureaucrats and politicians come and go, these linkages remain and corruption persists. For any anti-corruption reforms, a recognition of these linkages and breaking them is necessary. Furthermore, under the government's anti-corruption laws, to prosecute a civil servant, the government needs to give sanction to the investigating agency for starting an official investigation. In my analysis, I got evidence that such sanction is *normally* not provided or is delayed indefinitely by the government. Even when a corruption complaint comes to the notice of the government, it does not move forward. Sanctions are usually limited to prosecuting street officials and only *very rarely* the officials of All India Civil Service. I came across a very low number of senior officials that were finally convicted of corruption since independent India. This is the reason why even in the face of acceptability of corruption among officials, the conviction remains abysmally low. Appendix Figures C.1, C.2, C.3, C.4 and C.5 are based on an internal, anonymous survey on the corruption of senior civil

servants in 2010, which essentially show the capturing of institutions by corrupt politicians and bureaucrats. However, if we look at the conviction rates against corruption, they are very low, and most of the cases are not even investigated as is reflected in the high pendency rate of court cases. In nine of the 28 big states, not even a single conviction happened last year. The state of Uttar Pradesh, with a population more than the population of Brazil, only convicted one person. The pendency rate for these big states was 96.1%, which means that most cases are not investigated in the first place.

6.8 Street officials are the government and their work is the public policy.

Public policy is not made in legislatures, parliament, or Congress, but is what is presented by the street officials to the public. They are the government to the public and the extent to which they can satisfy organizational goals in their work is the public policy. Despite all the pressure from different principles, resource constraints, and difficult service conditions, street officials work to optimize public policy goals.

6.9 Comparative statics

Corruption exists in the state government bureaucracies in India. Politicians control the service conditions of the street officials and sell them offices in the market for corruption where the street officials participate. These street officials control the implementation where opportunities for corruption exist. As a cost of the participation in the corruption market for transfers, these street officials share a part of their rent with these politicians and keep the rest of it for themselves. The street officials raise much more than what they pay to the senior officials because no contract gives them the office for a fixed time; there is uncertainty and the politicians could still transfer them even after they purchase a certain office. So

street officials aim to reach breakeven as soon as possible and raise much for future office purchases. Politicians need a constant supply of funds for electoral purposes and also ought to show their department's performance to the government and the public. These politicians need street officials who could help with funds, listen to their dictates for giving priorities to their social networks, and also optimally implement the department's policy goals. In other words, while politicians capture institutions at the top by themselves with the help of senior civil servants, they capture local institutions through street bureaucrats. Rewarding bureaucrats with post-retirements jobs, including assigning them government portfolios, is a strong signal that these politicians send to the bureaucrats.

S_1: Politicians and bureaucrats work out a mechanism that ensures a good balance between corruption and organizational goals. This requires taking into account several interests and only then do they realize an optimum level of corruption. Corruption becomes a welfare optimization problem constrained by the private interests of the officials and politicians. For this, they need private information from the bureaucrats, especially from the senior-most officials. This is a reason why many ministers continue with the same bureaucrats as their assistants even after a change in the department they head. Politicians and street officials share a mutually agreed portion of the proceeds from this optimum level of corruption.

S_2: Politicians do not take any money for transfers and the process is entirely transparent. In this case, there is no grand corruption in transfers. The street bureaucrats could still keep getting money from the implementation, but the amount they raise goes to them only, and they do not share it with anybody except maybe their immediate seniors. In such a situation, the level of corruption will likely come down but still will be higher than the minimum corruption which is the first-best.

S_3:Street officials could refuse to make a payment to the politicians for their transfers.

Politicians still need to get the work done and need street officials. It leads to a collective action dilemma among street bureaucrats because some might still agree to make a bid for the politicians. Even if some bureaucrats could pay, politicians could give multiple assignments to them and get things done. Politicians also have powers to invoke rules that harm the future of the bureaucrats. So, the street bureaucrats are unlikely to overcome the collective action problem. In 2011, in the state, some IAS officers protested because one of their colleagues was suspended from the service. In response, the state gave their work to their junior officials, and immediately the protest subsided and they returned to the work.

Appendix C

Appendix to Chapter 6: Additional Materials

C.1 Appendix Figures

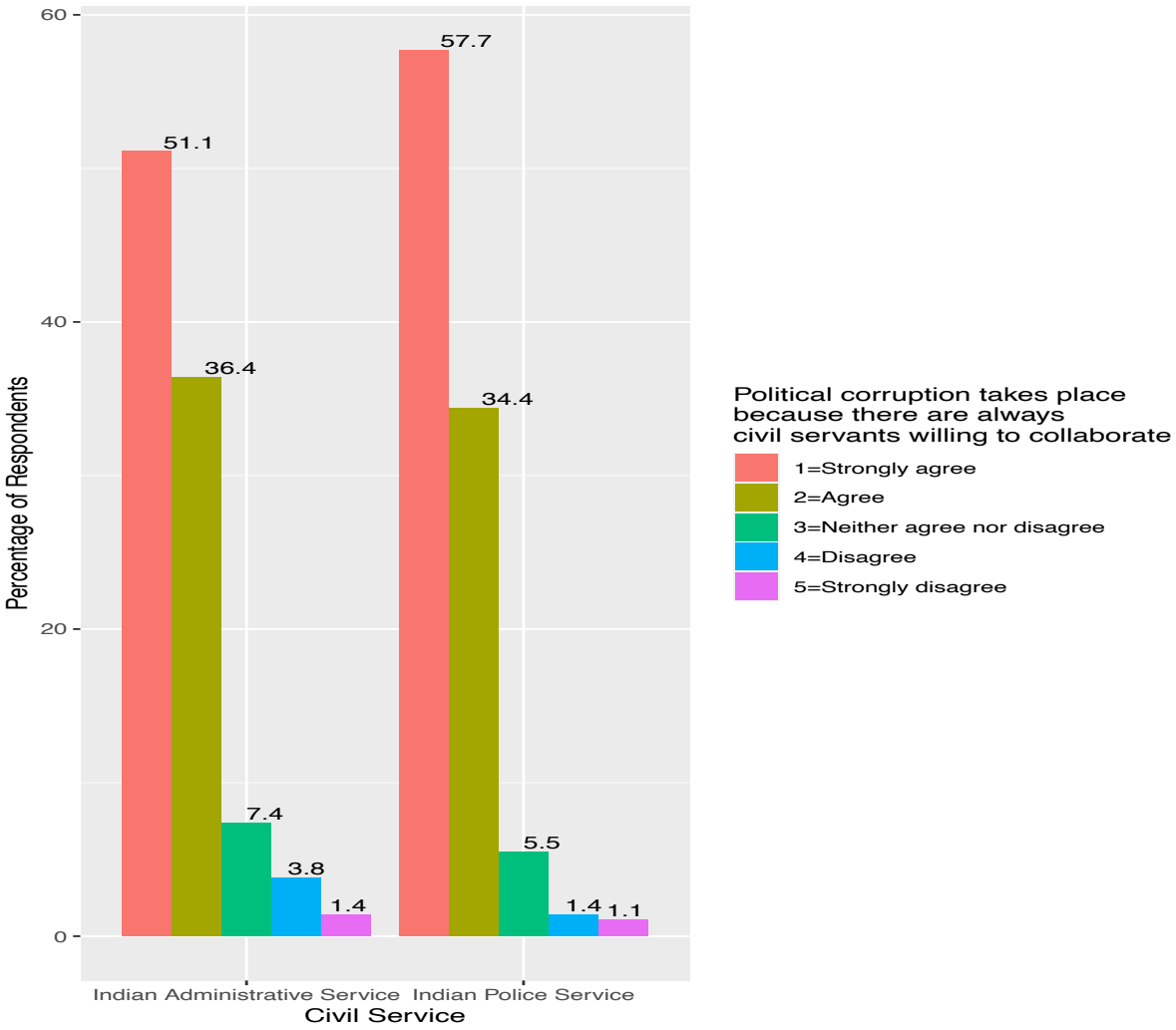

Figure C.1: Opinion on political corruption
Note:The survey was sent to all the federal civil servants in the country via email and post. It achieved a response rate of 26%, and 4808 of the total civil servants participated in the survey (Civil Service Survey 2010) [Details].

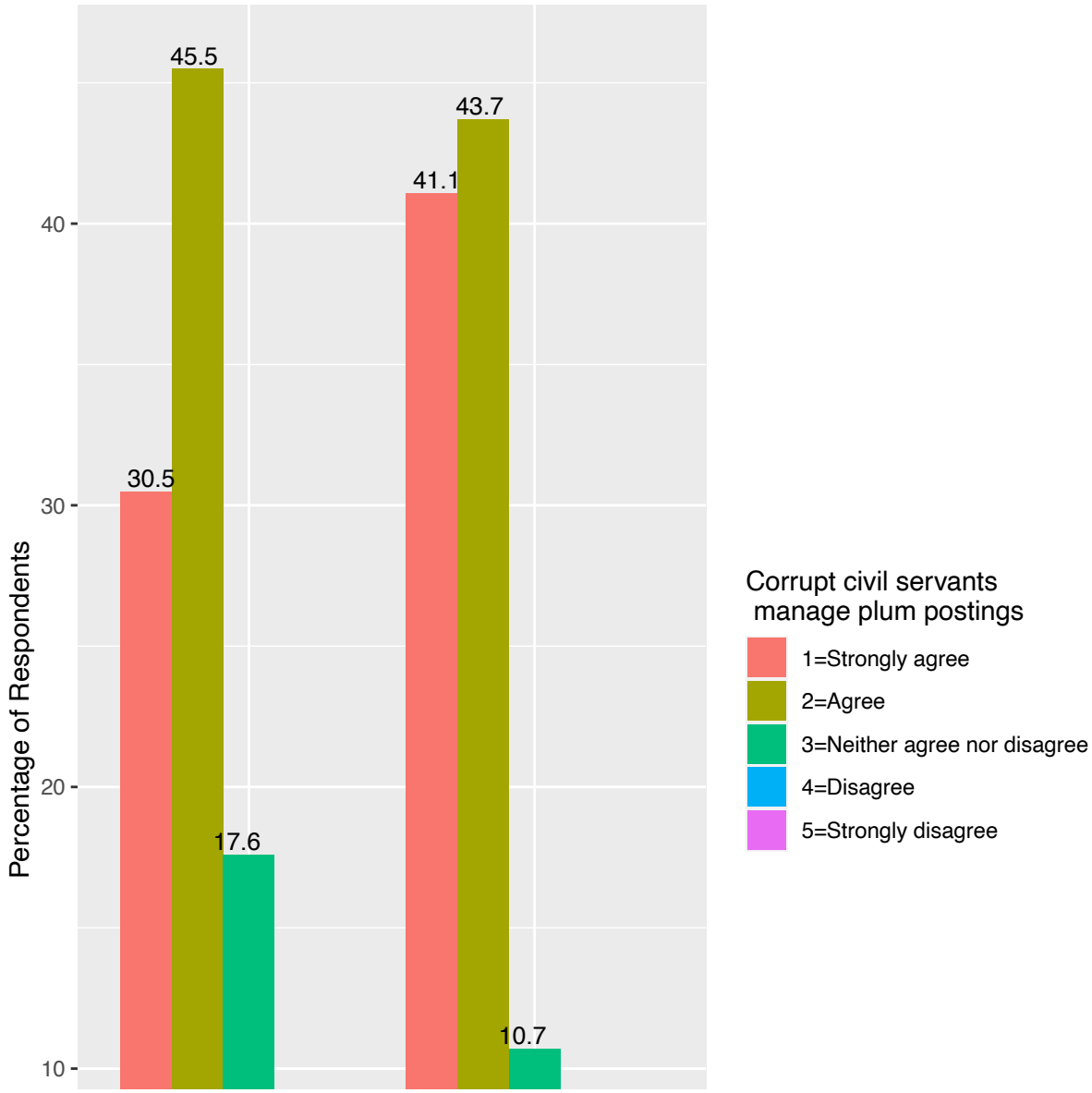

Figure C.2: Opinion on corruption in transfers

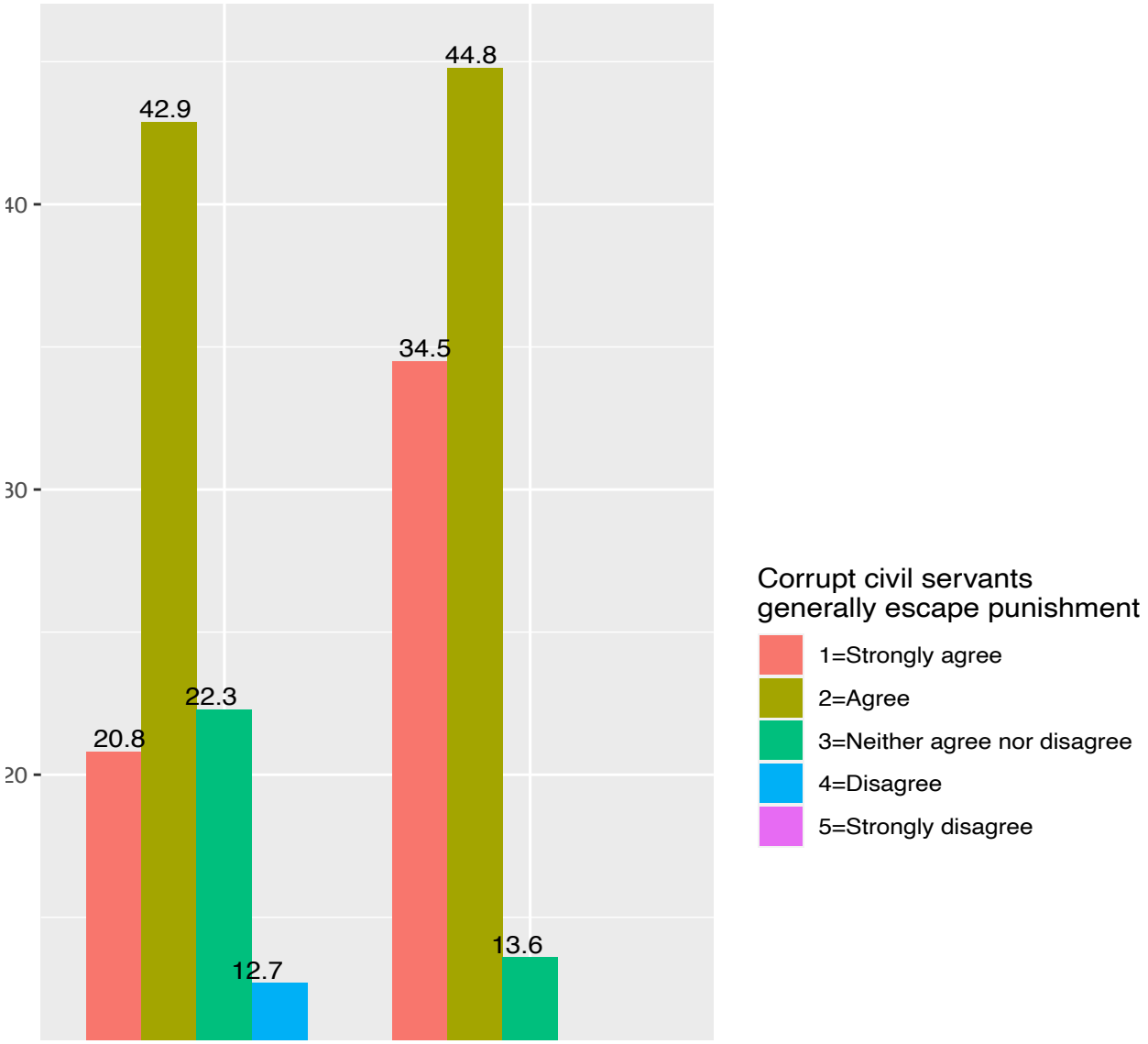

Figure C.3: Opinion on punishment of corrupt officials

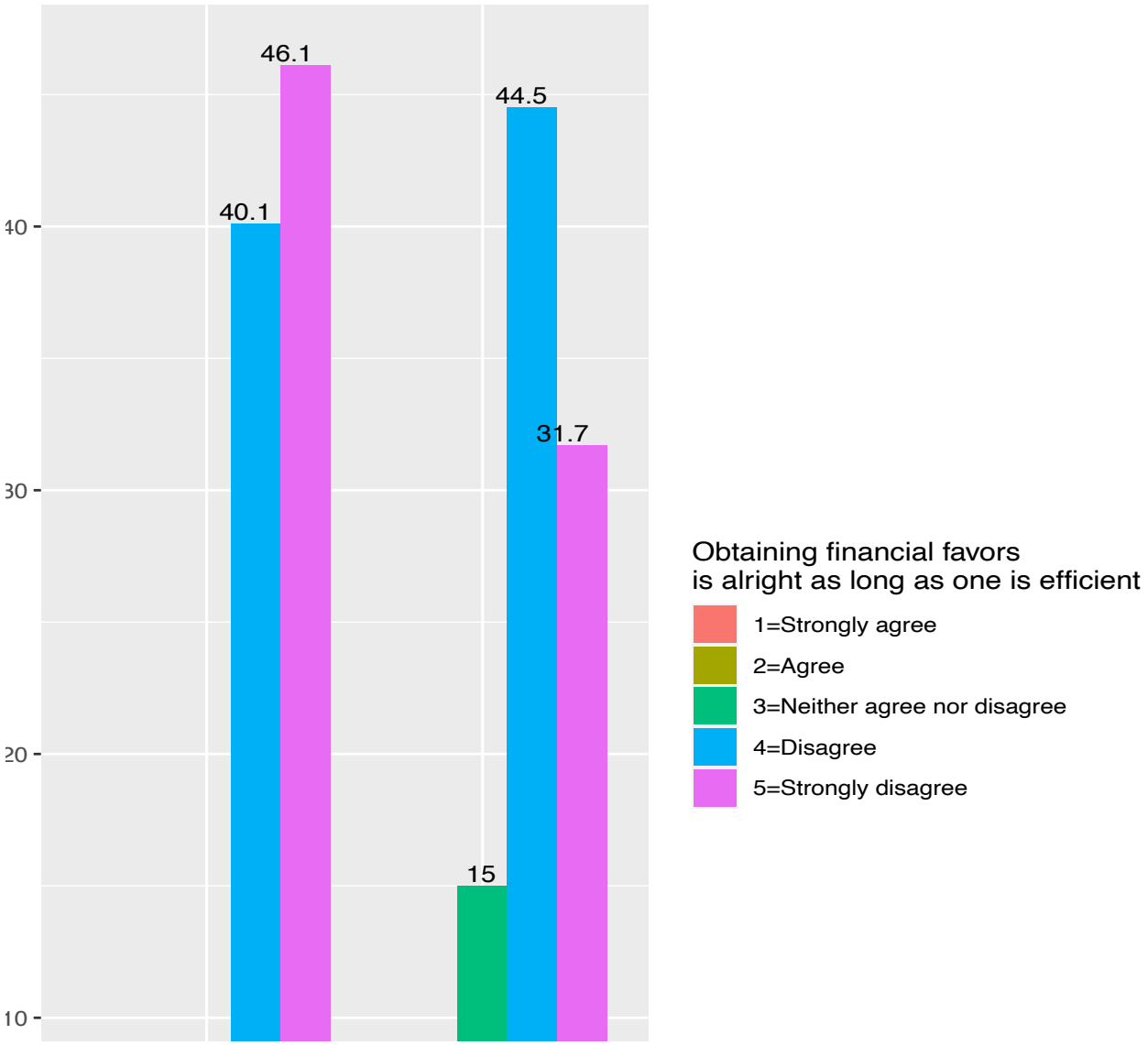

Figure C.4: Opinion on corruption as an efficiency incentive

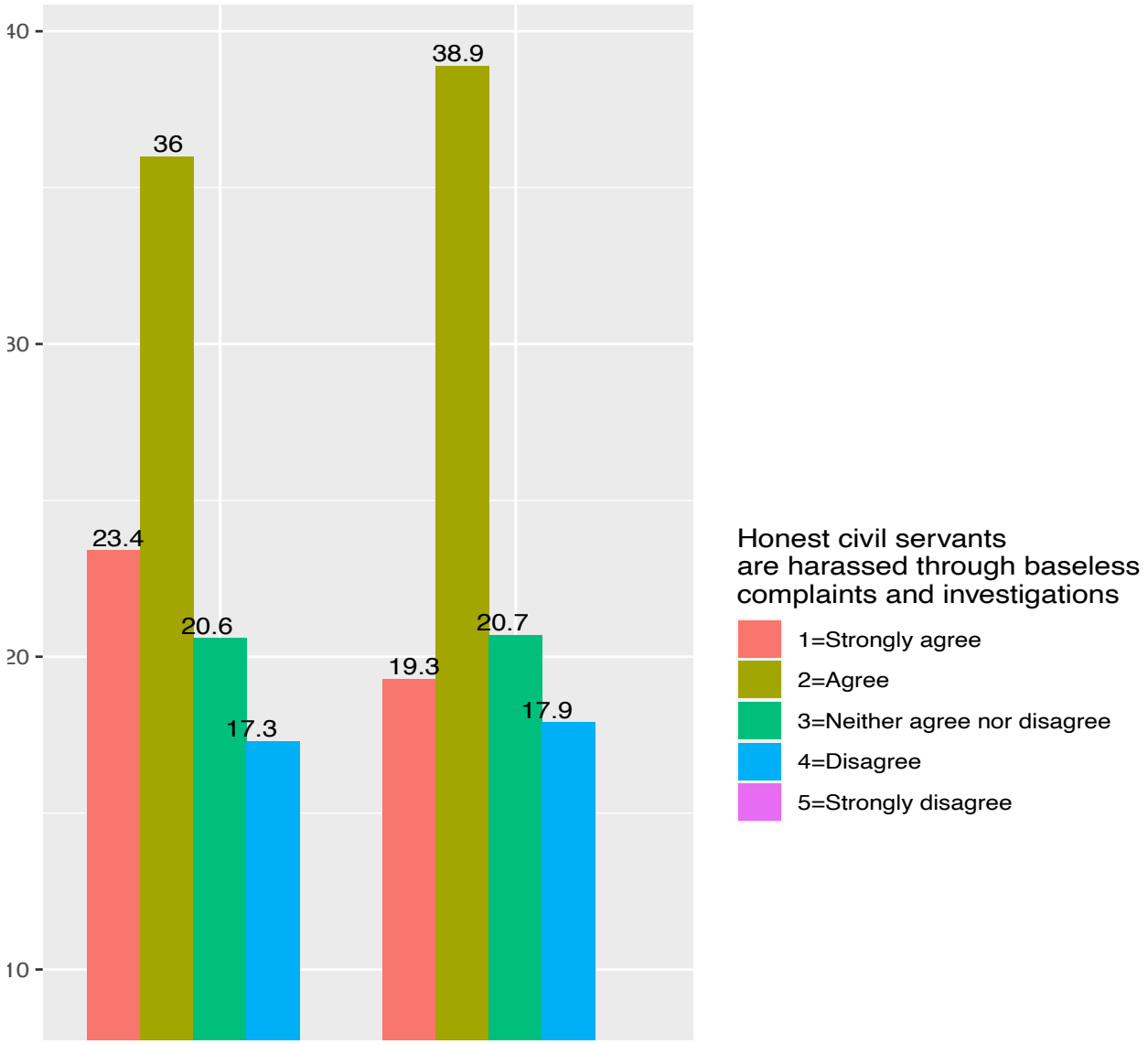

Figure C.5: Opinion on corruption complaints against honest civil servants

Chapter 7

Conclusion and Future Research

7.1 Conclusion

We could think of corruption in two ways. One could be scams or scandals, and the other could be the kind of corruption that is longer-term and more systematically present in government bureaucracies. I focus on the latter. My research helps us understand why corruption exists and persists and why some officials within a government bureaucracy are more corrupt than others. It can also help us understand why some departments are more corrupt than others. This self-selection is rooted in the transfer preferences of officials. Street officials have strong preferences about transfers. Senior officials learn these preferences. They do not fairly allocate postings, but create a market for corruption in transfers. Street bureaucrats participate in the market based on their preferences. They extract the cost of their participation from their implementation work. It is this mechanism through which the corruption market in the transfers is causally linked with the corruption market in implementation.

Street bureaucrats face the constraint of corruption in addition to inadequate resources, overwhelming workload, etc., in transition economies. Their decisions are socially constructed. They work hard to maximize organizational goals in the face of all these constraints. Senior

bureaucrats and politicians pressure the street bureaucrats to capture institutions at the local level.

Linkages between petty and grand corruption give us a better understanding of not only how corruption impacts specific social policies, but how corruption sustains and perpetuates itself in government bureaucracies. I find that these linkages between grand and petty forms of corruption are mutually reinforcing. The presence of these linkages explains the existence of corruption and the stability of these linkages explains its persistence. The presence of these linkages also helps us understand why anti-corruption policies based on Leviathan oversight may not be helpful, for who will guard the guardians?

7.2 Anti-corruption recommendations

In its present form, as it emerged in the largest survey of elite civil servants in India conducted by the government in 2010, four features of India's public corruption are eminently clear: (1) corruption remains highly prevalent in transfers, (2) bureaucrats and politicians collaborate and facilitate each other's corruption rather than acting as balancing forces, (3) there are more incentives to engage in and benefit from corruption than to fight against it, and (4) honest officers are subjected to harassments and punishments at the hands of their seniors and *only* end up in postings deemed as inconsequential by their peer group. In view of the limitations of existing anti-corruption policies and based on my research, I propose a four-pronged strategy to develop more effective anti-corruption interventions.

7.2.1 More transparency and accountability in transfers is absolutely essential.

Disproportionate control over the transfers and appointments of bureaucrats remains the most important lever in the hands of politicians to control bureaucracy. Immense discretionary

powers in such matters make it a potent reward and punishment tool exercised by the politicians to advance their interests. After each election, as soon as the new government assumes charge in the state, there are large-scale transfers in all major state bureaucracies. These transfers are opaque and governments bring in their "favorite" officers to occupy key positions. These decisions are so biased that even the public knows the name of favorite officers of different political parties who are likely to assume powerful positions in the new dispensation. There ought to be reduced discretion and a more objective criteria in bureaucratic transfers to bring transparency and reinforce public trust. I argue in my research that grand corruption in transfers leads to more petty corruption in the implementation process. This is because the street officials who resort to using political influence and bribery for securing their choicest postings end up giving more control to senior bureaucrats and politicians over the implementation to keep them in good humor or else, they could be transferred. Furthermore, to recover the cost of their transfers, these street officials themselves engage in corruption. A more transparent transfer process will lead to the breaking up of these linkages between corruption in transfers and corruption in implementation. Several administrative reforms commissions, including India's Supreme Court, have advocated for more accountability in transfers, but these reforms have been stalled repeatedly by the politicians. There should be a mechanism where a group of people, including members from civil society, and retired officials, could offer their inputs while choosing senior bureaucrats from the list of eligible officials. To smoothen this process, the government should also make the relevant information about the officers public, so that the public could offer informed inputs through their representatives. The public should exert pressure on the government to not select for key positions officers who have corruption or other serious cases pending against them.

7.2.2 Strengthening of judicial infrastructure, especially the ancillary institutions such as the administrative law mechanisms, is important.

There should be a two-tier structure to investigate complaints against corrupt officials. First, there should be independent boards such as the Civilian Review Boards in Massachusetts, United States, which could oversee the department's functioning and serious complaints against it, especially in matters regarding corruption or misuse of power. Before being heard in regular courts, such complaints could be heard by these Boards, which should be endowed with judicial powers to punish erring officials. The citizens should have a right to file complaints with these Boards against erring officials without fear and there should be a timebound investigation in these cases. Second, the departments should also have their own independent bodies empowered to investigate complaints from citizens against deviant officers. This two-tier structure would put significant cost on the corrupt officials and would have a cascading effect on the officers across bureaucracies.

7.2.3 Strengthening of accountability mechanisms at the local level is a must

Civil society participation in local public projects will bring in more transparency in the implementation process. At present such mechanisms are poorly utilized and only pursued in projects that have environmental implications as part of their environmental impact assessment exercises. These mechanisms should be strengthened by giving more voice to the public and expanded to all public projects. India has seen success in many such attempts at the local level, which could be scaled up and given more space for their inclusion in the decision-making process to check unbridled discretion of officials in implementation. A proactive pressure from civil society and NGOs could lead to more accountability in governance of public goods by reducing the likelihood of the misuse of discretion by officials.

7.2.4 Use of technology in developing a publicly available rating system to impose social cost on corrupt officials could be helpful

The use of technology has expanded in public service delivery in India in recent years. Rationed food items are delivered to the eligible beneficiaries using biometric technology. The use of this technology should be expanded to other public services such as the policing, infrastructure and environmental governance where the citizens could file complaints without having to visit government offices. Bribery in filing complaints remains an important source of corruption, especially in the police bureaucracy. The technology could be used to invite anonymous feedback about public projects and provide a channel to file complaints against corrupt officials. Information tools such as Right to Information Act should be strengthened. In recent years, several citizens and rights activists have started using the Act for obtaining information about misappropriation of public funds. On several occasions, this had led to assaults on citizens by associates of politicians to deter activists from pursuing corruption cases. There needs to a foolproof provision where the citizens can participate without fear as a check against public corruption.

7.3 Future research

In this research, I did not consider the cultural institutions as driving and sustaining forces of corruption. My future project will aim at whether the cultural institutions and social structures in some contexts make it challenging to conduct business at arm's length. Most of our lives are governed by institutions that are not formal or informal in the sense that they are not purely social norms either. These diffused and invisible Foucauldian structures of power have a disciplining impact on our lives much like Bentham's panopticon. In the future, I want to undertake a study of these invisible power structures using Foucault's paradigm to see how they impact social exchanges. I suspect these invisible structures might have

some explanatory role in helping us understand why powerful interests capture public goods institutions. In my work, I came across many instances when other scholars shared their experience of noticing similar linkages between grand and petty corruption in their work in other countries. I want to undertake a comparative study of major developing regions to test the strength of my theory that explains the failure of anti-corruption reforms on the existence and stability of these linkages.

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