

The Geography of Accountability

by

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Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the Department of Political Science
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ABSTRACT

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1

Introduction

Geography affects who governs, how much they control, and how much they deliver within their territories. The relevant characteristics of place can be visible at a glance, as with ruggedness, but they may take more analysis to distinguish: a place's political history, its present-day electoral boundaries, or its relationship with its neighbors can all be sources of geographic influence on political outcomes.

Political geography can thus be widely applied. It can refer to contemporary subnational boundaries, as in work on electoral geography, spatial distribution of population, representation, or the effects of electoral competitiveness on a range of outcomes.

Work on civil conflict has strong geographic elements, both within and across states. Local economic conditions, terrain ruggedness, and other geographic factors can help to predict where, within a country's boundaries, civil conflict will erupt. Cross-sectional analysis of civil conflict takes into account the potential contagion, between neighboring states, of domestic unrest (Ward et al., 2013).

Political geography is also integral to much historical work. Whatever mechanism transmits previous local conditions to present-day local outcomes, it happens in the

medium of place. Examples abound. Subnational variation in the organization of colonial or precolonial governments is associated with land tenure in India (Goldstein and Udry, 2008), extreme poverty in Peru (Dell, 2012), public goods provision in Uganda (Gennaioli and Rainer, 2007), and economic development across Africa (Michalopoulos and Papaioannou, 2013, 2011).

Natural elements of geography can also have profound historical and political effects. Rugged terrain in Africa, for instance, is believed to have provided protection from the slave trade, preventing the brutal destruction of local communities and long-standing negative effects on local trust (Nunn and Puga, 2010). And the high ecological diversity in some environments prompted long-distance trade within them and encouraged the formation of centralized governments (Fenske, 2012).

A growing body of cross-country research suggests that long histories of exposure to the state are associated with better economic performance at the national (Bockstette et al., 2002) and local level (Pierskalla et al., 2016). There is wide variation in that exposure to the state, in part because governments could not project their power indefinitely. To this day, governments are unable to project uniform power over their territory. States vary considerably in their domestic sovereignty: their ability to implement policy (Krasner and Risse, 2014) and to control violence (Villarreal, 2004) across their territories.

In peripheral areas, in the place of the state, there are often non-state actors organizing communities and providing public goods (Börzel and Risse, 2015). They do not operate completely independently from the state, but are permitted to exist because they offer something, usually votes, in return. These actors comprise a wide variety of categories. They include, for example, paramilitaries in Columbia (Acemoglu et al., 2013), rural agrarian authorities in Mexico (Fox, 2008), and elites ruling autocratic enclaves in Argentina (Gervasoni, 2010). These actors are a consequence of weak states, but they also contribute to territorial variation in the quality

of democratic institutions (Fox, 2008).

In this dissertation, I approach accountability through the lens of state weakness and distance in sub-Saharan Africa. I present three papers, each exploring a situation in which the accountability relationship between citizens and the formal government is tenuous. In the first, this tenuous relationship is due to the role of traditional authorities as middlemen. These traditional authorities, derived from precolonial structures, are influential today because colonial authorities did not have the power to project over distance without them. In the two latter papers, I examine the present-day role of distance in conditioning voters' responsiveness to government performance, first in subnational governments in Ghana, then for elected officials at multiple levels across sixteen countries.

In the first chapter, I examine the roles of chiefs in electoral accountability. An artifact of state weakness, chiefs are unelected non-state actors with claims to precolonial government lineage. They provide varying degrees of coordination in their communities, and operate in parallel to state authorities. Chiefs' authority is territorially defined. Though their jurisdictions are overlapping with those of the formal government, their role in the geography of public service provision is pronounced.

Anecdotal evidence and longstanding conjecture has suggested that chiefs serve as vote brokers, extracting personal rents from politicians in exchange for delivering their community members' votes. If politicians mobilize votes this way to the exclusion of responding to their constituents' needs, then accountability breaks down.

Other evidence suggests that chiefs can serve as development brokers for their communities, augmenting the voice of the community in requesting public goods, and assisting formal politicians in delivering them. Baldwin (2012) shows that connections between a chief and his member of parliament raise the chieftaincy's probability of receiving state development projects in Zambia. Using a combination of elite surveys and interviews with rural voters, she argues that the chief in the position of

development broker serves the interests of voters and politicians as well as chiefs. In this telling, members of parliament view chief-facilitated development as a way of mobilizing political support. Voters vote with the chief when he can deliver public services, and also heed his requests for involvement in the implementation of development projects.

I evaluate these two models of voter-chief interaction using nuanced survey data in Ghana. I seek to identify the conditions under which chiefs engage in development brokerage and/or in vote buying. I use a list experiment to elicit truthful responses to the incidence of vote-buying behavior among individuals, and model vote-buying behavior as a function of their relationship with and impressions of the chief.

In Chapters 3 and 4, I consider the extent to which voters' evaluations of elected officials depend on government performance. My use of approval of elected officials as the outcome variable has several advantages over alternative measures. One type of measure is perceived accountability (Escobar-Lemmon and Ross, 2014), such as a belief that democracy works, or that elections ensure that Members of Parliament reflect the views of voters.

In unconsolidated democracies, these attitudinal measures of institutional legitimacy are highly influenced by the success of the respondent's preferred party in the last election (Bratton, 2013). Other works eschew voter attitudes and attributes. Some use, as evidence for accountability, the ability to predict both informational and economic outcomes with the same explanatory variable (Campante and Do, 2014).

My analysis carves a middle path between the credulous interpretation of voters' opinions on accountability and ignoring their views on governance. I link voters' approval of government officials with their experience of government performance. My approach is similar to that of de Kadt and Lieberman (2015), which tracks the relationship between service provision and voting in South Africa. Accountability,

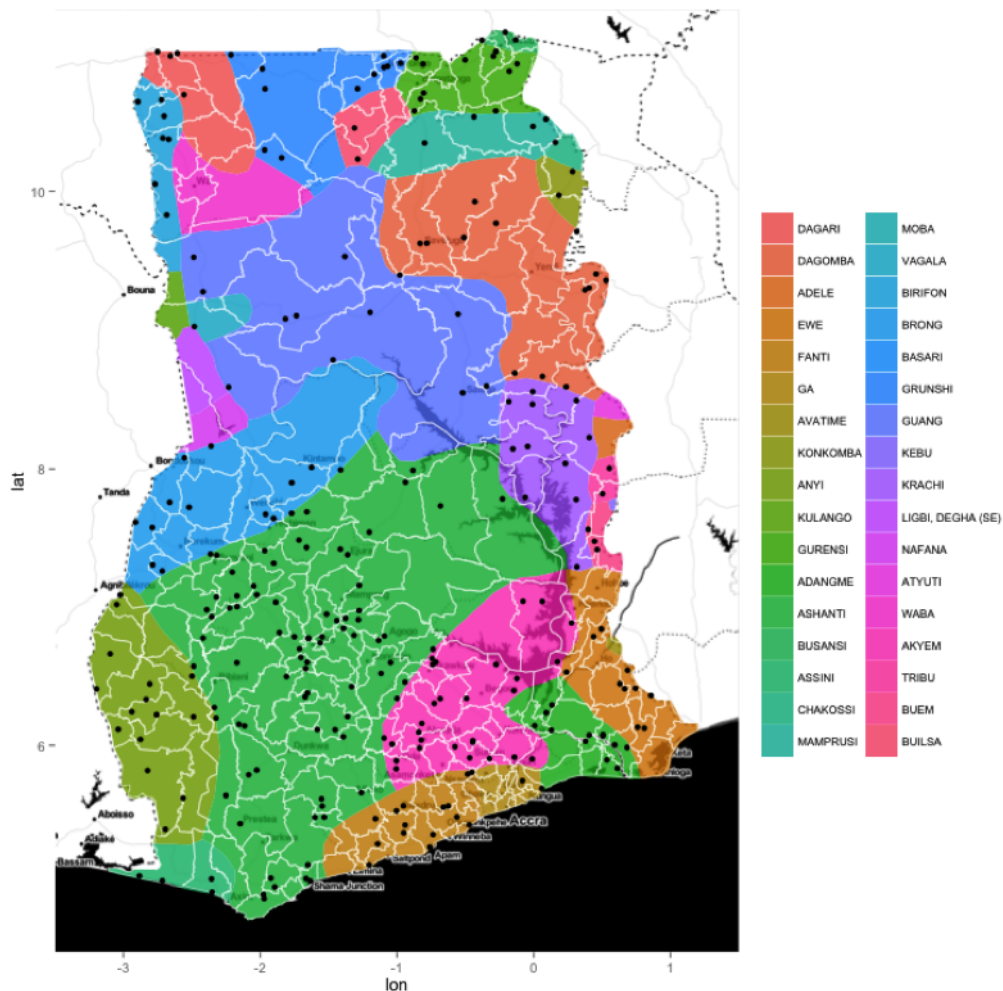


FIGURE 1.1: Historical Traditional Authority and 2014 Survey Locations in Ghana. Tribal homelands in Ghana derived from Murdock (1959). District borders are shown in white, and survey enumeration areas are shown in black.

in their view, is the extent to which increased service provision increases electoral returns for the incumbent. My outcome variable — individuals' approval of the incumbent — is a narrower, more sensitive measure of voter responsiveness than vote choice.

Voters make vote choices for reasons unrelated to satisfaction with the incumbent. In places with little electoral competition, voters may not have another option. Strategic considerations lead some voters in sub-Saharan Africa to vote for the in-

cumbent because they expect the incumbent will win, and do not want to be punished post-election for not having supported the incumbent (Bratton, 2013).

While these influences on vote choice present a problem for accountability, they are distinct from the concept I am investigating: the degree to which observed outcomes and perceptions influence satisfaction with the responsible representative. If poor performance diminishes satisfaction with the incumbent, even if it is not sufficient to drive satisfaction beneath a reelection threshold, I am able to capture its effect. This does not encompass the whole of the accountability picture, which in electoral situations links the threat of sanction at the polls with better government performance (Ashworth, 2012), but it is a critical component. Without diminished satisfaction for poor performance, no sanctioning will occur, and responsiveness to voters' needs will not be incentivized. This voter-centered measure thus captures a crucial element of accountability, without which accountability is impossible. Voter responsiveness is fundamental.

Although many obstacles to good governance are exacerbated by distance, physical proximity to the seat of government it has largely been missing from empirical analysis of distributional politics.

Building on the spatial logic of theories of urban bias, and incorporating the obstacles to responsiveness in electoral contexts, I argue that the extent to which voters hold their elected officials accountable is declining in distance from the seat of government.

A government systematically favoring urban interests over rural ones due to the outsized political influence of urban residents. The logic of this urban bias is that protests are more likely to occur where the costs of coordinating collective action (e.g. distance) are low (Olson, 1965). Cities thus have higher potential to initiate collective action that is economically or politically costly to the government. To ensure political survival, the government subsidizes urban residents at the expense

of rural ones (Bates, 1981). As originally identified, this bias takes the form of national price controls on food, which favors urban consumers over rural agricultural producers (Lipton, 1977; Bates, 1981). Bias can also be more direct, as in differences in government spending on public goods for the urban or rural sectors (Pierskalla, 2012), or in higher levels of actual service provision in urban areas over rural ones (e.g. Bezemer and Headey, 2008).

In Chapter 3, I investigate how distance mediates the relationship between citizen and subnational governments in Ghana. I propose that decentralized governments have a subnational capital bias. I expect district resources to be concentrated near the capital because the costs of holding governments accountable over distance are too high, and allow capture by local elites.

In addition, I argue that citizens located further from the capital will be less prone to holding governments responsible for public goods provision and curbing corruption. I evaluate these expectations using geocoded household-level survey data from 140 districts in Ghana.

In Chapter 4, I seek to explain *why* voter responsiveness would decline in distance from centers of power. Using newly geocoded data on sixteen African countries, I first test whether gradients in service delivery and accountability exist. I then test three mechanisms that I expect to be correlated with distance: information about political matters, expectations of government capacity, and norms of deference to authority. Because distance increases the costs of communication and monitoring, distant citizens will be less informed about their elected officials' activities, and have lower expectations of the government as a whole. This limits their ability to select for good representatives, and to sanction poor government performance.

Findings

In Chapter 2, I find that where chiefs operate in one of their more celebrated roles — liaising with community members — they are more likely to facilitate behaviors that undermine democratic accountability. The probability of an individual engaging in vote-buying behavior is strongly related to personal engagement with chiefs. Those who feel personally connected to the chiefs, who would go to the chief first with development concerns, are more likely to have exchanged their vote for promises of individual particularized benefit. By contrast, assessments of the chiefs' political influence — their ability to bring development projects to the community — are not meaningfully associated with vote buying.

I present evidence of two sources of broker influence, with different mobilization strategies and different distributive effects. Both political influence and personal ties to the community affect traditional authorities' efficacy as brokers. The source of their ties affects the avenues by which they mobilize votes. A chief's political influence encourages vote mobilization with the promise, either implicit or explicit, of club goods coming to the community. A chief's strong personal ties in the community, meanwhile, facilitate individual-level exchanges of private goods for votes. The two mobilization strategies are not mutually exclusive phenomena, but they have distinct effects. Club goods add a community benefit, and individual-level exchanges bypass electoral accountability. This has implications for which politicians are held accountable, and which communities attract state investment.

The aim of Chapter 3 is to better understand the relationship between spatial inequality in public services, proximity to capitals, and government responsiveness at the subnational level. To understand this relationship, we need to examine not only how location affects public goods provision but also where, and under what conditions, those services affect citizen evaluations of government.

The evidence I present in this chapter indicates that proximity to district capitals plays a significant role in access to public goods. Using nuanced, geocoded measures of access to public services in 140 distinct subnational units in Ghana, I show that for residents of outlying communities, water, schools, and public sanitation are less accessible and of poorer quality. This demonstrates a clear pattern of capital-proximity bias at the district level.

I also find that remote citizens' evaluations of the District Assembly representatives are not contingent on performance on key responsibilities of the District Assembly: public service provision and corruption prevention. The result is that they may be less able to generate political pressure for greater public service access and better government oversight.

In Chapter 4, I demonstrate that access to core public services deteriorates in distance from national capitals, from cities, and from the seats of district governments.

I then demonstrate where, and under what conditions, those services affect citizen evaluations of government. I find that distance from national capitals is associated with lower sensitivity to performance in individuals' evaluations of government officials. In areas distant from national capitals, voter responsiveness to service provision is muted: poor access to public services does not lead to dissatisfaction with their elected officials. These findings are robust to the inclusion of a number of geographic and individual-level covariates. Third, I demonstrate the resilience of the geographic influence on accountability, even when taking into consideration standard accountability mechanisms.

2

When Chiefs Buy Votes

Across national territories, especially in remote areas, the primary governing force is that of traditional authority. These adaptations of pre-colonial governance are still relevant, to local communities and to the national governments whose territory now encompasses them. This is especially true in rural and outlying areas (Mamdani, 1996; Boone, 2003). Gennaioli and Rainer (2006) show that African institutions are so weak, so unable to penetrate provincial government, that local governance quality is determined by characteristics of precolonial government.

Central to these traditional structures in sub-Saharan Africa are chiefs.¹ They carry out many day-to-day government actions. In many areas, chiefs perform critical governance activities: maintaining order, solving disputes, and serving as a conduit of information between the community and formal government officials. The reason they have this role is that the national, formal government cannot project control across its territory.

¹ I use the terms traditional authority and customary governance interchangeably to refer to chiefs. While chiefs draw their claims to authority from tradition, traditional structures are not static. The kind of power the chiefs hold, and even claims as to who can hold it, have been reshaped during the precolonial, colonial, and post-independence eras.

As such, chiefs are like other subnational actors operating within a national structure, that the national government tolerates but does not control (Gibson, 2006). They are permitted to exist because they offer something, usually votes, in return. These actors comprise a wide variety of categories. They include, for example, paramilitaries in Columbia (Acemoglu et al., 2013), rural agrarian authorities in Mexico (Fox, 2008), and elites ruling autocratic enclaves in Argentina (Gervasoni, 2010).

Where formal government structures are weak, practical considerations drive governments to collaborate with local actors, and in some cases cede responsibilities to them. In sub-Saharan Africa, chiefs are those actors. They operate within a structure that the national government not only tolerates, but condones. They can be integrated into the structure of the national government, as in Sierra Leone, for example, where traditional paramountcies are a unit of subnational governance. Their governance can run parallel to formal government structure.

Chiefs play a critical role in the level of government their communities reach. The influence of the chief can override other consideration. For example, in the Ashanti kingdom, the position of chief in ethnic governance hierarchy predicts village-level development outcomes for the village more than village-specific characteristics (McCaskie, 2000). Chiefs vary in the degree to which they represent the interests of their communities (Ribot, 1999), and their sense of accountability to them (Larson et al., 2010). Without this accountability, chiefs can be extractive and harmful to local development (Acemoglu et al., 2014). This mixed reputation has lead to debate among development aid practitioners on whether to work with, or around, traditional leadership.

There is a long history of using chiefs to control territory, beginning in the colonial era. In the colonial period, traditional authorities in some areas were co-opted by the ruling government (Englebert, 2009). The social infrastructure chiefs have enables

them to assist political parties in purchasing votes (Stokes, 2005) or in purchasing turnout (Nichter, 2008).

Though their roles are officially non-partisan, chiefs make public promises about vote delivery to politicians, and make open endorsement of candidates. In advance of the national elections in the December 2016, news reports were rife with traditional authorities' announcements on political matters. For example, the Mpobi Zongo Chief, Alhaji Salifu Mumuni, said he and his team from the Zongo had switched parties because they were disappointed with the underdevelopment in their communities (Ghana Kasa, 2016c). The Awoamefia of the Anlo state threatened to leave the coalition with the National Democratic Party, stating, "We do not seem to be receiving good dividends from the partnership we have with the NDC so far" (Ghana Kasa, 2016b). And the paramount chief of the Aflao traditional area effectively solicited bids from both parties:

"looking at the nature of my people, I have the votes, I have the people, I have the numbers. Aflao is a beautiful lady that I am putting on the table for handsome men like you to come and take home. I will never hide my beautiful queen. If the next party should come tomorrow, I will still put beautiful queen on the table" (Ghana Kasa, 2016a).

Chiefs have a visible role in elections: taking public positions, referencing development issues, and highlighting their roles as vote brokers.

There are two main frameworks for understanding the role of chiefs in democratic elections. One view holds that chiefs serve as vote brokers, using clientelist offers in their communities to generate political support for a particular candidate in democratic elections (e.g. Bratton and van de Walle, 1994). Community votes are bought with the promise of individual-level favors. But recent work suggests an alternate view: that chiefs, motivated by long-term interests in their communities, use their

political connections to bring public works to communities (Baldwin, 2012). The literature contains evidence for both practices.

The question, then, is when chiefs buy votes. This question is important because chiefs perform critical governance activities throughout many African countries: managing land, solving disputes, and serving as a conduit of information between the community and formal government officials. Governments' reliance on chiefs is a sometimes-uneasy result of administrative weakness and political expediency in the post-independence state. That unelected chiefs may buy votes in formal democratic elections presents a potential threat to democratic integrity. Vote buying may also undermine pressures for service provision in some ethnically defined areas, creating socially isolated pockets of poverty. The configurations of traditional authority that could bring this about bear scrutiny.

Critical to both accounts of chieftaincy in formal politics are the ties that the chiefs have with politicians and with their community members. The profile of a development broker chief is one embedded in his community, and whose ties to the community are strong (e.g. Baldwin, 2015). But it is precisely these chiefs who are best suited to facilitate vote buying. Chiefs who are an everyday presence in their communities, and to whom community members turn with their problems, develop strong interpersonal ties with voters. These social ties can be especially useful in mobilizing votes using a vote-buying exchange. I argue that community members' *personal engagement* with them gives chiefs an inward-facing power: one that allows them to induce and monitor compliance in vote-buying exchanges in their communities. Chiefs with strong ties to politicians in the formal government, however, may have better access to state resources. This *political influence* is an outward-facing power: one that enables chiefs to bring development to their communities. These two aspects of chief strength are not mutually exclusive. To the extent that delivering votes can earn one political favor, the results of personal engagement can lead

to political influence. But political influence outside of the community and personal engagement within it are conceptually and empirically distinct, and it is *personal engagement* within the community that facilitates vote buying.

To estimate the effect of a chief’s personal engagement on vote buying, I use a list experiment from a survey of 2,998 households in 140 districts across Ghana. The Ghanaian setting is useful to estimate chiefs’ involvement with vote buying because their role in government is officially sanctioned but explicitly apolitical. Chiefs in Ghana are members of 27 different traditional governance structures, and have varying levels of official recognition, connection to the government, and satisfaction among individuals. I show that more personal engagement with traditional governance significantly raises the probability of a voter engaging in a vote-buying exchange. Using a nonlinear least squares estimator to analyze a list experiment on electoral behavior, I find robust evidence that personal engagement with chiefs is associated with significantly higher levels of vote-buying. This finding is robust to consideration of the chief’s political influence, as well as to potential design effects, ceiling effects, and floor effects of the list experiment.

This paper proceeds as follows. The next section discusses the role of chiefs as middlemen in electoral politics. Section 2.2 introduces measures for two distinct aspects of chief strength: *political influence* outside of the community and *personal engagement* within it, and demonstrates their diverging roles in community development. Section 2.3 introduces a measure of vote buying. It then describes the estimation strategy for identifying the effect of personal engagement with the chief on the probability of engaging in a vote-buying exchange. Sections 2.4 and 2.5 present the main results and a discussion of robustness.

2.1 Chiefs as middlemen

Independence movements and post-colonial governments sought to reduce the power of traditional authorities in Africa, seeing chiefs as “decentralized despots” (Mamdani, 1996) whose influence should wane in a modern bureaucratic state. But traditional governance has enjoyed a resurgence in recent years. In the absence of an effective state presence at the local level, chiefs can serve as public administration within the community, and as liaison to the outside world. Their roles within their communities - some sanctioned by formal governments, some not - are many: chiefs arbitrate disputes, organize collective labor, and manage land rights and use. They also interface with the formal government, informing community members of political and public health issues at the state’s behest, and lobbying the government for development projects in their communities (Lindberg, 2010).

Because of their accessibility, their authority is often more relevant to villagers than that of any formal government official (Owusu, 1992, 1996; LiPuma and Koelble, 2009), and public support for traditional chiefs is strong in many areas across Africa (Logan, 2009, 2014).

As local elites with customary authority, strong chiefs have long been suspected of inducing community members support to a particular party (e.g. Boone, 2014; Lemarchand, 1972; Ferree, 2010). In contexts where party grassroots organizations are weak, chiefs are often the only local-level figures with such potential. Recent research has begun to provide nuanced empirical support for this contention, demonstrating that variation in the strength of customary leaders has electoral and distributional consequences (Baldwin, 2015; Gottlieb and Larreguy, 2016; Koter, 2013a).

Gottlieb and Larreguy (2016) show that in Senegal, politicians chose to target communities where brokers have demonstrated a high capacity to coordinate votes. They argue that where local ethnic and religious leaders are strong, they can coor-

minate voters to support the party that has provided club goods in their community. Communities without strong brokers lack the capacity to reward parties for club goods with sufficient electoral support, and thus attract less investment in club goods.

Chiefs may also influence political outcomes without explicit vote coordination. Baldwin (2015) argues that chiefs improve the performance of government at the local level by co-producing public goods with formal politicians. Chiefs coordinate the communal labor, and often local fundraising, that help to implement development projects. Without these inputs, government costs of implementing development projects can be prohibitive. The development broker model suggests that what stops politicians in the formal government from delivering development projects is not lack of incentive, but lack of capacity: “In communities where state institutions are largely absent, the challenge of ensuring the state implements proposed policy is likely to be an equal or bigger challenge than ensuring elections result in political leaders whose interests align with the electorate” (Baldwin, 2015). Chiefs’ connections to politicians in the formal government can facilitate the implementation of development projects, and are associated with better public goods outcomes (Baldwin, 2012). If a local chief has more connections with one party than with another, local development will benefit more if the party connected to the chief is in power. Chiefs influence vote choice indirectly, by changing voters’ expectations of the public goods each party might deliver.

Broker strength determines the level of benefit each community can extract from political parties, but the source of that strength varies. In the development broker model of chiefs’ political behavior, variation in broker strength comes from variation in chiefs’ relationships with politicians. In other accounts of brokerage in sub-Saharan Africa, variation in leaders’ strength derives from how much sway leaders have over community members. Deference to local leaders, rather than strategic calculation,

drives vote choice. For instance, Koter (2013a) emphasizes that a broker's efficacy is determined by the strength of ties to his community: voters who depend on and trust their local leaders will be more likely to vote according to the leader's wishes. Lemarchand (1972) argues that broker strength depends on how effectively customary governance structures have called on tradition to reinforce loyalty.

It is intuitive that for a broker between community members and politicians, ties to politicians and ties to community members both affect one's efficacy. This paper argues that the strength of the brokers' ties to each affects *the means* by which they mobilize voters for elections. A chief's political influence encourages vote mobilization with the promise, either implicit or explicit, of club goods coming to the community. A chief's strong personal ties in the community, meanwhile, facilitate individual-level exchanges of private goods for votes.

Chiefs who are an everyday presence in their communities, and to whom community members turn with their problems, develop strong interpersonal ties with voters. These social ties can be especially useful in mobilizing votes for a vote-buying exchange. Repeated, face to face interactions are stressed by many accounts of clientelism (e.g. Stokes, 2005), because they provide tools brokers can use to overcome commitment problems in vote buying.

Personal knowledge of community members allows brokers to target benefits. They can target party loyalists (Stokes et al., 2013), and individuals with norms of reciprocity (Finan and Schechter, 2012; Lawson and Greene, 2014), because they are more likely to follow through on their part of the exchange. Strong local ties enhance chiefs' ability to monitor defectors (Vicente, 2014; Stokes, 2007; Nichter, 2008). This monitoring is critical: cash distributed prior to elections has little effect on electoral outcomes in situations with low monitoring (Guardado and Wantchekon, 2014). But if goods or favors are to be delivered after the election, chiefs with strong community networks can withhold these goods from defectors. Politicians in Ghana have taken

advantage of chiefs' local networks, mobilizing voters "through local chiefs who were provided with Toyota Land Cruisers and financial assistance to help deliver the vote" (Kelly and Bening, 2011).

A chief's political influence can derive from kinship ties with politicians and public servants, from education, political skill, or a combination thereof. But there is some evidence that there are trade-offs between political influence outside of the chief's community, and maintaining individual ties within it. Political activism takes chiefs away from their villages (Muriaas, 2009). Regarding a paramount chief who has acquired seats on the boards of directors of several local institutions, as well as in the national house of chiefs, Lentz (1998) writes, "after attaining ever higher and more lucrative positions in the political hierarchy, he spends as much time in Accra and Kumasi as in his village." Traveling may impede his ability to monitor his village, but there are opportunity costs (in terms of attendance fees, networking opportunities, and potential access to state resources) to staying at home. In addition, if a chief's power is sufficiently entrenched, he may not need to perform constituency service (Acemoglu et al., 2014).

2.2 Personal Engagement and Political Influence: Two Dimensions of Traditional Authority

Chiefs have two main roles: organizing within their communities and interfacing outside of it. Chiefs are often the only linkage citizens have to the formal government (LiPuma and Koelble, 2009). By virtue of their presence in communities, chiefs accumulate local knowledge, and are aware of the needs of the community (Oomen, 2000; Dionne, 2010). Chiefs thus have inward-facing and outward-facing linkages. Each type of linkage is, potentially, a source of political power. To understand the political role of chiefs, I conceive of inward-facing and outward-facing linkages separately.

I construct measures of two distinct dimensions of traditional authority. Each represents one side of the chief's job description: interfacing with the community, or with powerful outsiders on the community's behalf.

My evidence draws from a household survey that was conducted in 140 districts between August and October 2014. The surveys were of 2,998 households, designed and deployed as part of the baseline data collection associated with USAIDs "Ghana - Social Accountability Mechanisms" governance project. I create measures of chiefs' political influence and their community ties using six survey questions on their role in development.

2.2.1 Political influence of chiefs

To capture the political influence of chiefs, I use survey items on the extent to which chiefs affect the location and maintenance of development projects. This captures the main tangible role of the chieftaincy: influence with politicians and assistance in the provision of club goods.

I create a measure for the political influence of chiefs by conducting principal components analysis of community members' responses to the following questions on development projects:

- "How much influence do you think chiefs have when it comes to where development projects are located?"
- "When you think specifically about the quality of local school buildings, how much responsibility do you think the local chief has?"
- "How important is the relationship between your local chief and political parties in order to get development projects in your community?"

These capture the extent to which the respondent believes the chief plays an integral role in bringing development projects to his community.

2.2.2 Chiefs' ties within the community

To elicit the level of community members' personal engagement with chiefs, I analyze a series of questions asking community members which authority figure they would approach if they wanted to accomplish a development goal or to solve a development problem. These, like the items discussed above, are relevant to public goods location and quality. However, whereas the above items reflect respondents' beliefs regarding the chiefs' overall role in development, these items bear on the respondent's personal choice.

The first question relates to the respondent's most salient problem with public services and infrastructure. The respondent is asked, "Thinking of your first priority [for the district assembly to spend its resources on]², if you wanted the district to work on that priority starting today, who is the first person in a formal position of authority to whom you would turn for help? And the second person?"³ Twenty-nine percent of respondents reported that they would turn to a village chief or paramount chief first or second.

In the second scenario, respondents are presented with a vignette about perceived inequality in the distribution of development projects across the district. "Emmanuel's district government has recently conducted many development projects. These projects favor some district residents far more than others, and some district residents have not benefited from district development projects at all." Respondents are then asked the following question: "If you were in Emmanuel's position, who would be the first person you would try to talk to about trying to change this situation?" Nineteen percent of respondents reported that they would turn to a village chief or paramount chief first.

² The infrastructure and public services options were: local roads, water supply, sewage, sanitation, education, health services, local policing, and facilities in your main marketplace.

³ Summary statistics for the responses are in the appendix.

For the third question, respondents are presented with a vignette about construction delays in development projects across the district. “[Samuel]’s district government began the construction of a school a year ago. Construction of the building was very slow, and no one has been seen working on it for six months.” Respondents are then asked, “If you were in Samuel’s position, who would be the first person you would try talk to about trying to change this situation?” For this vignette, as in the vignette on the distribution of development projects, nineteen percent of respondents reported that they would turn to a village chief or paramount chief first.

These questions capture whether, for each community member, traditional leaders have primacy among political actors - their interpersonal ties to the community member.

2.2.3 Chief political influence and personal engagement in the community

The fundamental difference between chief personal engagement and chief political influence is the direction in which the chief exerts his influence. Chiefs’ *personal engagement* reflects perceptions of chiefs’ strength and accessibility within the community - a measure of the direct personal relevance of the chief to the individual. Chiefs’ *political influence* reflects perceptions of the chief’s sway in a broader political context. Thus personal engagement measures perceptions of *inward-facing* power, and political influence reflects perceptions of *outward-facing* power.

One might expect that because the role of middleman requires power both within a community and with a broader political system, that the two aspects of chief strength would vary in tandem. The more influential the broker is outside of the community, in this line of reasoning, the more valuable he is to those within it. But there can also be trade-offs between the inward and outward elements of chief strength - in the allocation of the chief’s time, in his prestige, and in his approachability.

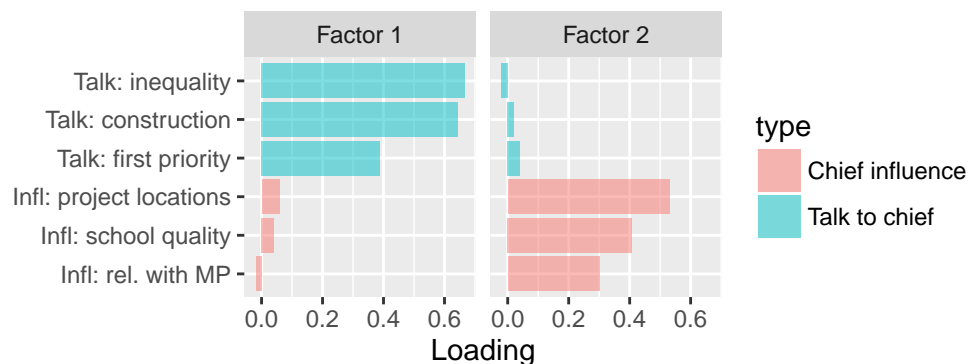


FIGURE 2.1: Factor analysis of six items involving chiefs and development.

To demonstrate the distinction between chief personal engagement and chief political influence, I conduct factor analysis on responses to the six questions on chiefs and development discussed above. Figure 2.1 plots the results. The items indicating that the individual would go to the chief for help with a development issue clearly load strongly on the first factor, and items reflecting the chief’s broader influence load strongly on the second factor. The plotted results are from factor analysis with varimax rotation conducted in R, but results are robust to different measures of correspondence, including using principal components analysis and using a polychoric correlation matrix to account for the binary nature of some of the items.

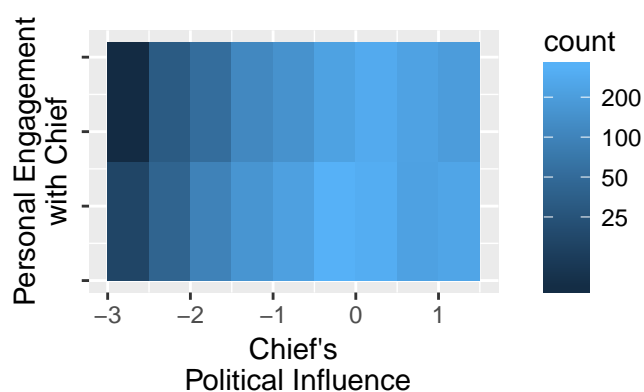


FIGURE 2.2: Joint density of chief personal engagement and chief political influence displays the slight positive correlation between the two. (For ease of presentation, the color gradient is log scaled.)

In the following analysis, I measure chief personal engagement as the sum of the indicators for whether an individual would discuss a particular development issue with a chief (ranging from 0 to 3), and as a binary indicator for whether internal ties are greater than zero. I construct an index variable of chief political influence using PCA on the three questions reflecting a chief's influence *outside* of his community. Figure 2.2 shows the joint density of these measures of chief personal engagement and chief political influence. Chiefs' intra-community ties and extra-community influence have only a slightly positive relationship (correlation coefficient is 0.04). There is considerable variation in assessments of chief political influence among individuals who would personally turn to the chief for help with development.

Chiefs' internal and external ties are not highly correlated, but they each represent part of the chief's job. Each enhances the status of chiefs among their community members. I show that political influence and personal engagement both earn approval for chiefs in their communities. Chiefs may be evaluated to be stronger on one dimension or another, or strong on both or neither. But neither dimension is associated with low popular opinion.

To demonstrate this, I estimate the effect of each influence on respondents' satisfaction with traditional authorities using linear mixed effects models with district random intercepts.⁴ The distribution of key covariates, by chief personal engagement, are shown in Figure 2.3.

I include an indicator for gender and age (centered and standardized). I also include a summary measure of the individual's assets, as a wealth index. I also include distance to Accra and to the district capital, the distance to the nearest city of 15,000 people or more, a community's urban/rural status. I also include indicators for ethnicity, designating the respondent as Ashanti-Akan, other Akan, or non-Akan.

I first estimate the effect of respondents' *personal engagement* with chiefs on their

⁴ This is estimated using maximum likelihood with the mixed command in Stata 13.1.

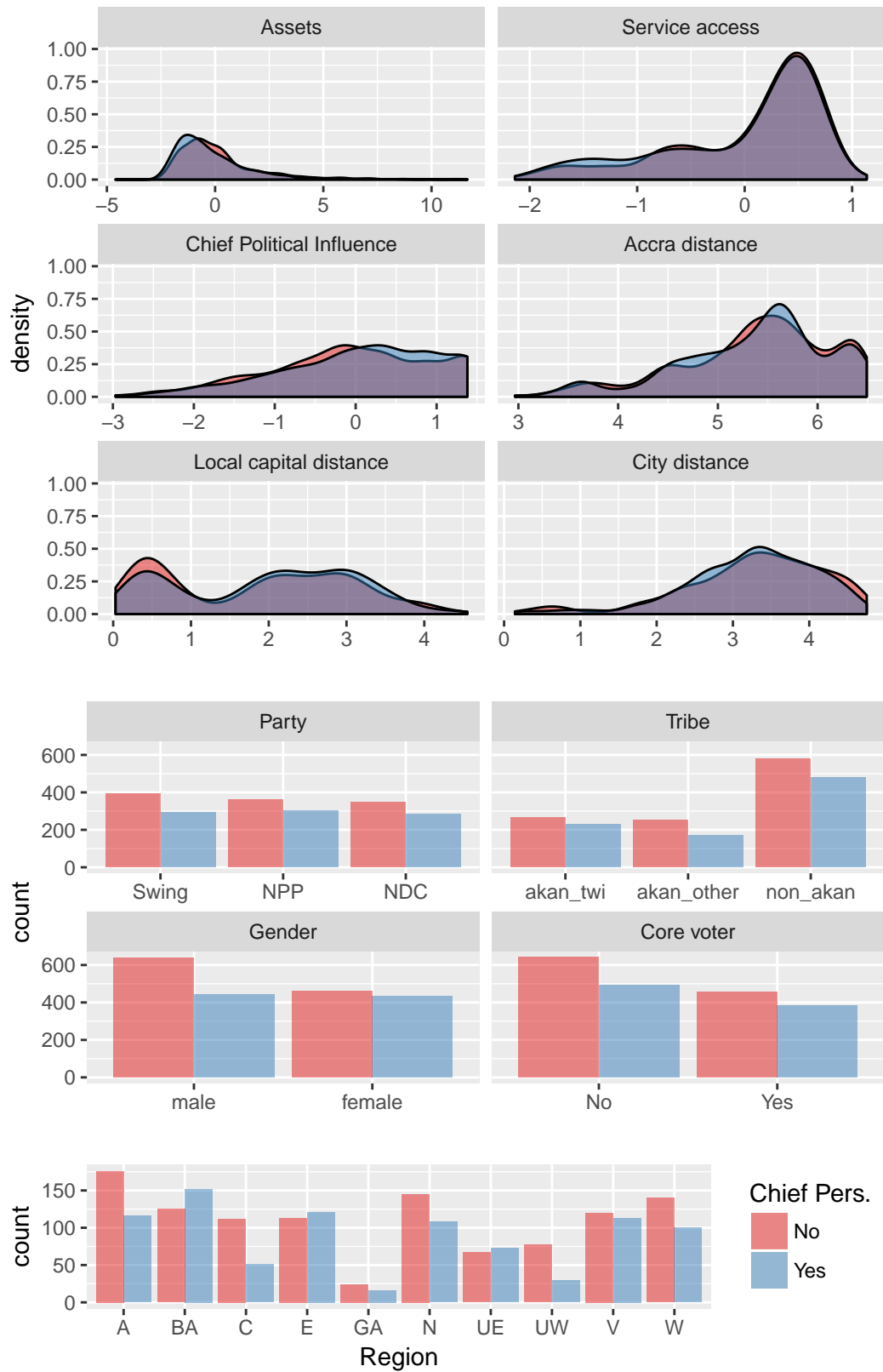


FIGURE 2.3: Demographics of sample, by personal engagement with the chief.

satisfaction with traditional authorities. The estimated coefficients on are presented in Column 1 of Table 2.1. Model 2 estimates the effect of beliefs about the chief's political influence on satisfaction with traditional authorities. Model 3 includes both methods of chiefly influence.

Across these models, chief political influence and chief personal engagement are associated with higher satisfaction with traditional authorities. Model 3 shows that both perceptions of chief political influence and perceptions of chief personal engagement are associated with higher levels of satisfaction with traditional authorities. Moving from 0 to 1 on internal ties yields a difference in satisfaction with the traditional ruler of .56 on a scale of 1 to 5, or an increase of approximately one-half of one standard deviation. The estimated effect of chief political influence on satisfaction with traditional authorities is positive, but is less than half that of chief personal engagement.

Local development outcomes are a major reason to study chiefs' roles in brokerage of development or of votes. If parties coordinate with chiefs to carry out vote-buying activities in lieu of improving government service delivery, then development in the community will suffer. While vote buying and service provision are not mutually exclusive mobilization strategies, if vote buying lowers the threshold of service delivery needed to secure votes, then it lowers elected officials' incentive to deliver. My argument that chief-community ties facilitate vote buying has observable implications for service delivery: service access should be lower for those who would talk to the chief about development, and higher for those who believe their chief to be politically powerful.

To capture access to services in a single summary measure, I use principal components analysis on the respondent's proximity to water, proximity to the nearest primary school, the quality of the local school, and access to a public toilet.

I estimate the effect of each dimension of chief strength types of on individuals'

access to services, using linear mixed effects models with district random intercepts.

I find that chiefs' internal and external ties have divergent relationships with critical development outcomes. Table 2.2 shows that while chief political influence has a positive estimated effect on service access in one's community, the estimated effects of chief personal engagement are negative. Column 1 shows the estimated coefficients for a model of service access that includes chief personal engagement as a predictor, but does not include chief political influence. Model 2 excludes chief personal engagement but includes chief political influence, and Model 3 includes both aspects of perceptions of chiefs. Across these models, chief political influence is associated with better access to services, and chief personal engagement is associated with worse access to services.

While both chief personal engagement and perceived influence of chiefs are associated with higher satisfaction with traditional authorities, Table 2.2 shows that only chief political influence is associated with better development outcomes. In the next section, I examine how these aspects of chiefs' rule affect their communities' engagement with the democratic process.

2.3 Estimating Vote-buying: Data and Specifications

Even in contexts where it is prevalent, vote-buying is often seen as morally objectionable (Wantchekon, 2003). If respondents are asked directly about a sensitive behavior, substantial underreporting is likely. To get around this issue, I analyze a list experiment on political behavior embedded in the GSAM-IE survey. Using a list experiment allows me to capture the extent of vote-buying without requiring individuals to admit to it directly. By dividing the sample into two groups, and only asking one group about vote-buying, I am able to estimate vote-buying frequency. A random number generator provided random assignment of respondents to treatment and control groups (the surveys were delivered on tablets programmed using

ODK). Treatment and control groups demonstrate balance across key covariates, as demonstrated in Table A.1.

All respondents are asked the following question: “People decide who to vote for based on many different considerations. I will read to you some of the reasons people have told us. Please tell me how many of these influenced your vote choice. Don’t tell me which ones, just tell me how many.” The control group was provided a list of three options. The treatment group was provided a list of four options: the three provided to the control group, and also the sensitive item of interest: “One party promising more favors to you or your family.”

Because respondents are instructed to give the total number of items on the list rather than answer each item separately, the incidence of vote-buying must be estimated indirectly. The typical way of analyzing the outcome is by calculating the mean response of the treatment group, and compare it to that of the control group. With random assignment, in expectation, the true prevalence of vote-buying is captured by the difference in means between treatment and control. A difference-in-means test on these data suggests 28% of respondents engage in vote-buying.

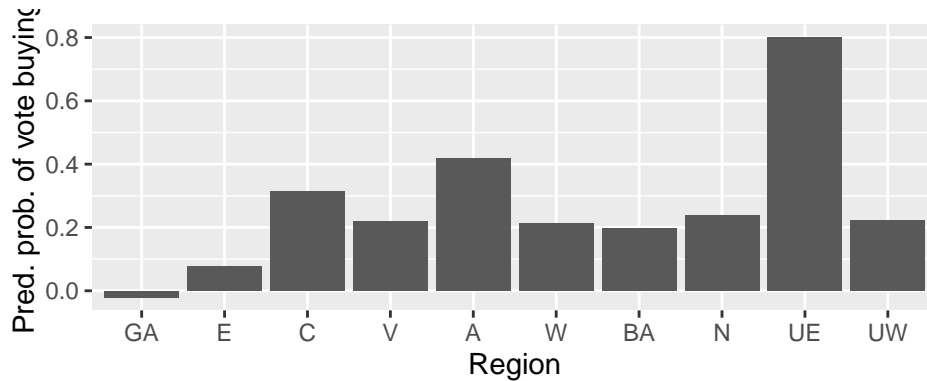


FIGURE 2.4: Prevalence of vote buying, by region. The proportion who respond ‘yes’ to the sensitive item is calculated as the difference between the treatment and control group in means responses to the list experiment.

This prevalence varies widely throughout the country. Figure 2.4 shows the estimated region-level prevalence of vote-buying. This is calculated using the region-level

difference in means of responses to the list experiment for respondents in treatment group (who were presented with the sensitive item) and control group (who were presented only non-sensitive items). The highest estimated prevalence of engaging in vote buying is in the Upper East region, with an estimated 80%, whereas the difference in means in Greater Accra is statistically indistinguishable from zero. To better understand the sources of variation in the extent of vote buying, I model the probability of vote-buying behavior as a function of individual and community characteristics in Section 2.3.1.

Table 2.1: Satisfaction with Traditional Authorities. Linear mixed effects models with district random intercepts.

	<i>Dependent variable:</i>			
	Satisfaction with Traditional Authorities			
	(1)	(2)	(3)	(4)
Chief Personal Engagement	0.17*** (0.05)		0.15*** (0.05)	0.16*** (0.05)
Chief Political Influence		0.45*** (0.09)	0.43*** (0.09)	0.46*** (0.08)
Other Akan	0.16* (0.10)	0.16 (0.10)	0.16* (0.10)	0.19** (0.09)
Non-Akan	0.32*** (0.08)	0.33*** (0.09)	0.33*** (0.08)	0.28*** (0.08)
Female	-0.01 (0.05)	0.01 (0.05)	-0.01 (0.05)	-0.01 (0.05)
Age	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Rural	0.20*** (0.05)	0.21*** (0.05)	0.20*** (0.05)	0.28*** (0.06)
Distance from district cap. (log)				-0.06*** (0.02)
District population density (log)				-0.03 (0.06)
Distance from Accra (log)				0.40*** (0.07)
Constant	2.66*** (0.14)	2.38*** (0.15)	2.35*** (0.15)	0.34 (0.60)
N	2878	2878	2878	2878

standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 2.2: Effect of chief influence on service access

	<i>Dependent variable: Service Access</i>			
	(1)	(2)	(3)	(4)
Chief Personal Engagement	-0.17*** (0.05)		-0.17*** (0.05)	-0.14*** (0.05)
Chief Political Influence		0.21** (0.09)	0.22*** (0.09)	0.25*** (0.08)
Other Akan	-0.04 (0.10)	-0.04 (0.10)	-0.04 (0.10)	-0.03 (0.10)
Non-Akan	-0.18* (0.10)	-0.18* (0.10)	-0.18* (0.10)	-0.13 (0.10)
Female	-0.00 (0.05)	-0.01 (0.05)	-0.00 (0.05)	-0.01 (0.05)
Age	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Rural	-1.37*** (0.05)	-1.38*** (0.05)	-1.37*** (0.05)	-0.96*** (0.06)
Distance from district cap. (log)				-0.25*** (0.02)
District population density (log)				0.73*** (0.15)
Constant	7.62*** (0.19)	7.43*** (0.20)	7.46*** (0.20)	4.21*** (0.70)
N	2878	2878	2878	2878
aic	10366	10369	10365	10245

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

2.3.1 Chiefs and Vote-buying

The standard way to analyze list experiments is to calculate the difference in the mean number of affirmative responses in the control group versus the treatment group. The difference in means represents the estimated prevalence of affirmative response to the sensitive item in the population. Using multivariate regression allows me to investigate how the probability of answering the sensitive question affirmatively varies as a function of respondents' characteristics and their assessments of traditional leaders (Imai, 2011). This approach has been demonstrated in Greene (2015). I show that chief personal engagement is associated with a substantive, statistically significant increase in the predicted probability of engaging in a vote-buying exchange. Cross-validation and placebo checks support the validity of the approach in Section 2.5.

To examine the relationship between engaging in vote buying and perceptions of the chief, I estimate the following equation:

$$Y_i = f(X_i, \gamma) + T_i g(X_i, \delta) + \epsilon_i$$

where Y_i is the observed response from respondent i , T_i is an indicator variable for whether respondent i is in the treatment group, X_i is a vector of covariates, and $E(\epsilon_i | X_i, T_i) = 0$. The expression $f(x, \gamma)$ represents the possibly nonlinear regression model for the conditional expectations of the the control items given the covariates, and $g(x, \delta)$ represents the same for the conditional expectation of the sensitive item, where $x \in X$. The expression (γ, δ) is a vector of unknown parameters. I estimate these two nonlinear least squares regressions (first for the control items, and then for the sensitive item) in a two-step process in the `ictreg` package in R (Blair and Imai, 2010). This estimator takes into account that $\hat{\gamma}$ is an estimate when calculating the errors, but it obtains consistent estimates regardless of the error specification (Imai, 2011).

Key demographic and political attributes of the respondents are included in X_i . I include an indicator for gender, because women may be likely to have a preference for public goods over clientelist offers (Wantchekon, 2003). I also include age (centered and standardized). I include an index of socio-economic status, and one measuring the individual's access to public services, to account for the diminishing marginal utility of material inducements as income and services rise. To control for political party affinity, I include an indicator for whether the respondent is a supporter of the political party that earned the most votes in that district in the 2012 presidential election. An individual who votes with his district in presidential elections is likely to have the same party affiliation as his DA representative and his MP. This core supporter is likely to be targeted with material inducements (Cox and McCubbins, 1986; Çarkolu and Aytaç, 2015).⁵

Many geographic factors may affect a campaign's decision on whether to buy votes, engage in other clientelist exchange, or campaign directly. Proximity to government may decrease the frequency of vote buying. If the campaign can offer government jobs in exchange for political support, the campaign may prefer it to vote buying: studies have shown job patronage to be more efficient than vote-buying because it is incentive compatible for the voter to elect the patron so that they get the job. Therefore I include distance to Accra and to the district capital.

The costs of campaigning in rural areas may drive an increase in particularistic distribution over political campaigns as vote mobilization. Thus I also include, in some models, a community's urban/rural status and distance to the nearest city of 15,000 people or more.

The crucial independent variable is the personal engagement with the chief. I begin with the binary operationalization of this measure.

⁵ The main results are robust to alternate specifications of partisan loyalty.

2.4 Results

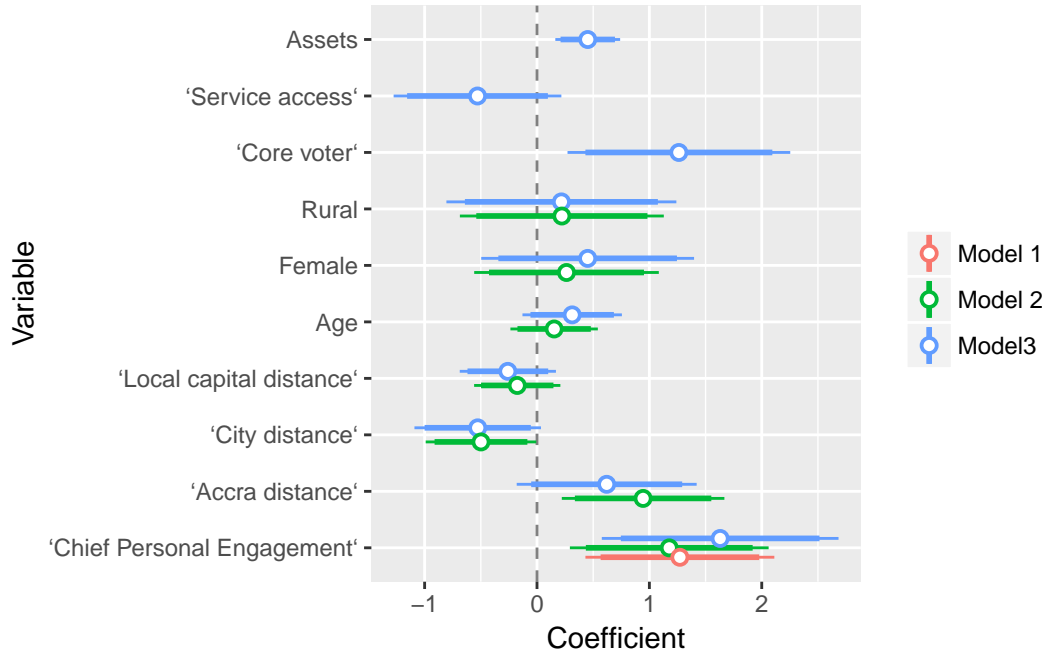


FIGURE 2.5: Baseline vote-buying models using an NLS estimator for list experiments. Estimated coefficients on the probability of answering affirmatively to sensitive item: “One party promising more favors to you or your family.” Voters who are inclined to talk to their chiefs are significantly more likely to have engaged in a vote-buying exchange. This is robust over a range of specifications including geographic and individual-level traits.

I find robust evidence that chief personal engagement has a large and significant positive association with vote buying. Figure 2.5 shows a coefficient plot for three basic models of the probability of responding in the affirmative to vote choice being influence by the sensitive item: “One party promising more favors to you or your family.” Model 1 serves as a baseline, modeling the effect of a binary measure of chief personal engagement on individuals’ probability of vote buying. Personal engagement with chiefs has a statistically significant positive effect of the probability of selling one’s vote. The effect is substantial: for a woman who is not a supporter of the majority party in her district, with other characteristics set at the sample mean, the predicted probability of engaging in vote buying if chief personal engagement

is 0 is 9.6%. With chief engagement set to 1, the predicted probability of vote-buying behavior is 35%. Figure 2.6 shows the distribution of predicted probabilities of engaging in vote buying for each individual, by their chief personal engagement.

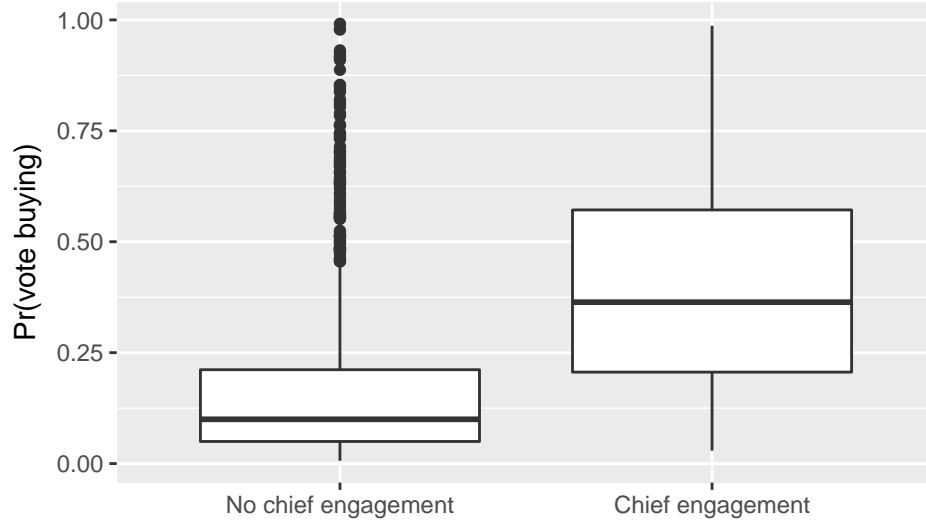


FIGURE 2.6: Box plots of predicted probability of each individual engaging in vote buying, by whether the respondent would go to the chief with assistance in development.

Model 2 includes key demographic and geographic controls: age, gender, and the community’s urban/rural status, distance to Accra, distance to the nearest city of 15,000 people or more, and distance to their district capital. The geographic covariates yield mixed results: while distance from Accra has a positive effect on the probability of vote buying, distance from cities has a negative coefficient, and distance to the district capital and urban/rural status are statistically indistinguishable from zero.

Model 3 includes political and economic attributes of the respondents: their support for the majority party in their district, their socioeconomic status, and their access to public services and infrastructure. It shows that being a supporter of the majority party in one’s district has a large and significant positive effect on engaging in vote buying. Those with better access to public services are estimated to be less

likely to engage in vote buying, although the coefficient is not significant at conventional levels. Surprisingly, the respondent's socioeconomic status is associated with slightly higher levels of vote buying. In all of these models, personal engagement with chiefs has a positive effect on the probability of selling one's vote that is significant at the 5% level.

I consider three potential confounding effects in these results: that *personal engagement* captures some of the effect of chief political influence, that those who engage with the chief may also be low-information voters, and that regional variation may drive the results. I control for each of these potential confounders. The estimated coefficients are shown in Figure 2.7.

Model 1 includes chief political influence. Model 2 includes two measures of low-information voters: how frequently the respondent consumes the news, and how important they say that politics are. Model 3 includes region fixed effects. The estimated effect of chief personal engagement on vote buying is robust to inclusion of region fixed effects, to the importance the respondent places on national politics, to the frequency of the respondent's news consumption, and the chief's political influence. The estimated effect of chief political influence on the probability of vote buying is negative, but is not significant at conventional levels except when including region fixed effects.

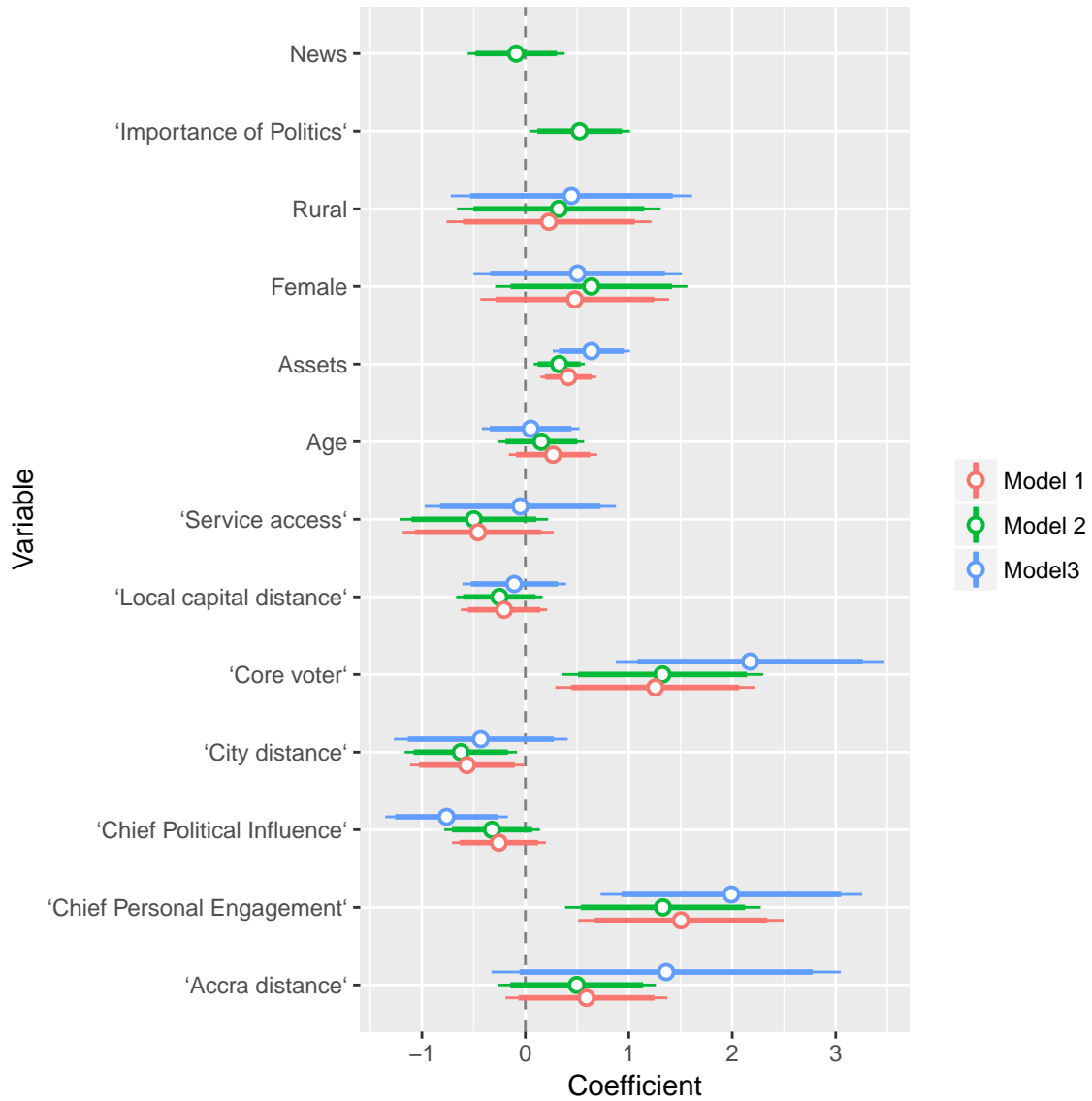


FIGURE 2.7: Additional Controls. Estimated coefficients for predictors of engaging in vote buying. The positive coefficient on *chief personal engagement* is robust to inclusion of *chief political influence* in model 1, measures to account for low-information voters in model 2, and region fixed effects in model 3.

2.5 Robustness

Using the non-linear least squares approach to estimation of sensitive behavior in list experiments is a two-stage process. In the first stage, coefficients for non-sensitive items are estimated by non-linear least squares regression of covariates on the re-

sponses of the control group. In the second, these estimates are used to predict the non-sensitive counts for the treated group. The difference between the predicted response and the actual response is then modeled using the same covariates: this results in estimates of their effects on the probability of responding in the affirmative to having engaged in vote buying. For this reason, it is critical that any error in prediction is independent of the true effect of the covariates on the non-sensitive items. Viable coefficient estimates in the second stage depend on the quality of coefficient estimates in the first stage.

Overfitting in the modeling of non-sensitive items presents a potential threat to estimates of the size of the coefficient for the sensitive item. In this list experiment, the non-sensitive items in this list experiment involve political participation. If, for example, older people are more likely to engage in politics in the general population, and the model estimated on the control group overestimates this effect (due to random noise in the control group), then the model's predictions of non-sensitive counts for older people in the treatment group will be too high. As a result, in the second stage, the difference between the reported count and the predicted non-sensitive counts will be artificially low. When these differences are modeled using the same covariates as those that predicted the non-sensitive counts, the coefficient on age will be artificially lowered.

To evaluate the method for potential overfitting in this context, I randomly assign placebo treatment within the control group with a probability of .5. I add 1 to placebo-treated individuals' responses with probability .28 (because 28% is the overall difference in means estimate of the prevalence of vote buying). I run the same non-linear least squares model on the control group. Any significant coefficient estimate for the "sensitive" item in the placebo-treated group would demonstrate that the estimator is sensitive to random noise.

Figure 2.8 shows histograms of coefficients from non-linear least squares estimates

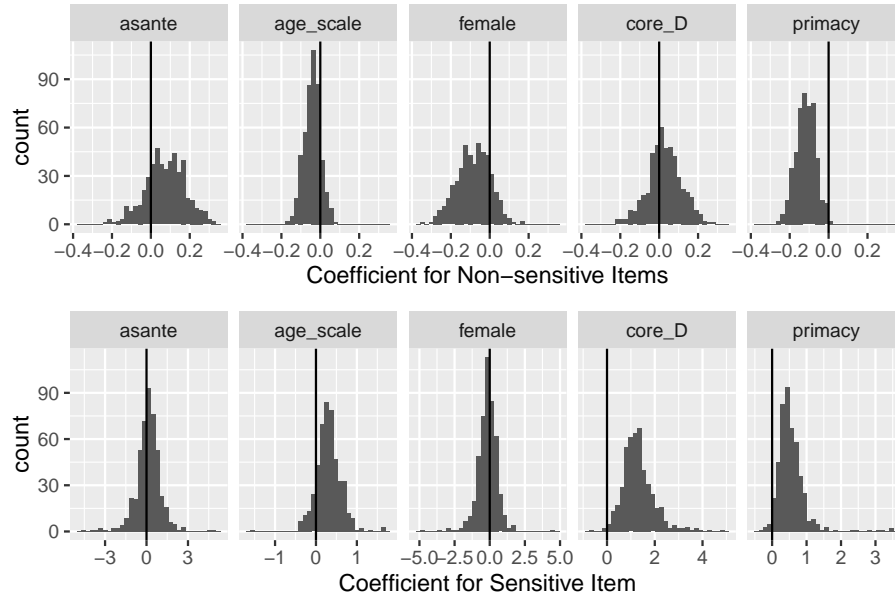


FIGURE 2.8: Histograms of coefficients from non-linear least squares estimates on 500 bootstrapped sub-samples.

on 500 bootstrapped sub-samples of the data. The width of the distribution depicts the sensitivity of the coefficient estimates to the composition of the sample. Using these distributions to construct confidence intervals yields 95% confidence intervals on chief personal engagement and on the core voter indicator that do not include zero.

Figure 2.9 compares coefficient estimates for actual treatment (left) with those of placebo treatment (right). All respondents in the placebo subsample are actually in the control group. I randomly assign the “placebo treated” and “placebo control” designations with a probability of .5 for each individual. I add 1 to placebo-treated individuals’ responses with probability .28 (because 28% is the overall difference in means estimate of the prevalence of vote buying). Any significant coefficient estimate for the “sensitive” item in the placebo treatment would demonstrate that the estimator is sensitive to random noise. The placebo test yields no coefficients on the sensitive item that are significant at the 95% level. This is supportive of the

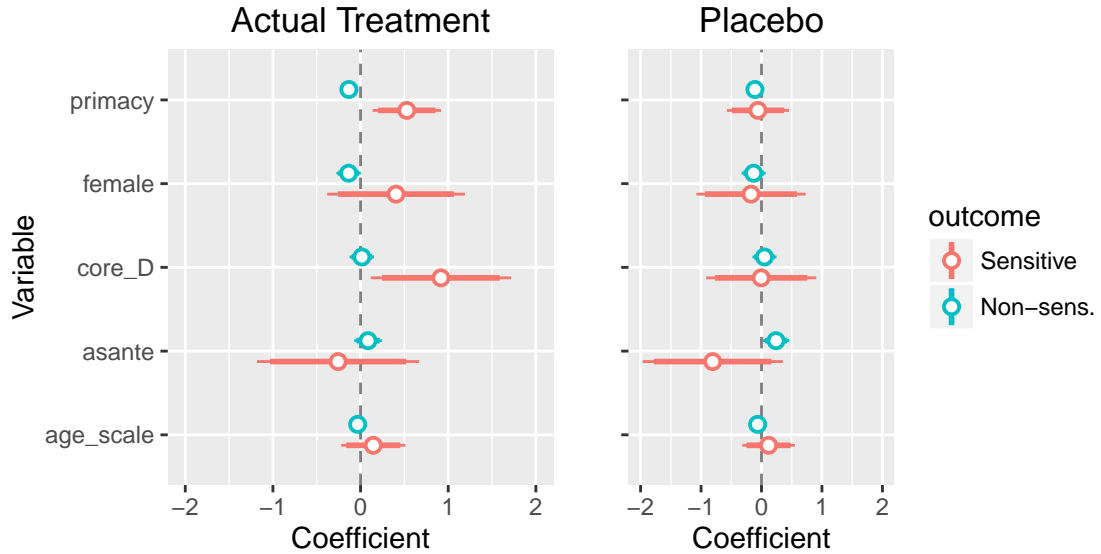


FIGURE 2.9: Coefficient estimates for actual treatment and placebo treatment.

validity of significant results in the analysis of the actual treatment group.

2.6 Conclusion

Where chiefs operate in one of their more celebrated roles — liaising with community members — they are more likely to facilitate behaviors that undermine democratic accountability. The probability of an individual engaging in vote-buying behavior is strongly related to personal engagement with chiefs. Those who feel personally connected to the chiefs, who would go to the chief first with development concerns, are more likely to have exchanged their vote for promises of individual particularized benefit. By contrast, assessments of the chiefs’ political influence — their ability to bring development projects to the community — are not meaningfully associated with vote buying.

This paper provides a contribution to the literature on weak states and hybrid governance. I show that chiefs’ political influence is associated with better public service access. Yet I demonstrate that chiefs’ personal engagement has the opposite association with public goods provision. This inverts the expectation that personal-

ized trust enables non-state actors work in the interests of the community to hold the state accountable (Börzel and Risse, 2015). Instead, it may provide evidence that incorporation of traditional elites into the formal governance structure can lead to better outcomes and greater legitimacy (Englebert, 2000). It also provides support to Migdal (1988)’s claim that social control exercised by local elites can undermine development.

This paper contributes to the literature on clientelism, especially on the consequences of variation in broker strength (Koter, 2013a; Nathan, 2016; Baldwin, 2012), and on the different sources of broker influence (Gottlieb, 2015). First, it provides individual-level evidence on vote buying behavior and attitudes toward a potential broker. More significantly, it analyses, within the same sample, two sources of broker influence, with different mobilization strategies and different distributive effects.

Both political influence and personal ties to the community affect traditional authorities’ efficacy as brokers. The source of their ties affects the avenues by which they mobilize votes. A chief’s political influence encourages vote mobilization with the promise, either implicit or explicit, of club goods coming to the community. A chief’s strong personal ties in the community, meanwhile, facilitate individual-level exchanges of private goods for votes. The two mobilization strategies are not mutually exclusive phenomena, but they have distinct effects. Club goods have a community benefit, but individual-level exchanges undermine the accountability relationship between elected officials and voters. This has implications for which politicians are held accountable, and which communities attract state investment.

This paper sets an agenda for future work on chiefs. Why do they buy votes? An survey of chiefs would be especially useful to ascertain their time horizons, political goals, and professional options outside of the village. And further household surveys could specify which level of chief — paramount, village, or town — they saw as most influential over the delivery of development projects, and which level they would

approach with their own concerns.

The Geography of Voter Responsiveness in Ghana

Access and accountability across space

Within-country inequalities in income and health outcomes are large and growing, often exhibiting clear spatial patterns. A growing literature relates these outcomes to the geographic inequality in government-provided public services. Access to essential services - to water, to schools - are lacking in large areas of the developing world, inhibiting productivity and diminishing quality of life. Spatial inequality in these services is potentially politically destabilizing. However, the explanations behind geographic variation in access to public services is less well understood.

Distance from outposts of service provision has a large effect on access and uptake. Distance from primary care facility is associated with infant mortality in Tanzania (Kadobera et al., 2012), and with lower vaccination rates in Niger (Blanford et al., 2012). Distance is also associated with a decline in quality of services. For example, in Africa, distance from cities is associated with larger class sizes, resulting in worse educational outcomes (Lee 2005).

Citizens' rubrics for evaluating service delivery does not seem to decline in dis-

tance as quickly as their access. (Krishna and Schober, 2014) find that rural citizens in India have poorer access to services than their urban counterparts, and also perceive them to be poor quality. (Brinkerhoff et al., 2016) find that both access to and satisfaction with basic services declines in distance from cities. And respondents in Uganda report higher satisfaction with health services when they are closer to Kampala (MeTA, 2014).

Demand for access to water is universal, and in many countries provisions for access are mandated by law. Lack of access, then, reflects a lack of political influence. Understanding geographic variation in access to public goods requires consideration of how geography conditions a government's responsiveness to its citizens.

Governments face more pressure from some constituents than from others. This inequality in political leverage, explored in the political economy literature on responsiveness, can lead to corruption, favoritism, and distortion of the distribution of public services (Keefer and Khemani, 2005; Bardhan and Mookherjee, 2006). Low information and social fragmentation constitute significant barriers to responsiveness, leading governments to favor elites to the detriment of the poor. The responsiveness literature, however, does not explore how barriers to responsiveness play out across space.

The literature on urban bias illustrates how geographic location can affect political leverage. In rural areas, the costs of collective action to pressure governments can be prohibitive, resulting in the outsized influence of urban residents Bates (1981). The literature exploring this phenomenon, following Lipton (1977), demonstrates how these pressures can result in fiscal controls and public spending that favor cities. Surprisingly, however, little work has explored the geography of public goods provision beyond the urban-rural dichotomy.

In states without competitive elections, urban actors are better situated to enact costly protests than are rural actors because the costs of coordinating atomized rural

communities can be prohibitively high (Olson, 1965). In authoritarian regimes, this provides urban residents with a distinct advantage because governments subsidize urban areas in order to stave off costly or even regime-threatening protests (Lipton, 1977; Bates, 1981).

Targeting local public goods provision to mobilize electoral support necessarily has a geographic component. But the accountability literature highlights electoral targeting of voters and districts based on their partisanship, ethnicity, or clientelistic ties, rather than on their geographic position within the state. To the extent that scholarship has addressed how geographic position itself may affect targeting, it has focused on the binary distinction between urban and rural areas, with clientelism supplanting programmatic appeals in rural areas (Resnick, 2012; Koter, 2013b).

An emerging literature discusses the role of proximity to capitals, using that proximity to extract rents from the government (Kuran, 1991; Lohmann, 1994; Wallace, 2013). Others stress the role of proximity to government in holding governments accountable (Campante and Do, 2014; Campante et al., 2016). Distance from the seat of power affects citizens' ability to communicate their needs (Grossman et al., 2014), and to monitor and pressure governments (Bates, 1981). The spatial distribution of a U.S. state's population relative to its capital affects politicians' incentives and opportunities to engage in corruption (Campante and Do, 2014). Populations concentrated near the state capital appear to make states, in aggregate, more accountable and less corrupt. But little work has explored how these dynamics affect the spatial distribution of public goods within states.

In this paper, I introduce fine-grained geographies to the analysis of voter responsiveness to subnational government performance. Because distance increases the costs of communication, monitoring, and collective action, voters' responsiveness to government performance should decline in distance from local capitals. One observable implication would be that citizens' access to public services would decline

in a gradient from the capital, because elected officials have less incentive to provide public services to unresponsive voters. Another is that voters' evaluations of their local elected representative will be less related to their assessments of the subnational government's performance, in both service provision and in controlling corruption. I evaluate these expectations using geo-coded household-level survey data from 140 districts across in Ghana.

Consistent with my expectations, I find that access to public services deteriorates in distance from district capitals. These findings are robust to inclusion of communities' urban-rural status, as well as to the proximity to placebo district capitals. I also find that distance from the seat of district power is associated with lower sensitivity to performance in individuals' evaluations of government officials. For voters distant from local capitals, poor access to public services and dissatisfaction with corruption in local government leads to an only slightly diminished view of their representative.

These findings represent new evidence of capital bias at the subnational level. This capital-specific bias joins the work tying urban/rural distinctions to differences in mobilization strategies and biases in public spending, irrespective of voters' preferences. It also adds nuance to our understanding of the implications of decentralization for geographic patterns of service delivery and good government. By using fine-grained evidence on individuals' experience with government outputs and sanctioning of incumbents, we can better understand how within-unit geographic location conditions politicians' incentives to be accountable to citizens.

The remainder of this paper is structured as follows. Section 3.1 explores how proximity to capitals might encourage responsiveness. Section 3.2 introduces the institutional environment and geographically nuanced measures of access to public services. Section 3.3 demonstrates a robust empirical regularity: distance from the local seat of government is associated with worse access to core public goods. Section 3.4 presents the conditional effects of performance assessments on overall satisfaction

with politicians. The final section discusses the results and concludes.

3.1 Geographic distortions in public goods, corruption, and accountability

What drives the spatial inequality in public goods provision? In the 1950s and 1960s, political geographers saw geographic clustering in public goods provision in the developing world as part of the process of modernization. Following Hagerstrand (1952), economic modernization in sub-Saharan Africa was expected to diffuse from centers of commerce, gradually incorporating more and more of the state's territory (Soja, 1968). But scholars began to see spatial differentiation as an explicitly political problem, rather than a straightforward expansion of economic progress. Of Sierra Leone, Riddell (1985) writes,

Millions are without safe drinking water, workers go out on strike, and petroleum supplies are frequently exhausted. Yet the president recently purchased two helicopters, and the Produce Marketing Board is building a new office block in the capital city, complete with shops, a cinema, and indoor parking. Such differences index underdevelopment, not the incomplete diffusion of modernization! The areal patterns of differentiation suggest that a search for cause is necessary.

3.1.1 *Urban and capital bias*

The literature on urban bias provides a framework for understanding how spatial dynamics condition government accountability, emphasizing the importance of population concentration for getting favorable treatment from the states. The logic underlying urban bias is that protests are more likely to occur where the costs of coordinating collective action (e.g. distance) are low (Olson, 1965). Cities thus have higher potential to initiate collective action that is economically or politically costly

to the government. To ensure political survival, the government subsidizes urban residents at the expense of rural ones (Bates, 1981).

If urban actors are politically powerful by dint of their potential for collective action, actors in urban capitals are more so. If a protest escalates in a capital, its proximity to the seat of government raises the possibility of direct, violent threat to the regime (Kuran, 1991; Lohmann, 1994). Indeed, the concentration of population in national capitals has been shown to diminish regime stability and threaten political survival (Wallace, 2013). Thus, violent collective action in the capital poses a greater threat to regime stability than it would in other locations.

The questions of whether, where, and how urban bias is problematic have been subject to much debate (e.g. Bezemer and Headey, 2008; Varshney, 1993; Anderson, 2009). Democratic elections make urban bias less likely, because votes replace protests as the primary expressions of citizen dissent. The ballot box makes the cost of collective action less relevant to government accountability because voices do not need to be coordinated to be heard. Especially in sub-Saharan African states, which are majority rural, elections are expected to ameliorate government bias toward urban constituents (Stasavage, 2005; Bates, 1993). Yet while cross-national evidence suggests that countries with stronger democratic institutions are less subject to urban bias, urban bias is still seen as prevalent throughout sub-Saharan Africa (Bezemer and Headey, 2008).

For elections to promote government responsiveness, lack of performance in key areas needs to translate into electoral sanction. Voters' levels of information is widely seen as key to this process (Ashworth, 2012). In its simplest form, more or better quality information on politicians' activities makes voters more responsive to what they observe. This responsiveness on the part of voters increases the incumbents' incentives to promote their constituents' interests.

In Ghana, the primary constituent interests are in public goods provision and

in addressing corruption. Recent work on electoral accountability in Ghana has shown that voters reward politicians for local public goods provision (Weghorst and Lindberg, 2013; Harding, 2015). But citizens lack of information (e.g. Besley and Burgess, 2002b; Keefer and Khemani, 2005; Ferraz and Finan, 2011; Reinikka and Svensson, 2004) diminishes their ability to assess whether their representatives are extracting private benefits from office, are attempting to facilitate projects to benefit their constituents, and to what extent they are succeeding. Besley and Burgess (2002a) show that the responsiveness of subnational governments in India to local needs is better in places with higher newspaper readership and greater electoral accountability.

Incidence of corruption has a spatial component. Campante and Do (2014) find some evidence, from U.S. states, that the closer the state's population to state capitals, the less prevalent corruption is in state. Their findings are comparisons across states: isolated capitals have higher levels of corruption.

The evidence on the efficacy of local monitoring of corruption is mixed. Olken (2007) finds, in analysing public spending and outcomes for village road projects in Indonesia, that local grassroots monitoring had a very limited effect on the incidence of corruption relative to top-down monitoring.

Some empirical evidence from local governments in Brazil demonstrates that electoral incentives enhance accountability and constrain corruption. Compared to mayors who could not face reelection, due to term limits, municipalities where the mayor could be elected had much lower corruption (Ferraz and Finan, 2011).

Corruption has costs beyond wasted funds. Perceived corruption has been shown to be an important predictor of political participation. Field experimental evidence in Mexico shows that information about corruption leads to support for parties both in and out of government, and less participation in the political process Chong et al. (2015). Corruption can also be motivating. In Senegal, perceived corruption is asso-

cieted with an increased likelihood of voting Inman and Andrews (2015). Political activity creates the incentive for elected officials to be responsive to the needs of their constituents (Adserà et al., 2003).

Corruption has implications for community members' non-electoral behavior as well. For example, in Liberia, observation of corruption stifled community members' own voluntary contributions to public goods (Beekman et al., 2014).

Acquiring information to uncover corruption (Olken, 2007) and to correctly identify parties responsible for goods provision (Gélineau and Remmer, 2006) can be difficult and time intensive. This can drive government spending toward projects that are directly observable, and are therefore easier to monitor (Harding and Stasavage, 2014). Where the effort of politicians is difficult to observe, and institutional capacity is low, it may be rational to assume all politicians are corrupt (Svolik, 2013). This assumption leads to a cycle in which voters do not expect responsiveness from their elected officials, and incumbents have no incentive to deliver.

The costs of gathering information on incumbents' activities can stymie citizens' abilities to hold governments accountable. Several lines of research hold that proximity to the seat of government increases the availability or quality of information. Ades and Glaeser (1995) write that shorter distances to the capital provide better access to the mechanisms of government, reducing the costs of obtaining information and lobbying politicians. Remoteness raises the cost of collecting information, because traveling to the capital involves significant investments in time and money.

The contention that proximity to capitals conditions electoral responsibility underlies a literature linking political decentralization to better public services. Devolving administrative power to local governments moves the locus of decision-making closer to the people affected. This proximity, in theory, facilitates the flow of information between citizens and local governments (von Hayek, 1948). While the evidence on decentralization's information benefits is mixed, there is some evidence,

from U.S. states, that a public's proximity to local capitals is associated with a better politically informed public (Campante and Do, 2014).

This paper provides nuanced evidence on the influence of geographic distance in government responsiveness to community needs. With few exceptions, studies on the effect of geographic distribution of population ignore all but the largest cities. All other residents outside the largest city are treated as rural, despite the wide variations in economic organization and population density. These studies are also cross-national in scope (Bezemer and Headey, 2008; Anderson, 2009). Whether they discuss the contexts in which urban bias is most likely or the consequences of urban concentration for regime stability, cross-national studies are subject to confounding due to complex interactions among colonial histories (Herbst, 2000; Boone, 2003), regime types (Varshney, 1993), economic policies, and numerous unobserved sources of cross-national variation (Okojie and Shimeles, 2006; Christiaensen et al., 2003).

I bring analysis of the influence of distance on accountability down to the district level. I generate two main hypotheses relating service access and voter responsiveness to distance from district capitals.

First, I expect to observe a sub-national capital bias: access to public services will fall in distance from district capitals. Because holding elected officials accountable for their performance is more difficult across distance, they will be able to shirk in the provision of local public services.

Second, I expect that in two key areas - service delivery and handling of corruption - district government performance will have a weaker effect on individuals' evaluations of government officials, as distance from the capital increases.

My subnational emphasis in Ghana is useful for a number of reasons: First, Ghana is among the countries where decentralization has been most implemented. Its District Assemblies have a de facto, not just de jure, role in governance. The primary responsibility of the District Assembly is district development, so the performance

of DA representatives has direct relevance to their constituents' service access.

Second, in Ghana, service delivery has established relevance in the electoral process. Service delivery has been shown to influence votes among swing voters (Weghorst and Lindberg, 2013), in urban environments (Nathan, 2016), in rural areas (Harding, 2015), and among ethnic minorities (Ichino and Nathan, 2013).

Third, I have a survey drawing from a subnationally representative sample that is specifically designed to address issues of local governance. This includes nuanced measures of citizens' access to, and quality of, a variety of public goods, and multifaceted evaluations of local government performance.

By using geo-coded access to services in 140 districts within a single country, this paper avoids the problems associated with cross-national analysis. It also avoids using binary urban-rural status prevalent in the existing literature exploring within-country inequality in public service access.¹ Increased migration to peri-urban areas has highlighted the importance of distance and rendered the urban-rural distinction less meaningful (Stow, 2014). Isolating the political influence on spatial inequality from among the myriad other potential causes requires a nuanced treatment of the geographies involved. This project has largely been neglected in the literature.

3.2 Data and Institutional Setting

District governments in Ghana have been responsible for basic infrastructure and public service delivery since the early 1990s. District Assemblies (DAs), alongside centrally-appointed District Chief Executives, are central to district government. Two-thirds of the membership of DAs are elected representatives, each representing a small set of communities. District Assembly representatives are thus responsible to their communities for local investments in a variety of public goods, from class-

¹ Two notable exceptions, examining the effects of proximity to cities, are Brinkerhoff et al. (2016) and Krishna and Schober (2014).

room construction to improved water infrastructure. As with many decentralization initiatives, the devolution of power to DAs in Ghana was intended to give a stronger voice to the public, making government more responsive to community needs, and to allow them to monitor government (Okuru and Armah-attoh, 2015).

Theoretically, political decentralization provides a method to increase government accountability to rural voters. Devolving decision-making power to local governments moves the locus of decision-making closer to the people affected. This proximity implies that citizens should have both a greater incentive and a greater ability to monitor government activity and hold government officials to account. The proliferation of sub-national capitals also gives individuals throughout the country a far greater ability to censure governments by enacting protests in centers of power (Cheema and Rondinelli, 1983). The hope is that local officials, motivated by reelection, will better satisfy local interests and incorporate politically marginalized groups (Przeworski et al., 1999).

While decentralization is expected to improve governance and service delivery in much of the literature, there are limited theoretical justifications and weak empirical evidence (Treisman, 2007). Particular configurations of responsibilities in multi-tiered governments can lead to inefficiency and stagnation in public goods provision (Wibbels, 2006; Cox and McCubbins, 1991). Problems of government oversight at the national level are replicated at the local level. Acquiring information to uncover corruption (Olken, 2007) and to correctly identify responsible parties (Gélineau and Remmer, 2006) is a problem that remains even at the subnational level.

With the introduction of local capitals, the influence that comes from proximity to centers of decision-making is no longer limited to individuals near the national capital. Democratically elected local governments would theoretically be accountable to a broader set of citizens than would national or non-democratic governments. Local capitals can also draw outsized public investment. In Nigeria, for example,

local government spending clusters in urban district headquarters, largely eschewing programs to benefit rural constituents (Olowu, 1992; Akpan, 1990). The improved access to government that proximity to new local capitals provides may benefit local elites more than the public at large (Reinikka and Svensson, 2004).

I evaluate the extent to which proximity to local capitals is associated with better outcomes within districts in Ghana.

The data used in this analysis – a large, new set of geo-located household surveys sampled from 140 districts – were collected as part of the GSAM-IE survey on local governance and accountability in September-October 2014. The sample covers 2998 individuals sampled from 130 urban and 170 rural communities, and it provides nuanced measures of access to services and satisfaction with government. These data are remarkable for their broad scope: the sampled districts comprise 140 of the 216 subnational administrative units in Ghana. The geographic balance in sampling of communities is particularly useful in the present study: in each district, two samples of 10 households are drawn from one rural and one urban community.² One third of the sample is drawn from district capitals. Capitals are close to the citizens they represent: for communities in our sample outside of the capital, the median distance to the district capital is 9.7 km.

3.2.1 Measuring bias over distance

Capturing spatial bias using service access estimates from survey data has several advantages. Much of the work on urban bias focuses on price controls favoring urban sectors at the expense of rural ones.³ In cross-national contexts, these are

² In districts with no urban communities, we sampled two rural communities.

³ As originally identified, this bias takes the form of national price controls on food, which favors urban consumers over rural agricultural producers (Lipton, 1977; Bates, 1981). Bias can also be more direct, as in differences in government spending on public goods for the urban or rural sectors (Pierskalla, 2012), or in higher levels of actual service provision in urban areas over rural ones (e.g. Bezemer and Headey, 2008).

the most easily available data. However, sectoral favoritism is less useful at the sub-national level: within a district, residents of urban areas are likely to rely on the same underlying economic landscape as residents of rural areas. When we consider more nuanced geographies, such as the gradient of access to public services that emanates from the district capital, sectoral spending becomes an even less tractable measure to detect bias.

An alternative to investigating price controls is to compare government spending on urban versus rural areas. While public goods spending at the local level is perhaps indicative of electoral effort, it is not necessarily indicative of efforts to provide public or collective goods. Especially in more rural areas, budget allocations for public services may actually be used for clientelist distribution rather than for improving public service access and quality (Hicken and Simmons, 2008).

Individuals' actual access to public services provides the most direct measure of government spending and effort in their community. I use four main measures of service access: proximity to water, proximity to a primary school, access to a public toilet⁴, and a summary measure combining these. Access to water is measured as the number of minutes each respondent reports traveling to access the nearest source of water. Water access is specified as $-\log(\text{time to water})$, so that higher numbers indicate greater access. Access to primary education is constructed in the same way, using the reported number of minutes needed to reach the nearest primary school. I include a measure of the quality of primary education because school construction is the largest area of spending for district governments, and recent evidence shows that the incentives to build schools do not extend to providing other critical inputs to education (Stasavage, 2005). Access to primary schools without textbooks or teachers does not constitute access to primary education. I also use a measure of

⁴ I include private toilets in an alternate measure. The substantive interpretation of the results remains the same.

Table 3.1: Percent of respondents with access to a public toilet, by the community’s distance to the district capital and urban/rural status

distance to district capital	rural	urban
below median ($< 7.75km$)	26.4	36.8
above median ($> 7.75km$)	18.4	23.9

whether individuals report using public toilets. Access to toilet facilities is a major issue in both urban and rural areas, as shown in table Table 3.1. Twenty-six percent of rural respondents near district capitals have access to public toilets, whereas only 24% of urban voters further from district capitals have this access. In the GSAM-IE sample, one-third of respondents do not use any type of facility.

Finally, I construct a service access index from a principal components analysis of the preceding variables, allowing me to capture the greatest possible variation in access to public goods in a summary single measure.

Distances are calculated primarily from individual-level geographical coordinates, although some households use enumeration area (EA)-level coordinates. Individual-level geolocations are GPS coordinates collected by survey enumerators in front of each dwelling. Where these data were unavailable, I used maps provided by the Ghana Statistical Service in detailed district-level census reports to obtain the precise location of the EA.

3.3 Capital-proximity bias

In this section, I evaluate whether a key outcome of political accountability in local government — public service provision — is declining in distance from the district capital.

Hypothesis 1: Distance from district capitals will predict lower access to core public services.

I use geo-located households survey data with nuanced continuous measures of access to water, schools, and public toilets to investigate the extent of this gradient from district capitals. I estimate the effect of distance from capitals on service provision using this specification of a linear mixed effects model using restricted maximum likelihood estimation:

$$y_{ij} = \beta_0 + \beta_1 x_{ij} + \beta_2 z_j + (u_j + e_{ij}),$$

where y_{ij} is the measure of access to services at the individual level, x_{ij} is a vector of individual-level predictors, and z_j is a vector of district-level predictors. The term u_j allows for differential intercepts for each district, and e_{ij} represents the individual-level residual for respondent i in district j . District-level intercepts account for some unobserved district-level influences on public goods, while still allowing the estimates to benefit from between-district variation as well as within-district variation in the covariates.

The key independent variable is distance to the district capital (operationalized as $\log(km + 1)$). I include distance to the national capital (Accra) to account for potential infrastructure investments that took place prior to decentralization, as well as lingering influence that proximity to the central government may have on the allocation of local public goods.

I also include indicators for ethnicity, designating the respondent as Ashanti-Akan, other Akan, or non-Akan. I include this variable to control for the possibility of ethnic bias in service delivery. Ashanti-Akans are typically associated with the National Patriotic Party (NPP), and Ewes (and non-Akans) are associated with the National Democratic Congress (NDC).

Table 3.2: Access to individual services: mixed effects models with district random intercepts

	Linear			Logistic
	(1) Access to Water	(2) Primary School Access	(3) Primary School Quality	(4) Public toilet
District cap (log km)	-0.15*** (0.03)	0.01 (0.03)	-0.16*** (0.03)	-0.56*** (0.12)
Accra (100km)	-0.09*** (0.02)	-0.09*** (0.02)	-0.08*** (0.02)	-0.36*** (0.09)
Female	0.01 (0.03)	0.01 (0.03)	0.15** (0.05)	0.04 (0.11)
Age	0.00 (0.00)	0.00 (0.00)	0.00* (0.00)	-0.01 (0.00)
Constant	4.49*** (0.12)	3.60*** (0.11)	3.40*** (0.15)	0.46 (0.43)
Observations	2878	2213	2878	2877

Standard errors in parentheses

* p<0.5, ** p<0.01, *** p<0.001

3.3.1 Results: Capital-Proximity Bias

I first present the estimates for access to individual services. The analysis shows that access to public services and infrastructure is significantly declining in distance from district and national capitals. As shown in Table 3.2, access to water, quality of primary schools schools, and access to public toilets all decline in distance to district capitals. Across all four service indicators, distance from the national capital exhibits a statistically significant decrease in access to services.

These highly significant coefficients indicate substantial differences in service access. For example, for individuals near district capitals, those closest to Accra are expected to reach their source of water in two minutes, while those furthest from Accra would take seven minutes to reach their source of water. Moving to the furthest distance from the district capital increases the predicted time to reach water to

12 minutes. Clearly, gradients from both national and district capitals affect service access.

In additional analyses, I model service access index as the outcome variable. While demonstrating spatial patterns of access to specific goods is useful for an intuitive illustration, it raises concerns about multiple testing. As shown at Table 3.3, evidence of spatial decay from district capitals remains strong with this measure, and the addition of ethnic effects (shown in column 3 of Table 3.3) does not change the substance of the main results.

Table 3.3: Aggregate access to services

	<i>Dependent variable: Service Access Index</i>			
	(1)	(2)	(3)	(4)
District cap (log km)	-0.20*** (0.03)	-0.15*** (0.03)	-0.20*** (0.03)	-0.31** (0.10)
Accra (100km)	-0.22*** (0.02)	-0.21*** (0.02)	-0.22*** (0.02)	-0.22*** (0.02)
Female	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Rural		-0.28*** (0.07)		
Other Akan			-0.01 (0.01)	
Non Akan			-0.01 (0.01)	
Placebo cap (log km)				0.13 (0.11)
Constant	0.97*** (0.08)	1.02*** (0.08)	0.97*** (0.09)	0.96*** (0.08)
N	2878	2878	2878	2878
aic	-741.05	-753.96	-737.52	-740.35

Standard errors in parentheses

* p<0.5, ** p<0.01, *** p<0.001

linear mixed effects models with district random intercepts

To distinguish subnational capital bias from urban bias, I test the sensitivity of the results to inclusion of a number of alternate geographic covariates. First, I include an indicator for whether the individual lives in an urban community. Second, as a placebo, I include as a regressor the distance from a community to the *nearest* capital city, regardless of whether it is in the same district. This is to alleviate a potential concern, that proximity to the district capital could be in fact proxying for proximity to the nearest city. As shown in Column 4 in Table 3.3, this placebo has no independent effect, and leaves the main results unchanged. This is an important finding: proximity to a district capital is only associated with better service access when within that capital’s jurisdiction. It suggests that subnational capital bias is not urban bias in disguise, but a specifically governmental phenomenon.

Finally, to estimate capital-proximity bias in delivering a broader range of services, I use individual responses on public service use to construct EA-level dummies of service availability. Collapsing the data on public toilets and electrification at the EA level, I can differentiate between the presence of these services in a community and the individual choice to use them. These results, shown in Table B.1 in the appendix, also show strong evidence of decay in community-level access to services in both distance from Accra and distance from district capitals.

3.4 Remoteness and Accountability

How does location condition electoral accountability? For representatives to have electoral incentives to provide public services, citizens’ assessments of these representatives should be affected by the level of services they receive. With cross-sectional data, we should expect to observe a correspondence between an individual’s access to public services and his satisfaction with his representative in the responsible governing body.

Likewise, for incumbents to have an incentive to reign in corruption, voters’ per-

ceptions of government handling of corruption should be linked to their satisfaction with their representative. As shown in Table 3.4, respondents near and far from district capitals believe corruption is a problem in district government,⁵ and are dissatisfied with how the district assembly is handling it.⁶ Overall, 78% of respondents report that corruption in the DA is a big problem for development efforts, and 56% of respondents are ‘not at all satisfied’ with the district assembly’s handling of corruption.

Table 3.4: **Concerns about Corruption**

Distance from District Capital	Corruption big obstacle to development	Not at all satisfied with DA handling of corruption
Below median ($< 7.75km$)	78%	54%
Above median ($> 7.75km$)	79%	57%

I operationalize accountability as the responsiveness of community members’ satisfaction with their representative to government performance. This is the amount that service access influences approval of the DA representative. My use of satisfaction with DA representatives as the outcome variable has several advantages over alternative measures.

One such measure is perceived accountability (Escobar-Lemmon and Ross, 2014). such as a belief that democracy works, or that elections work. In unconsolidated democracies, these attitudinal measures of institutional legitimacy are highly influenced by the success of the respondent’s preferred party in the last election (Bratton, 2013). Other works eschew voter attitudes and attributes. Some use, as evidence for accountability, the ability to predict both informational and economic outcomes with the same explanatory variable (Campante and Do, 2014).

⁵ The question reads: ‘How big of a problem is corruption among district public officials (to building better development projects)?’

⁶ On the DA handling of corruption, the question reads: ‘How satisfied are you with how the District Assembly is keeping corruption in check, or have you not heard enough to say?’

My analysis carves a middle path between the credulous interpretation of voters' opinions on accountability and ignoring their views on governance. I link voters' approval of government officials with their experience of government performance. My approach is similar to that of de Kadt and Lieberman (2015), which tracks the relationship between service provision and voting in South Africa. Accountability, in their view, is the extent to which increased service provision increases electoral returns for the incumbent. My outcome variable — individuals' approval of the incumbent District Assembly representative — is a narrower, more sensitive measure of voter responsiveness than vote choice.

Voters make vote choices for reasons unrelated to satisfaction with the incumbent. Strategic considerations lead some voters in sub-Saharan Africa to vote for the incumbent because they expect the incumbent will win, and do not want to be punished post-election for not having supported the incumbent. While this presents a problem for accountability, it is distinct from the concept I am investigating: the degree to which observed outcomes and perceptions influence satisfaction with the responsible representative. If poor performance diminishes satisfaction with the incumbent, even if it is not sufficient to drive satisfaction beneath a reelection threshold, I am able to capture its effect. While this does not encompass the whole of the accountability picture, which in electoral situations links the threat of sanction at the polls with better government performance (Ashworth, 2012), it is a critical component. Without diminished satisfaction for poor performance, no sanctioning will occur, and responsiveness to voters' needs will not be incentivized. This voter-centered measure thus captures a crucial element of accountability, without which accountability is impossible. Voter responsiveness is fundamental.

As discussed in Section 3.1, physical distance from the center of administration raises the costs of collecting information on politicians' performance. While an individual with low information might notice an absence of public works in his

community, he is less likely to be able to directly attribute this absence to a failure on the part of his DA representative.

I thus expect DA performance - both in service delivery and in good governance - to be tightly linked to satisfaction with individual DA representatives close to the district capital, and less tightly linked in communities distant from the district capital.

Hypothesis 2: The relationship between service access and public opinion of DA representatives will be stronger closer to the district capital.

Hypothesis 3: The relationship between satisfaction with the District Assembly's handling of corruption and public opinion of DA representatives will be stronger closer to the district capital.

To evaluate the sensitivity of politician evaluations to the DA's performance, I estimate linear mixed effects models on individuals' reported satisfaction with his DA representative.⁷ The key explanatory variables are two measures of government performance: the respondent's access to public services, and their satisfaction with the handling of corruption in the District Assembly. Access to public services is operationalized using the service access index described in Section 3.3. For satisfaction with the handling of corruption, I use the response to the following item: 'How satisfied are you with how the District Assembly is keeping corruption in check, or have you not heard enough to say?'⁸ Concerns about corruption are widespread. As shown in Table 3.4, these concerns are not correlated with distance from the district capital. For respondents living above the median distance from the capital and those below, a majority choose the lowest possible response: not at all satisfied with the

⁷ The question reads: 'How satisfied are you with your elected district assembly man or woman, or have you not heard enough to say?' Responses range from 'not at all satisfied' to 'very satisfied.'

⁸ ('not at all satisfied' - 'very satisfied').

government's handling of corruption. In addition, for each group, almost 80% of respondents report that corruption is a big obstacle to development.

To estimate how distance from the district capital conditions the effect of service access on satisfaction with DA representatives, I interact service access with distance to the district capital. To estimate how distance from the district capital conditions the effect of satisfaction with corruption on opinion of DA representatives, I interact satisfaction with corruption with distance to the district capital.

To control for political party affinity, I include an indicator for whether the respondent is a supporter of the political party that earned the most votes in that district in the 2012 presidential election. While DA representatives are nominally non-partisan, their party alignments tend to be influential in DA elections. While the party affiliations of DA representatives are technically unobservable, an individual who votes with the majority in his district in presidential elections is likely to have the same party affiliation as his DA representative. I also include controls for the respondent's age and gender.

My argument leads me to expect the following. The coefficient on *services* should be positive, indicating that service access increases satisfaction with the DA representative where distance to the capital is zero. However, the coefficient on the *services* \times *distance* interaction should be negative, indicating that distance from the capital exerts downward pressure on the effect of services. That is, assuming a positive coefficient on services, distance diminishes the effect of service provision on satisfaction with the DA representative.

The coefficient on *handling of corruption* should be positive, indicating that in the district capital, satisfaction with the DA on corruption increases satisfaction with the DA representative. The coefficient on the *handling of corruption* \times *distance* interaction should be negative. Assuming a positive coefficient on *handling of corruption*, distance from the district capital diminishes the correlation between

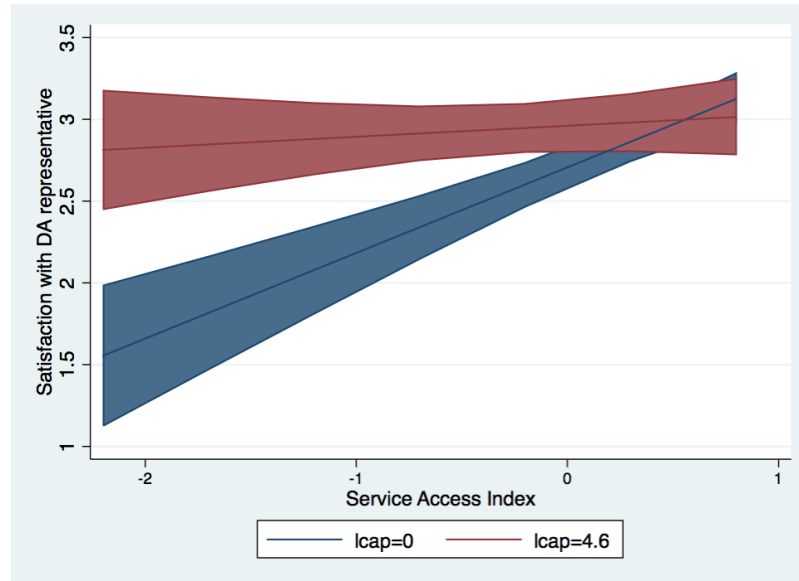


FIGURE 3.1: Predicted satisfaction with the District Assembly Representative, plotted against service access, for respondents near to and distant from the district capital. Values are derived from the fixed portion of the mixed effects estimates in column 1 of Table 3.5. All variables not depicted are held at their means.

handling of corruption and satisfaction with the DA representative.

3.4.1 Results: remoteness conditions responsiveness

I estimate the effects of service provision and handling of corruption on satisfaction with public officials using linear mixed effects models with district random intercepts.⁹ I first estimate the effects of these two key variables individually, and then together. Table 3.5 shows strong support for the argument presented in this paper. The coefficient estimates reported in column 1 have the expected signs and are substantively and statistically significant, supporting the expectation that distance from district capitals diminishes the influence of poor service access on public satisfaction. These effects are illustrated in Figure 3.1, which plots predicted satisfaction with the District Assembly Representative against service access, for respondents near to and

⁹ This and subsequent models are fit using restricted maximum likelihood with the mixed command in Stata 13.1.

distant from the district capital. Values are derived from the fixed portion of the mixed effects estimates, with all variables not depicted held at their means.

Substantively, these results indicate that if public service provision is at its lowest value in the data (a service access index value of -2.17), a respondent's satisfaction with their DA representative in the district capital, compared with satisfaction furthest from the district capital, yields an increase of 1.2 points on a 1-5 scale. That is, satisfaction with the DA representative, at the same level of services, is 80% higher distant from the capital.

Nearest to district capitals, satisfaction given service provision one standard deviation below the mean is satisfaction with the DA representative is 37% lower than if services are standard deviation above the mean (i.e., a drop in satisfaction from 'neutral' (2.6) to 'somewhat dissatisfied' (2.0)). Furthest from district capitals, service provision one standard deviation below the mean is expected to yield satisfaction with the DA representative just 3% lower than services one standard deviation above the mean. The further away citizens are from district capitals, the less the provision of services affect their assessments of public officials.

Similar results hold for assessments of the district assembly's handling of corruption. The coefficient estimates reported in column 2 of Table 3.5 support the expectation that distance from district capitals also diminishes the influence of the DA's handling of corruption on satisfaction with the DA representative, although this is significant only at the $p=.1$ level. Column 3 shows that this effect holds when including the conditional effect of service access as well. Figure 3.2 presents these results graphically, plotting the predicted satisfaction with District Assembly representative against satisfaction with the district assembly 'keeping corruption in check' (left), and against access to public services (right). Predicted satisfaction is derived from the fixed portion of the mixed effects, with all variables not depicted are held at their means.

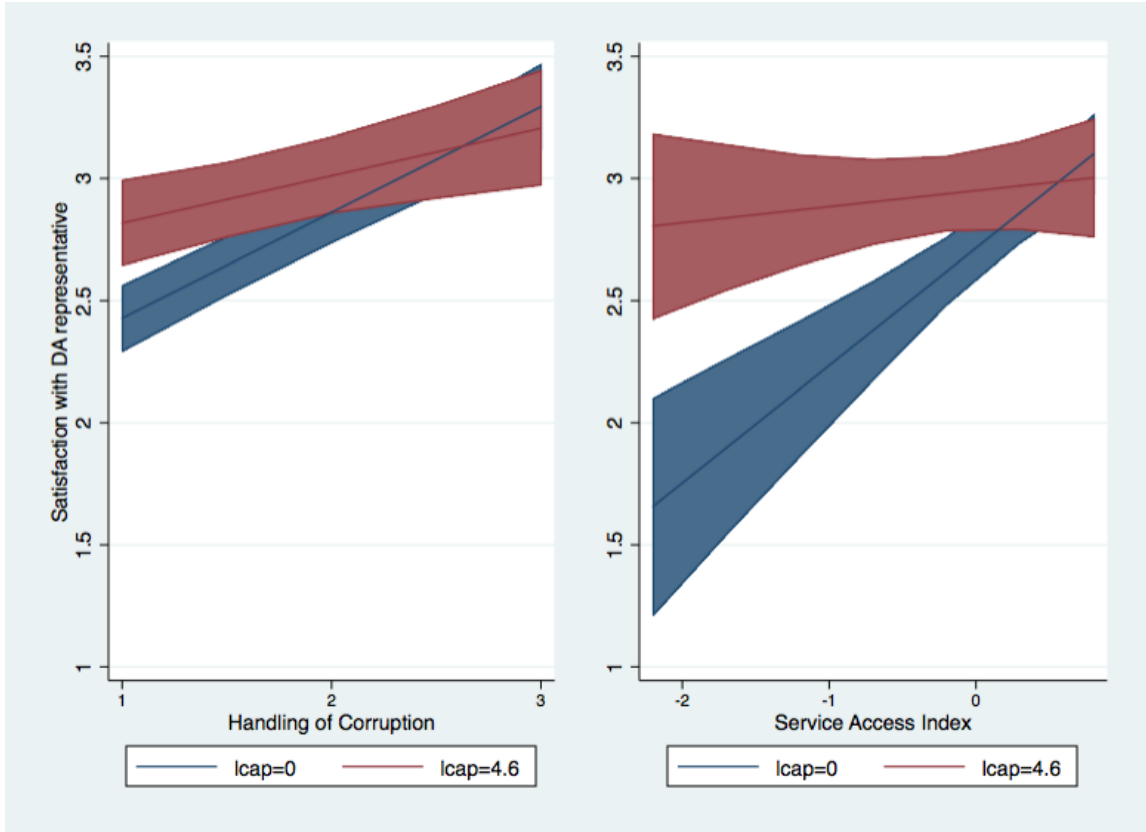


FIGURE 3.2: Predicted satisfaction with District Assembly representative for respondents near to and distant from the district capital. The figure at left depicts this support against satisfaction with the district assembly ‘keeping corruption in check.’ The figure at right depicts this support against access to public services. Values for each are derived from the fixed portion of the mixed effects estimates in column 3 of Table 3.5. All variables not depicted are held at their means.

Fifty six percent of the sample ‘very dissatisfied’ with how the DA handles corruption. Nearest to the district capital, moving from ‘very dissatisfied’ to ‘somewhat dissatisfied’ is enough to move predicted satisfaction with the DA representative from ‘somewhat dissatisfied’ (2.4) to ‘neutral’ (2.9). For those furthest from the capital, all levels of satisfaction with corruption handling predict a ‘neutral’ assessment of the DA representative.

In additional analyses, I test the sensitivity of the results by replacing the district core voter variable with party affiliation dummies for the NDC and NPP. Neither

the NPP nor NDC has a rural base: their electoral performance in Accra tends to be in line with national averages. To check for potential regional effects, I exclude one region at a time and re-estimate the model on the remaining nine regions. I also check the robustness of the results to inclusion of respondents' socioeconomic status. None of these alternative specifications affect the main results.

To summarize, the results suggest that there is a strong negative relationship between an individual's distance from district capitals and the sensitivity of their evaluations of elected representatives. As shown in figure 3.2, respondents who are far from the capital tend to be neutral in their assessments of their DA representatives, regardless of their access to local public services and their satisfaction with the DA's handling of corruption.

Table 3.5: Satisfaction with District Assembly Representative: Linear mixed effects models with district random intercepts

	(1)	(2)	(3)
Distr.cap. (lkm)	0.055* (0.029)	0.058 (0.046)	0.115** (0.047)
Service Access Index	0.523*** (0.111)		0.481*** (0.109)
Distr.cap. (lkm) \times Service Access Index	-0.099** (0.040)		-0.090** (0.040)
Handling of corruption		0.310*** (0.043)	0.302*** (0.043)
Distr.cap. (lkm) \times Handling of corruption		-0.036* (0.020)	-0.034* (0.020)
Nat'l.cap. (100km)	0.191*** (0.034)	0.124*** (0.030)	0.183*** (0.033)
District maj. pty voter	0.156*** (0.058)	0.130** (0.057)	0.137** (0.057)
Age	0.0059*** (0.0019)	0.0047** (0.0018)	0.0048** (0.0018)
Female	0.079 (0.056)	0.061 (0.055)	0.061 (0.055)
Observations	2878	2878	2878

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.5 Conclusion

Although many obstacles to good governance are spatial, physical proximity to the seat of government it has largely been missing from empirical analysis of distributional politics. The aim of this article is to better understand the relationship between spatial inequality in public services, proximity to capitals, and government responsiveness. To understand this relationship, we need to examine not only how location affects public goods provision but also where, and under what conditions, those services affect citizen evaluations of government.

The evidence presented here indicates that proximity to district capitals plays a significant role in access to public goods. Using nuanced, geo-coded measures of access to public services in 140 distinct subnational units in Ghana, I show that for residents of outlying communities, water, schools, and public sanitation are less accessible and of poorer quality. These findings represent new evidence of capital bias at the subnational level. This capital-specific bias joins the work tying urban/rural distinctions to differences in mobilization strategies and biases in public spending. It also adds nuance to our understanding of the implications of decentralization for geographic patterns of service delivery and good government. By using fine-grained evidence on individuals' experience with government outputs and sanctioning of incumbents, we can better understand how within-unit geographic location conditions politicians' incentives to be accountable to citizens.

3.5.1 Accountability

I also demonstrate that for outlying communities, evaluations of DA representatives are not contingent on key responsibilities of the DA: public service provision and corruption prevention. The result is that they may be less able to generate political pressure for greater public service access and better government oversight.

There is evidence across sub-Saharan Africa that rural citizens vote for incumbents at much greater rates than do urban citizens (Youde, 2005). This urban disaffection has been interpreted as resulting from a pro-rural bias (Harding, 2010), in keeping with expectations that competitive elections would shift government efforts away from urban subsidies in order to win rural votes. My analysis suggests an alternative interpretation. Service provision exhibits a steep gradient away from national and local capitals; public service spending and effort do not exhibit a pro-rural bias. Citizens who are far from centers of power are not favored by government, but they are less likely to blame elected officials for poor service access and governance quality. If rural citizens evaluate elected representatives using criteria other than public service provision and good governance, politicians can safely ignore their concerns in these arenas.

In highlighting the public service and political consequences of geographic isolation from the government, this paper joins other studies investigating geographic components of political voice. Bratton (2013) argues that the many obstacles to citizen engagement in Africa, including distance, lead to local governments often remain unrepresentative of local popular interests. Krishna and Schober (2014) show that rural individuals living further from towns receive worse governance, participate less in community-government interactions, and come to expect less of their governments.

These results presented here suggest lower expectations of governance on the part of distant citizens. As such, they show that capital-centered gradients occur not only in service provision but also in voter efficacy.

This paper joins a small literature on the role of distance to capitals and corruption. Campante and Do (2014) provide cross-sectional evidence that proximity to capitals is associated with more corruption. This paper provides within-unit analysis to suggest that, though remote voters care about corruption as much as those near the capital, they do not sanction their elected officials for poor handling of it. It also

contributes to work on capture in decentralized settings (Bardhan, 2002; Seabright, 1996).

3.5.2 Future work

This paper explored within-district variation in accountability and capital-specific bias, but leaves many questions for future work. One question is how the spatial distribution of the population within districts affects district government accountability *across* districts. One could use district-level public service outputs to test whether concentrations of population near the capital create better social service outputs. Such an approach could also be linked with existing surveys of district government officials in the same districts as were sampled here.

Geography of Governance in sub-Saharan Africa

Scholars investigating the role of the state in Africa have increasingly recognized the uneven geographic penetration of the government across its territory (Herbst, 2000). The absence of governance leaves gaps in service provision that contribute to economic inequalities. Poor roads in rural areas make selling agricultural products more costly. Lack of education limits economic opportunity, and lack of access to health care can be life-threatening.

For the poor, access to government services determines quality of life. Access to infrastructure services is lower in Africa than in any other region in the world, and the geographic disparities are stark: sixty-three percent of the urban population has access to an improved water source, compared with 14 percent of the rural population (Banerjee et al., 2009). Accordingly, recent surveys show that a majority of rural citizens see their living conditions as bad, and 40% expect the next year to be the same or worse.¹ Yet rural voters are more likely than urban voters to support the incumbent government, both in public opinion surveys and at the polls (Harding, 2010). This rural support for the incumbent, regardless of party, is puzzling.

¹ From the third round of the Afrobarometer surveys.

Why would rural voters systematically support politicians who provide more public services to urban residents? How does this relate to their position in the political geography?

Most existing data are ill-equipped to assess this question in a nuanced way. We know that distance from urban areas and capitals affects service provision (Krishna and Schober, 2014; Brinkerhoff et al., 2016). With few exceptions, works on the geography of accountability use binary urban-rural distinctions or focus on the population concentration in the largest cities (Bezemer and Headey, 2008; Anderson, 2009). They are thus unable to distinguish between capital effects, the effects of a single large city, and urban effects more generally (Harding, 2010).

Similarly problematic is the flattening of all ‘rural’ locations into a single category. Political decentralization creates new local potential for subnational capital bias in the hinterland. Rapid urbanization and increased migration to peri-urban areas renders the urban-rural distinction less meaningful (Allen, 2010). The ‘rural’ designation can hide a wide variation in economic activity, living arrangements, and institutional investment.

This argument joins much existing theory on the influence of geographic proximity on accountability. Urban bias depends on the idea that proximity to urban centers facilitates collective action to threaten the regime. Theories of capital bias emphasize that proximity to the seat of government would increase the threat such protests would raise to the regime, and thus expect a bias toward capital cities. Works illustrating rural bias emphasize the role of competitive elections in *decreasing* the importance of proximity, either to the government or to urban centers, in holding the government to account.

This paper introduces granular public opinion data to the analysis of the geography of public service provision, using geo-coded household-level survey data from across sixteen countries in sub-Saharan Africa. By using individual-level evidence on

access to public goods and services as well as proximity to both national and local capitals, I can contribute to our understanding of capital bias at the subnational level.

Three principal findings emerge. First, I demonstrate that access to core public services deteriorates in distance from national capitals, from cities, and from the seats of district governments. Second, I find that distance from national capitals is associated with lower sensitivity to performance in individuals' evaluations of government officials. For voters distant from national capitals, poor access to public services does not lead to dissatisfaction with their elected officials. These findings are robust to the inclusion of a number of geographic and individual-level covariates. Third, I demonstrate the resilience of the geographic influence on accountability, even when accounting for standard accountability mechanisms.

The remainder of this chapter is structured as follows. Section 4.1 explores previous work on geographic distribution of public services and accountability. Section 4.2 introduces the geographically nuanced objective and subjective measures of access to public services. Section 4.3 demonstrates that distance from the cities, and from local and national seats of government, is associated with worse access to core public goods. Section 4.4 presents the conditional effects of services on overall satisfaction with public officials. In Section 4.5, I explore how typical obstacles to accountability may account for its variation over distance. The final section discusses the results and suggests areas for further research.

4.1 Studying accountability over distance

Where do advantages in public goods provision and governance occur? Theories alternately specify that governments favor cities, national capitals, rural areas, and local capitals. Evidence of these patterns is fragmented, and little work systematically explores where service provision is strong - in cities vs. local seats of government

vs. national capitals - as well as variation in other communities.

Cities are expected to be favored for several reasons. Public services and infrastructure can be provided at lower cost in cities than among a more dispersed population (Arnott and Gersovitz, 1986). Infrastructure, in particular, is partially a relic of colonial powers favoring the coast over the hinterland (Herbst, 2000). In addition, the literature on urban bias suggests that government systematically favor urban interests over rural ones. To ensure political survival, the government subsidizes urban residents and undermine service provision in rural areas (Lipton, 1977; Bates, 1981).

Alternatively, governments may make few investments outside of their national capitals. Whether due to the capacity for people in the capital to enact destabilizing protests (Wallace, 2013), the decreased costs of lobbying from the capital (Ades and Glaeser, 1995), or an inability to project power over distance (Herbst, 2000), service provision in the national capital may outstrip service provision in any other locality.

Local capitals can also draw outsized public investment. In Nigeria, for example, local government spending clusters in urban district headquarters, largely eschewing programs to benefit rural constituents (Olowu, 1992; Akpan, 1990).

In competitive democracies, rural voters can exert electoral pressure, and where rural voters are in the majority, a rural bias may emerge (Varshney, 1993). But recent evidence suggests that geographic inequality in sub-Saharan Africa is rising. While unable to distinguish national capitals from other major cities, Banerjee et al. (2009) identify cities as having made greater expansion in infrastructure delivery than have smaller towns and rural areas. I provide more nuanced evidence to substantiate this claim. What accounts for this persistence?

One explanation is that it is more costly for remote voters to monitor the activities of elected officials. The principal-agent literature (e.g. Besley and Burgess, 2002b; Keefer and Khemani, 2005) emphasizes how lack of information on govern-

ment activities affects citizens' ability to assess public officials' performance. In some circumstances, it is difficult to draw inference from outcomes about a politician's effort to represent citizen interests. This lessens citizens' abilities to hold governments accountable. This low information can have distributive consequences (Grossman and Helpman, 1996), particularly if it is more prevalent among the poor.

Information allows voters to screen against politicians they may have otherwise supported (Pande, 2011), so learning tends to downgrade citizens' assessments of politicians. Several field experiments reinforce the notion that low information voters tend toward positive assessments of public officials. In India, Banerjee et al. (2011) find that politicians whose report cards indicated corrupt activity received a lower vote share than control group politicians, on whom no pre-election report card was published. In Brazil, Ferraz and Finan (2008) find that having corruption exposed by random audit significantly reduced probability of reelection relative to controls.

Less experience with the government at large can also lead to a breakdown of electoral accountability. Information on the capacity of government raises the standards that citizens set for their performance. If voters underestimate local government competence, they will not assign blame to politicians when they fail to deliver. In experimental settings, high expectations have a cost in public opinion if the expectations are not met (Malhotra and Margalit, 2014). But distance from national and local governments is likely to be associated with less experience with the functioning of government. This lack of experience can prevent respondents from setting appropriate benchmarks, because they information on government capacity (Gottlieb, 2016). These voters will have generous evaluations of public officials. In Uganda, increased participation in governance and experience with politicians decreased trust in government (Moehler, 2008).

4.2 Service Provision in sub-Saharan Africa

I combine newly geocoded household surveys with the locations of subnational capitals and urban centers in eighteen countries in sub-Saharan Africa. Two rounds of Afrobarometer surveys conducted from 2005-2009, provide objective indicators of local public goods provision, subjective measures of service access and quality, and individuals' approval of public officials at the local and national level.

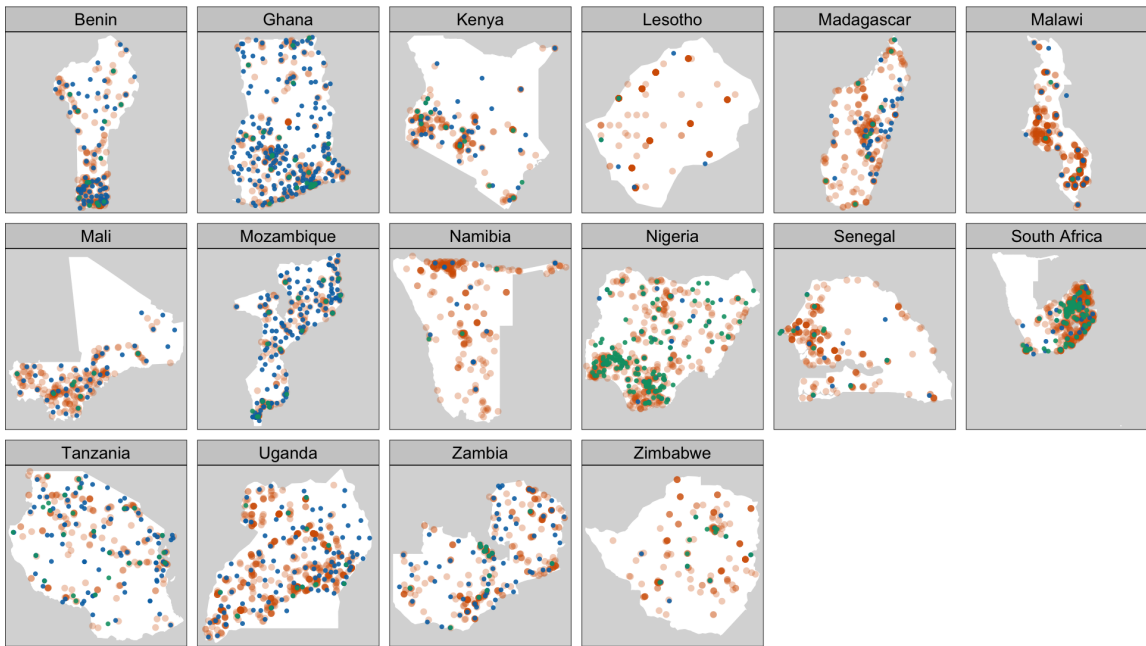


FIGURE 4.1: Locations of survey samples (orange), subnational capitals (blue) and cities (green) with more than 50,000 inhabitants.

The sample covers 35,022 individuals sampled from 2501 urban and 1992 rural communities. I geolocated the respondents at the village level, querying Geocities and Google Maps databases, and scraping Wikipedia for Geohack coordinates. I was able to locate 4597 communities, roughly 75% of the primary sampling units surveyed. For each community, I calculate the distance to its appropriate local capital, typically that of the second-level administrative unit.² I also calculate the

² This is the level at which local elected officials congregate.

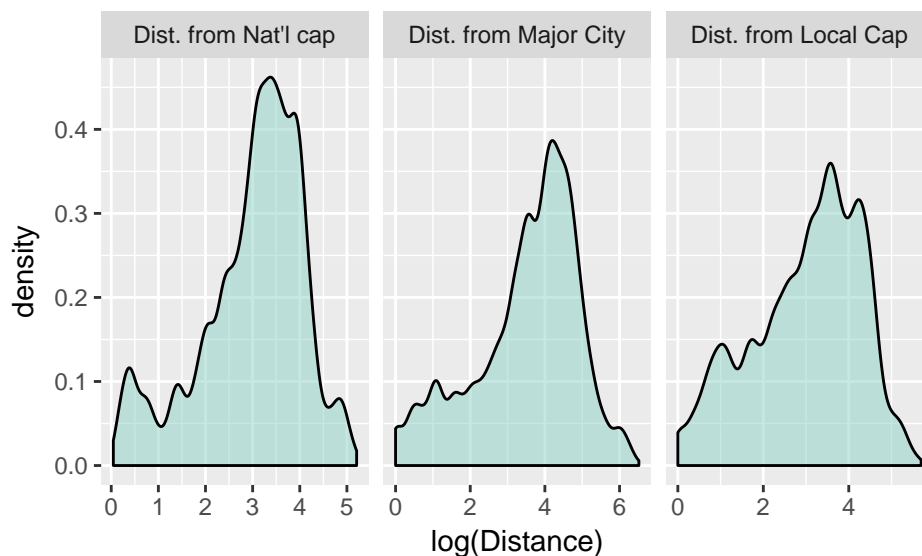


FIGURE 4.2: Distribution of distance from national capitals, major cities, and district capitals.

community’s distance from the nearest city with a population of more than 50,000, and to the national capital. This novel combination provides nuanced measures of proximity to cities and seats of government, access to services, and satisfaction with government. Figure 4.2 shows the distribution of distances individual-level dataset, drawn from the 2005-2006 round of surveys.

I use three measures service access. For the first, I use objective information on the availability of service infrastructure in a community. In each community (primary sampling unit) in the survey sample, enumerators report presence of an electricity grid, a sewage system, and a piped water system that most houses could access. I construct a service infrastructure index from a principal components analysis of these variables, allowing me to capture the greatest possible variation in public service infrastructure in a summary single measure.³ I then scale the index from 0-10 for ease of interpretation. The distribution is plotted in the top panel of Figure 4.3.

For the second measure of service access, I use individuals’ self-reported difficulty

³ Using an additive index in its place does not change the core findings.

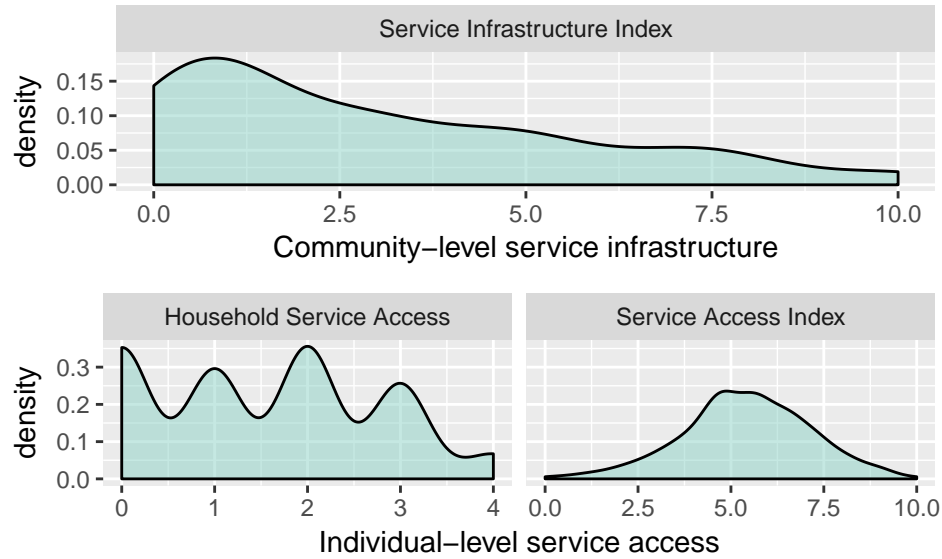


FIGURE 4.3: Measures of service access. This figure presents the distributions of three measures of service access. The top panel shows the community-level measure of service infrastructure. At the level of the individual, I show two measures: ease of accessing household services (bottom left) and a service access index incorporating access to and quality of schools and clinics (bottom right).

in obtaining household services, such as electricity or water, from the government.⁴ Individuals rated getting services from the government from “very difficult” to “very easy” (1-4 on the scale), or stated that they did not try to get them. The distribution is plotted in the bottom left panel of Figure 4.3. Not attempting to obtain services is represented by zero on the x axis. Twenty-seven percent of respondents did not attempt to obtain household services from the government, because the government did not provide them or because they had no need for household services. Of the respondents who attempted to get services, two-thirds say that the it is difficult or very difficult to obtain them. These individual assessments of service availability are more nuanced than the community-level measures.

The third measure of service access incorporates a broader set of criteria. In

⁴ From the Afrobarometer surveys in 2005-2006: “Based on your experience, how easy or difficult is to obtain the following services? Or do you never try and get these services from government: household services (like piped water, electricity or telephone).”

addition to ease of accessing services in the home, it includes impressions of the quality of local health clinics and public schools. I standardize each in a set of items on frequency encountering a range of problems with local health care and public schools.⁵ I then combine the measures for schools, clinics, and household services, weighting each of the three categories equally. As with the community-level service infrastructure index, I scale the individual-level public service access index from 0-10 for ease of interpretation. This index captures individuals' perceptions of the quality of public services.

The mean score on the index is 5.5. This score could represent, for example, ease of accessing household services between 'very difficult' and 'difficult', and experiencing problems with each aspect of schools and clinics 'once or twice' in the last year.

I present the results of the analysis in three steps: I first investigate how remoteness affects access to public services. In a second step, I investigate how service provision affects approval of elected officials, and how this relationship varies with distance. In the third step, I investigate the channels by which distance affects accountability.

4.3 Service provision falls in distance from the capital

How does distance affect access to public services? I first estimate the relationship between the presence of community public services and remoteness from the national

⁵ The questions bearing on local public school quality ask, for each of the following issues, "Have you encountered any of these problems with your local public schools during the past 12 months:" Services are too expensive / Unable to pay? Lack of textbooks or other supplies? Poor teaching? Absent teachers? Overcrowded classrooms? Poor conditions of facilities? Demands for illegal payments?

Responses range from "never" to "often."

The questions bearing on local clinic quality are as follows: "Have you encountered any of these problems with your local public clinic or hospital during the past 12 months: " Services are too expensive / Unable to pay? Lack of medicines or other supplies? Lack of attention or respect from staff? Absent doctors? Long waiting time? Dirty facilities? Demands for illegal payments?

capital, major cities, and the subnational capital. Here I focus on *objective* measures of local public goods at the community level: the presence of infrastructure and facilities that provide public services. Specifically, I estimate OLS regressions of the form

$$\begin{aligned} \text{service infrastructure}_{ij} = & \beta_0 + \beta_1 \text{national capital distance}_{ij} \\ & + \beta_2 \text{local capital distance}_{ij} + \beta_3 \text{major city distance}_{ij} \\ & + \beta_4 x_{ij} + \beta_5 z_j + \epsilon_{ij}, \end{aligned}$$

where *service infrastructure*_{ij} is the service infrastructure index in community *i* in country *j*, *x*_{ij} is a vector of community-level predictors, and *e*_{ij} is the error term.⁶ All specifications include country fixed effects, represented by *z*_j, which account for unobserved country-level heterogeneity. This allows me to focus on within-country variation in service access.

In the baseline model, I include covariates for factors that make it particularly difficult to project state power: the community’s distance to the nearest coast and the area’s elevation (Herbst, 2000).

In the full model, I include several controls to account for governance legacies of the colonial era. I control for the area’s suitability for malaria, which may account for colonial strategies of extraction (Acemoglu et al., 2002). Colonial powers were more likely to collaborate with centralized chiefs (Boone, 2003; Gennaioli and Rainer, 2007). To capture the level of precolonial centralization in a society, I combine ethnographic data on precolonial tribes with a map designating that tribe’s ethnic homeland (originally coded in Murdock 1956).⁷

The key explanatory variables are the distances from the community’s location to the district capital, the national capital, and the nearest major city.

⁶ I use Stata 13.1 to estimate these models.

⁷ Precolonial political centralization is measured by jurisdictional hierarchy: the number of political levels, above the village level, for each ethnic group.

Figure 4.4 presents the results from the full model. It plots the predicted community-level core public service infrastructure, against distance from the national capital (left), the nearest major city (center), and the local capital (right), holding the other covariates at their means. I find a statistically significant and substantial drop in service infrastructure for communities further from the capital.

A community 80 km from a national capital (one standard deviation below the mean) is expected to have a services score .13 standard deviation higher than the same community 520 km from the national capital (one standard deviation above their mean).

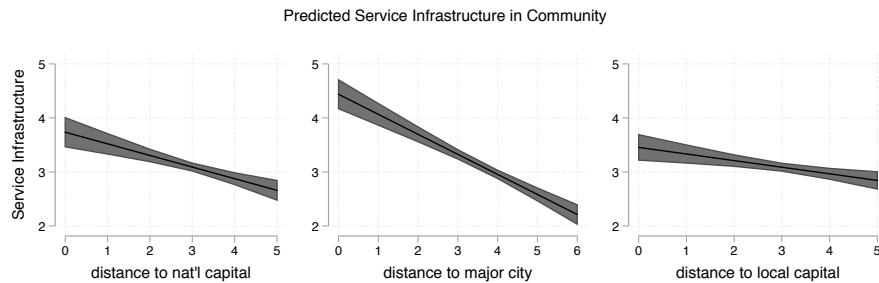


FIGURE 4.4: Service Infrastructure and Distance. Predicted community-level core public service infrastructure, against distance from the national capital (left), the nearest major city (center), and the local capital (right). Core service infrastructure is measured on a scale from 0-10.

A community furthest from its national capital is predicted to have a service infrastructure level 29% lower than if it were in its national capital. A community furthest from a major city has a predicted to have a service infrastructure level 55% lower than if it were in a major city. A community furthest from its local capital is predicted to have a service infrastructure score 18% lower than if it were in its local capital.

Community-level service infrastructure declines most sharply in distance from cities, but the effects of distance from both national and district capitals have substantial effects.

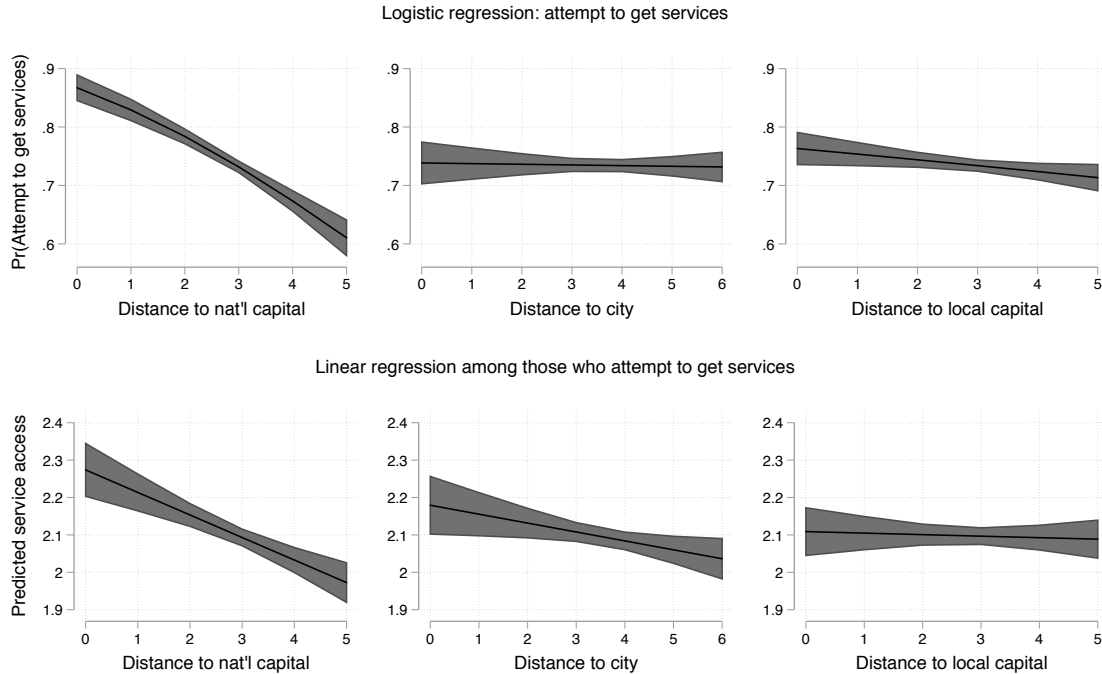


FIGURE 4.5: Household Services: attempts to obtain and ease of access. The top panel shows the predicted probability of a respondent attempting to obtain household services provided by the government, at varying distances from the national capital, the local capital, and major cities. The bottom panel shows the predicted ease of getting household services (on a scale of 1-4), for a respondent that attempts to obtain services.

A similar picture emerges when we shift our focus to respondents *subjective* assessments of their access to public services. The main outcome variable is ease in obtaining household services, which respondents rate from “very difficult” to “very easy,” or report that they do not try to get them. I first examine the effects of remoteness on whether a respondent has tried to obtain services using logistic regression. I then use linear regression to estimate the effects of remoteness on the *ease* of obtaining household services from the government.⁸In addition to the community-level geographic covariates described above, I include controls for respondent attributes

⁸ I analyze these outcomes separately for clarity of interpretation. In the appendix I show that analyzing the *attempt* and the *ease* together, either in linear or two-part models, yields substantively similar results (See Table C.2).

(age, and age-squared term, and the respondent's gender).⁹

Figure 4.5 illustrates the resulting estimates of the relationship between individuals' access to services and their distance from national capitals, cities, and local capitals. The top panel shows the predicted probability of a respondent attempting to access household services provided by the government, at varying distances from the national capital, the local capital, and major cities. The predictions are derived from the fixed portion Distance from national capitals is associated with a lower probability of *trying* to get services, as well as experiencing more difficulty if one attempts to obtain them. Distance from cities is associated with more difficulty in obtaining services, and distance from local capitals is associated with lower probability of attempting to get services.

I find a statistically significant and substantial drop in attempts to get household services as distance from the national capital increases. Moving across the interquartile range of national capital distance, the predicted probability of attempting to get household services drops 7 percentage points, from 76% to 69%. For the same change in distance from the local capital, the predicted probability of attempting to get household services drops 2 percentage points, from 74% to 72%. Distance from the nearest city is associated with no change in attempts to obtain household services.

The bottom panel shows the predicted ease of getting services from the government, among those that made an attempt to get them. Moving across the interquartile range of national capital distance, the predicted ease of accessing services drops 3%, from 2.12 to 2.06. Across the same quantile of distance from the city, the estimated ease of accessing services drops 2%. For the same change in distance from the local capital, a drop of .7% is predicted, but fails to reach standard measures of

⁹ These models include country fixed effects, but inclusion of country-ethnicity fixed effects do not change the main results.

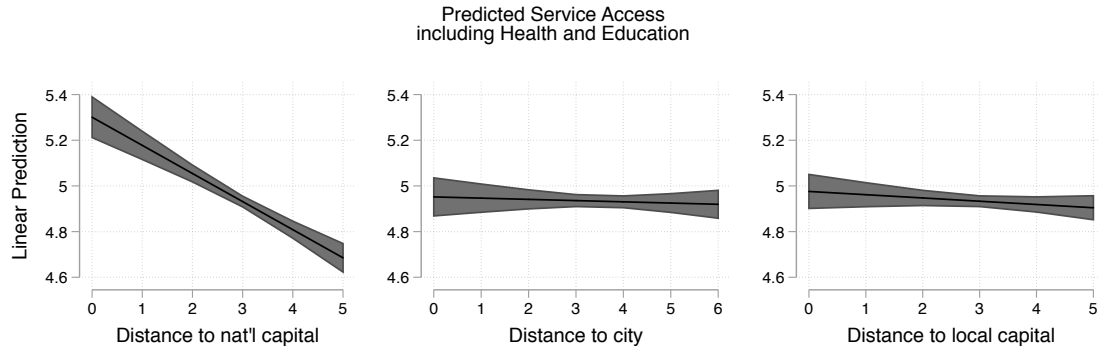


FIGURE 4.6: Broadly defined services and distance. This figure plots the predicted value of the service access index (on a 0-10 scale), against distances from the national capital, the nearest major city, and the local capital. The service access index combines the ease of accessing services and the quality of local schools and health facilities.

significance.

The broader measure of individuals' service access (including quality local schools and health care) shows similar declines in distance from population centers, as shown in Figure 4.6. Moving across the inter-quartile range of national capital distance, the service access index drops 3.3%, from 2.12 to 2.06. Distance from the nearest city and from the local capital are associated with small, insignificant drops in service access.

In sum, individuals' perceived access to household and community services is declining in distance from the national capital, across a range of specifications. At the individual level, the evidence for major cities and local capitals is more mixed. Distance from local capitals is associated with a lower probability of *attempting* to get household services. Greater distance from cities is associated with more difficulty obtaining them, given an attempt.

Both community-level service infrastructure and individuals' perceived access to these services is declining in distance from the national capital, across a range of specifications. Service infrastructure at the community level exhibits substantial declines in distance from major cities and local capitals as well. Self-reported access

to services has a geographic component, but is less influenced by space than the physical social infrastructure.

4.4 Accountability falls in distance from the capital

I now turn to the effect of distance on voter responsiveness to service provision. I conceive of voter responsiveness as the extent to which service access influences their views of elected officials.¹⁰

I estimate approval of elected officials as a function of their access to services and their distance from national capitals, major cities, and local capitals. I focus on subjective access to public services, because a given objective level of service infrastructure can mean different things in different settings. Respondents evaluate their services, and their elected officials, in context. Perceptions of relative deprivation drive a relatively small portion of satisfaction (Ravallion and Lokshin, 2010), but using self-provided evaluations allays residual concerns that this aspect of contextual assessment may be influencing the results.

For representatives to have electoral incentives to provide public services, citizens' assessments of these representatives should be affected by the level of services they receive. Overall, we should expect to observe individuals with better access to public services to approve of his elected officials more highly. An interaction of self-assessed services with each measure of remoteness allows the effect of service access to vary by distance. I expect negative evaluations of services to have different effects for close vs. remote respondents.

I estimate separate models for each category of elected official: the president, the member of parliament, and the local councilor. I am agnostic as to the expected

¹⁰ "Do you approve or disapprove of the way the following people have performed their jobs over the past twelve months, or havent you heard enough about them to say: [President/Prime Ministers name]? Your Members of Parliament/National Assembly Representative? Your Assembly Man/Woman/Local Government Councilor?" Responses for each elected official range from 0-3, representing "Strongly Disapprove" to "Strongly Approve."

magnitude of the effect across elected officials. Service access is the result of public goods jointly provided by local and national governments. Even in cases where a particular level of government is entirely responsible for a poor outcome, voters do not always choose the correct level of government to blame (Gélineau and Remmer, 2006). I use the following model to estimate the effect of service access of approval of elected officials:

$$\begin{aligned}
[approval]_{ijk} = & \beta_0 + \beta_1 services_{ijk} + \beta_3 national\ capital\ distance_{jk} \\
& + \beta_4 local\ capital\ distance_{jk} + \beta_5 major\ city\ distance_{jk} \\
& + \beta_6 services_{ijk} \times national\ capital\ distance_{jk} \\
& + \beta_7 services_{ijk} \times local\ capital\ distance_{jk} \\
& + \beta_8 services_{ijk} \times major\ city\ distance_{jk} \\
& + \beta_9 x_{ijk} + \beta_{10} z_k + \epsilon_{ijk},
\end{aligned}$$

where $approval_{ijk}$ is individuals' reported approval of the president, their member of parliament, or their local councilor, depending on the specification. Control variables, represented by x_{ijk} , include the community-level geographic covariates (elevation and distance from the coast) and respondent attributes (age, gender, and partisan affiliation) described above. The variable z_k stands in for country fixed effects, and ϵ_{ijk} is the error term.

Figure 4.7 plots the predicted approval of elected officials, illustrating the heterogeneous effects of services by distance to the national capital (the full results are also shown in Table C.3 in the appendix). The first panel demonstrates that for respondents distant from the national capital, there is a weaker influence of service provision on approval of the president.

This difference in effect is substantial. For respondents in the national capital, approval of the president for a respondent in the 5th percentile of service access is

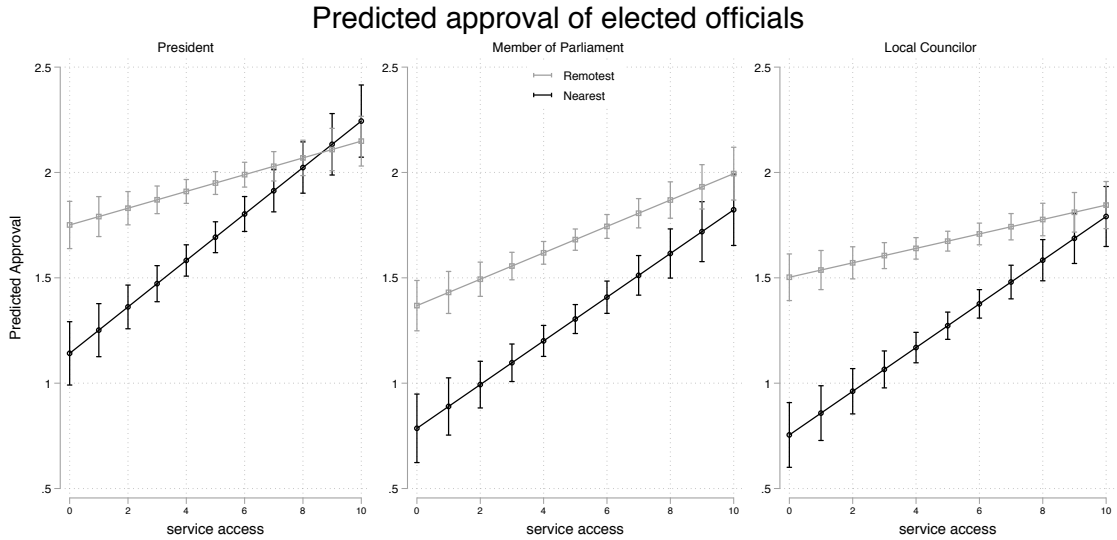


FIGURE 4.7: Predicted approval of elected officials' performance, against access to services, for a respondent nearest to vs. furthest from the national capital.

estimated to be .6 points lower on a 0-3 scale than a respondent in the 95th percentile of service access. For those furthest from the national capital, the estimated effect of service access on approval of the president is statistically indistinguishable from zero.

A similar result emerges in the analysis of approval of the MP. The second panel of Figure 4.7 illustrates the estimates. In the national capital, the estimated approval of the member of parliament for a respondent in the 5th percentile of service access is estimated to be .5 points lower on a 0-3 scale than those with greater access to services (a 35% drop, from 1.5 to .9). For those furthest from the national capital, the estimated approval of the member of parliament differs by only .2 points.

Approval of the local councilor exhibits similar conditional effects, as illustrated in the rightmost panel of Figure 4.7. In the national capital, the estimated approval of the local councilor for a respondent in the 5th percentile of service access is estimated to be .7 points lower on a 0-3 scale than those with greater access to services. For those furthest from the national capital, the estimated approval of the local councilor

differs by only .2 points.

I find no evidence for a conditional effects of service access by distance from major cities or from local capitals, as shown in Table C.3. In the subsequent analyses, I retain these distances as regressors, but account for heterogeneity of the effect of services by distance to the national capital only.

4.5 Why does remoteness decrease accountability?

Thus far, my analysis has shown that individuals' opinions are more responsive to service delivery near the capital. For people near the capital, poor service access lowers assessments of elected officials, but for people further from the capital, poor service access does not lead to lower approval. This raises a related question: why does remoteness reduce voter responsiveness to service delivery?

I examine three potential reasons that distance from national capitals conditions the effect of service provision on approval of elected officials. First, poor information can limit voters' ability to hold politicians accountable. Remote voters, in particular, can have limited ability to monitor the actions of government officials. In some circumstances, it is difficult to draw inference from outcomes about a politician's effort to represent citizen interests. In these cases, voters are less likely to blame a particular representative for poor outcomes. This lessens citizens' abilities to hold elected officials accountable for access to services in their communities.

Second, remote citizens could have low expectations of government capacity (in general or vis--vis service delivery), leading them to deprioritize service delivery in their evaluations of elected officials. Exposure to government informs citizens on the way government *should* perform - the *intended* level of service delivery and the capacity of the government to deliver. Proximity to capitals and population centers where one might be exposed to government is thus associated with higher expectations of what government can do. Meanwhile, those with little exposure to

government service provision could have difficulty establishing a benchmark with which to judge the government's performance (Gottlieb, 2016). This suggests that those in communities distant from seats of government are likely to underestimate the government's capacity, such that individuals choose to evaluate incumbents on some alternate criteria, for instance, kinship. These respondents' assessments of incumbent politicians could be more generous than if service delivery were considered.

Third, respondents further from the national capital may be reluctant to criticize elected officials. This could arise if they are embedded in clientelist networks, are in a non-competitive political context and thus lack potential alternatives to their current elected officials, or are socialized with norms of deference to authority. Each of these is more likely in communities further from major population centers.

4.5.1 Operationalization: Interest in politics, Expectations of Government, and Deference to Authority

We have observed heterogeneous effects of service access on attitudes about elected officials, by distance from the capital. To explain why, we need to identify the social mechanism that distance captures. Here I investigate a lack of information about public affairs, low expectations of government, and deference to authority. I argue that each of these characteristics will lower voter responsiveness.

I have two hypotheses. First, I expect that each of these factors will moderate the effect of service provision on satisfaction with elected officials. Second, I expect that these conditional effects will account for the effect we have observed: voter responsiveness falling in distance from the capital. I thus expect that when taking these mechanisms into account, distance will have a smaller role in conditioning the effect of service access on approval of politicians.

To capture the quality of respondents' monitoring of elected officials, I construct an index of interest in politics from three survey items: interest in public affairs,

and discussion and comprehension of politics.¹¹ For this and the following indices, I standardize each constituent item and sum them to create an equally-weighted index. The first two components - the extent to which respondents care about public affairs, the frequency with which they discuss politics with friends and family - capture the relevance and availability of information about political activities. The third component - to what degree respondents are confused by politics - captures the respondents' confidence in their own ability to monitor political behavior. As a whole, this index represents the respondent's ability to assess the elected officials' performance.

To capture respondents' expectations of the state, I construct an index from respondents' perceptions of the capacity of the government to enforce the law and collect taxes.¹² This scale gauges the extent to which citizens have confidence in the state's capabilities, as they apply to officials and to the respondent personally. A high value indicates the respondent believes in a more capable state.

To account for deference to authority, I create an index of *voter responsibility*, including indicators for whether voters are responsible for making sure that MPs or local councilors do their jobs, and their evaluations of statements regarding questioning leaders vs. respecting authority.¹³ This scale captures individuals' sense of

¹¹ The questions read: "How interested would you say you are in public affairs?" "When you get together with your friends or family, would you say you discuss political matters:(Never(0) - Frequently(2))?" "Do you agree or disagree with the following statements: Politics and government sometimes seem so complicated that you cant really understand whats going on?"

¹² "How likely do you think it would be that the authorities could enforce the law if *a top government official* committed a serious crime?" "...if *you* committed a serious crime?" "How likely do you think it would be that the authorities could enforce the law if *a top official* did not pay a tax on some of the income they earned?" "...if *you* did not pay a tax on some of the income you earned?"

¹³ "Lets talk for a moment about the kind of society we would like to have in this country. Which of the following statements is closest to your view? Choose Statement A or Statement B. A: As citizens, we should be more active in questioning the actions of our leaders. B: In our country these days, we should show more respect for authority."

entitlement, or even obligation, to hold politicians responsible. Low values of this index represent beliefs that people should show more respect for authority, and that government accountability primarily horizontal, with officials holding one another responsible.

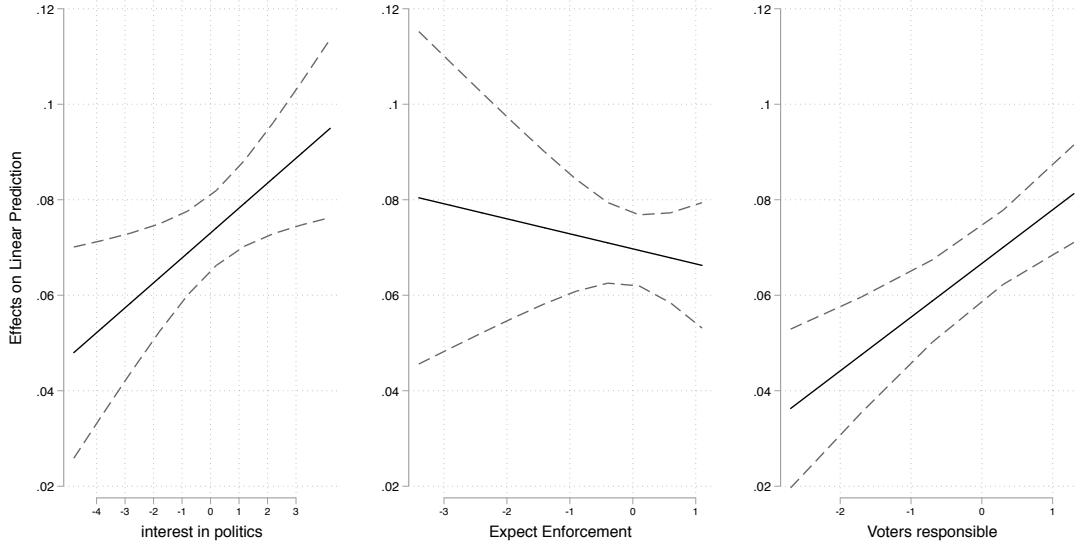


FIGURE 4.8: Mechanisms and Approval of the President. This figure shows the estimated marginal effect of service access on approval of president. The effect of service access is modeled as conditional on information about politics (left panel), the respondent’s perceived capacity of government (center panel), and voters’ sense of responsibility for elected officials’ performance (right panel). Higher values on the y axis indicate a stronger positive influence of access to services. The dashed lines indicate 95% confidence intervals.

To examine the influence of each mechanism, I include the operationalization and its interaction with service access to the conditional responsiveness models. This in an effort to see if the new interaction accounts for heterogeneity in effects of service access by distance. Because the above channels are substantively different, I estimate a separate model for each. (The measures are distinct empirically, as well as theoretically. The pairwise correlations of interest in politics with expectations and voter responsibility are .1 and .09, respectively. The correlation between expectations and voter responsibility is .05.) As in the previous section, I estimate OLS

regression models with country fixed effects, to focus on within-country variation in the relationship between service access and approval of politicians. I thus estimate, for each mechanism, equations of the form

$$\begin{aligned}
 [approval]_{ij} = & \beta_0 + \beta_1 services_i + \beta_2 [attitude]_i + \beta_3 national\ capital\ distance_i \\
 & + \beta_4 services_i \times [attitude]_i \\
 & + \beta_5 services_i \times national\ capital\ distance_i \\
 & + \beta_6 x_{ij} + \beta_7 z_j + \epsilon_{ij},
 \end{aligned}$$

where, as above, $approval_{ij}$ is individuals' reported approval of the president, their member of parliament, or their local councilor, depending on the specification. The $[attitude]_i$ term stands in for the operationalization of each mechanism: the respondent's attitude toward political information, their perceptions of government capacity, or their beliefs about voter responsibility.

Control variables, represented by x_{ij} , include the community-level geographic covariates (elevation and distance from the coast) and respondent attributes (age and gender) described above. The variable z_j stands in for country fixed effects, and ϵ_{ij} is the error term.

4.5.2 Results: Hypothesis 1

Here I investigate whether each mechanism conditions the effect of service access on approval of elected officials.

Figure 4.8 plots the marginal effects of service access on approval of the president, against each proposed mechanism. Political information (left panel) and voter responsibility (right panel) clearly have a moderating effect on the relationship between service access and approval. The upward slope indicates that service access has a stronger effect on approval of the president at higher levels of the moderating factor. The middle panel of Figure 4.8 shows a slightly negative, very imprecisely

estimated influence of perceived government capacity on the effect of service access on approval of the president. I interpret this as a lack of evidence of a moderating effect. I report the coefficient estimates from these models (of approval of the president) in Table C.4, for the MP in Table C.5, and for the local councilor in Table C.6.

How influential are these mechanisms? For a generic respondent who is informed about public affairs at the highest observed level, improving service access across its interquartile range (4.4 to 6.5) increases the predicted approval of the president by 10%. For a generic respondent with the lowest level of political engagement, the same improvement in service access increases the predicted approval of the president by 7%. This difference in the effects of service access is minimal.

For a generic respondent with the highest observed level of voter responsibility, improving service access across its interquartile range increases approval of the president by 11%. For a respondent whose sense of voter responsibility is at the observed minimum (i.e., emphasizing deference to authority over questioning leaders), the same improvement in service access increases approval of the president by just 4%.

Figure 4.9 plots the marginal effects of services on approval of the MP for each mechanism. Each of the three factors clearly has a moderating effect on the relationship between service access and approval of the MP. The upward slope indicates that service access has a stronger (positive) effect on approval of the member of parliament at higher levels of each moderating factor.

Figure 4.10 plots the marginal effects of services on approval of the local councilor for each mechanism. The slight upward slope indicates that each moderating factor may increase the positive effect of service access on approval of the local councilor, but these increases are not precisely estimated. Overall, these results are consistent with the idea that each individual characteristic - disengagement, low expectations, and deference to authority - tempers voters' responsiveness to their elected officials'

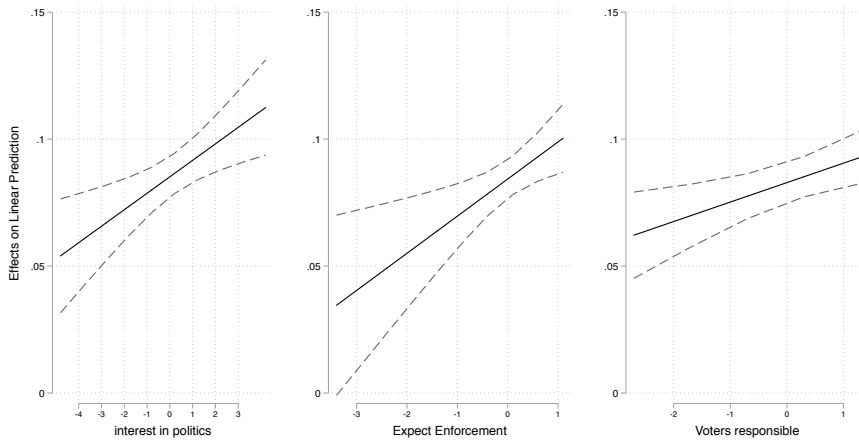


FIGURE 4.9: Mechanisms and Approval of the MP. This figure shows the estimated marginal effect of service access on approval of the respondent's member of parliament, conditional on information about politics (left panel), the respondent's perceived capacity of government (center panel), and voters' sense of responsibility for elected officials' performance (right panel). The dashed lines indicate 95% confidence intervals.

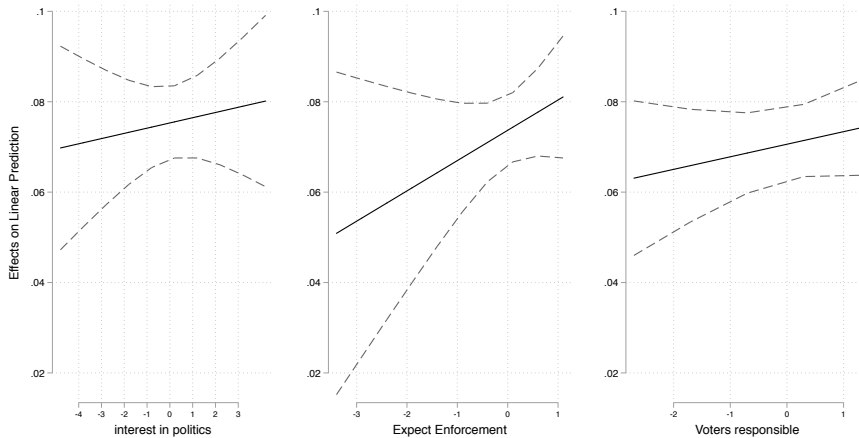


FIGURE 4.10: Mechanisms and Approval of the Local Councilor. This figure shows the estimated marginal effect of service access on approval of the respondent's local councilor, conditional on information about politics (left panel), the respondent's perceived capacity of government (center panel), and voters' sense of responsibility for elected officials' performance (right panel). The dashed lines indicate 95% confidence intervals.

performance. But do they account for any of the conditional effect of distance?

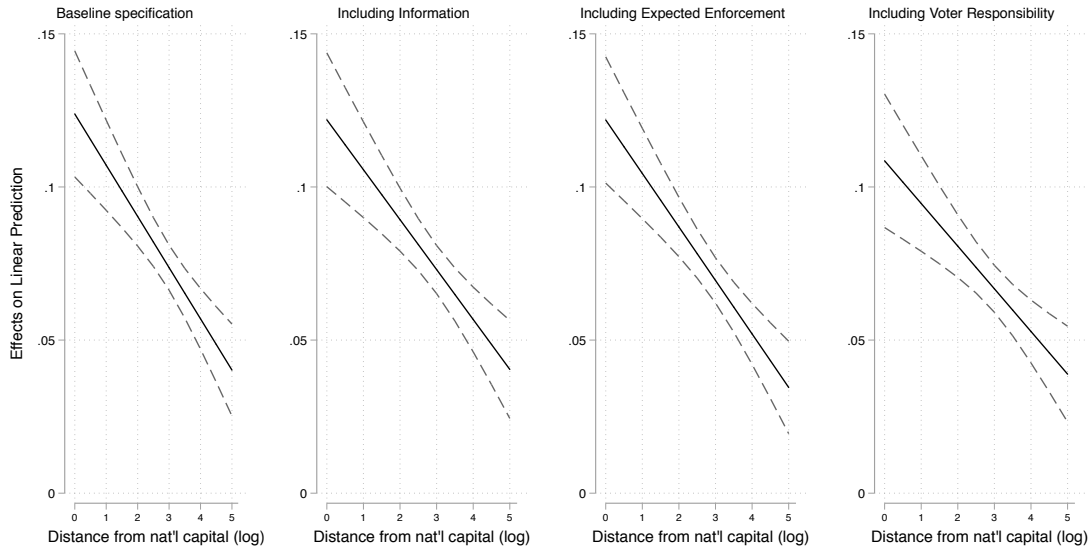


FIGURE 4.11: Distance from the national capital and Approval of the President. This figure shows the estimated marginal effect of service access on the respondent's approval of the president against distance from the national capital. The leftmost panel shows estimated effects from the baseline model, where the effect of service access is conditional on distance only. The subsequent panels show models including measures of the mechanisms: information about politics, the respondent's perceived capacity of government, and voters' sense of responsibility over elected officials. The dashed lines indicate 95% confidence intervals.

4.5.3 Results: Hypothesis 2

The goal of this analysis is to explain why distance from national capitals moderates the effect of services. Yet the role of distance in conditioning the effect of services, illustrated in Figure 4.11, remains both statistically significant and substantial, even when accounting for these potential channels.

Plotting the predicted approval of the president against services, as in Figure 4.12, makes clear the persistent role of distance in conditioning the effect of services. Figure 4.12 plots the predicted approval of the president against service access, with the light gray lines display predictions for a generic respondent at distance from the capital's highest value, and the dark gray lines show predictions for the respondent in

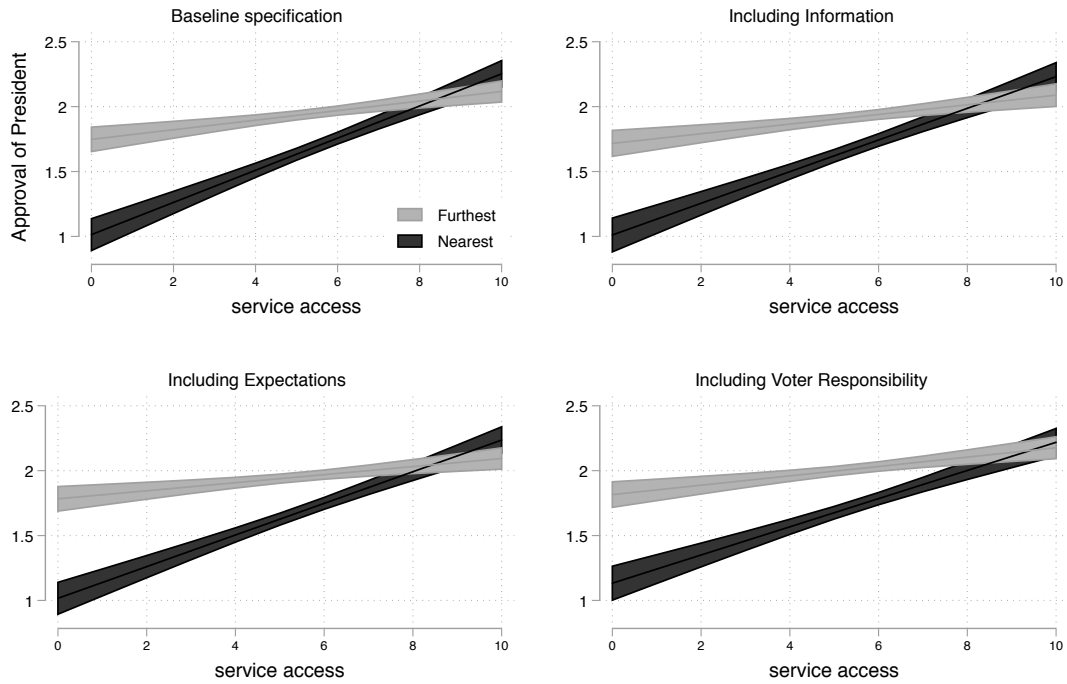


FIGURE 4.12: This figure plots the predicted approval of the president against service access. The light gray lines display predictions for a generic respondent at distance from the capital's highest value, and the dark gray lines show predictions for the respondent in the national capital. Shaded bands indicate 95% confidence intervals.

the national capital.¹⁴ In the baseline model (accounting for none of the mechanisms), for a generic respondent living in a national capital, improving service access across its interquartile range is estimated to increase approval of the president by 17% (from 1.56 to 1.82). For a respondent furthest from the national capital, increasing service access by the same amount has no statistically significant effect (the point estimate actually drops, from 2.2 to 2.1). The difference in difference across remoteness over this range of services is .35 (on a 0-3 scale). Among all of the models including mechanisms, the smallest difference in difference across remoteness is .30. This is essentially the same as the baseline model, meaning that the mechanisms that I have accounted for do not explain the role of distance in conditioning the effect of services

¹⁴ For this and subsequent plots in this chapter, all covariates not shown are held at their means.

on approval of the president.

4.5.4 Substantive effects of the mechanisms: reward and punishment

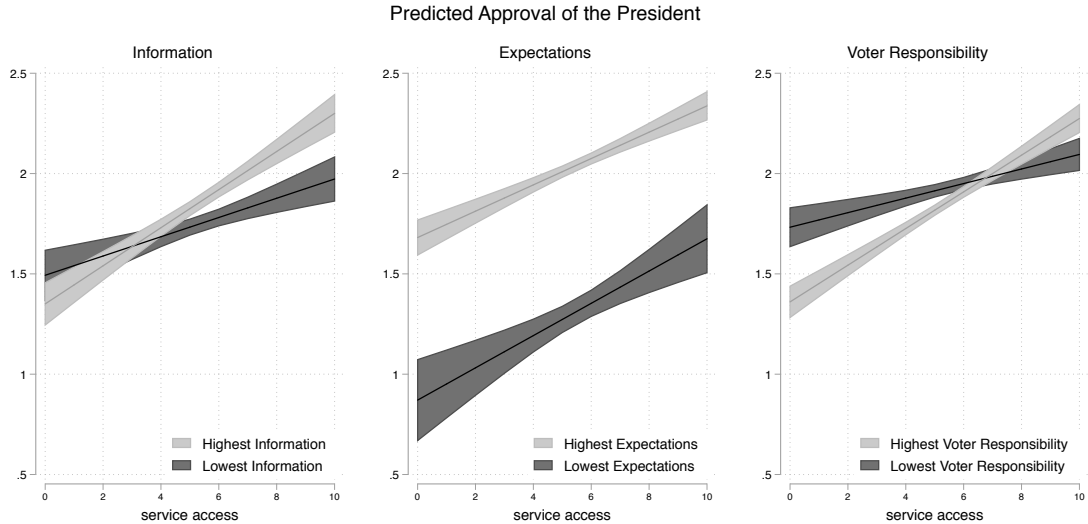


FIGURE 4.13: This figure shows predicted approval of the president against service access. The light gray lines display predictions for a generic respondent at the mechanism’s highest value, and the dark gray lines show predictions for the respondent at the mechanism’s lowest value. Shaded bands indicate 95% confidence intervals.

We now have observed that information, expectations, and voter responsibility do not account for the conditional effect of service access on elected officials, by distance. The expectation was that each of these mechanisms might explain why citizens near the capital ‘punish’ elected officials for poor performance, but remote citizens would not. Interestingly, I find that only one of the three mechanisms fits that pattern. High responsibility voters punish elected officials if they had poor service delivery. As shown in the right-hand panels of Figures 4.13 and 4.14, low responsibility voters do not have lower opinions of elected officials if their service access is lower.

By contrast, those with high expectations of government *reward* both MPs and local councilors when their services are high. If their services are low, their assessments of elected officials are the same as those of voters with low expectations of

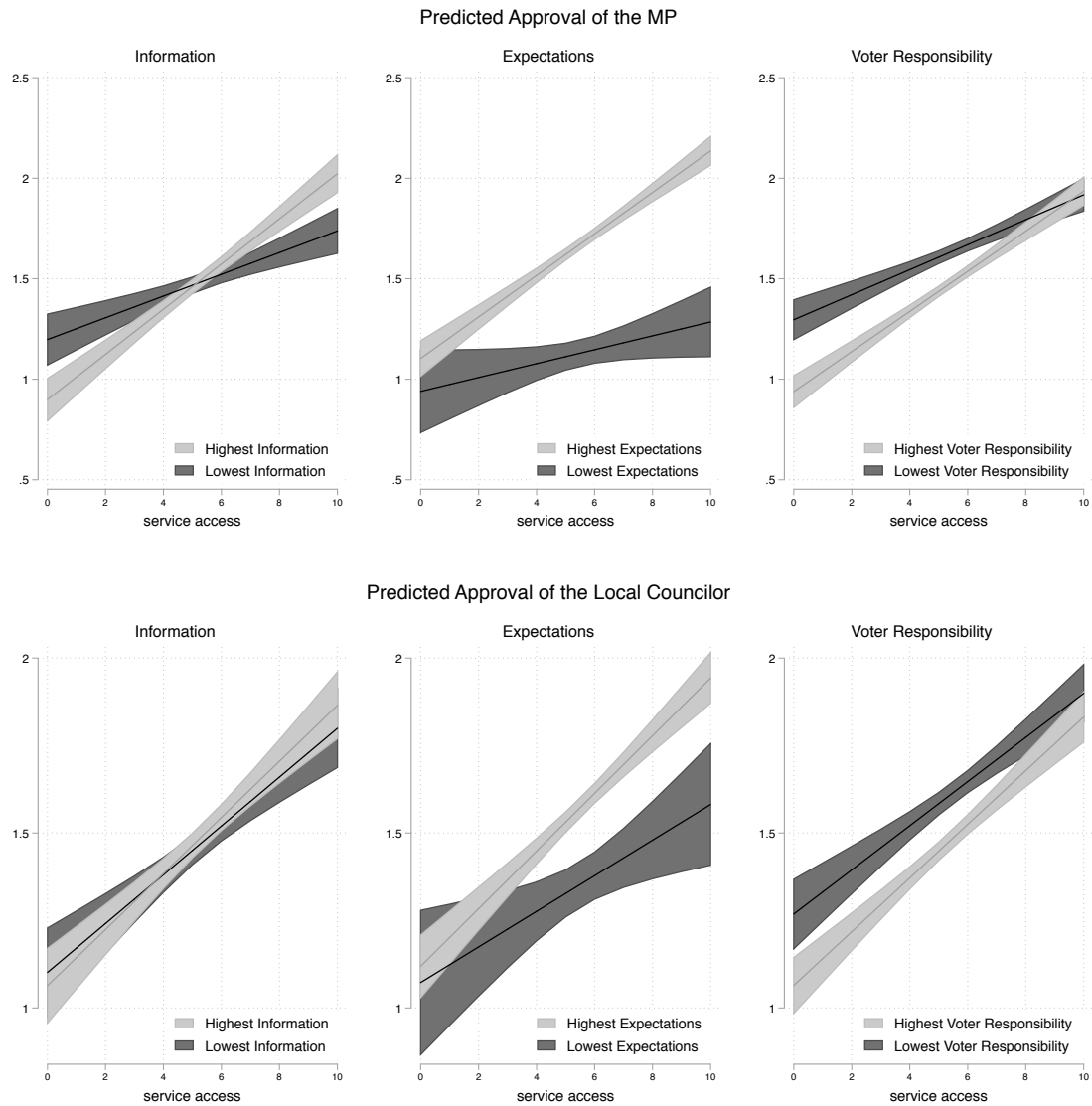


FIGURE 4.14: Predicted approval of MP (top) and Local Councilor (bottom), by mechanism. This figure plots predicted approval of the MP and local councilor against service access. The light gray lines display predictions for a generic respondent at the mechanism's highest value, and the dark gray lines show predictions for the respondent at the mechanism's lowest value. Shaded bands indicate 95% confidence intervals.

government. This is shown in the center panels of Figures 4.13 and 4.14. Information, as shown in the left-hand panels, strikes a balance between reward and punishment, but the overall influence on public support for elected officials is low.

Figure 4.14 plots predicted approval of the MP (top panel) and local councilor (bottom panel) against service access for each proposed mechanism. The first panel illustrates the role of information in qualifying the effect of services. For a generic respondent who is informed about public affairs at the highest observed level, improving service access across its interquartile range (4.4 to 6.5) is estimated to increase approval of the MP by 17% (from 1.4 to 1.63), whereas the same increase in service access would increase the approval of the MP by 8%. For approval of local councilors, information plays a similar role in conditioning the effects of service access, but does not create differences in predictions that are statistically distinguishable from zero.

As with approval of the president, higher perceptions of state capacity predict, on average, higher approval of the MP. Here I find evidence of a conditional effect: those who hold high expectations of government are more responsive to service delivery in their assessments of MPs. For a generic respondent with high beliefs in the capacity of government, improving service access across its interquartile range is estimated to increase approval of the MP by 15% (from 1.8 to 2), whereas the same increase in service access would increase the approval of the MP by only 4% (also to 2).

Rather than inducing voters to punish elected officials for poor service access, voters' beliefs in state capacity reward high service delivery, but do not punish low service delivery. At the 25th percentile of service access, with high expectations of government, a respondent's approval of the MP is predicted to be .5 standard deviations (.46 points) higher than if the respondent had low expectations. At the 75th percentile of service access, the difference in approval of the MP is an even greater .65 standard deviations.

The findings for voter responsibility's relationship with approval of MPs echoes

those for approval of the president. For a generic respondent with the highest observed level of voter responsibility, improving service access across its interquartile range increases approval of the MP by 15% (from 1.6 to 1.8). For a respondent whose sense of voter responsibility is at the observed minimum (i.e., inclined to defer to authority rather than question leaders), the same improvement in service access increases approval of the MP by just 7%. At the 25th percentile of service access, with a high voter responsibility score, a respondent's approval of the MP is predicted to be .2 standard deviations (.19 points) lower than if the respondent had a low sense of voter responsibility. At the 75th percentile of service access, the difference in approval of the MP becomes smaller: just .11 standard deviations.

4.6 Conclusion

This paper makes three main contributions. First, I demonstrate that access to core public services deteriorates in distance from national capitals, from cities, and from the seats of district governments.

Second, I find that distance from national capitals is associated with lower sensitivity to performance in individuals' evaluations of government officials. For voters distant from national capitals, poor access to public services does not lead to dissatisfaction with their elected officials. These findings are robust to the inclusion of a number of geographic and individual-level covariates. Third, I demonstrate the resilience of the geographic influence on voter responsiveness, even when accounting standard obstacles to accountability.

These findings make a contribution to the literature on 'uncritical citizenship' (Mattes and Shenga, 2013) and on accountability more broadly. They demonstrate the role of proximity to governance in accountability, and call for future work. Whatever process links voter responsiveness and distance is not captured by public opinion data on interest in politics, attitudes toward authority, or expectations of government

capacity.

Appendix A

When Chiefs Buy Votes

Table A.1: Balance tests on Covariates

	Treated (Mean)	Control (Mean)	Diff.	Std. Error	Obs.
Female	0.44	0.46	0.02	0.02	1978
Age	40.57	41.82	1.25	0.67	1978
Asante Akan	0.24	0.26	0.02	0.02	1978
Other Akan	0.21	0.22	0.01	0.02	1978
Non-Akan	0.55	0.52	-0.03	0.02	1978
Swing voter	0.36	0.33	-0.03	0.02	1978
NPP voter	0.32	0.35	0.02	0.02	1978
NDC voter	0.32	0.32	0.01	0.02	1978
Inward-facing power	0.44	0.45	0.01	0.02	1978
Outward-facing power	0.72	0.73	0.01	0.01	1978
Assets	-0.07	0.10	0.18*	0.09	1978
Access to services	6.57	6.65	0.08	0.10	1978
Rural	0.54	0.56	0.02	0.02	1978
Distance from District Capital (log)	1.31	1.31	-0.01	0.07	1978
Distance from Accra (log)	5.38	5.37	-0.01	0.03	1978
District population density (log)	4.48	4.49	0.01	0.04	1978

* p<0.1, ** p<0.05, *** p<0.01

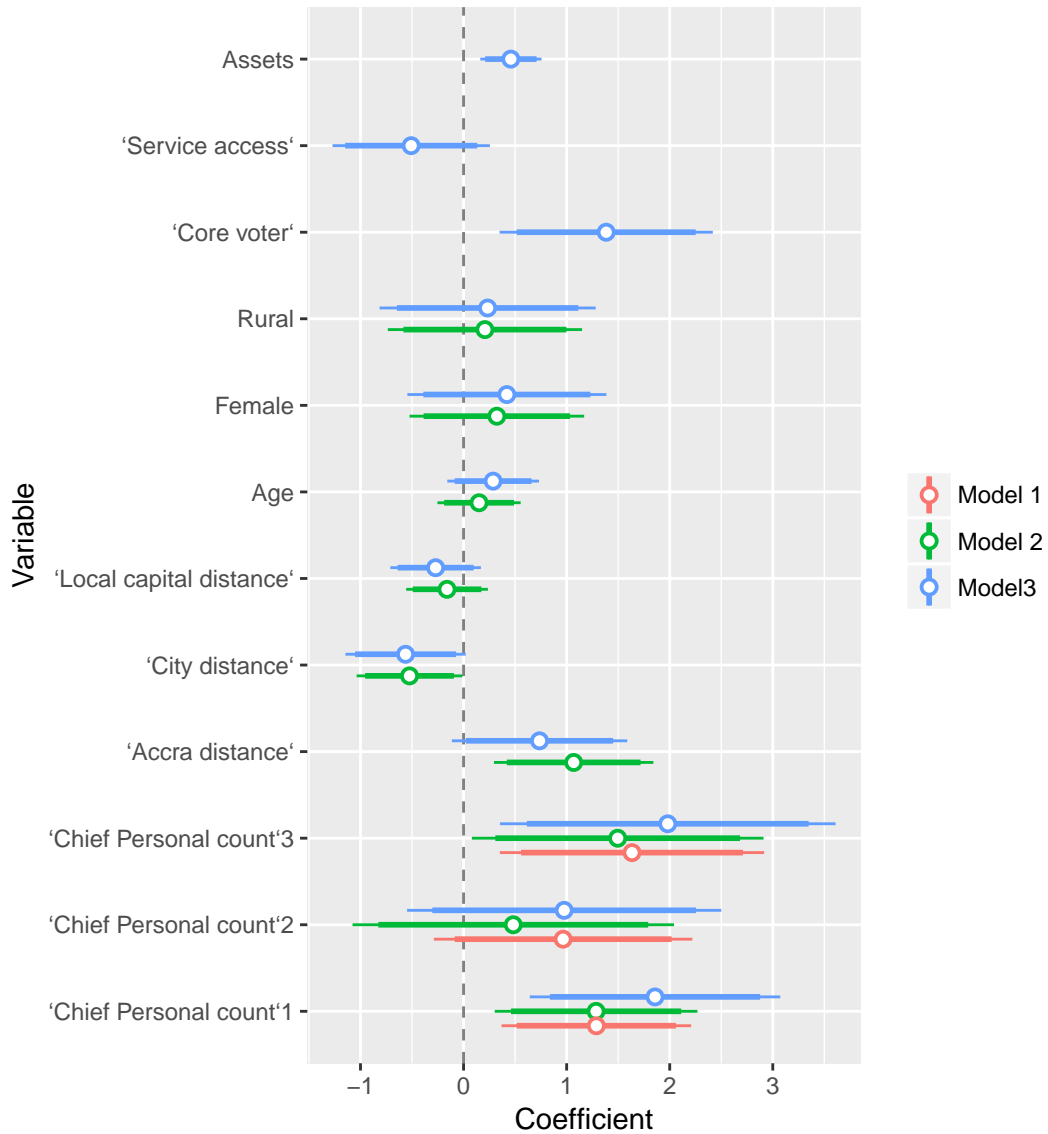


FIGURE A.1: Categorical treatment of personal engagement with chief. Estimated coefficients for predictors of engaging in vote buying. The positive coefficient on *chief personal engagement* is robust to inclusion of *chief political influence* in model 1, measures to account for low-information voters in model 2, and region fixed effects in model 3.

Appendix B

The Geography of Voter Responsiveness in Ghana

Table B.1: Community-level Service Access. Mixed effects logistic regression with district random intercepts.

	(1)	(2)	(3)	(4)	(5)
	Public toilet	Open toilet	Source of electricity	Prim. school access	Water access
Distance from local capital	-0.498*** (0.116)	0.358** (0.117)	-0.835*** (0.227)	0.00764 (0.026)	-0.146*** (0.030)
Distance from Accra	-0.300*** (0.0775)	0.540*** (0.0928)	-0.532*** (0.135)	-0.0904*** (0.0180)	-0.0890*** (0.0209)
<i>N</i>	288	288	288	288	288

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix C

The Geography of Governance in sub-Saharan Africa

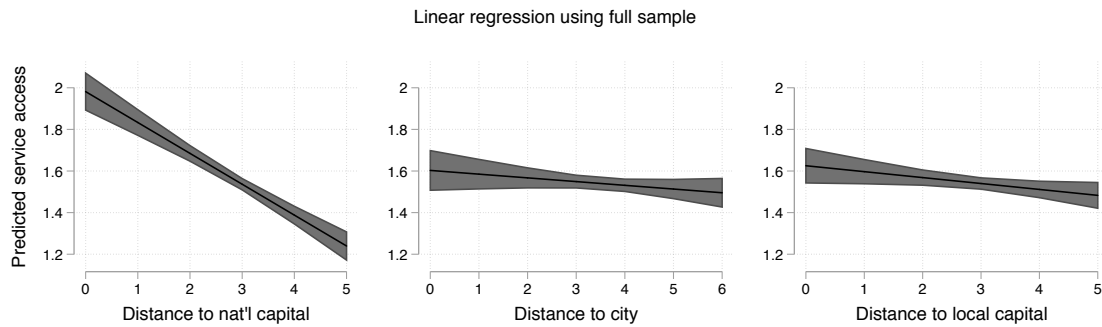


FIGURE C.1: Predicted access to services against distance from the national capital (left), the nearest major city (center), and the local capital (right) using linear regression.

To estimate the effect of remoteness on access to services, I fit a two-part model for mixed discrete-continuous outcomes. In the first step, I fit a logistic regression model to obtain the probability that an individual had tried to get services. In the second step, conditional on the individual having tried, I fit a generalized linear regression model for the ease with which individuals obtained these services.¹

¹ I implement these models using the `twopm` command in Stata (Belotti and Deb, 2015).

Table C.1: Community-level Public Services

	(1)	(2)	(3)
Distance from nat'l capital	-0.171*** (0.043)	-0.154*** (0.043)	-0.215*** (0.044)
Distance from major city	-0.439*** (0.036)	-0.380*** (0.036)	-0.371*** (0.036)
Distance from local capital	-0.075* (0.038)	-0.116** (0.037)	-0.122** (0.037)
Distance from nearest coast		-0.002*** (0.000)	-0.001*** (0.000)
Elevation		0.000** (0.000)	-0.001*** (0.000)
Distance from colonial railway			-0.009 (0.015)
Malaria suitability			-1.599*** (0.191)
Precolonial hierarchy			-0.030 (0.047)
N	4597	4596	4540

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

OLS regression with country fixed effects

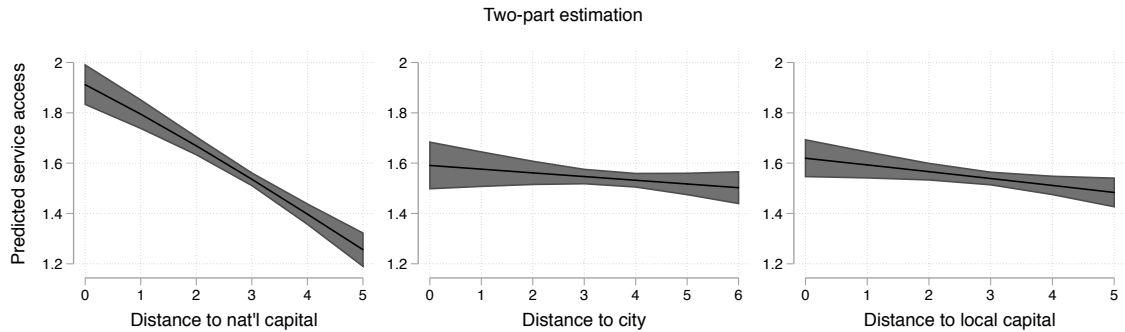


FIGURE C.2: Predicted access to services against distance from the national capital (left), the nearest major city (center), and the local capital (right) using two-part estimation.

Table C.2: Attempt to obtain household services, and ease of access: Two-part model.

	Service Access	
	Attempt (logit)	Ease (glm)
Distance from nat'l capital	-0.286*** (0.034)	-0.049*** (0.012)
Distance from city	0.001 (0.028)	-0.021* (0.010)
Distance from local capital	-0.062* (0.028)	-0.008 (0.010)
Age	0.035*** (0.006)	-0.006* (0.003)
Age sq.	-0.000*** (0.000)	0.000 (0.000)
Male	0.236*** (0.029)	-0.016 (0.013)
Distance from coast	-0.229*** (0.047)	-0.031* (0.015)
Elevation	0.025* (0.011)	0.017*** (0.004)
N	19344	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

This approach is distinct from a Heckman selection model or other generalized Tobit models in that it treats *not trying* as a true zero outcome, whereas a selection model would treat those observations as censored (Newton et al., 2010). I choose the two-step approach because an individual *not trying* to get services such as electricity from the government is likely indicative of a lack of capacity on the part of the government. This lack of capacity is the same influence underlying the entire range of outcomes, meaning that *not trying* to get services is likely a true zero. Where zeros represent actual outcomes, rather than censored data, the assumptions underlying selection models are violated and can lead to inappropriate interpretation of the results (Min and Agresti, 2002).

Another advantage of the two-part model is that it estimates a conditional equation in the second part (as opposed to an unconditional equation as in selection models). This means that it is simple to calculate predictions and marginal effects over the combined first and second part models.

Figure C.2 plots the predicted access to services against distance from the national capitals, the nearest city and local capitals. Overall, the ease of getting services is declining in distance from all three population centers. The difference in level of service access, from the nearest respondent to the most remote one, is 38% for the national capital, 8% for major cities, and 6% for local capitals.

Table C.2 presents the results from two-part models of the relationship between proximity to national and district capitals and to cities on individuals' access to services. Both models include country fixed effects and geographic controls.

As shown in Table C.2, distance from national capitals is associated with a lower probability of *trying* to get services, as well as experiencing more difficulty if one attempts to obtain them.

Table C.3: Approval of job performance for President, MP, and Local Councilor

	(1) Approve President	(2) Approve MP	(3) Approve Loc. Councilor
Distance from nat'l capital	0.127*** (0.027)	0.113*** (0.027)	0.146*** (0.025)
Distance from city	0.018 (0.023)	-0.017 (0.022)	-0.011 (0.021)
Distance from local capital	0.030 (0.026)	0.010 (0.024)	0.015 (0.024)
Service Access	0.129*** (0.018)	0.109*** (0.017)	0.120*** (0.016)
Distance from nat'l capital × Service Access	-0.015*** (0.005)	-0.009* (0.005)	-0.015*** (0.004)
Distance from city × Service Access	0.001 (0.004)	0.003 (0.004)	0.001 (0.004)
Distance from local capital × Service Access	-0.005 (0.004)	-0.002 (0.004)	-0.003 (0.004)
Opp	-0.068*** (0.021)	0.067*** (0.019)	0.081*** (0.019)
incumb	0.310*** (0.019)	0.198*** (0.019)	0.150*** (0.020)
Age	0.000 (0.002)	-0.005** (0.002)	0.002 (0.002)
Age sq.	0.000 (0.000)	0.000** (0.000)	0.000 (0.000)
Male	-0.011 (0.011)	-0.030** (0.012)	-0.006 (0.013)
Distance from coast	0.074*** (0.016)	0.093*** (0.014)	0.093*** (0.014)
Elevation	0.015*** (0.003)	-0.001 (0.003)	-0.003 (0.003)
N	17821	16751	16764

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table C.4: Approval of job performance, in the last year, for the President

	(1)	(2)	(3)
Interest in politics	-0.02 (0.01)		
Expect Enforcement		0.17*** (0.03)	
Voters responsible			-0.08*** (0.02)
Distance from nat'l capital	0.14*** (0.02)	0.15*** (0.02)	0.13*** (0.02)
Distance from city	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Distance from local capital	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
Age	0.00* (0.00)	0.00* (0.00)	0.00 (0.00)
Age sq.	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Male	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Service Access	0.12*** (0.01)	0.12*** (0.01)	0.11*** (0.01)
Distance from nat'l capital × Service Access	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)
Interest in politics × Service Access	0.01** (0.00)		
Expect Enforcement × Service Access		-0.00 (0.01)	
Voters responsible × Service Access			0.01*** (0.00)
N	16966	18894	17691

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C.5: Approval of job performance of Member of Parliament.

	(1)	(2)	(3)
Interest in politics	-0.03*** (0.01)		
Expect Enforcement		0.03 (0.03)	
Voters responsible			-0.07*** (0.02)
Distance from nat'l capital	0.10*** (0.02)	0.10*** (0.02)	0.08*** (0.02)
Distance from city	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
Distance from local capital	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Age	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Age sq.	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Male	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Service Access	0.10*** (0.01)	0.10*** (0.01)	0.09*** (0.01)
Distance from nat'l capital × Service Access	-0.01 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Interest in politics × Service Access	0.01*** (0.00)		
Expect Enforcement × Service Access		0.01*** (0.01)	
Voters responsible × Service Access			0.01*** (0.00)
N	16001	17791	16643

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C.6: Approval of Local Councilor's job performance.

	(1)	(2)	(3)
Interest in politics	-0.03*** (0.01)		
Expect Enforcement		0.03 (0.03)	
Voters responsible			-0.07*** (0.02)
Distance from nat'l capital	0.10*** (0.02)	0.10*** (0.02)	0.08*** (0.02)
Distance from city	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
Distance from local capital	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Age	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Age sq.	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Male	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Service Access	0.10*** (0.01)	0.10*** (0.01)	0.09*** (0.01)
Distance from nat'l capital × Service Access	-0.01 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Interest in politics × Service Access	0.01*** (0.00)		
Expect Enforcement × Service Access		0.01*** (0.01)	
Voters responsible × Service Access			0.01*** (0.00)
N	16001	17791	16643

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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