

Unprincipled Principals: Co-opted Bureaucrats and Corruption in Ghana*

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Abstract

In theory, granting politicians tools to oversee bureaucrats can reduce administrative malfeasance. In contrast, I argue that the political control of bureaucrats can increase corruption when politicians need money to fund election campaigns and face limited institutional constraints. In such contexts, politicians can leverage their discretionary powers to incentivize bureaucrats to extract rents from the state on politicians' behalf. Using data from an original survey of bureaucrats (N=864) across 80 randomly sampled local governments in Ghana, I show that bureaucrats are more likely to facilitate politicians' corrupt behavior when politicians are perceived to be empowered with higher levels of discretionary control. Using qualitative data and a list experiment to demonstrate the mechanism, I show that politicians enact corruption by threatening to transfer non-compliant officers. My findings provide new evidence on the sources of public administrative deficiencies in developing countries and qualify the presumption that greater political oversight improves governance.

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Worldwide, trillions of dollars of public money are lost in corrupt deals each year (Transparency International, 2014). Corruption is a symptom of weak institutions and is especially prevalent in poorer countries (Svensson, 2005). Corruption impairs development by increasing the cost of public goods and services (Di Tella and Schargrotsky, 2003; Bandiera, Prat and Valletti, 2009) and decreasing their quality (Olken, 2007). While previous explanations of corruption focus on institutional (Gingerich, 2013; Schwindt-Bayer and Tavits, 2016) and cultural (Treisman, 2000) factors, more recent scholarship analyzes individual agents' incentives to misappropriate public funds. For example, micro-level theories of corruption focus on the relationship between politicians and bureaucrats (Banerjee, Hanna and Mullainathan, 2013), which helps explain variation in corruption *within* countries in ways that country-level covariates cannot. This article presents a micro-theory of corruption that considers the incentives of politicians and civil servants to steal from the state.

Agency theory recognizes that bureaucrats and politicians often have different goals. Thus a primary concern of public administration scholars has been to show that politicians have tools to control bureaucrats' behavior (McCubbins, Noll and Weingast, 1987). Previous studies have shown that politicians use a range of *ex ante* and *ex post* mechanisms to limit bureaucratic shirking and the distortion of policy away from the intent of the politicians who delegated its implementation (McCubbins and Schwartz, 1984). These models assume that bureaucrats are the source of agency loss. Applied to corruption, this suggests that politicians want to stop administrative corruption to enhance voters' welfare, while bureaucrats wish to engage in it (Shleifer and Vishny, 1993; Olken and Pande, 2012).

Moreover, these models informed by observations in developed democracies, assume high levels of horizontal accountability and strong electoral institutions that align the preferences of politicians with those of voters. However, politicians often do not face such constraints in developing democracies, yet encounter significant pressure to obtain funds to conduct election campaigns. This pressure gives incumbent politicians an incentive to steal from the state (Golden, 2003; Bussell, 2013; Gingerich, 2013). Interference in public procurement offers an attractive source of

funding to politicians (Mironov and Zhuravskaya, 2016). However, politicians who want to capture rents in this way must secure the co-operation of bureaucrats in order to manipulate procurement processes. Oversight tools enable politicians to co-opt bureaucrats and incentivize them to engage in illicit practices. While bureaucrats can engage in corruption for themselves, this is difficult in work environments where political higher-ups closely monitor their activities. In such settings, I argue that bureaucrats often engage in corruption on behalf of their political principals.

I analyze subnational variation in corruption and demonstrate a positive relationship between politicians' ability to control bureaucrats and corruption in local governments in Ghana. The oversight tool I study is geographic transfers – politicians' ability to transfer bureaucrats from one location to another.¹ I investigate one common form of corruption: corruption in public procurement. To analyze corrupt procurement, I conduct an original survey of bureaucrats (N=864) across a random sample of 80 local governments. To measure corruption, I use a randomized-response (RR) survey method.² This technique aims to solicit honest responses, and has been shown to produce unbiased estimates of sensitive outcomes (Rosenfeld, Imai and Shapiro, 2015; Blair, Imai and Zhou, 2015). While existing empirical work uses audits to investigate corruption among local governments (Ferraz and Finan, 2008, 2011), such data are only reliable when these audits are conducted by bureaucrats who are themselves independent. These conditions do not hold in Ghana, where local politicians bribe auditors to refrain from reporting misconduct.³

Controlling for other factors that might influence corruption, my results show that bureaucrats' propensity to engage in corruption varies according to the extent to which bureaucrats perceive that politicians can control their careers. Specifically, when bureaucrats believe politicians can easily transfer them, there is a 52 percent chance that a bureaucrat will report that there is corruption in public procurement in their local government. This figure drops by 24 percentage points when politicians are perceived to have low levels of control over transfers. I assess the proposed

¹I focus on transfers because Ghanaian politicians cannot fire bureaucrats who resist their demands.

²I discuss this method and my implementation of it in detail in Section 3.2. The specific form of corruption in procurement that I study are kickbacks from a firm to a politician. I ask bureaucrats whether firms who win public contracts in their districts give part of the contract sum to the ruling party.

³The result is that the local governments that look the most corrupt on paper may be the least corrupt in practice, and vice versa.

mechanism using qualitative data and a list experiment, which confirm that bureaucrats think that indiscriminate transfers impose significant costs on them and that exposing corruption is likely to cause politicians to transfer them.

This article makes at least three significant contributions to the literature. First, it brings to the forefront the idea that the real problem caused by bureaucratic delegation in developing countries has less to do with politicians' ability to control bureaucrats, and more to do with the difficulties that voters, judges and opposition politicians have to ensure that the politicians themselves are accountable. Indeed, the premise that politicians make good principals may be very inappropriate in developing settings. Accordingly, policymakers who seek to improve public service delivery must consider the need to *protect* bureaucrats from unchecked political oversight.

Second, I highlight how political control over bureaucrats' careers after bureaucrats have been hired can encourage corruption. My findings complement Wade (1982) and Iyer and Mani (2012) who also demonstrate that transfers are a potent control mechanism available to politicians in developing democracies. My results suggest that while the adoption of meritocratic recruitment practices are a critical component of public sector professionalization (Geddes, 1994; Grindle, 2012) and a potential strategy to reduce corruption (Oliveros and Schuster, 2018), bureaucrats hired on the basis of merit may still have strong incentives to engage in graft.

Third, I build on prior research to show how survey techniques designed to measure sensitive behavior can be used to estimate levels of corruption. Perhaps surprisingly, this article is among the first quantitative studies on corruption that relies on responses collected from individual bureaucrats. The advantage of surveying bureaucrats is that the data come from the actors involved in political corruption themselves, rather than from second-hand reports from country experts, firms or civil society activists. Building on innovative work by Gingerich (2013), Gingerich et al. (2016) and Kraay and Murrell (2016) who also use randomize-response techniques to study corruption, this article demonstrates the applicability of the RR-method in a lower-income setting. The article also complements a growing body of research that measures corruption us-

ing violations in procurement practices (Charron et al., 2017; Di Tella and Schargrodsy, 2003; Lewis-Faupel et al., 2016; Bobonis, Fuertes and Schwabe, 2016).

1 Theory: Politicians, bureaucrats and corrupt procurement

1.1 Bureaucratic delegation

Modern accounts of delegation discuss the advantages of granting politicians tools to control bureaucrats in order to limit civil servants' ability to shirk, steal or distort policies. Scholars justify granting politicians the upper hand over bureaucrats in three ways (Kiewiet and McCubbins, 1991). First, politicians are elected by the people, and therefore have a democratic mandate to determine policies. Second, elections, supported by a range of horizontal institutions, such as independent judiciaries, help voters punish politicians who divert from voters' preferences, thereby deterring wrongdoing.⁴ Third, politicians have policy ideal points that are close to the median voter's preferences. Since bureaucrats are not elected, and may have policy preferences that are far from those of the median voter, citizens cannot hold them to account if they implement unpopular policies (Prendergast, 2008).

An important question is whether justifications for bureaucratic subordination that hold in developed democracies also apply in the context of developing democracies. On the one hand, many recognize that autonomy is a critical component of an institutionalized political system (Weber, 1978; Huntington, 1968). Historical accounts of the professionalization of the public sector in Britain and the United States describe the process of taking power out of politicians' hands (Carpenter, 2001; Richards, 1963). On the other hand, some scholars recommend exercising caution when contemplating isolating the bureaucracy in developing states. For example, Fukuyama argues that the lower the capacity of the state, the less autonomy civil servants should have (Fukuyama, 2013). Policy prescriptions along these lines have led to an emphasis on political oversight.⁵

⁴In developed democracies, political corruption remained rampant until corruption tribunals were handed over to independent courts (Eggers and Spirling, 2014).

⁵For innovative experimental work that investigates the relationship between oversight and corruption, and between political oversight and bureaucratic monitoring, see Olken (2007) and Raffler (2017), respectively. Gulzar and

Fukuyama writes that “For the past decade, international donors have been advising developing countries to decrease the amount of discretion in the behavior of their bureaucracies” (Fukuyama, 2013, 361).

I examine bureaucrat–politician relationships in developing democracies and argue that justifications for high levels of political control over bureaucrats often do not hold in these contexts. In developing democracies, politicians have a strong motive to capture public rents. These motives can push politicians’ ideal points away from that of the median voter. At the same time, lack of institutional constraints mean that politicians can divert public resources and go unpunished. The combination of strong motives to engage in corruption and the availability of opportunities means politicians may not make responsible principals. In these contexts, politicians can leverage formal or informal tools of bureaucratic oversight to extract rents from the state.

1.2 Politicians’ incentives

Politicians’ motive to capture corrupt rents is driven in a large part by their need to finance their election campaigns. The relationship between corruption and campaign funding has been shown in many developing regions: in Latin America (Gingerich, 2013), South Asia (Bussell, 2013), and Africa (Mwangi, 2008). In the context of African democracies, lack of regulations on campaign spending and donations, and limited oversight, inflate election costs for candidates (Saffu, 2003; Ohman, 2014).⁶ In Ghana, parliamentarians typically spend more than twice their annual salaries on elections (Lindberg, 2003). In Kenya, parliamentary candidates run the “personal risk of bankruptcy” in their attempts to run for office (Coalition for Accountable Political Financing, 2007). Pressure to finance campaigns ensures that the ideal point of politicians can become distant from those of the median voter: incumbent politicians extract funds meant for public projects and siphon them into their parties’ campaign chests.

Pasquale (2017) also demonstrate that when local bureaucrats answer to a single – as opposed to multiple – politicians, public programs operate more effectively. Their article demonstrates the potential positive role that politicians can play in motivating bureaucrats to work hard.

⁶Ohman (2014) notes that “Given the scarcity of spending limits, and doubts about whether existing limits are enforced, it is fair to say that (as with contribution limits) this type of regulation [regulation on spending] plays no practical role in African political finance” (56).

Politicians' diversion from the common good occurs because of low levels of horizontal accountability. While parliaments, judiciaries and anti-corruption bodies in Africa have been able to push back against political predation on occasions, these actions rely on "serious leaders, significant resources, and independent legal authority" (Diamond, 2008, 139). All too often judiciaries and legislatures fail to assert themselves against the executive branch (Prempeh, 2008; Barkan, 2009). This means that political wrongdoing, including financial misappropriation, often goes undetected and unpunished. Without the threat of punishment, politicians are not deterred from engaging in corruption. Where the judiciary and legislature struggle to hold the executive and incumbent politicians to account, bureaucrats are at risk of becoming subject to the whims of corrupt politicians.

Finally, politicians' incentives to manipulate bureaucratic processes and extract rents are enhanced by the challenges that voters face to hold them to account. While many citizens seek to condition their votes on the performance of politicians (Bratton, Bhavnani and Chen, 2012), they often struggle to obtain the information necessary to do so (Gottlieb, 2016; Grossman and Michelitch, 2018). Especially relevant is the lack of information that voters have on the resources available to politicians to promote development (Gottlieb, 2016; Reinikka and Svensson, 2011). Politicians can leverage these information asymmetries to divert public funds. Voters' limited knowledge of public budgets, as well as the scale of money involved in constructing new infrastructure, makes public procurement an area that is particularly susceptible to political corruption (Di Tella and Schargrodsky, 2003; Lewis-Faupel et al., 2016; Bobonis, Fuertes and Schwabe, 2016; Mironov and Zhuravskaya, 2016).

1.3 Bureaucrats' incentives

While politicians have an incentive to capture rents to fund their campaigns, bureaucrats have an incentive to use their public sector positions to achieve two goals: first, to advance their careers; and second, to work in areas with relatively high levels of economic development (Dal Bó, Finan

and Rossi, 2013). The latter goal is particularly relevant in developing countries because of high internal variation in wealth.

Regarding the first incentive, the predictability of career advancement is a key indicator of meritocracy (Weber, 1978; Evans and Rauch, 1999). However, research shows that promotions in the public sector are often politicized. For example, in India, bureaucrats' propensity to obtain prestigious posts depend on both their ability as well as their loyalty to elected officials (Iyer and Mani, 2012).⁷ Regarding the second incentive, bureaucrats in developing countries generally prefer to live and work in economically developed locations, in part to access higher-quality public services such as schools.⁸

A third goal that bureaucrats may hold is to use their positions to capture illicit rents (or bribes) for themselves (Shleifer and Vishny, 1993; Olken and Pande, 2012). While all bureaucrats may have a motive to engage in corruption for personal gain the opportunity to be corrupt is not constant across positions. Variation in opportunity depends on the extent to which bureaucrats work independently, are monitored either by political higher-up or other bureaucrats, and whether bureaucrats' primary output involves exchanges with individuals. Front-line service workers, such as doctors, work independently, are not usually closely monitored, and provide individual services to clients. Under such conditions, bureaucrats have opportunities to extract bribes from clients. In comparison, bureaucrats in line ministries or local governments usually work in teams, are monitored by politicians, and do not directly sell outputs (driving licenses, drugs, electricity connections, etc.) to citizens; corruption requires coordination, which limits bureaucrats' opportunities to capture rents. I focus here on the behavior of the latter kind of bureaucrats.

⁷Iyer and Mani (2012) find that sharing a caste group with the chief minister's party supporters increases an officer's probability of working in a prestigious post by roughly seven percentage points.

⁸A recruitment experiment in Mexico, where public agencies randomized advertised wages for the same job, shows that candidates are attracted to positions in poorer communities only when they are compensated with high wages (Dal Bó, Finan and Rossi, 2013).

1.4 Politicians' informal control over the careers of bureaucrats

Given politicians' incentive to capture state funds, and the incentives of bureaucrats to advance their careers and live in wealthier localities, politicians can use tools of oversight to manipulate bureaucratic processes and extract rents. While politicians often cannot hire and fire bureaucrats or alter their wages (Evans, 1995), in many cases an important oversight mechanism is discretion over where bureaucrats work (Wade, 1982).

Politicians' ability to *transfer* bureaucrats to different geographic locations is an extremely potent form of political discretion because it imposes costs on bureaucrats in terms of both career progression and quality of life. Not only can politicians manipulate the transfer process to move bureaucrats to undesirable locations; bureaucrats who are frequently moved are likely to develop a reputation as "bad" officers, which may damage their opportunities for career advancement. Bureaucrats who want to advance in their careers or increase the likelihood of working in a specific location may have to satisfy the demands of politicians, including by helping them steal from the state. Politicians can therefore use transfers to micro-manage bureaucrats or force them to capture illicit rents on their behalf.

Prior qualitative research documents politicians' coercive use of transfers. Discussing bureaucrats working in the irrigation sector in India, Wade (1982, 309-312) writes, "the pressures on any one individual to behave in a 'corrupt' manner, whether in response to demands from superiors in the irrigation hierarchy or to satisfy the expectations of politicians and farmers, are very strong...punishment for not being corrupt or for being too corrupt is transfer out of department and to the worst possible location."

I test the hypothesis that higher levels of political discretion lead to higher levels of corruption. I measure political discretion as politicians' ability to transfer bureaucrats to offices in other towns or cities. I assess the theory in the context of politicians and bureaucrats who work in local governments in Ghana. Focusing on a single case allows me to hold constant potentially important country-level factors that explain corruption and leverage internal variation in political discretion.

2 Local governments and corrupt procurement in Ghana

Political power in Ghana is decentralized to 216 local governments: one local government per district.⁹ Local governments are responsible for the development of districts, including the provision of basic infrastructure and public works and services. The president appoints a District Chief Executive (DCE) (akin to a mayor) to head each local government, in consultation with the local branch of the ruling party. Thus all mayors are members of the ruling party, regardless of the partisanship of the majority of voters in the district. In this article, when I discuss local politicians, I am referring to mayors/DCEs. The mayors in the analysis are aligned with the National Democratic Congress (NDC) – the party who won office in Ghana following the country’s December 2012 elections. Each local government consists of both a political and a bureaucratic arm. The head civil servant is the District Coordinating Director (DCD), who is a career bureaucrat. Since the mayor’s office is in the same building as the bureaucrats’ offices, he or she can closely oversee the work of bureaucrats.

Each local government operates with an annual budget of 1–2 million USD, the majority of which is dedicated to the provision of local public goods. To construct public works, district assemblies award contracts to private firms following a public procurement process. Ghana’s Public Procurement Act (2003) guides this process, which involves a number of steps. First, the assembly places an advertisement in a national newspaper which provides the details of the project and instructions on how firms can apply.¹⁰ Interested companies then purchase tender documents from the local government and submit their proposals.¹¹ At the close of the tender period, the assembly opens the secret bids in public. An evaluation committee, usually composed of three or four local bureaucrats,¹² then evaluates and ranks the bids. Once the committee completes its evaluation, it reports to the District Tender Committee, chaired by the mayor; the members of this committee

⁹Local governments are known as District, Municipal or Metropolitan Assemblies, with classifications based on the population of the district.

¹⁰The assembly must post the ad at least 28 days before the specified closing date.

¹¹The typical cost of the tender application documents is around \$50–60 US dollars (equivalent to 200–250 Ghana cedi).

¹²Typically, the district engineer, and the planning, budget and procurement officers serve on the evaluation committee.

have an opportunity to ask questions and provide feedback. Finally, the local government sends an award letter to the winning contractor.

2.1 How politicians manipulate public procurement processes

Two methods allow bureaucrats and politicians to rig the procurement process, which I call *restricting sales* and *secret information*.¹³ The first method involves mayors controlling which firms can purchase tender application documents. To restrict sales, bureaucrats print only three copies of the application documents and sell them to a single contractor favored by the mayor.¹⁴ When other contractors try to purchase application documents, bureaucrats inform them that the materials are not available. The favored contractor then submits all three bids either in the name of three companies he owns or companies that his friends or colleagues own. In the latter case, the contractor would ask his colleague to submit an incomplete application or to inflate the project budget to ensure they would not win the contract.¹⁵

The secret information method involves an open tendering process, but politicians tip the field in favor of their preferred contractor by providing them with secret information to ensure they submit the lowest bid. Usually, the favored contractor gets access to internally produced cost estimates for the project. This allows the contractor to submit a low-cost budget in line with the estimate provided by the engineering department of the local government. Contractors who do not have access to official estimates present higher bids, as they are unsure of the exact specifications required by the local government; erring on the side of caution, they pad their budgets.¹⁶ If contracts are awarded to the lowest bidder, one may assume that this method results in value for money and limits the size of the kickback that politicians receive. However, in practice, this is usually not the case. While the contracted sum is low, once the favored firm has won the contract,

¹³These strategies were described to me during interviews with over 50 local bureaucrats and politicians, as well as more than 30 experts on local governance during multiple fieldwork trips between 2014 and 2018.

¹⁴By law, districts must evaluate the bids of three or more companies before they award a contract.

¹⁵The favored contractor usually has to pay his colleagues a fee to complete and submit the application.

¹⁶One interviewee likened this method to taking an exam and one person being given the questions in advance.

the contractor can inform the local government that prices for raw materials have increased and ask for additional funds. Projects can end up costing more than three times the contracted sum.

Mayors tend to favor firms owned by constituency executives of the ruling political party. Party executives win contracts because of their past contributions to the election campaign of the governing party, or in exchange for promises of future financing. When mayors award contracts to party executives, these contractors are often not qualified to do the work. As one DCD noted:

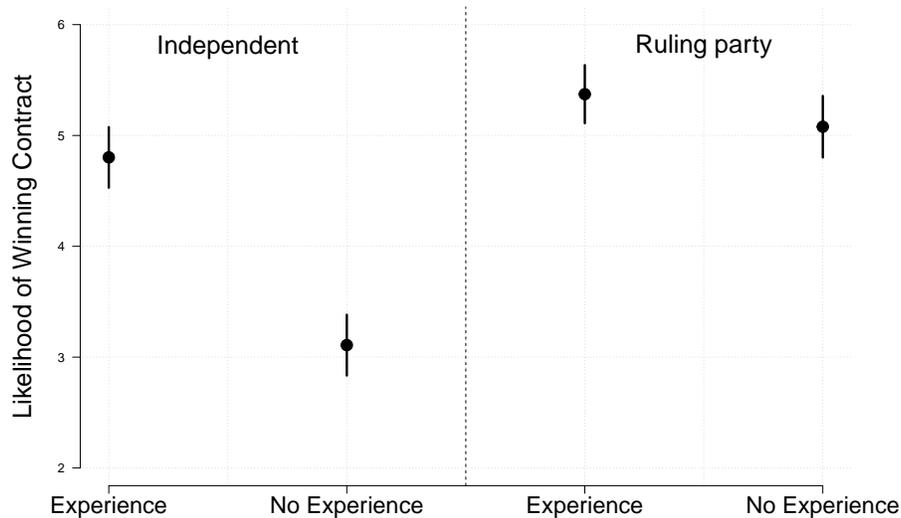
“They [the DCE] tell you “give it to this contractor.” They [the DCE] don’t think about development, they think about how to win elections, and they need funds. The contractor needs to recoup what he has spent on the party. The contractors are all party financiers.”

I verify this insight using a survey experiment implemented when I conducted the main survey discussed in this article. In the experiment, I presented audio vignettes to bureaucrats about different types of firms that were bidding for a contract to construct a new classroom block.¹⁷ I randomly manipulated two variables: (i) the party affiliation of the contractor (allied with the ruling party vs. non-partisan) and (ii) their experience in construction work. Figure 1 displays the results and demonstrates that partisan firms can win contracts even when they have limited experience in construction.¹⁸

¹⁷This is the most common project undertaken by local governments.

¹⁸My account of mayors manipulating local procurement to fund election campaigns is similar to qualitative accounts provided by Luna (2016), who conducted interviews with party executives, bureaucrats, mayors and contractors in a number of local governments in Ghana.

Figure 1: Survey experimental results: which types of contractors are likely to obtain public contracts



Notes: The experimental vignettes were presented to respondents as a conversation between two colleagues (also bureaucrats). Respondents listened to this conversation privately on a phone using headphones. They then recorded how likely the firm they heard about was to win the hypothetical contract to construct a new classroom block. Higher values (from 1 to 7) indicate a greater likelihood of the contractor receiving the contract. I randomly manipulated the two variables of interest using the following sentences: *Experience of contractor* (a) “The contractor has a lot of experience in construction” or (b) “The contractor does not have a lot of experience in construction.” *Affiliation to political party* (a) “From what I know, the contractor is independent” (i.e. not aligned with any political party) or (b) “From what I know, the contractor is a party executive of the ruling party.”

To engage in *restricting sales* or *secret information* strategies, mayors must rely on the co-operation of bureaucrats. Regarding the former, it is the job of procurement officers to print and sell tender applications to contractors. The procurement officer must therefore agree to restrict the sale of application documents. Budget and finance officers who work for local governments have an incentive to increase the sales of applications, as these sales generate revenue for the local government. Therefore, the budget and finance officers usually know when the procurement officer limits sales. As regards the latter strategy, while the district engineer may not directly provide a copy of his estimates to the preferred contractor, the engineer will know whether the mayor does this, as it is obvious when one of the contractors submits a proposal that matches the internal

documents. Again, the planning officer and other members of the evaluation panel are likely to be aware when secret information has been provided, as they also have access to the internal documents.

2.2 How politicians control bureaucrats through transfers

Bureaucrats who work in Ghana's local government are hired by the Local Government Service (LGS), which has offices in the capital city, Accra. The recruitment process for professional positions involves candidates passing a set of written exams or interviews. Recent empirical analysis suggests that local bureaucrats in professional position are hired meritocratically, with patronage hiring confined to menial posts (Brierley, 2018). Local bureaucrats are highly educated: the vast majority hold a bachelor's degree (87 percent), while a significant minority holds a master's degree (39 percent).¹⁹ While local bureaucrats may have an incentive to be corrupt, they can not do so without coordinating with other bureaucrats or the district's mayor. Mayors can monitor local bureaucrats as they work in the same offices. Local bureaucrats also do not sell outputs to individual clients. As discussed in Section 1.3, these conditions limit bureaucrat-led predation. The meritocratic recruitment process further instills a sense of professionalism in personnel. My interviews with bureaucrats suggest they have a strong desire to comply with legislation and to advance the welfare of citizens in their districts. These anecdotes complement empirical work that demonstrates that bureaucrats who are hired on the basis of merit are less likely to be corrupt (Oliveros and Schuster, 2018).

Once recruited, bureaucrats have limited control over where the LGS posts them to work. Bureaucrats can specify which region/s they prefer, but their final posting depends on vacancies at the time of hiring. The LGS, however, often posts bureaucrats to localities where they have social, religious or linguistic ties. My survey data of bureaucrats (discussed further below) shows that 44 percent of bureaucrats work in their home regions. Over the course of their careers, bureaucrats typically work in a number of local governments. On average, bureaucrats spend about four years

¹⁹See Table 1. In comparison, Ghana's most recent census (in 2010) reveals that 2 percent of Ghanaians have a university education.

working in a particular local government, although a significant minority (16 percent) spends less than two years in a district. Seventy percent of bureaucrats in the sample have been transferred at least once. Many of these transfers are a product of regular rotations of staff. However, some transfers result from bureaucrats' non-compliance with the wishes of individual mayors, including refusing or questioning politicians' requests to facilitate corrupt procurement deals. Considering the politicization of transfers, a significant majority of bureaucrats that I surveyed (61 percent) agreed that transfers are more likely in the years following an election than in other years. This suggests that bureaucratic postings are not free from political considerations. Bureaucrats I interviewed noted that rotations occur after elections because some mayors attempt to work with bureaucrats that they consider are co-partisans and thus more likely to assist them in capturing campaign funds for the party.²⁰

Two different institutions control the transfer process: the LGS is the final authority on transfers that occur across regions, while the country's ten regional ministers (who are appointed by the government) authorize transfers *within* regions. Transfers within regions are more common because mayors usually find it easier to communicate with the regional minister than the head of the LGS. Transfers present a threat to bureaucrats because of the significant costs associated with being transferred. Bureaucrats interviewed for this study highlighted two main costs of transfers. First, there are financial costs associated with being posted to an undesirable, usually rural, district. These costs result from civil servants having to live apart from their families, and include additional accommodation, communication and travel expenses. In rural towns, spouses who work outside the public sector struggle to obtain permanent employment. For these reasons, civil servants who work in remote districts often have to live alone during the week and see their families only on weekends.

Second, bureaucrats discussed the psychological costs of being tagged by a politician as a noncompliant (or "stubborn") officer, which include not being given work to do and being treated as an outsider. Bureaucrats also referred to the tight networks that mayors operate in, especially

²⁰I cite these statistics from the survey that I conducted because empirical data on the regularity and destinations of transfers for each bureaucrat do not exist.

within regions. Mayors relay information through these networks about bureaucrats – especially those who refuse to assist them in their corrupt deals. One bureaucrat noted the costs of being labeled as a noncompliant officer:

“They [the DCE] will go to the regional minister and transfer you. Next district they will say you aren’t a team player. It’s very difficult to apply the rules. This is how they put fear in you. You crawl back into your shell. If they see you as someone who moves around a lot you are tagged as a bad officer. Meanwhile, you are trying to inject some sanity into the whole system. You are branded.”

3 Data and measurement

3.1 Sampling of districts and respondents

I surveyed individual bureaucrats to measure corruption in public procurement. To select bureaucrats, I first restricted the sample to five southern regions of the country.²¹ These regions contain 126 districts. I then selected a stratified, random sample of 80 districts. Appendix A discusses the sampling procedure in detail and presents a map of the selected districts. The sampled districts are representative of the study regions, and are broadly representative of the entire country, although slightly wealthier on average (see Appendix Table A.1.)

The bureaucrats surveyed hold top professional positions, which are consistent across districts: District Co-ordinating Director, Assistant Director, Budget Officer, Finance Officer, Auditor, Planning Officer, Procurement Officer, District Engineer, Head of Education, Head of Health, Head of Works, and Head of Social Development. Bureaucrats in these positions are involved in the everyday implementation of procurement processes: selling tender documents, evaluating bids, planning and designing local public goods projects, issuing contracts to firms, and monitoring and paying contractors. The final sample contains responses from between 8 and 15 bureaucrats from

²¹This decision was based on financial considerations. About 57 percent of Ghana’s population resides in these regions.

Table 1: Characteristics of local bureaucrats in the sample

Variable	Mean	St. Dev.	Min	Max
Male	0.87	0.34	0	1
Age	43.51	9.64	23	65
Bachelors degree	0.87	0.34	0	1
Masters degree	0.39	0.49	0	1
Years in public sector	13.28	10.00	0.42	40.81
Years at current district	3.31	3.18	0.00	27.30
Interview during hiring	0.82	0.39	0	1
Exam during hiring	0.41	0.49	0	1
Member or observer of district tender committee	0.74	0.44	0	1

Notes: The unit of analysis is individual bureaucrats (N=864).

each local government.²² Given that the districts were chosen randomly, and that positions are held constant across local governments, these bureaucrats should be representative of this top layer of bureaucrats within the sampled regions.

The sampling procedure generated a sample of 864 bureaucrats. Table 1 displays relevant characteristics of the bureaucrats in the sample. The typical survey respondent was 44 years old, had spent 13 years working in the public sector and at their current district for three years. Roughly three quarters (74 percent) of respondents are members or observers of their district's tender committee.

3.2 Dependent variable

Corruption is difficult to measure. Every data collection method has advantages and disadvantages in terms of reliability. The advantage of getting data from civil servants directly is that these actors have better knowledge of corruption in the public sector than entrepreneurs or experts, who

²²There is variation in the number of total responses across districts because not all bureaucrats in these positions were available during the survey and in some instances both the head of a department and her deputy were interviewed.

many research organizations rely upon for data on corruption.²³ In countries with reliable audit data, scholars can use these data to measure sub-national variation in corruption. However, Ghana does not have such data. Instead, it is an open secret that mayors and bureaucrats bribe auditors not to report corruption. The disadvantage of surveying local bureaucrats is that they may have an incentive to underreport illegal behavior. Fear of admitting to corruption could stem from a concern that the government will punish them for revealing financial misappropriation. Alternatively, it could result from their desire not to admit to socially undesirable acts in public.

To mitigate these concerns, I used a randomized-response (RR) indirect survey technique to uncover unbiased estimates of corrupt practices (Blair, Imai and Zhou, 2015). Researchers have shown that the estimates derived using this method are much closer to observed actual rates of sensitive behavior compared to direct survey techniques (Rosenfeld, Imai and Shapiro, 2015). The RR method attempts to solicit honest answers about sensitive behavior by providing respondents with plausible deniability.

To do so, researchers give respondents a randomization device, such as a die or coin, which they use to determine whether they should provide an honest or predetermined (“forced”) response. When using a die, the enumerator does not observe what number the respondent rolls. By introducing random noise to responses, individuals are protected because enumerators do not know if a positive response is because of the roll or because it is the respondent’s honest answer.

I used a die to randomize responses. Each respondent rolled the die and followed a simple set of instructions. If they rolled a “1” they answered “Yes” regardless of whether this was their truthful answer. If they rolled a “6” they answered “No.” If they rolled any other number, they were instructed to answer honestly.²⁴ Critics of this method suggest that it is not an appropriate technique to use on respondents with low levels of education. Yet given that almost all of the bureaucrats in the survey have a bachelor’s or master’s degree (see Table 1), this is not a significant concern in this study. In addition, before answering the outcome question on corruption, the survey

²³For example, Transparency International’s Corruption Perceptions Index and the World Bank’s World Business Environment Survey.

²⁴Respondents were provided both verbal and written instructions.

included questions to check that respondents understood the RR technique. The survey enumerators were instructed to continue to explain the technique if the respondent did not understand.²⁵

The dependent variable is a binary (yes = 1; no = 0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* As the discussion above suggests, bureaucrats are key actors in the procurement process and have intimate knowledge of how and when politicians attempt to circumvent competitive procedures. In this question, I refrain from asking respondents directly whether they personally engage in corruption, but ask more generally whether corruption occurs in their district. I use this approach for two reasons. First, I anticipated that framing the question more generally would solicit more honest responses. Second, it is somewhat misleading to ask bureaucrats if they engage in corruption themselves. As the strategies that I discuss in Section 2.1 highlight, there are usually many steps that ultimately result in an uncompetitive transaction. No single individual is to blame, and therefore many individuals may not think they are individual perpetrators of corrupt acts.

Once I collected the data, I used the following equations to calculate the actual proportion of respondents who reported corruption. Z_i represents the latent binary response to the sensitive question for each respondent, i . The observed response represents the dependent variable, Y_i , (1 for “yes” and 0 for “no”). R_i denotes a latent random variable that can take one of the three possible values; $R_i = 1$ ($R_i = -1$) indicating that respondent i is forced to answer “yes” (“no”), and $R_i = 0$ indicating that the respondent is providing a truthful answer Z_i . Then, the forced design implies the following equality,

$$Pr(Y_i = 1) = p_1 + Pr(Z_i = 1)(1 - p_1 - p_0) \quad (1)$$

²⁵Appendix Table B.3 shows that the results are robust to only including respondents (78 percent) who answered the RR comprehension question correctly the first time.

where p_0 is the probability of a forced “no” response ($p_0 = Pr(R_i = -1)$), and p_1 is the probability of a forced “yes” response ($p_1 = Pr(R_i = 1)$). Rearranging equation 1 allows us to derive the probability that a respondent truthfully answers “yes” to the sensitive question,

$$Pr(Z_i = 1) = \frac{Pr(Y_i = 1) - p_1}{(1 - p_1 - p_0)}. \quad (2)$$

Applying equation 2 to the data shows that just under half of bureaucrats, 46.0 percent, report procurement corruption in their districts (95% CI: 40.9 to 50.8 percent).²⁶

3.3 Explanatory variables

I argue that when politicians have the ability to transfer bureaucrats, civil servants are more likely to engage in corruption. To test this hypothesis, I asked bureaucrats how much influence the mayor has over the transfer of bureaucrats in their districts. I asked this question at the start of the survey to guard against potential bias. Respondents answered on a four-point scale (1 = *No influence*; 4 = *A lot of influence*).²⁷

Variation in responses, which I label *political discretion*, stems from the political connections of both individual politicians and bureaucrats. Transfers must be authorized by one of two political figures: the regional minister (for transfers within a region) or the Head of the Local Government Service (for transfers across regions).²⁸ Mayors who have personal connections to these political elites find it easier to transfer bureaucrats. At the same time, bureaucrats may have connections to the same elites, which they can use to block transfers.²⁹

²⁶I calculate the confidence interval applying a bootstrapping technique, in which I resample the original sample 1,000 times with replacement. The sample size for each bootstrapped sample is equal to the original sample, N=864.

²⁷The exact question wording was: *In reality, how much influence does the MCE/DCE [or mayor] have on the transfer of bureaucrats in your district?*

²⁸The Head of the LGS is a political appointee.

²⁹I collect data for both the dependent variable and explanatory variable using the survey with bureaucrats. There is some concern that bureaucrat may not be adequately informed about the transferal powers of their mayor. However, because the *perceptions* of bureaucrats regarding mayoral transfer power are likely to be most important in shaping their behavior concerns of inaccuracy are somewhat mitigated. It is also unlikely that bureaucrats’ perceptions of corruption influenced their response to transfer question because the latter question was in the survey before any discussion of corruption. The survey contained only two questions on corruption – the list experiment and the RR question – both of which were at the end of the survey to guard against potential priming.

While the majority of respondents report that the mayor has a lot of influence in determining transfers in their districts, a small minority reports that they have no influence. On average, respondents agree that mayors have a lot of control over the transfer process – the mean is 3.4 on a four-point scale.

4 Main results

In this section, I examine when bureaucrats are most likely to engage in corruption. Specifically, I test my hypothesis that corruption is positively associated with the degree of discretion that local politicians have over the careers of bureaucrats. I conduct a multivariate logistic regression analysis that accounts for the fact that the outcome variable is derived using an RR technique.³⁰ I first analyze the bivariate relationship between corruption and political discretion. I find that this relationship is positive, and statistically significant at the 2 percent level (Column 1). I next introduce bureaucrat-level controls – gender, age, education, time at current district, and ethnicity (Column 2).³¹ Next, I add region fixed effects (Column 3), and finally district-level controls – population, local GDP and an indicator of whether the district receives revenues from natural resources (Column 4).³² The regression results show that the relationship between political discretion and corruption remains positive and statistically significant below the 5 percent level in each of the columns.³³ I present the coefficients and standard errors in Appendix Table B.1. As individual responses may

³⁰For further details of the exact model specification, see Blair, Imai and Zhou (2015). I conduct these analyses using the *RR* package in R.

³¹Bureaucrats’ ethnicity serves as a rough proxy of their partisanship. In the survey, I asked each bureaucrat which party they would vote for if an election were held tomorrow. However, 43 percent of respondents did not provide an answer. Accordingly, I do not control for partisanship in the main analysis. As a robustness check, I re-analyse the data on the subset of bureaucrats who answered this question (N=488), and control for whether the bureaucrat is aligned with the ruling party (NDC). Appendix Table B.3 displays the results, which remain consistent with the main results.

³²Appendix B discusses these variables in more detail.

³³A potential concern in using the RR technique is that respondents will not follow the rules. Instead, they may provide their honest response or simply deny engaging in the activity due to fear. While some respondents may not have followed the rules, the main result will hold as long as respondents’ propensity to not follow the instructions is not correlated with their perceptions of the power of the mayor.

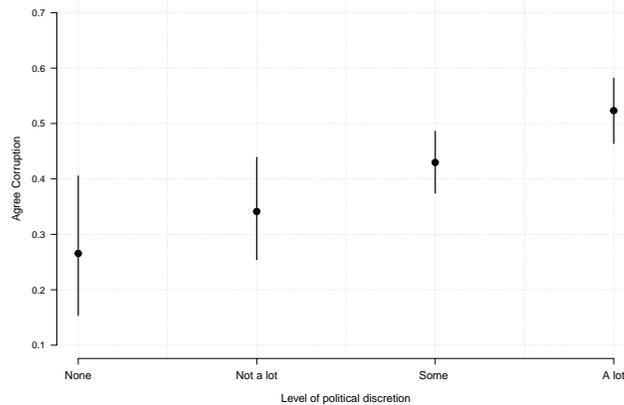
be correlated within districts, I also run the same analysis using a block bootstrap approach. The bootstrapped results (presented in Appendix Table ??) are consistent with the main results.³⁴

To demonstrate the substantive significance of the positive association that I find between political discretion and corruption, and to provide a more intuitive interpretation of the results, I calculate the predicted probability of a “yes” response varying the mayors’ ability to transfer bureaucrats. Figure 2 displays these probabilities. The estimate on the far left is the predicted probability for bureaucrats who report that their mayors have “no influence” on transfers. The right-hand estimate displays the same estimate for bureaucrats who say their mayor has “a lot” of influence. The results show that more than half of bureaucrats (52 percent) report corruption when politicians have a lot of discretionary control, compared to just over a quarter (28 percent) when politicians have limited influence. This is equivalent to a 46 percent decrease in the probability of corruption. The larger confidence interval around the far left-hand point estimate results from the fact that the distribution of the explanatory variable is right-skewed: fewer bureaucrats report that politicians have no influence than those who say they have a lot of influence. Overall, these results support the hypothesis, that higher levels of corruption are associated with higher levels of political discretion.³⁵

³⁴In the Appendix, I also present two additional robustness checks. First, I verify that the results are not driven by respondents from any particular district. I demonstrate that the results are robust to dropping all responses from one district at a time (see Appendix Figure D.1). Second, I aggregate responses across districts and classify districts according to whether the majority of bureaucrats perceive the mayor as having a *high* or *low* level of political discretion. The theory implies that in districts where *most* bureaucrats perceive the mayor to have a high level of discretion the share of bureaucrats who agree that there is corruption will be higher. A cross-tabulation analysis (Appendix Table F.1) confirms this: the share of bureaucrats who report corruption in low discretion districts is 37 percent compared to 48 percent in high discretion districts.

³⁵This analysis assumes a linear relationship between the independent variable and level of corruption. I verify this assumption by conducting the analysis with each category entering the regression as a dummy variable. As an additional robustness check, I also conduct the analysis on the sub-sample of the 78 percent of respondents (N = 671) who answered the RR comprehensive test question correctly the first time. I instructed survey enumerators to keep explaining the method when respondents got the answer wrong. When I conduct my analysis on this sub-sample, the results remain the same: the coefficient on the political discretion variable is positive and significant (see Appendix Table B.3).

Figure 2: Predicted probabilities from randomized-response logistic regression



Notes: This figure displays the predicted probability of a "yes" response to the RR question on corruption. I estimate these probabilities from the model that controls for both bureaucrat and district characteristics and includes region fixed effects (column 4 of Appendix Table B.1).

4.1 Disaggregating between bureaucrats in rural and urban districts

An observable implication of the theory is that the effect of political discretion will be higher for bureaucrats who work in relatively more desirable locations. While all local governments offices in Ghana are in district capitals, these towns vary in their levels of economic development. For bureaucrats working in more economically-developed districts, transfers impose higher costs. This grants politicians greater leverage by lowering the incentives of bureaucrats to resist pressure from mayors to facilitate corruption.

This analysis confirms that discretion plays a more significant role in determining levels of corruption in urban districts. The coefficient on political discretion is 0.70 (significant at below the 10 percent level) for bureaucrats working in urban districts and 0.39 (significant at below the 5 percent level) for bureaucrats working in rural districts (see Appendix Table E.1).

4.2 Alternative explanations

An alternative explanation of the positive association between political oversight and corruption is that more perceptive bureaucrats are likely to know that mayors can control bureaucrats, and that

mayors award contracts to contractors who offer to fund the ruling party. Bureaucrats' perceptiveness is then a potential confounding variable. I attempt to quell this concern by controlling for bureaucrat characteristics that may serve as a proxy for their perceptiveness or knowledge of the operation of local governments. My results already control for level of education and time working in the current district, which may be proxies for perceptiveness. In addition, I add a control for whether the bureaucrat is a member of the district procurement committee, which may indicate that they are more aware of politicians' informal controls and desires to capture illegal rents. Controlling for bureaucratic perceptiveness, I continue to find a positive association between political discretion and corruption (see Appendix Table B.2 (Column 1)).³⁶

Another rival hypothesis is that local politicians may have characteristics that drive both their ability to transfer bureaucrats and their propensity to engage in corruption. This would also lead to a positive association between these two variables, but political discretion in this case would not be the *cause* of corruption. In the theory section, I argue that politicians' need to obtain election campaign funds drives their propensity to be corrupt. This would suggest that politicians who are actively seeking higher-level political offices are more likely to engage in corruption. These politicians, who are aggressively seeking to advance their political careers, may also have more influence on bureaucratic transfers, perhaps because they have been involved in politics longer than those who are not seeking higher office. I attempt to rule out this concern by collecting data on the length of time each mayor has been in office, as well as which of the mayors in the sample ran in the previous parliamentary primaries (in 2015). I then control for these two variables in regression analyses and continue to find a positive association between political discretion and corruption (see Appendix Table B.2 (Columns 2-3)).

Finally, readers may ask why unelected mayors need to capture illicit rents to fund election campaigns. There are two main reasons. First, mayors are the main representatives of the ruling party in each district. They are expected to campaign on behalf of the presidential flag bearer

³⁶In Column 4 of Appendix Table B.2 I add additional controls that proxy for bureaucratic quality because quality may also be associated with bureaucrats' propensity to be transferred. In addition to education and age, I control for the number of years each civil servant has been working in the public sector and whether they entered the public sector via competitive examinations. The results remain the same.

Table 2: Item lists for control and treatment groups

Control	Treatment
(1) Skills needed in another district	(1) Skills needed in another district
(2) Bad relationship with mayor	(2) Bad relationship with mayor
(3) Dislike the local area	(3) Attempt to expose misconduct
	(4) Dislike the local area

Notes: This table displays the items in the control and treatment lists. The sensitive item is in bold here for reference only; this was not the case in the actual experiment. The question read: *Please tell me how many of these are likely reasons for a bureaucrat to be transferred to work in another district? Don't tell me which ones, just indicate how many of them are likely reasons.*

of their party. Mayors also have strong incentives to campaign because their reappointment is conditional on the incumbent president retaining power. Second, as discussed above, many mayors use the position as a springboard into Parliament: about a quarter of mayors in the sample sought parliamentary office in 2015.³⁷

4.3 List experiment to assess mechanism

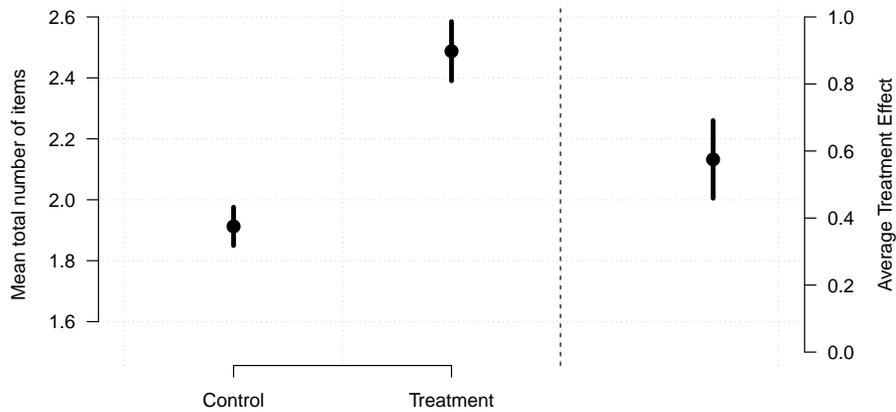
To more systematically assess the mechanism for corruption that I propose, the survey with bureaucrats also included a list experiment. The aim of the list experiment was to demonstrate that when a bureaucrat engages in anti-corruption behavior they believe that this may result in them being transferred. The results of the list experiment support my argument that politicians use, or threaten to use, transfers coercively in response to bureaucratic behavior.

The survey experiment involved asking bureaucrats to identify behavior that is likely to cause them to be moved to a different local government. I ask "how many of these are likely reasons for a bureaucrat to be transferred to work in another district?"³⁸ I exposed half of the respondents at random to the treatment list and half to the control list. On the treatment list, I included "Attempt to expose misconduct" as the sensitive item (see Table 2). I focus on whistleblowing as opposed to,

³⁷In the hierarchy of political positions, Members of Parliament are generally seen as one rank above the DCE (mayor) position.

³⁸While the question wording does not mention mayors directly, as I note above, transfers are at the direction of mayors or the LGS. I expect bureaucrats to expect that the LGS direct transfers on the basis of skills (item 1), and mayors to attempt transfers based on bad personal relationships (item 2) and in response to individual bureaucrat behavior (item 3). Item 4 is included to protect against ceiling effects.

Figure 3: Mean responses and average treatment effect (ATE) for sensitive item



Notes: This two points on the left display the mean number of items for the control and treatment lists, respectively (N= 864). The far right point displays the Average Treatment Effect.

for example, not granting a contract to a firm that the mayor wants, because individual bureaucrats have the power to whistleblow on their own do not have the power to individually award contracts. Appendix Section G discusses how I implemented the list experiment in more detail. Importantly, I show that the list experiment does not suffer from a design effect – instances where responses to control items change with the addition of a sensitive item to the list (see Blair and Imai (2012)).

Figure 3 displays the results of the experiment. The estimate on the left shows the mean number of items respondents agreed are reasons for transfers in the control list (1.91, compared to 2.49 for the treatment list). These results show that 58 percent of bureaucrats (95% CI: 46 to 69 percent) agreed that speaking up about corruption can cause them to be transferred. These results support the mechanism that I propose on the relationship between corruption and bureaucratic transfers. They complement the qualitative data and, importantly, show that such sentiments are not confined to a minority of bureaucrats.

5 Conclusion

Political corruption is a problem that plagues developing democracies. To engage in corruption, politicians must often co-opt the bureaucrats who are intimately involved in the administrative processes that politicians seek to manipulate to capture state resources. In this article, I examine the conditions under which bureaucrats are likely to help politicians to facilitate corruption. Using data from an original survey of local bureaucrats across 80 randomly selected local governments in Ghana, I document a positive association between political discretion and bureaucrats' propensity to engage in corruption. This relationship is robust to a variety of specifications.

Overall, the results suggest that greater levels of political discretion can increase corruption, and that oversight tools are subject to abuse by politicians. This raises the critical question of how to make local politicians and bureaucrats more accountable. This study is not the first to discuss the negative effects of political control over transfers. In India, local politicians also use transfers to punish bureaucrats who do not capture sufficient rents on behalf of politicians (Wade, 1982). The abuse of transfers by politicians is also not confined to bureaucrats working in administrative offices – police officers in India also face frequent transfers, which leaves them with low morale and few incentives to develop ties with the communities they serve (Banerjee et al., 2012). Transfers can also be seen as one of many tools that in different contexts politicians can use to punish bureaucrats during their careers in the public sector: interfering in promotion decisions, docking bonuses, and administratively sidelining non-compliant bureaucrats are alternative potential tools.

There are two possible policy responses to the politicization of transfers, both of which seek to protect bureaucrats from threats of discretionary oversight. The first option is to place strict rules on the movement of civil servants. Bureaucrats, for example, could be contracted to work in a local government for a fixed period of time. This approach would impose some logistical difficulties, as positions are bound to open as workers go on leave or retire. However, so long as each individual bureaucrat is operating on his or her own fixed calendar, it should always be the case that an appropriately trained individual is available to fill a vacant position. The second option is to use transfers to incentivize public servants to work hard. Using transfers as a reward was found

to increase the performance of police officers in Rajasthan, India (Banerjee et al., 2012). Common to both of these policy options is the addition of greater structure and uniformity of movement both across positions and between locations. Until there is greater predictability in bureaucrats' future careers, they are likely to remain susceptible to satisfying the short-term, often selfish, ambitions of their political principals.

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Online Appendix for “Unprincipled Principals: Co-opted Bureaucrats and Corruption in Ghana”

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A Sampling procedure

I analyze data from an original survey of local bureaucrats that I conducted in late 2015 and early 2016. I follow three steps to select bureaucrats: selecting regions, followed by districts and finally individuals. First, I conducted the survey in five contiguous regions of Ghana – Central, Eastern, Brong-Ahafo, Ashanti and Volta. These regions together contain just under 60 percent of the population. A total of 126 local governments lie within these regions. I do not include the two Metropolitan local governments (Kumasi and Cape Coast) in these regions in the sample. In the second stage, I take a stratified, random sample of 80 of these districts. The stratification procedure ensured I selected districts with varying political configurations. The two variables that I stratified on are the partisan affiliation of the Member of Parliament, and the degree of local electoral competition which I measure using the parliamentary election results from Ghana’s election in 2012. I sought variation on these variables as they may influence how bureaucrats behave.

Figure A.1 displays a map of Ghana and neighboring countries. The dots show the locations of the 80 local governments in the sample. After I sampled districts, the final step was to select individual bureaucrats to survey. I selected respondents on the basis of their positions, selecting twelve of the most important positions in the local government system.

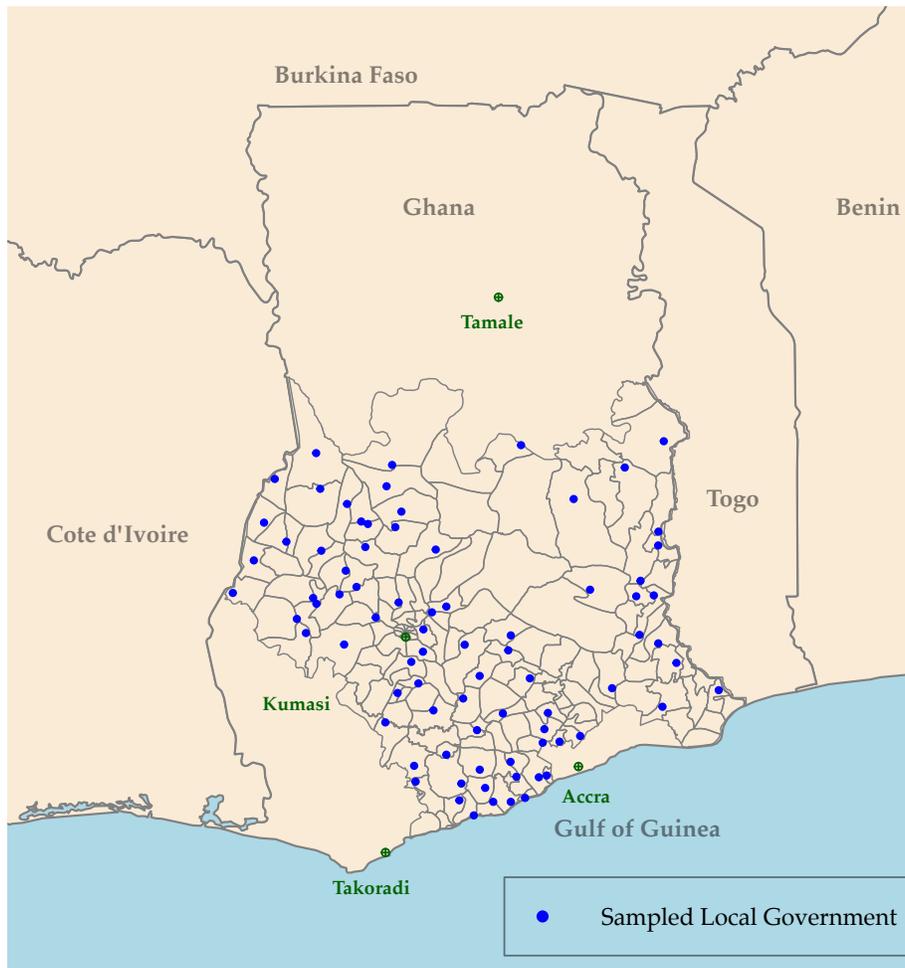
Table A.1 shows that the sampled districts are representative of these regions in terms of levels of urbanization, education, employment, and poverty indicators such as access to advanced cooking fuel (gas or electric). The districts in the sample appear slightly richer than the country as a whole, as measured by the share of houses with cement walls and access to electricity. Indeed, while 43 percent Ghanaians live in concrete structures, 50 percent of individuals in the sampled districts do.

Table A.1: Characteristics of sampled districts compared to the population (i) in the five regions (sample population) (ii) and across the country (nationwide)

Variable	Nationwide (%)	Sample population (%)	Sample (%)
Rural population	64	62	63
Access to electricity	49	53	54
Access to advanced cooking fuel	8	7	8
Cement wall for housing	43	50	50
Involved in agriculture	56	53	53
Highest education primary	92	92	92
Employed	53	51	51

Source: Ghana 2010 Housing and Population Census.

Figure A.1: Map of the 80 local governments in the sample



Note: Each dot indicates the location of a local government. I sample local governments in five regions of the country: Ashanti, Brong Ahafo, Central, Eastern and Volta. The lines display the boundaries of each district. I also indicate the locations of the four largest cities in the country: Accra, Kumasi, Takoradi and Tamale.

B Regression results: main analysis and robustness

All of the regression results that I present in this section are multi-variate logistic regressions that take into account that the dependent variable is a randomized response variable. To run these regressions I use the *RR* package in R.

In Table B.1 (Model 4), I include district level controls. Data on district population is derived from Ghana's 2010 Population and Housing Census. I calculate local GDP using nightlight data (2013): I overlay the district boundaries shape file on the country map and calculate the mean luminosity for each district. Finally, I control for whether each local government receives revenues from natural resources. These data are taken from reports produced by the Ministry of Finance (Ministry of Finance, 2015, 2018). Most mining royalties in Ghana are derived from gold mining: roughly 97 percent of Ghana's earnings from mineral exports are from gold.

Table B.1: Main regression results

Variables	Model 1	Model 2	Model 3	Model 4
Political discretion	0.29** (0.12)	0.41*** (0.15)	0.42*** (0.15)	0.45*** (0.15)
Age		0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Male		-0.49 (0.37)	-0.43 (0.39)	-0.48 (0.39)
Masters degree		0.39 (0.24)	0.45* (0.26)	0.44* (0.26)
Years at district		0.12** (0.04)	0.14** (0.05)	0.13** (0.05)
Ethnicity (Fante)		-0.83** (0.39)	-0.78* (0.44)	-0.76* (0.44)
Ethnicity (Ga-Adangbe)		-0.34 (0.53)	-0.30 (0.54)	-0.33 (0.55)
Ethnicity (North)		-0.65** (0.33)	-0.87** (0.36)	-0.86** (0.36)
Ethnicity (Ewe)		-0.22 (0.31)	-0.14 (0.36)	-0.16 (0.37)
Ethnicity (Other)		-0.19 (0.49)	-0.32 (0.51)	-0.32 (0.51)
Log(Population)				0.35 (0.32)
Local GDP (nightlights)				-0.05 (0.04)
Mining royalties				0.47 (0.46)
Region FEs	No	No	Yes	Yes

Notes: N=864 bureaucrats. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; dependent variable is a "Yes" (1) or "No" (0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* I report standard errors in parentheses.

Table B.2: Replication of Model 4 (Table B.1) with additional control variables

Variables	Model 1	Model 2	Model 3	Model 4
Political discretion	0.44*** (0.15)	0.44*** (0.15)	0.41*** (0.16)	0.42*** (0.16)
Age	0.04*** (0.01)	0.04*** (0.01)	0.03*** (0.01)	0.02** (0.02)
Male	-0.50 (0.40)	-0.50 (0.40)	-0.41 (0.41)	-0.39 (0.42)
Masters degree	0.49* (0.26)	0.49* (0.26)	0.44 (0.28)	0.47* (0.28)
Years at district	0.13** (0.05)	0.13** (0.05)	0.15** (0.05)	0.14** (0.05)
Ethnicity (Fante)	-0.86** (0.45)	-0.85** (0.45)	-0.69 (0.47)	-0.71 (0.47)
Ethnicity (Ga-Adangbe)	-0.34 (0.56)	-0.34 (0.56)	-0.25 (0.58)	-0.26 (0.59)
Ethnicity (North)	-0.86** (0.37)	-0.86** (0.37)	-0.89** (0.40)	-0.91** (0.40)
Ethnicity (Ewe)	-0.16 (0.37)	-0.16 (0.37)	-0.20 (0.41)	-0.20 (0.41)
Ethnicity (Other)	-0.36 (0.52)	-0.36 (0.52)	-0.47 (0.58)	-0.47 (0.59)
<i>Additional control variables</i>				
Member of tender committee	-0.54** (0.28)	-0.54** (0.28)	-0.47* (0.29)	-0.52* (0.30)
Political ambition		-0.06 (0.27)	-0.09 (0.28)	-0.09 (0.28)
Second term DCE			-0.05 (0.30)	-0.04 (0.30)
Years in public sector				0.02** (0.02)
Recruitment via exam				0.04 (0.28)
District controls	Yes	Yes	Yes	Yes
Region FEs	Yes	Yes	Yes	Yes

Notes: N=864 bureaucrats. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; dependent variable is a "Yes" (1) or "No" (0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* I report standard errors in parentheses.

Table B.3: Replication of Table B.1 (restricted to bureaucrats who answered RR-test right first time)

Variables	Model 1	Model 2	Model 3	Model 4
Political discretion	0.29** (0.12)	0.41*** (0.15)	0.42*** (0.15)	0.45*** (0.15)
Age		0.02* (0.01)	0.02* (0.01)	0.02* (0.01)
Male		-0.49 (0.37)	-0.43 (0.39)	-0.48 (0.39)
Masters degree		0.39 (0.24)	0.45* (0.26)	0.44* (0.26)
Years at district		0.12*** (0.04)	0.14*** (0.05)	0.13*** (0.05)
Ethnicity (Fante)		-0.83** (0.39)	-0.78* (0.44)	-0.76* (0.44)
Ethnicity (Ga-Adangbe)		-0.34 (0.53)	-0.30 (0.54)	-0.33 (0.55)
Ethnicity (North)		-0.65** (0.33)	-0.87*** (0.36)	-0.86*** (0.36)
Ethnicity (Ewe)		-0.22 (0.31)	-0.14 (0.36)	-0.16 (0.37)
Ethnicity (Other)		-0.19 (0.49)	-0.32 (0.51)	-0.32 (0.51)
Log(Population)				0.35 (0.32)
Local GDP (nightlights)				-0.05** (0.04)
Mining royalties				0.47 (0.46)
Region FEs	No	No	Yes	Yes

Notes: N=671 bureaucrats. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; dependent variable is a "Yes" (1) or "No" (0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* I report standard errors in parentheses.

Table B.4: Replication of Table B.1 (restricted to bureaucrats who indicated which party they voted for and controlling for partisanship)

Variables	Model 1	Model 2	Model 3	Model 4
Political discretion	0.39*** (0.16)	0.54*** (0.18)	0.52*** (0.19)	0.55*** (0.20)
Age		0.04** (0.02)	0.03* (0.02)	0.03* (0.02)
Male		-0.56 (0.49)	-0.49 (0.51)	-0.55 (0.52)
Masters degree		0.15 (0.34)	0.21 (0.35)	0.15 (0.35)
Years at district		0.06 (0.06)	0.07 (0.06)	0.07 (0.06)
Ethnicity (Fante)		-0.54 (0.54)	-0.46 (0.60)	-0.49 (0.61)
Ethnicity (Ga-Adangbe)		-0.83 (0.65)	-0.75 (0.65)	-0.82 (0.66)
Ethnicity (North)		-0.47 (0.47)	-0.57 (0.49)	-0.62 (0.50)
Ethnicity (Ewe)		-0.29 (0.43)	-0.27 (0.50)	-0.35 (0.51)
Ethnicity (Other)		-0.02 (0.69)	-0.13 (0.72)	-0.15 (0.72)
NDC voter		-0.82*** (0.34)	-0.73** (0.34)	-0.76** (0.35)
Log(Population)				0.42 (0.42)
Local GDP (nightlights)				0.03 (0.06)
Mining royalties				0.52 (0.61)
Region FEs	No	No	Yes	Yes

Notes: N=488 bureaucrats. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; dependent variable is a "Yes" (1) or "No" (0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* I report standard errors in parentheses.

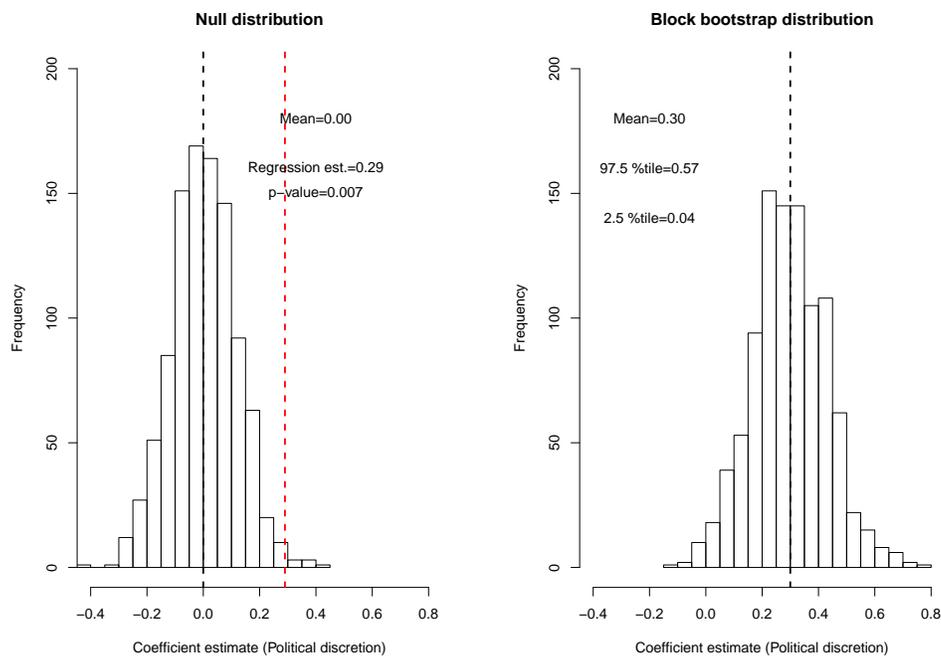
C Replication of results using a block bootstrap

There is a concern that individual responses are correlated within districts. I check that my results are robust to analyses that account for the clustered nature of the sampling procedure by using a block bootstrap approach, with districts defining the blocks. I replicate the results of Model 1 of Table B.1. I replicate the bivariate model (Model 1) because the RR-regressions do not compute every time as more control variables are added.

To create the bootstrapped samples, I sample with replacement the 80 districts. When a district is selected, all of the individuals in this district join the new sample. Individual respondents will appear in the bootstrapped samples the same number of times as the district is selected. I create 1,000 random samples. Figure C.1 displays the distributions for the *political discretion* coefficients. The left plot displays the null distribution of the coefficient, and the p-value associated with the regression estimate ($p=0.007$). The right plot displays the block bootstrapped distribution. The mean for the null distribution is 0.00 (95% CI: -0.22 to 0.23). The mean for the bootstrapped distribution is 0.30 (95% CI: 0.04 to 0.57).

I conduct the same analysis but instead with 500 re-randomizations of the data. The results are essentially the same. The mean for the null distribution is 0.00 (95% CI: -0.22 to 0.24). The mean for the bootstrapped distribution is 0.30 (95% CI: 0.05 to 0.57).

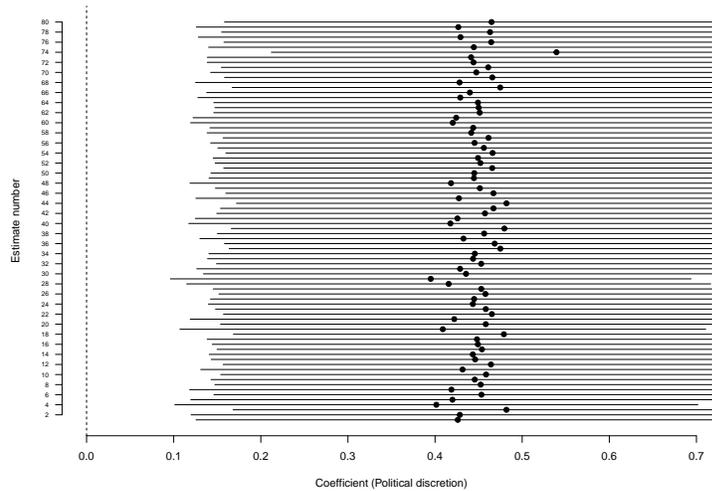
Figure C.1: Comparison of null and block bootstrap distribution (estimated using Model 1 of Table B.1)



D Crossvalidation of results dropping respondents from one district at a time

To verify that the results are not driven by respondents from any particular district, I sequentially drop the data from one district at a time and re-run Model 4 of Table B.1. Figure D.1 displays the regression coefficients along with the 95% CIs.

Figure D.1: Coefficient on political discretion sequentially dropping one district at a time (estimated using Model 4 of Table B.1)



E Comparing the results across urban versus rural local governments

An implication of the argument is that the effect of political discretion will be larger for bureaucrats who work in more economically developed versus less economically developed districts. This is because geographic transfers impose a higher cost on bureaucrats who already live and work in richer districts; these bureaucrats have a better standard of living and access to better public amenities.

I operationalize economic development according to the type of local government (district or municipal).³⁹ Local government offices are always situated in the district capital. Bureaucrats who work in municipal assemblies are almost certain to be working in larger towns than those who work in district assemblies. To confirm that municipal districts are more economically developed than district assemblies, I measure economic development using nightlight data (2013) and calculate the luminosity of the area surrounding the local governments. I find that municipal assembly locations have a mean luminosity (20.92) that is more than twice as large as district assembly locations (8.64).

³⁹The survey sample only included bureaucrats who work in district and municipal assemblies. A local government becomes a municipal assembly when the district population is over 95,000.

I reanalyze the data, disaggregating between bureaucrats who work in the two types of local governments: those working in municipal (N=253) and district (N=611) assemblies. The regression results support the hypothesis that political discretion plays a greater role in determining levels of corruption in more economically developed districts. Controlling for bureaucratic demographics and including region fixed effects, I find that the coefficient on political discretion is 0.703 (significant below the 10 percent level) for bureaucrats working in municipal governments and 0.388 (significant below the 5 percent level) for bureaucrats working in district assemblies. I present these coefficients and standard errors in Appendix Table E.1.

Table E.1: Disaggregate regression results: urban versus rural local governments

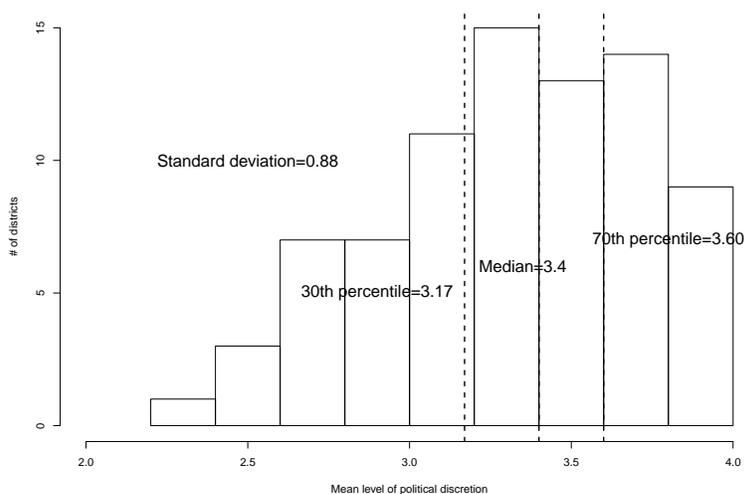
Variable	Model 1 (Urban)	Model 2 (Rural)
Political discretion	0.703* (0.397)	0.388** (0.171)
Age	0.017 (0.028)	0.032 (0.016)
Male	0.278 (0.856)	-0.738 (0.471)
Masters degree	0.513 (0.534)	0.475 (0.304)
Years at district	0.171* (0.091)	0.134** (0.057)
Ethnicity (Fante)	-0.899 (0.93)	-0.813 (0.514)
Ethnicity (Ga-Adangbe)	0.565 (0.945)	-0.688 (0.685)
Ethnicity (North)	-1.407* (0.767)	-0.773* (0.425)
Ethnicity (Ewe)	-0.098 (0.774)	-0.199 (0.439)
Ethnicity (Other)	-0.676 (0.902)	-0.199 (0.688)
Region FEs	Yes	Yes

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; dependent variable is a "Yes" (1) or "No" (0) response to the following question: *In this district, are contracts granted to contractors who are likely to give part of the money to the election campaign of the incumbent party?* I report standard errors in parentheses.

F Cross-tabulation of corruption across different types of districts

In this section, I classify districts according to whether bureaucrats in a district think their mayor has high or low ability to transfer them, and then calculate the share of bureaucrats who report corruption. Aggregating bureaucrats' responses across districts, I find that on average bureaucrats think that their mayor has either "some" (3) or "a lot" (4) of power to transfer them; the district level median is 3.4 (see Figure F.1).

Figure F.1: Mean level of political discretion across districts



Notes:

Table F.1 displays a cross-tabs of reported corruption across three different types of districts: (i) districts where most bureaucrats agree the mayor has *high* levels of discretion (ii) districts where most bureaucrats agree the mayor has *low* levels of discretion (iii) and districts where bureaucrats' opinions are varied. I classify a district as having a mayor with high levels of discretion when the district mean is at or above the 70th percentile (3.6) and the standard deviation in responses is below the mean (0.88). I classify a district as having a mayor with low levels of discretion when the district mean is at or below the 30th percentile (3.17) and the standard deviation in responses is below the mean (0.88). The remaining districts lie between these two ranges.

Table F.1: Relationship between political discretion and corruption

	Low political discretion	Middle political discretion	High political discretion
Agree corruption	37.2	45.7	47.9
Disagree corruption	62.8	54.3	52.1
Total	100.0%	100.0%	100.0%
# bureaucrats	42	558	264
# districts	4	52	24

Notes: The middle category includes districts where bureaucrats' opinions are either varied (an above average standard deviation in bureaucrats' responses) and where the mean response lies between the 30th and 70th percentile. The results are similar if districts are classified according to the 40th and 60th percentile of political discretion; the share are bureaucrats who agree that there is corruption is 37.2 percent, 45.5 percent and 47.8 percent, respectively, across district type.

G Methodology for list experiment

Survey list experiments (originally called the "item count technique") aim to elicit truthful responses to sensitive behavior. A list experiment uses a control and treatment list. Each respondent sees one of these lists. The only difference between the two lists is the addition of a sensitive item on the treated list. Respondents are asked to report how many items (not which items) on the list are true; this shields the respondent from having to directly admit to engaging in the sensitive activity. In my case, the control group received a list of three non-sensitive items. The treatment group received a list of four items; the control list plus the sensitive item.

Critics of list experiments suggest that when an item is truly sensitive, respondents figure out what is going on and do not comply with the treatment. See, for example, Andrew Gelman (2014) <http://andrewgelman.com/2014/04/23/thinking-list-experiment-heres-list-reasons-think/>. To avoid making the treatment item overly sensitive, I used the word "misconduct" instead of "corruption." During the pilot of the survey, which I conducted with bureaucrats in four local governments, bureaucrats confirmed that they understood misconduct to be synonymous with corruption. All surveys were conducted in English, the national language in Ghana. To further induce compliance with the treatment, respondents inputted their responses on a cell phone. Concerns about the sensitivity of the item are also somewhat obviated by the fact that in this case the respondent is not the one engaging in the sensitive behavior. Instead, the respondent is reporting about sensitive behavior carried out by politicians.

I implemented the list experiment using cell phones, conducting the experiment using *Open Data Kit*. 458 bureaucrats were randomly assigned to the control list and 406 to the treatment list. Table G.1 demonstrates that the randomization procedure was successful; on average, participants are almost identical across a range of individual and district-level characteristics.

The wording of the question was as follows: *Please look at the list. [Which enumerators presented to respondents on a cell phone.] Please tell me how many of these are likely reasons for a bureaucrat to be transferred to work in another district? Don't tell me which ones, just indicate how many of them are likely reasons using the phone.*

Table G.2 displays estimates of respondent types. To calculate respondents' type, I use the following equations,⁴⁰

$$\begin{aligned}\pi_{y0} &= Pr(Y_i \leq Y | T_i = 1) - Pr(Y_i \leq Y - 1 | T_i = 0) \\ \pi_{y1} &= Pr(Y_i \leq Y | T_i = 0) - Pr(Y_i \leq Y - 1 | T_i = 1).\end{aligned}$$

Y_i is individual i 's response, y is the total number of affirmative control items, 0 is a negative response to the sensitive item, and 1 is a positive response to the sensitive item. T_i indicates the treatment status of each respondent, where 1 indicates being in the treatment group, and 0 in the control group.

⁴⁰These equations can be found on page 52 of Blair and Imai (2012).

Table G.1: Balance table reporting mean values in control and treatment groups

	Control	Treatment	Difference	P-Value
<i>Bureaucrat variables</i>				
Age	43.23	43.82	0.59	0.37
Gender	0.87	0.88	0.01	0.66
Masters	0.38	0.40	0.02	0.48
Time at current district	3.36	3.26	-0.10	0.65
Member of tender committee	0.35	0.41	0.06	0.10
Years in service	12.53	14.12	1.58	0.02
Hired after exam	0.41	0.42	0.01	0.76
<i>District variables</i>				
DCE ran in 2015	0.40	0.38	-0.02	0.64
District population	91,731.90	95,553.42	3,821.52	0.10
Local GDP (nightlights)	5.92	5.73	-0.19	0.50
Mining revenue	0.08	0.09	0.01	0.43

Notes: Table G.1 displays the mean values of covariates for respondents in both the treatment and control groups. The unit of analysis is individual bureaucrats. 458 bureaucrats were randomly assigned the control list and 406 the treatment list ($N = 864$).

Table G.2: Estimated respondent types for list experiment

y value	Control (Freq.)	Treatment (Freq.)	π_{y0} (%)	π_{y1} (%)
1	130	74	18.23	10.16
2	238	138	23.83	28.13
3	90	116	0.43	19.21
Total (%)			42.49	57.50
N	458	406		

Notes: Table G.2 displays the frequency of responses for individuals in both the treatment and control groups. In the table, y is the total number of affirmative answers to the control items. 1 indicates an affirmative response to the sensitive item, and 0 indicates a negative response to the sensitive item. N includes those in the treatment group whose response, Y_i , was 4 ($N=78$).