When Elites Meet: Decentralization, Power-Sharing, and Public Goods Provision in Post-Conflict Sierra Leone

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Abstract

Over the last decade, decentralization of fiscal and policy-making authority has become a cornerstone of development organizations' recommendations for good governance. Yet the institutional design of multilayered government can create tensions as new elites attempt to fill governing spaces long occupied by traditional patrons. In this paper, we use the case of post-conflict Sierra Leone to explore the power-sharing dynamics between traditional hereditary chiefs and newly elected community councilors, and how these dynamics affect the provision of local public goods. Using data on several measure of local service provision, we find that councilor/chief relationships defined by competition are associated with higher levels of public goods provision as well as greater improvements in these goods between council areas over time, whereas relationships defined by frequent contact in the absence of disputes as well as higher frequencies of familial ties between the two sets of actors are associated with worse local development outcomes. This evidence suggests that greater competition between elite groups is beneficial for local development, whereas collusion or cooption between old and new elites harms the provision of local public goods.

Section 1: Introduction

Decentralization creates new institutions. These institutions, in turn, create new political positions, provide new avenues to accumulate political power and promote the development of new local elites. By design decentralization introduces newly elected elites into preexisting systems of local governance, leading to potential conflicts between new and old local authorities. We argue that potential power-sharing tensions between old and new elites have implications for the success of decentralization policies; an insight thus far insufficiently explored in scholarly and policy debates. Using the case of Sierra Leone, this article attempts to fill this lacuna by examining how the process of decentralization shapes power relations among different sets of local actors who are both attempting to fill the same governance space, and how the dynamics of these relationships affect the provision of local public goods.

Guided by international organizations, Sierra Leone initiated a protracted process of decentralization in 2000, culminating in the passage of the Local Government Act (LGA) in 2004. The international community supported the devolution of public goods provision to local governments in Sierra Leone believing that it would empower citizens, strengthen local government vis-à-vis the central government, and increase oversight (Sacks and Larizza 2012). Further, international support for decentralization was spurred by the belief that the centralized nature of the Sierra Leonean government was a driving factor in instigating Sierra Leone's decade long civil war (Jackson 2005).

One of the central components of the LGA was to devolve the majority of central government responsibilities to newly created local councils. This reduced the customary legal responsibilities of hereditary Paramount Chiefs, and challenged the *de jure* influence of traditional leaders as the primary source of local public authority. In this paper, we investigate how the subsequent types of relationships that have formed between local councilors and Paramount Chiefs have affected local development. Using data from Sierra Leone's Decentralization Stakeholders Survey (DSS), which surveys all local councilors in the country, and the household level National Public Surveys (NPS), we find that closer self-reported relationships between chiefs and councilors are associated with a decrease in the use of local public health and education facilities as well as worsening perceptions about the quality of local public goods. In contrast, we find that a greater degree of competition between the two groups, defined as a greater number of self-reported inter-elite disputes, is associated with improved

local development outcomes. We also test numerous other council-level compositional variables and find that, with few exceptions, these variables have little effect across public goods outcomes in Sierra Leone. Our findings suggest that the nature of inter-elite relationships is key in determining the provision of local public goods in the country.

This paper is organized as follows: Section 2 reviews the decentralization literature related to power-sharing tensions in local governance and their consequences for local development. Section 3 introduces the case of post-conflict Sierra Leone. Section 4 describes different types of strategic interactions that may be taking place between local councilors and Paramount Chiefs, as well as other council-level variables that may influence local development outcomes. Section 5 presents our data, measures, and multi-level model specifications, which include both enumeration area (EA) level and council-level variables. Section 6 presents our model results, including robustness checks and cross-level interactions. In Section 7 we discuss the implications of our findings to the extant literature on decentralization and local development. The final section concludes.

Section 2: Decentralization, Public Goods Provision, and Local Power-Sharing

The political economy literature suggests that the theoretical benefits of decentralization are twofold. First, budgeting power at the local level can increase accountability for the provision of public goods. Second, the state can increase revenue mobilization by tapping resources the central government is incapable of reaching. As decentralization has spread globally, scholars have started to test empirically the extent to which these benefits are actually observable. Due to data restrictions, most research focuses on fiscal decentralization (Rodden 2004), and results have shown that the effects are not homogenous across cases. Several scholars have found that decentralization promotes good governance and economic growth. For example, Singh and Srinivasan (2006) find that *de facto* fiscal autonomy in sub-national governments in India promote direct accountability structures between citizens and their local officials. In the Mexican case, Careaga and Weingast (2003) similarly find that fiscal systems that allow sub-national governments to keep the majority of revenue they collect have stronger incentives to foster local economic growth. When local officials cannot keep the revenue they collect they have incentives "to substitute market-enhancing public goods for rent-creation and corruption" in most domestic political contexts (Weingast 2009, 285).

Other studies, however, have documented instances where decentralization policies have created negative outcomes. Ko and Zhi (2013, 36) argue that without strong legal enforcement, in the form of monitoring and auditing, fiscal decentralization can actually increase corruption at the local level. They argue that in China, decentralization has led to "illegal or predatory taxation, misuse of budgets, as well as other types of corruption." In his review of the fiscal decentralization literature, Wibbels (2006, 168) finds additional cases where decentralization appears to have caused poor economic performance, aggravated redistributive and ethnic conflicts, and increased inequality. Even when fiscal decentralization improves local service delivery, the cost of coordination across multiple levels of government may outweigh the benefits (Treisman 2000).

A large literature also exists in comparative political economy that attempts to explain and analyze variation in public goods[1] provision. A strand of this literature examines how variation in representative or bureaucratic political institutions increases or decreases public goods provision (e.g. Tsai 2007, Olken 2010, Sheely 2013). Specific to African experiences, much of this research has focused on the relationship between conflict, ethnic diversity, and public goods provision (Miguel and Gugerty 2005; Habyarimana et al. 2007, 2009; Casey et al. 2012), while fewer studies have examined outcomes related to power-sharing dynamics of local elites.

There are, however, a few notable exceptions. Examining the relationship between chiefs and local MPs in single-member constituencies in Zambia, Baldwin (2013) finds that closer ties between the groups are beneficial to the public provision of education because chiefs "serve as a technology by which resources are delivered to communities" and further that citizens vote for MPs backed by local chiefs because they recognize these welfare benefits. The effects of the relationship between chiefs and national level politicians on local development, however, are likely to be different than scenarios in which both groups are directly competing for the same sphere of local governing influence.

In the West African context, two other recent studies consider the role of traditional power holders in public goods provision in newly decentralized states. Acemoglu, Reed, and Robinson (2013) find that districts in Sierra Leone with fewer ruling families, and therefore

[1] Following Ostrom and Ostrom (1999), we define local public goods as goods that are non-excludable and non-rival within a specific geographic area.

fewer competing chiefs, have worse development outcomes in terms of education attainment, child health, and non-agricultural employment. They argue that less competition for the chieftaincy allows local power holders to use traditional mechanisms of social control rather than build community development through providing public goods.

Fearon et al. (2009) argue that chieftaincy buy-in to externally-funded development projects is an important pre-condition to their success in northern Liberia. This research shows that temporary donor-driven Community Development Committees (CDCs) produced higher levels of social and economic cohesion and larger contributions by citizens to public goods games in villages where local chiefs and village elders cooperated, rather than competed, with the new CDCs. These two studies support our intuition that the nature of the relationship between councilors and chiefs is an important factor for distributional outcomes. However, the findings are somewhat contradictory. Acemoglu, Reed, and Robinson (2013) find that competition is good for public goods provision, whereas Fearon et al. (2009) find that cooperation is beneficial. Neither study, however, directly investigates relationships that necessitate long-term power sharing between different types of local elites.

Indeed, with a few notable exceptions (see Treisman 2006; Beramendi 2012), this literature has yet to seriously take into account the fact that decentralization empowers new sets of local actors and overlays them onto existing political, economic, and social systems. To address this lacuna, we seek to understand how the introduction of new local power holders and new institutions that necessitate long-term power sharing have shaped, or reshaped, the incentives of other relevant actors at the local level to provide public goods.

Section 3: The Case of Sierra Leone

3.1 Power-Sharing Tension and Conflict

Tensions between levels of government in Sierra Leone are not new. The British created several versions of district councils during colonialism to oversee local governance, but this system was not maintained by Sierra Leone's post-independence government (Barrows 1976). Many attributed the failure of the district councils to their successful co-optation by Paramount Chiefs,[2] which was exacerbated when former Prime Minister (1968-1971) and President (1971-

[2] For several well documented accounts of how Paramount Chiefs systematically undermined District Councils see Kilson (1966), Wraith (1972), Johns and Riley (1975), Barrows (1976) and Richards (1996).

1985) Siaka Stevens created a one-party state and consolidated his own position by empowering chiefs who were supporters of his regime (Mitton 2009; Richards 1996).[3]

The Sierra Leonean Civil War was also rife with tensions between local elites and militias. War began in 1991 when the Revolutionary United Front (RUF) attacked the Sierra Leone Army from across the Liberian border. In 1992, the All People's Congress (APC) was ousted by a military coup, and the newly formed National Provisional Ruling Council (NPRC) continued to battle against RUF rebels. Another coup in 1996 returned Sierra Leone to civilian rule and ushered in the presidency of Ahmed Tejan Kabbah of the Sierra Leone People's Party (SLPP). Despite being ousted briefly by a coup in 1997, which brought the RUF to power, Kabbah maintained leadership of the SLPP throughout the war. During his tenure, Kabbah coordinated with existing community militias to protect villages against RUF abuse by creating an organization of Civil Defense Forces (CDF). Over the course of the war, the CDF became the main paramilitary offensive to protect the SLPP regime (see Gberie 2005; Richards 1996).

In CDF controlled regions, primarily concentrated in the east, the militias relied on Paramount Chiefs for financial support (Hoffman 2011). Chiefs were motivated to help the CDF fight the RUF, as the RUF targeted chiefs and members of their households (Sacks and Larizza 2011, 13). The power of chiefs was also heightened in CDF-controlled areas as central authority from Freetown eroded as the war progressed (Humphreys and Weinstein 2008, 441–443; see also Keen 2005).

3.2 Decentralization in Sierra Leone

In post-conflict Sierra Leone, decentralization has created new authority structures that must compete with the interests of local chiefs who operate within their own long entrenched governance structures. The 2004 LGA legally subordinates Paramount Chiefdoms to both the newly created local councils and to the central government. The local councils, then, have become the new *de jure* intermediate authority between the chiefdoms and the central government, and are formally responsible for the distribution of public goods (Fanthorpe 2005; Robinson 2008). Related to the delimitation of chiefs' formal responsibilities, the Chieftaincy Act of 2009 (2009, 14) list five official duties Paramount Chiefs have within their chiefdom: 1) to supervise local tax collection and assist other authorities in tax collection, 2) to prevent "the

[3] Stevens, however, ultimately abolished the district councils in 1972.

commission of offences" and maintain order and good government, 3) to preserve and promote traditions and customs, 4) to serve as an agent of development and 5) to supervise the election of sub-chiefs. As this list suggests, the exact formal role of the Paramount Chiefs remains opaque both in law and in practice. For example, the councils and chiefdoms are required to share revenue raised from local taxes and mining (LGA 2004, 33), but neither the Chieftaincy Act nor the LGA specifies an exact protocol for this process.[4]

Unsurprisingly the opaque nature of the formal power-sharing responsibilities between councilors and chiefs has led to local tensions. As one observer notes, the 2004 LGA and the 2009 Chieftaincy Act "did not bring closure to the relationship between local councils and chiefs," and though chiefs are legally subordinate to local councils, the chiefs "have not accepted this hierarchy" (Fofanah 2011). Fofanah (2011) provides further examples of councilor/chief tensions, including Paramount Chiefs collecting revenue but never turning over the precept to the local council, while local councilors have also been reported to collect their own taxes independent of chiefs.

Section 4: Power Sharing and Public Goods Provision

In this section we explore how power-sharing tensions created through decentralization may affect the provision of local public goods. We first outline explicit relationships between chiefs and councilors (contact, disputes, and familial relations) and derive expectations about how these relationships might affect the distribution of public goods. We then examine other compositional characteristics that might affect the nature of interactions between councilors and chiefs and thus indirectly affect local development. Finally, we outline additional council-level compositional variables that may also affect public goods outcomes unrelated to councilor/chief interactions. We lay out or theoretical expectations here, but discuss the specific operationalization of our key dependent, independent, and control variables in Section 5.

[4]According to the LGA (2004, 35) three months before the end of every fiscal year, local councils set the amount of taxes to be collected in their locality, as well as the percentage of the tax to be paid to the council (the precept). The council then notifies the chiefdom and the chiefdom is responsible for collecting local taxes and remitting the precept to the local council during the following fiscal year. The LGA establishes no minimum or maximum percentage that the precept should be nor does it specify a set amount for the chiefdoms to keep. Local councils are also responsible for all expenditures related to carrying out the devolved functions and for preparation of annual budgets. They can also use council assets for income generation for the council and borrow money.

Section 4.1 Councilor and Paramount Chief Relations

We examine power-sharing dynamics between the two groups of local elites by observing their explicit self-reported relationships. The potential for different types of councilor/chief relationships may arise under several circumstances. First, at least one Paramount Chief has the legal right to sit on every local council in Sierra Leone. Second, as we have expressed throughout this article, even chiefs without council seats have incentives to approach council members as they vie for control over local governance. And finally, many local councilors report being directly related either by blood or marriage to the Paramount Chiefs in their districts.

We assume here that the general nature of the relationships between councilors and chiefs may take on one of two broad forms: competition or collusion. We expect competitive relationships to be defined by frequent self-reported disputes between councilors and chiefs. Collusion, in contrast, may take several forms that vary on the extent to which the two groups actually share power. In a more equal power-sharing scenario, collusion might best be described as cooperation in which both chiefs and councilors divide fiscal and policymaking responsibilities equally or come to decisions through consensus. In more unequal relationships, however, collusion may be better expressed as cooption in which one group has been able to capture the complete decision-making authority of the other. Given the history of decentralization and the traditional power base of Paramount Chiefs in Sierra Leone, we expect this type of capture to be in the direction of chiefs coopting the authority of local councilors, rather than local councilors successfully superseding chiefs' authority.

The literature outlined above suggests several potential, and at times contradicting, ways in which the nature of councilor/chief relationships may affect local development outcomes. First, competition between local elites may be beneficial for the provision of local public goods, as some research suggests that existing elites support institutional innovation when there is a high degree of political competition from rival elite groups (Acemoglu, Reed, and Robinson 2013; Acemoglu and Robinson 2006). Given that the introduction of local councils effectively dissolved chiefs' formal monopoly on local authority, decentralization may have prompted both groups to invest more in local public goods as they each vie for the public's commitment to their authority. Of course, however, when both groups use their positions to invest in private goods to maintain or build patronage networks, inter-elite competition may come at the expense of local public goods provision. In addition, when disputes hinder the ability of either group to

effectively provide public goods - for instance, when on group seeks to actively obstruct the authority of the other - we also expect inter-elite competition to harm local development outcomes.

There are also theoretically based reasons to expect that relationships defined by cooperation, rather than competition, will be beneficial to the provision of local public goods. For instance, as Fearon et al. (2009) suggest, chieftaincy support of local council projects may increase the chances of programmatic success. Further, Logan's (2008, iii) analysis of Afro-barometer data from 15 countries on the continent, finds that respondents' evaluations of newly decentralized local authorities and hereditary chiefs move together, noting "local traditional leaders appear to draw their sustenance and legitimacy from the same well as elected officials." This suggests that rather than control over local power and resources being a zero-sum game, cooperative relationships between chiefs and councilors may be beneficial for public goods outcomes as well as public perceptions of the quality of local government. If these types of cooperative inter-elite relationships are at play, closer ties between councilors and chiefs should be associated with greater levels of public goods.

Yet other research on the political economy of Africa suggests an opposite effect. Close inter-elite relationships may indicate that councilors are benefitting from chiefs' clientelistic networks to buy votes and ensure future electoral support. In such instances, patronage-based redistribution may come at the expense of public goods provision (Bratton 2008; Collier & Vicente 2012; Keefer 2005; van de Walle 2003, 2012; Wantchekon 2003). In addition, if councilors draw their legitimacy indirectly from the support of chiefs rather than from their performance, the accountability of local governance and thus councilors' incentives to invest in public goods also decline. In such scenarios, we expect that closer inter-elite relationships defined by frequent contact in the absence of disputes and a higher frequency of councilor/chief familial ties will lead to worse local development outcomes.

In sum, both theoretical and empirical work on inter-elite competition and local governance suggest countering expectations on the ways in which the nature of inter-elite relationships will affect the ability of both groups to effectively provide local public goods. We hope to contribute to this debate by providing direct evidence on different types of self-reported inter-elite relationships as we explore how power-sharing dynamics affect different dimensions of local public goods provision.

Section 4.2: Councilor/Chief Relationship Moderators and Alternative Explanations

In addition to direct councilor-chief relations, there are several other council-level characteristics that may indirectly influence the relationship between chiefs and councilors and thus their ability to provide local public goods. We describe these potential moderating variables here as well as other council-level variables that may affect local development outcomes separate from councilors' relationships with Paramount Chiefs.

Party and Electoral Competition

Political parties and electoral competition shape incentives of political elites. Under certain conditions, electoral competition can create accountability and upward pressure on politicians as they must be responsive to the needs of their constituents (Hecock 2006). Increased electoral competition, however, has not led to universal improvements in development outcomes in many young African democracies. Rather competition in areas with weak electoral oversight creates incentives for politicians to devote resources to foster private political patronage rather than to invest in public goods (Bratton 2008; Collier and Vicente 2012; van de Walle 2003, 2007). Examining politicians' tendencies towards clientelisim in further detail in Sierra Leone, Jablonski, Sacks, and Larizza (n.d.) argue that the impact of competition on public goods provision is mediated by a candidate's wealth, either from personal assets or access to the ruling SLPP coffers.[5] When politicians have funds available, they will respond to electoral competition with vote buying. When they lack discretionary income, they will respond with more investments in public service projects. Therefore when electoral competition is high, we expect higher SLPP membership to be associated with increased public goods provisions.

CDF Membership

As described in Section 3, during Sierra Leone's civil war, the Civilian Defense Force and Paramount Chiefs operated under a reciprocal relationship in which the CDF relied upon chiefs for funding and the chiefs depended on the CDF for protection against the RUF. We therefore expect that councilors who were previously in the CDF will have strong preexisting

[5] SLPP members were able to raise, on average, 37% more campaign funds from the party than members of the APC (Jablonski, Sacks, and Larizza n.d., 18).

relationships with local chiefs and, once elected, will be more socialized to accept chiefs' authority. Of course, whether these close relationships are beneficial or detrimental to local development outcomes relates to our main empirical question discussed above – and we are agnostic to the effect of prior CDF membership on local development outcomes when it is not moderating councilor/chief relationships.

Age and Education

The elder/youth divide served as a key demographic cleavage during Sierra Leone's long civil war. Student radicals opposed to the one-party regime of the APC originally formed the RUF. The student led ideology of the RUF did not last long into the conflict, but as the war progressed, the RUF recruited alienated youth in Freetown and abducted youth from the countryside (Abdullah 1998; Mokuwa et al. 2011; Peters and Richards 2011; Richards 1996). Indeed, by the conflict's end more than half of the 75,000 combatants in the RUF were children between the ages of 8-14 years of age (Peter and Richards 1998, 186).

In part because of the war's legacy, age continues to be a politically salient feature of Sierra Leonean politics, and this may have indirect effects on potential councilor/chief relationships. The chieftaincy in Sierra Leone is largely composed of community elders, whereas the local councils on average recruit a younger demographic; implying members of these two groups are likely to have experienced the war differently.[6] We expect that councils that are on average younger may have more autonomy from pre-existing elites than those that are on average older. We include mean councilor age in our models on the assumption that it may help shape interactions between councilors and chiefs, but again we are agnostic to the effect this may have on public service provision separate from how it moderates councilor/chief relationships.

We also expect that councilor median education may inform how councilors value public goods, such as education and healthcare. In particular, we hypothesize that higher average education levels of councilors will be associated with increased public goods provision in their districts *ceteris paribus*.

[6] The DSS report notes that the 2004 Local council cohort had a median age of 50, whereas the 2008 cohort had a median age of 44. The median age of the Paramount Chiefs is 60 (Kpaka 2011). Additionally, we are aware that the concept of youth in the Sierra Leonean context means unmarried, not young in age. However, we do not have data on marriage rates in the Local councils, but we assume that age is at least a partial proxy for marriage.

Gender

Another council-level variable that may affect public goods provisions relates to the number of women elected to the group. Research on the political economy of gender suggests that women's presence in political bodies translates into substantive policy decisions in at least three ways. First, female representatives may prefer a different bundle of public goods than male representatives (Chattopadhyay and Duflo 2004). In particular, evidence from the United States (Miller 2008; Rehavi 2008) and India (Bhalotra, and Clots-Figueras 2010; Clots-Figuerasa 2012) suggests female elected officials prioritize health and education spending. Second, when governing by consensus, female constituents may be more likely to express their opinions in councils that are led by women (Ban and Rao 2008). Finally, in the Indian context, Munshi and Rosenzweig (2008) find that female council leaders are more competent than their male counterparts in delivering public good investments to their constituencies. From this we expect that local councils with more women may have higher rates of public investments in health and education services than those with fewer women, all else equal.

In addition, the gender composition of local councils may mediate the potential for different types of councilor/chief relations. Recent work from a policy experiment with reserved electoral districts for female councilors in Lesotho presents evidence that traditional leaders loose authority in districts reserved for women because the presence of female councilors implicitly challenges the patrilineal tradition on which chiefs base their authority (Clayton 2014). Again, however, how this dynamic affects local development outcomes relates to our main empirical question.

In addition to these council-level compositional variables, we discuss the EA-level controls we include in our models in Section 5.3.

Section 5: Data, Measures, and Methods

Our analysis draws on data from two types of surveys in Sierra Leone. First, we create the local council variables from the Decentralization Stakeholders Survey (DSS), which was given to all local authorities affected by the decentralization process. We use data from the survey conducted immediately after the 2008 local council elections that surveys councilors from

the 2008–2012 cohort. Second, we use a series of longitudinal surveys on the National Public Services (NPS) surveying over 6,000 households throughout Sierra Leone from 2005 to 2011 to measure changes in access and use of public services. The 2011 survey was designed to be longitudinal at the EA level, prompting us to aggregate household level variables to this unit of analysis. Our data include measures at the EA level from 2007, 2008, and 2011, which we describe in detail below. Our complete dataset includes 607 EA-level observations nested within 19 local council areas.

Section 5.1: Dependent Variables

We operationalize our first outcome of interest as the provision of healthcare. During Sierra Leone's protracted process of decentralization, a range of fiscal and administrative functions and responsibilities related to public service provisions were devolved to local councils. Of the 80 functions, health care was among the first and was fully devolved in law and in practice by 2005 (Casey 2009; Sacks and Larizza 2011, 10). The effects of fiscal decentralization on power-sharing relationships and public good provision therefore should be most observable in the use of public health services.[7] The NPS survey asks respondents about the level of heath care service in their communities, including what type of hospital or clinic they most often visit (government, private, NGO, traditional healer, etc.).[8] Our first dependent variable, therefore, is the percentage of respondent per EA that report using government-run health facilities in 2011.

As an additional indicator of health care provision we take a survey question from the 2011 NPS survey that directly asks respondents: "What do you think has happened to the quality of government health services in the last year?" Household respondents could report on a five-

[7] In Sierra Leone, devolution of public service delivery to the local councils has largely meant the direct transfer of block grants to council accounts. These block grants cover basic maintenance of the programs and are used for the local implementation of public policies set at the ministry or central government level for that particular issue area. The LGA only guarantees that the annual grants are enough for basic maintenance of services. Therefore, other forms of local revenue stemming from local tax collection or mining revenue, or the precept that councils collect from Paramount Chiefs, are important components of local council budgets. The actual local council budgets in 2011 help verify this assumption, as many councils spend more, some much more, on health and education than the block grants that they receive from the central government.

[8] There have been four rounds of the NPS surveys: 2005, 2007, 2008 and 2011. We use the 2008 and 2011 surveys, and we prefer the measure of self-reported distance to the nearest health center. The survey also asks how long it takes to get there in minutes. We choose not to use this measure because the time it takes to get to a health center could also be a function of infrastructure (i.e. if roads have improved in the area) and household wealth (i.e. if the respondent is now able to take a public bus rather than walk),

point Likert-type scale that government health services had gone from much worse to much better over the previous year, with higher values on the scale associated with perceptions of greater improvements in of the quality of government health services. Again we average these responses to EA level to create our second dependent variable. We consider public perceptions of the quality of government health services an important area of inquiry separate from actual usage of these services. The decentralization process in Sierra Leone was at least partially motivated by the belief that many grievances during the civil war were related to the centralized nature of the state, leading ultimately to a lack of government accountability and low levels of trust among citizens. Because fiscal decentralization was intended to increase public knowledge of government led service provision, whether citizens actually observe and approve of changes in these services is an important indicator of the success decentralization initiatives, and, therefore, a potentially important antecedent to trust in local government (see Sacks and Larizza 2011).

Our third dependent variable is access to public education services, which will indicate the degree to which our findings are consistent across different types of public goods. We measure the provision of public education as whether families with school age children report that their children attended government schools on the 2011 NPS. Although local councils did not receive direct transfers for education until 2007 (Casey 2009), this function was devolved to the cohort of councilors included in our surveys, causing us to expect a substantive impact in this policy area as well. Ideally we would also include a dependent variable measuring variation in public goods that remain in the domain of the chiefdoms, such as security and the maintenance of order, to assess whether power-sharing dynamics affect the provision of these goods. Unfortunately, the NPS does not include indicators of this nature.

Table 1 reports the correlations between our three dependent variables, which indicate the extent to which the three measures of service delivery are related to each other six years after the Local Governance Act initiated the process of decentralization. We note that the use of government health services and government schools are moderately positively correlated in our data, suggesting public investments in government and education generally move together. Further these values are not correlated in 2008 ($r = -0.007$), suggesting that the correlation in the 2011 usage levels are related to simultaneous improvements in public heath and education provision at the council level.

Perhaps unsurprisingly, in the past year, perceptions of improvements of public health services are not related to the 2011 levels of the use of government schools. More surprisingly, however, our measure as to whether citizens perceive that government health facilities have improved over the past year is also not related to the reported usage of these facilities in 2011. This discrepancy between self-reported usage and perceptions of quality can be interpreted in at least three ways. First, it is possible that because fiscal authority over health spending was one of the first functions devolved to local authorities, councilors might have devoted funds to improving access to local health facilities early in their tenure, so that by 2011 respondents would not report improvements during the previous year. Second, it is possible that whether or not citizens use government health facilities is quite separate from the quality of services they receive at these facilities. As current media attention to the Ebola outbreak has highlighted, access to government health facilities does not mean that these facilities will be adequately staffed or well stocked. Finally, it is possible that the low level of correlation between our measures of perceptions and usage suggests that one of these measures may be a more valid and reliable indicator of local public health provision than the other.

Each of these possible interpretations indicates to us the importance of measuring health facility usage and quality of services separately, allowing us to robustly test the council-level effects on different dimensions of service delivery. Further, we argue that the relatively low levels of correlation between our dependent variables strengthens our ability to test for the effects councilor/ chief interactions on different dimensions of service delivery. That is, the results we present below demonstrate how inter-elite relationships shape fairly independent measures of service delivery, rather than displaying similar effects across highly correlated dependent variables.

	Use of government health facilities (2011)	**Perceptions of government health services (2011)***	**Use of government schools (2011)**
Use of government health facilities (2011)	1.00		
Perceptions of government health services (2011)*	-0.041	1.00	
Use of government schools (2011)	0.1254	0.0316	1.00

* Higher values indicate quality has gotten better over the previous year.

Table 1: Correlations between the three dependent variables: EA-level use of government health facilities, use of government schools, and perceptions of government health services.

Section 5.2: Independent Variables and Controls

In Section 4 we listed a host of explanatory variables that might affect the provision of public goods either directly or indirectly by shaping the nature of the relationship between councilors and chiefs. We operationalize direct relationships between councilors and chiefs within any given council by using three council-level indicators: the median number of times councilors report having contacted a chief in the previous month, the percentage of councilors that report having had a dispute with a chief during the past month, and the percentage of councilors that report that they are related to a Paramount Chief either through blood or marriage.

Figure 1 displays the variation for each of these variables by council. The graphic in the upper left quadrant illustrates the median self-reported monthly contact with chiefs grouped by local council. Regular monthly contact with chiefs is reported by at least one councilor on all councils, and the mean of the median monthly contact across councils is slightly under five times per month. The bottom left quadrant plots the percentage of councilors who report that they have familial ties with a chief. As with the monthly contact variable, at least one councilor (and often the majority of councilors) on each council reported being related to Paramount Chiefs. The upper right quadrant shows the percentage of councilors that reported having had a dispute with a chief. Unlike the family ties and contact variables, few councilors report having had disputes with chiefs. Councilors on more than half of the councils report that have had no disputes with chiefs, and the average percentage of councilors reporting disputes across councils is slightly over five percent.

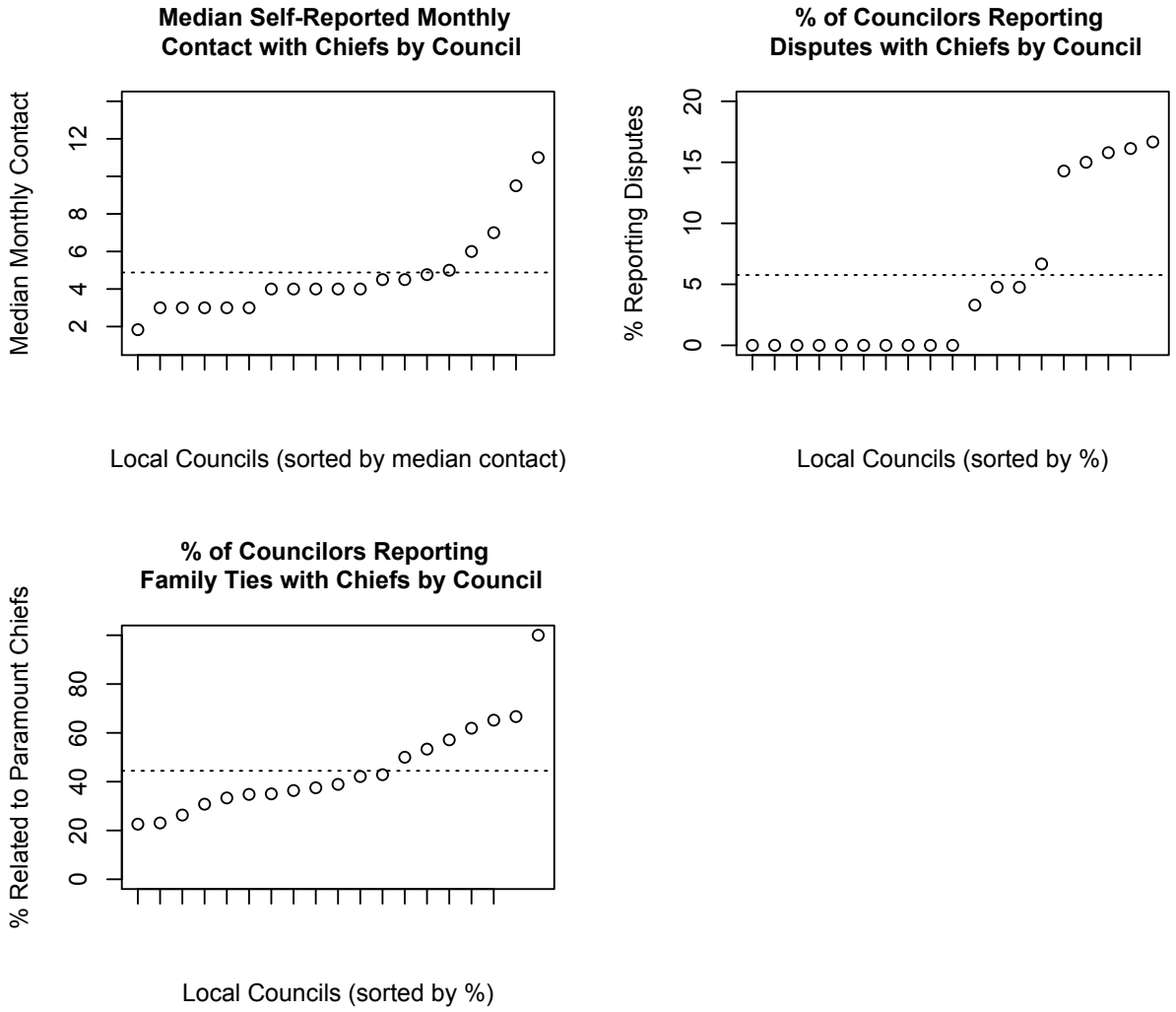


Figure 1: Self-reported councilor relationships with chiefs by local council. For each figure, dotted lines indicate the respective across-council means (upper left plot: across council median contact; upper right: across council mean percentage reporting disputes; lower left: across council mean percentage with chiefly family ties.)

We operationalize our other council-level compositional variables as follows: we measure CDF membership by the percentage of councilors who report having been a CDF member during the war. We also include the percentage of seats held by female councilors, the percentage of seats held by the ruling SLPP party, the mean education level of councilors, and mean councilor age. Finally, following Jablonski, Sacks, and Larizza (n.d.), we include a measure of electoral competition in our models, which we operationalize as the log of the mean number of candidates per council seat.

Section 5.3: Enumeration Area Level Controls

At the EA level, we include a host of control variables from the 2007 and 2008 community and household-level surveys NPS surveys.[9] We include a measure of the percentage of the EA population that reports working in agriculture, as a proxy for district-level poverty. We also control for EA-level poverty through an aggregated factor measure of the average number of material goods within households. In addition, we include measures of ethno-linguistic fractionalization (ELF) at the EA level. Sierra Leone, like most African countries, has a heterogeneous religious and ethnic composition. In post-conflict Sierra Leone ethnicity continues to determine membership in the country's two main political parties. The APC is associated with the Temne and Limba groups in the north and the west, while the Mende, Kissi and Sherbro groups in the south and east largely support the SLPP (Sacks and Larizza 2011, 14). Because party affiliation is largely an extension of ethnic identity in Sierra Leone, we do not have strong *a priori* expectations about the effects of ELF at the EA level separate from political party affiliation.

Some research suggests that Sierra Leoneans who experienced violence during the war are more likely to register to vote, to attend community meetings, to participate in political and community groups, and to contribute to local public goods (Bellows and Miguel 2009, 1145). This heightened civic participation may independently increase the success of public goods provision. Therefore, we control for the war's impact. We measure this by aggregating the household war experiences of respondents using a series 2007 NPS household survey questions that asks respondents: if they or anyone they knew was maimed or killed during the war, had a house that was destroyed, or had to flee. We include the former measure in the following models, but our results are also robust to the latter two measures.[10] From the 2007 community-level NPS surveys we also include several measures of EA remoteness, specifically the distance in miles

[9] Many questions were asked either in 2007 or 2008 causing us to pull from both survey rounds to include as many control variables as possible.

[10] We might also expect that areas that saw the heaviest fighting would have fewer remaining health centers and a larger population with an objectively greater need for these services, leading us to observe improvements in these districts first. However, this appears not to be the case. Huge populations shifted to Freetown during the war, which caused public goods to be delivered to the capital first. The worst hit areas, such as Kono and Kailahun, had come to either rely on aid agencies or were self-sufficient (Fanthorpe 2011).

from the EA center to the nearest chiefdom headquarters, the district headquarter and to Freetown, as well as to the nearest passable road.

Related to community health and development, we include a measure of the main water source in the community (community well or tap rather than a river or stream) as well as the average number of respondents per EA that were treated for malaria in the last year. We also include a measure from 2007 indicating whether a Paramount Chief or local councilor visited the EA during the previous year. Finally we include 2008 baseline measures of use of government health and school services so that our models capture the magnitude of change in public service provision *across* council areas. We discuss how to interpret these results within a hierarchical structure at length below. See Table 1 in the appendix for a full a list of our independent variables and controls, as well as their operationalization and data source.

Section 5.4: Modeling Strategy

Our analysis employs multi-level models, which best reflect our particular nested data structure, micro-level units (enumeration areas) clustered within macro-level units (council areas). By design, the local councils are responsible for service delivery across enumeration areas in their districts, and multi-level models allow us to capture this within group dependence by accounting for both EA and council-level variation in estimating council-level regression coefficients (Gelman and Hill 2007, Snijders and Bosker 2012). If we fail to account for the clustered nature of our data we inherently violate the basic assumption of multiple regression: that our micro-level units are independently and identically distributed. Multi-level analysis allows us to first measure and then model dependence between EA observations clustered within councils. We first measure this internal homogeneity in our council-level observations with respect to our three dependent variables through their respective interclass correlation coefficients (ICCs). The ICC measures the proportion of the total variance for each of the three outcome variables that are accounted for at the council-level. Put another way, the ICC reveals the predicted correlation between each outcome variable measured for two randomly drawn EAs in the same council area (Snijders and Bosker 2012, 72). **Table 2** shows the ICC by council area for each of our three outcome variables as well as the 95 percent confidence intervals that bracket each of these estimates.

	EA-level perceptions of government health services (2011)	EA- level use of government health facilities (2011)	EA-level use of government schools (2011)
ICC	0.466 [0.328, 0.659]	0.385 [0.258, 0.582]	0.137 [0.076, 0.269]

Table 2: Inter-class correlation coefficients for each outcome variable by council area

The high (and statistically greater than zero) inter-class correlation coefficients for each of our three dependent variables confirm that public service provision is indeed highly clustered by council area. This accurately reflects our assumptions about the extent to which decentralization has empowered local councils to affect council-wide public service provision since their creation in 2005. The fact that we observe higher levels of correlation by council area for government health services rather than education also reflects the timing of decentralization, as health was the first public service devolved to the local councils. The high level of council-level correlation for each of our three outcome variables also corroborates our intuition that multi-level models are indeed the most appropriate specification for analyzing council-level characteristics on EA-level outcomes.

In order to directly model within council dependence, we use random intercepts at the council level in the multi-level specifications that follow. This allows us to properly account for the nested structure of our data while maintaining the assumption that the effect *size* within any particular council area, controlling for other observable explanatory variables, is interchangeable. That is, in contrast to models that employ random coefficients, we have no *a priori* expectations about how the *magnitude* of our key independent variables (the coefficient slope) might depend on any particular council. Rather, our theoretical expectations suggest that the effect size of councilor-chief relations should be generalizable across council areas. However, we test this assumption further in Section 6.

By design, multi-level models allow us to include explanatory variables at the both EA and council levels. The EA-level explanatory variables can be interpreted as capturing both within and across council variation. Each EA-level regression coefficient has both a within group and a between group component. The reported coefficients fall between the two level-specific coefficients, and are weighted by the number of EA observations within each council area and the amount of variance accounted for between councils (the ICC). If we were interested in

disentangling the within council from the between council components of the EA-level indicators we could also include the EA-level means as a separate set of indicator variables in the models that follow. The EA-level means capture the between group regressions and subsequently allow us calculate the within group regression coefficients as well. Because, however, our key independent variables are at council level, we allow the EA-level variables to capture both the within and between council effects without making a specific attempt to differentiate the two. In Section 6, we also include a series of cross-level interactions to investigate how council level variables are affected by EA-level variation within council areas.

Interpreting the council-level coefficients is straightforward because there is no variation between the EA-level variables for each council-level variable. For instance, if ten percent of local councilors in a council area report disputes with local chiefs, this is consistent for all EA-level observations within that council. The coefficients at the council level, therefore, only describe between council differences.

We measure our three dependent variables at the EA level, and our key independent variables, councilor-chief relations, at the council level. Given the change in survey design between the 2007, 2008 and 2011 survey rounds, aggregating household level data to EA level allows us to include comparable data across multiple survey years. We cluster our 607 EA-level observations into their respective 19 local council areas and, as noted, use a random intercept design to account for unobserved variation by council. Our complete dataset has low levels of missingness (between zero and ten percent across included variables) but we choose to use R's Amelia function to impute missing values rather than list-wise delete missing values.[11]

In the models that follow, we include the 2008 values of our EA-level measures of education and health care provision. Again, because the council-level variables do not vary within council areas or over time, the coefficients only explain the difference between councils. Including these baseline values allows us to capture the extent to which service provision has increased or decreased *across* councils as a function of our council-level variables of interest and our EA-level controls, including the 2008 baseline values. We note, however, that the key findings we present below hold when removing the baseline 2008 measures – and we include the associated regression tables in Appendix 2. We also discuss how to interpret the magnitude of

[11] Our results, however, are robust to list-wise deletion.

our council-level regression coefficients, including graphical representations of predicted values, in the sections that follow.

For each of our three dependent variables we include the fourteen EA-level controls, but we model each local council indicator separately. We do this for two reasons. First, given that we only have 19 local councils, we have limited degrees of freedom to test multiple variables simultaneously. Second, running separate models for each of the council level variables allows us to compare across models to assess each explanatory variable's statistical significance and explanatory power.

Section 6: Model Results

6.1: Main Results

Use of Government Health Services

Our first dependent variable relates to the use of government health facilities. For each EA in 2011, we take the percentage of respondents who report that they usually seek health care treatment or assistance at a government hospital. **Table 3** and **Table 4** show our model results for each of our respective council-level variables while controlling for our fourteen EA-level controls.

[Table 3 and Table 4 here]

Across the council-level bivariate regressions, two of the chief/councilor relationship variables achieve statistical significance at the 0.05 level: median monthly contact with chiefs and the percentage of councilors related to chiefs through blood or marriage. Higher values for each of these measures are associated with lower usage levels of government health facilities. The left panel of **Figure 2** shows the magnitude of our chief/councilor contact variables on EA-level use of government health services – both the mean predicted values (in red) and the council specific intercepts (in black). Moving from the lowest value in the range of councils (median contact of 1.8 times per month) to the highest value in the range (11 times per month) results in a 11.4 percentage point change in the reported use of government health facilities (from 98 percent

average use per EA use to 86 average use per EA). The effect size concerning the percentage of chiefs that report being related to a chief by blood or marriage is slightly larger, and are displayed in the right panel of Figure 2. Across councils, moving from the highest value in this range (100 percent of councilors reporting being related to chiefs) to the lowest value (20 percent) is associated with a 15 percentage points change in average EA-level reported use of government health services (moving from 98 percent to 83 percent). We note, however, that there is also significant variation among the council-level intercepts. We include additional plots of the random effects by council area for each of our statistically significant councilor/chief relationship variables in Appendix 3.

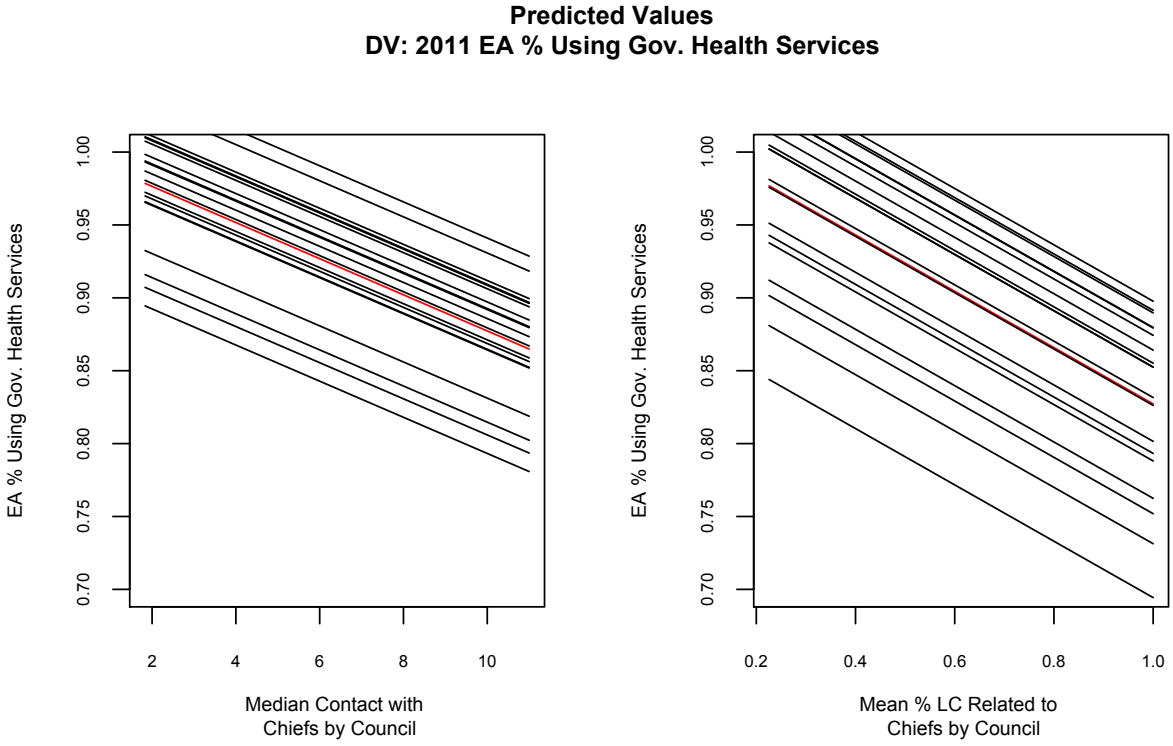


Figure 2: Predicted values of median contact with chiefs (left) and mean familial relations with chiefs (right) on EA percentage using government health services. Mean predicted intercept in red and council specific intercepts in black.

Perceptions of Government Health Services

Our second dependent variable measures citizens' perceptions of improvements in government health services during the previous year. We take the mean value of this response on

the five-point scale per EA as our second outcome variable and include the same covariate specifications as presented above. **Tables 5** and **6** display our results.

[Table 5 and Table 6 here]

Here, four council-level variables achieve statistical significance at the 0.05 level in the bivariate regressions: former CDF participation, SLPP membership, chiefly contact, and self-reported disputes with chiefs. Councils with a greater percentage of former CDF members or a greater percentage of SLPP party members are both associated with more unfavorable perception of the quality of government health care provision.

The negative coefficient for chiefly contact indicates that a higher amount of contact between chiefs and councilors is associated with worsening perceptions of the quality of government health services. As median contact moves from its lowest value (1.8 times per month) to its highest value (11 times per month), this is associated with decrease of 0.58 points in the five-point scale (a move from 3.4 to 2.8). In contrast, the negative coefficient for the chiefly disputes variable suggests that frequent disputes increase the likelihood that respondents, on average, report an improvement in the quality of public health care. As the percentage of disputes moves from its lowest value per council (0 percent) to its highest value (17 percent), we see an associated 0.4 point increase on the response scale (moving from 3.1 to 3.5). Figure 3 below plots the average effect size as well as the council specific intercepts for each these measures of councilor/chief interactions.

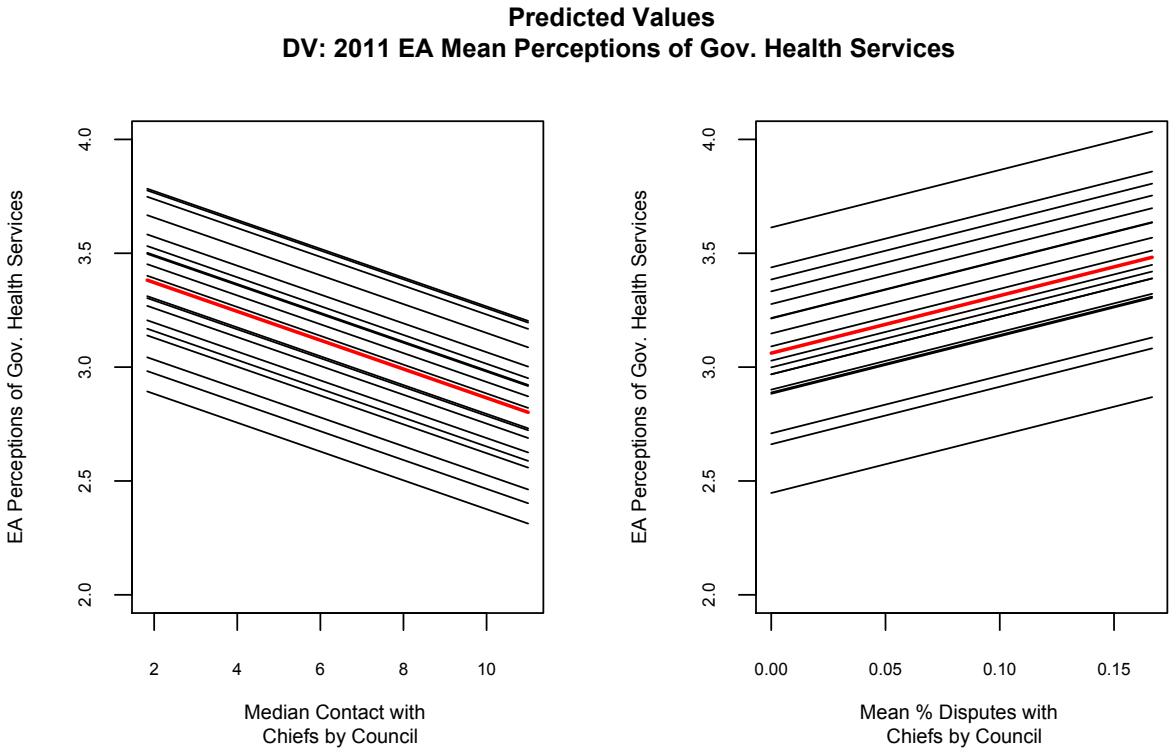


Figure 3: Predicted values of median contact with chiefs (left) and mean percentage of disputes with chiefs (right) on EA-level mean perceptions of improvements of government health services in the past year. Mean predicted intercept in red and council specific intercepts in black.

We also note that the negative coefficient for former CDF membership also follows the same theoretical pattern as the results that we have presented thus far. In Section 4.2, we hypothesized that higher levels of CDF membership during the war signaled closer pre-existing ties between councilors and chiefs, which we see here are associated with lower levels of EA-level use of government health services.

Use of Government Schools

Our final dependent variable measures the 2011 average percentage of households per EA with school age children that report that their children attend government schools. In addition to the explanatory and control variables used in the models above, we also include the mean number of school age children reported in each EA. **Table 7** and **Table 8** show these model results with similar specifications as described above.

[Table 7 and Table 8 here]

Across our bivariate council-level specifications with EA-level controls, only our measures of chiefly contact and disputes with chiefs achieve statistical significance. Figure 4 below shows the predicted values of these two variables. As median contact moves from its lowest value (1.8 times per month) to its highest value (11 times per month), the predicted percentage of school age children enrolled in government schools decreases from 41 percent to a mere 10 percent. In contrast, as the percentage of disputes moves from its lowest value per council (0 percent) to its highest value (17 percent), the predicted percentage of government school enrollment increases from 25 percent to 41 percent. **Figure 4** below plots these average predicted effect sizes as well as the council specific intercepts.

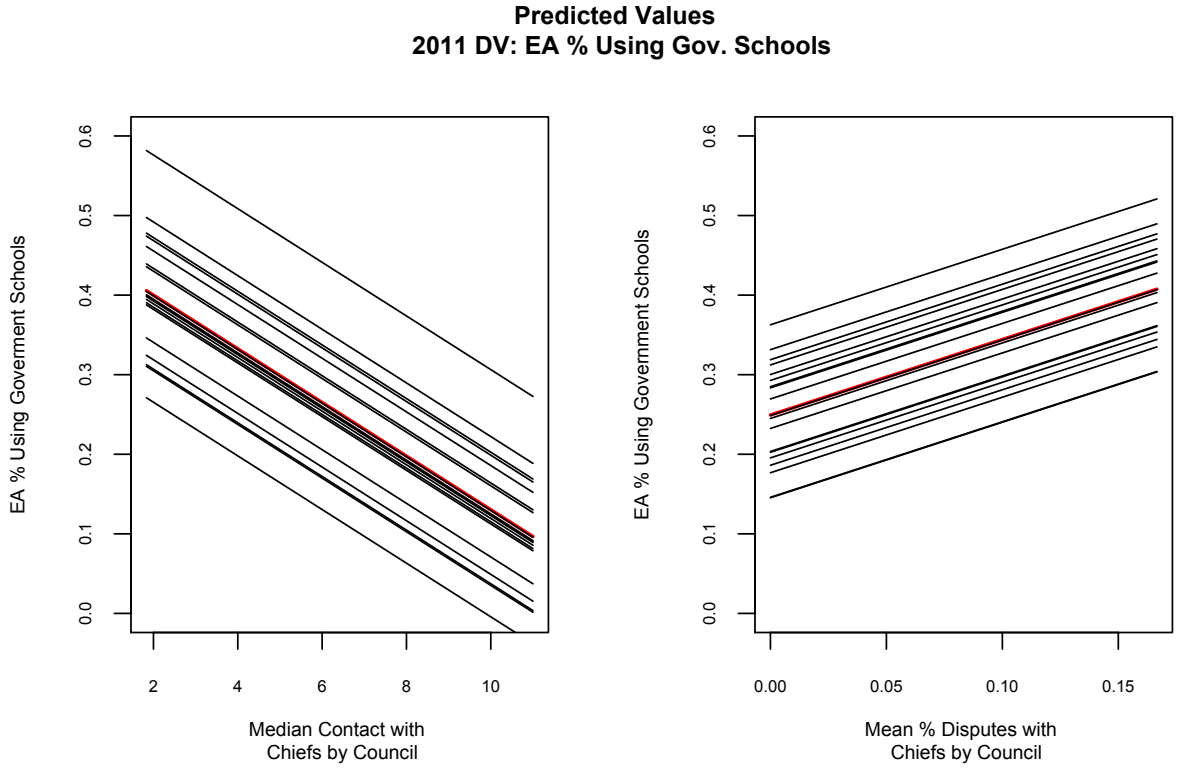


Figure 4: Predicted values of median contact with chiefs (left) and mean percentage of disputes with chiefs (right) on EA-level mean percentage use of government schools. Mean predicted intercept in red and council specific intercepts in black.

Taken together, our findings are striking. For each of our three measures of local public service provision, we have found that two out of our three measures of councilor/chief relations achieve statistical significance – and all six of these findings move in the same theoretical direction. Further, no other council-level variables are consistently significant across models. On average, we find that closer ties between councilors and chiefs, as measure by more frequent self-reported contact and a higher percentage of councilors from chiefly families, are associated with worse local development outcomes. In contrast, higher frequencies of councilors' self-reported disputes with chiefs in 2008 are associated with improved levels of service provision in 2011. Our measure of councilor/chief contact is the most consistent result, achieving a negative and statistically significant value across all three measures of local public goods provision. We now turn to a series of robustness considerations to test the stability of our results before moving to a discussion of their implications.

6.2: Robustness Considerations

As a first robustness test, we exclude the 2008 EA-level baseline measures of health and education services when modeling the respective 2011 values. Under these specifications, the model results only predict the 2011 levels across councils rather than the magnitude of change across councils from 2008 to 2011. We include these results in **Table 10** in the appendix. Three of our four relationship-related variables maintain their statistical significance at the 5 percent level under this specification. The expected effect of the fourth variable, the percentage of councilors related to chiefs, on the 2011 EA-level use of government health facilities only achieves statistical significance at the 10 percent level when excluding the 2008 baseline measure.[12]

As a second robustness test, we run council-level interactions between the percentage of self-reported disputes and contact with chiefs for each of our three outcome variables of interest. These interaction terms, which potentially signal whether our contact variable is measuring frequent dispute-related contact, do not achieve statistical significance across any of our three

[12] We also note that our results our robust to measuring self-reported contact with chiefs as a mean rather than median value, although we do not include these model results here.

outcome variables. We take these non-results to mean that councilors who report disputes are not the same councilors who report having frequent contact with chiefs – and, therefore, that our contact variable on its own does not signal frequent dispute-related contact. Rather councilors who report disputes with chiefs are distinct from councilors who report frequent contact with chiefs, which our bivariate regressions above accurately capture.

As a final robustness consideration we test whether councilor-chief relations interact with any of our EA-level variables to affect the provision of local public goods. We do this through a series of theoretically motivated cross-level interactions. Cross-level interaction effects are an extension of random slope models in that they allow the *effect size* of councilor-chief relations (i.e. council-level slopes) to vary as a function of particular EA-levels variables. This serves both a robustness check to assess whether our council-level findings are consistent across EAs, as well as a way to reveal potential theoretically relevant EA-level moderators relating the effects of councilor-chief relations to the provision of local public goods.

First it is important to note that these cross-level effects are symmetrical in nature, meaning that we are agnostic about whether it is the council-level variable or the EA-level variable that acts as the moderating variable in any given model (Aguinis, Gottfredson and Culpepper 2013). For instance, when interpreting the cross-level interaction between councilor-chief relations and EA remoteness on the provision of local public goods, the model cannot specify whether the remoteness of the EA moderates the relationship between councilor-chief interactions and public goods provision, or whether councilor-chief interactions moderate the effects of EA remoteness on public goods provision. Given that we are substantively interested in how our macro-level variables, councilor-chief relations, affect the provision of public goods, we include cross-level interactions in which it is conceivable that EA-level factors may moderate this relationship.

We first include distance to the chiefdom headquarters and distance to the district headquarters as possible EA-level moderators. Because chiefs might have stronger pre-existing power bases in areas closer to their chiefdom headquarters (and/or further away from district headquarters), these communities might experience the effects of councilor/chief relations more strongly than EAs that are located further away. We also include our EA-level measures indicating whether a local councilor or a Paramount Chief visited the EA during the previous year. We assume that areas that are visited more often by councilors and/or chiefs may be more

politically salient, and may experience the effects of councilor/chief relations on local public goods provision differently than communities that are less politically salient. Finally, we include the 2008 baseline measures of use of public heath and education services as potential moderators, which gives us some insight on the dynamics of changing levels of service delivery across councils. For instance, areas with previously low levels of service delivery might be more susceptible to the positive effects of chief/councilor competition, or at least improved perceptions about provisions, as they have more to gain from even small improvements.

We run cross-level interactions between our six potential EA-level moderator variables of interest (distance to chiefdom/district headquarters, EA visited by chief/councilor, 2008 baseline use of public health/education services) with each of the six models that proved statistically significant in the previous section. As is suggested widely in the literature (Gellman and Hill 2007, Aguinis, Gottfredson and Culpepper 2013), we first center our EA-level variables before running the interactions so that the coefficients associated with the interaction term can be interpreted as the slope change due to the cross-level interaction in comparison to an average council. We do not report the results of all thirty-six models here, but in **Table 9** we display the statistically significant interaction effects.

[Table 9 here]

We only find two statistically significant interaction effects across these thirty-six model specifications, and they are related to perceptions of improvements in local service delivery. With this dependent variable, we find positive interaction effects between councilor-chief contact and both EA distance to the nearest chiefdom headquarters and to the nearest district headquarters. The effect magnitudes, however, are substantively equivalent to zero. We note that our main councilor-chief contact variable of interest maintains statistical significance across both these specifications. We conclude, therefore, that council-wide relationships with local Paramount Chiefs remain one of the most salient predictors in determining the provision of local public goods.

Section 7: Discussion

We find that closer relationships between councilors and chiefs are largely associated with lower levels of local public goods provision, whereas relationships defined by inter-elite conflict are associated with higher levels of these goods. Specifically, our results indicate that more frequent contact between chiefs and councilors are associated with worse perceptions about the quality of public health services, decreased use of government schools, and decreased use of government health services. Additionally, a greater number of councilors from chiefly families are associated with lower usage levels of government health services. And finally, more frequent disputes between councilors and chiefs are associated with better perceptions about improvements in local public health services and higher EA-level rates of government school enrollment. Apart from our measures of councilor/chief relations, few other council-level variables are statistically significant across models.

Returning to the theoretical expectations we presented in Section 4, we find strong evidence that collusion between councilors and chiefs is detrimental to local development. These deleterious effects lead us to believe that when collusion occurs, it is likely better described as cooption rather than cooperation between the two groups, given that we hypothesized the latter would lead to positive development outcomes. Our evidence suggests that in areas in which councilors and chiefs have close-knit relationships, chiefs have been able capture the decision-making authority of councilors in such a way that limits the ability of the elected councilors to effectively provide local public goods.

As discussed in Section 4, this could be for several reasons. Close ties with chiefs may signal that councilors are part of chiefs' patronage-based authority structures in ways that privilege the distribution of private rather than public goods. In addition, accountability structures between citizens and local councilors are likely eroded when councilors draw their legitimacy from their relationships with hereditary chiefs rather than from their performance as elected officials. That is, relying on chiefs as local patrons weakens councilors' incentives to appeal to a broad base of voters. Of course, which exactly of these mechanisms are at play cannot be answered by the research tools used here – but suggest potential areas for supplementary qualitative research. In contrast we find that inter-elite relationships that are defined by competition are beneficial to both the provision of local public goods and citizens'

perceptions of these improvements. These findings fit well with previous literatures documenting the benefits of political competition on local development outcomes (Acemoglu and Robinson 2006; Acemoglu, Reed, and Robinson 2013)

Conclusion

This paper has attempted to address gaps in the existing political economy literature by examining how decentralization shapes power relations among new and traditional elites, and how these relationships, in turn, have affected the provision of local public goods. In post-conflict Sierra Leone, decentralization has layered new political institutions onto existing informal governance structures that have traditionally ordered rural life. Using household surveys as well as surveys of new local elites created through decentralization, we present evidence that inter-elite competition results in improvements of local development outcomes, whereas inter-elite collusion is deleterious for development.

This research presents clear policy implications – as well as several potential areas of future research. First, to date very little attention has been paid to the ways in which decentralization empowers new local authorities in areas of traditional governance. Given this, the success of decentralization policies likely hinges on the ways in which existing elites react to the creation of new local authorities. If existing elites have a history of co-opting local institutions, as Paramount Chiefs do in Sierra Leone, then the design of these new institutions would likely benefit from additional mechanisms that provide autonomy to new decision-making bodies so that they may operate free from the influence of traditional elites. On the other hand, when decentralization creates new institutions that successfully foster effective inter-elite competition, the theoretical benefits of devolved authority are more likely to unfold.

Finally, the survey-based evidence we have presented here suggests several potential areas for future work. Extensions of this research would benefit from additional questions on future rounds of the DSS surveys including more detailed questions about the nature of chiefs' relationships with councilors – for instance, how willing and/or cooperative they feel chiefs are in sharing authority. Additionally, social network data documenting relationships among councilors, ruling families, and chiefs could illuminate the extent of influence each group has among these sets of actors. Finally, the evidence we have presented here has revealed a series of

quite strong findings that all support the same general theory – but this research would also benefit from more extensive qualitative as well as potential experimental approaches to better test for specific causal mechanisms related to inter-elite power-sharing in newly decentralized contexts - both in Sierra Leone and elsewhere.

Appendix 1: Operationalization and Measurement

Table A1: Description of Independent and Control Variables

Variable Name	Operationalization	Level (N)	Source
Dependent Variables			
Use of government health facilities	Percentage of EA households that reports using government health facilities	EA (607)	2011 NPS
Use of government schools	Percentage of EA households with school age children that reports using government schools	EA (607)	2011 NPS
Perceptions of government health services	Mean reported perception on quality of health service improvements in the past year (five point scale)	EA (607)	2011 NPS
Council Level Key Independent Variables			
Councilor contact with chiefs	Median self-reported councilor contact with chiefs in the last month	Council (19)	2008 DSS
Councilor reported disputes with chiefs	Percentage of councilors who report disputes with chief	Council (19)	2008 DSS
Councilor reported family ties to Paramount Chief	Percentage of councilors who report being related by blood or marriage to Paramount Chiefs	Council (19)	2008 DSS
Council Level Controls			
Councilor CDF experience	Mean self-reported membership in a CDF during the war	Council (19)	2008 DSS
Councilor age	Mean self-reported councilor age	Council (19)	2008 DSS
Political competition for councilor	Logged value of the number of candidates over the number of available seats for the 2008 election	Council (19)	2008 DSS
SLPP membership in council	Mean councilor self-reported ruling party identification	Council (19)	2008 DSS
Councilor gender	Percentage of female councilors	Council (19)	2008 DSS
Councilor education	Mean councilor education level	Council (19)	2008 DSS
EA Level Controls			
EA-level agricultural work	Mean percentage of the population that works in agriculture	EA (607)	2008 NPS
EA-level poverty	Mean number of material items each household reports possessing (radio, motorcycle, etc.)	EA (607)	2008 NPS
EA-level war impact	Mean individual war experiences (respondent knew someone that was maimed or killed during the war, had	EA (607)	2007 NPS

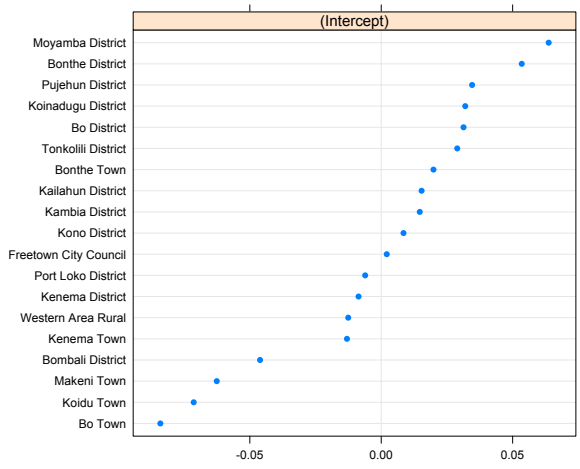
	a house that was destroyed, or had to flee).		
EA-level ELF score	Clustered mean, calculated with the Herfindahl-Hirschman Index (HHI)	EA (607)	2008 NPS
EA-level Mean School-Age Children	The mean number of school age children per EA	EA (607)	2008 NPS
EA-level PC Visit	Whether a Paramount Chief visited the EA during the previous year (0/1)	EA (607)	2007 NPS
EA-level LC Visit	Whether a local councilor visited the EA during the previous year (0/1)	EA (607)	2007 NPS
EA-level remoteness	Distance in miles to the nearest chiefdom headquarters	EA (607)	2007 NPS
EA-level remoteness	Distance in miles to the nearest district headquarters	EA (607)	2007 NPS
EA-level remoteness	Distance in miles to Freetown	EA (607)	2007 NPS
EA-level remoteness	Distance in miles to the nearest passable road	EA (607)	2007 NPS
EA-level well in community	Main water source in the community (well, tap = 1, river, stream = 0)	EA (607)	2007 NPS
EA-level malaria treatment	Average number of respondents treated for malaria in the past year	EA (607)	2007 NPS

Appendix 2:

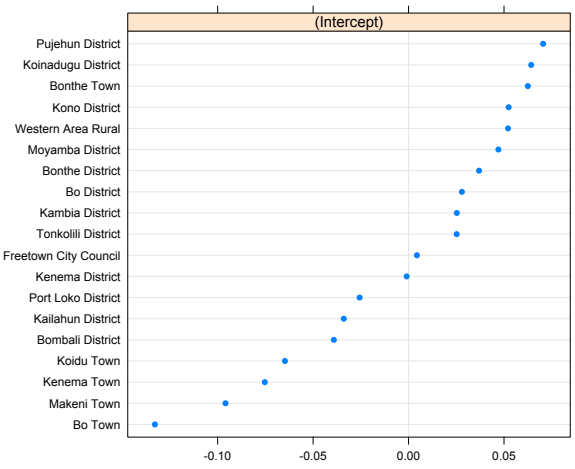
Table 10 here

Appendix 3: Council-Level Random Effects

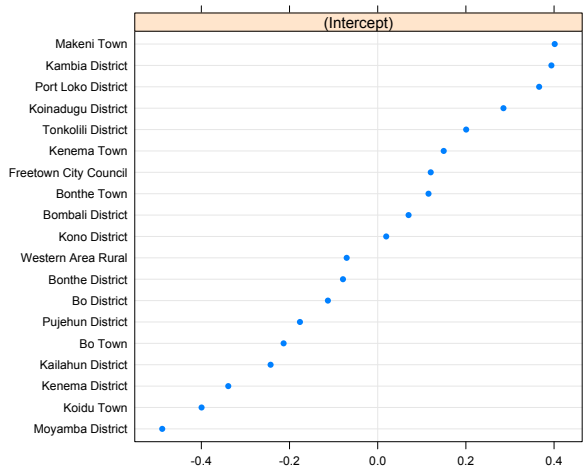
The following six graphs display the random effects, ordered by council, for our six key findings.



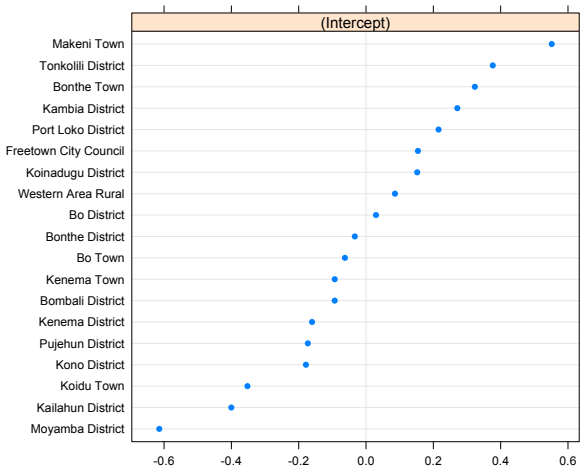
Council Random Effects of Chief
Contact on EA-Level Public Health



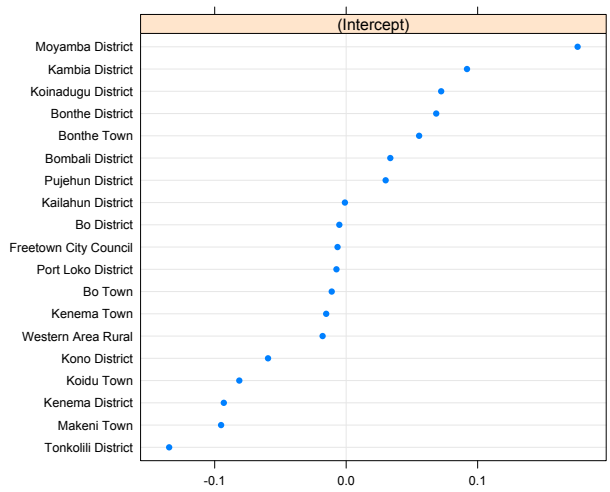
Council Random Effects of Chief
Relations on EA-Level Public Health



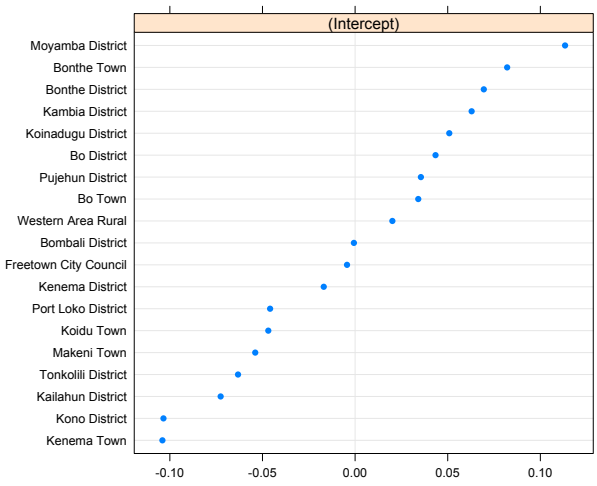
Council Random Effects of Chief
Contact on Perceptions of EA-Level Public Health



Council Random Effects of Chief
Disputes on Perceptions of EA-Level Public Health



Council Random Effects of Chief Contact on EA-Level Education



Council Random Effects of Chief Disputes on EA-Level Education

Bibliography

Abdullah, Ibrahim. 1998. "Bush Path to Destruction: The Origin and Character of the Revolutionary United Front/Sierra Leone." *The Journal of Modern African Studies* 36(2): 203–35.

Acemoglu, Daron, Tristan Reed, and James A. Robinson. 2013. *Chiefs: Elite Control of Civil Society and Economic Development in Sierra Leone*. National Bureau of Economic Research. http://www.nber.org/papers/w18691 (April 30, 2013).

Acemoglu, Daron, and James A. Robinson. 2006. "Economic Backwardness in Political Perspective." *American Political Science Review* 100(01): 115–31.

Agarwal, Bina. 2009. "Does Women's Proportional Strength Affect Their Participation? Governing Local Forests in South Asia." *World Development* 38(1): 98–112.

Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. 2013. "Best-practice recommendations for estimating interaction effects using multilevel modeling." *Journal of Management* 39, 1490-1528.

Arriola, Leonardo R. 2013. *Multiethnic Coalitions in Africa: Business Financing of Opposition Election Campaigns*. New York: Cambridge University Press.

Ban, Radu, and Vijayendra Rao. 2008. *An Empirical Analysis of the Deliberative Space: Evidence from Village Meetings in South India.* World Bank Development Research Group. Mimeo.

Baldwin, Kate. 2013. Why Vote With the Chief? Political Connections and Public Goods Provision in Zambia. Working Paper.

Barrows, Walter L. 1976. *Grassroots Politics in an African State: Integration and Development in Sierra Leone*. New York: Africana Pub. Co.

Bellows, John, and Edward Miguel. 2009. "War and Local Collective Action in Sierra Leone." *Journal of Public Economics* 93(11): 1144–57.

Beramendi, Pablo. 2012. *The Political Geography of Inequality: Regions and Redistribution*. New York: Cambridge University Press.

Bhalotra,, Sonia R., and Irma Clots-Figueras. 2010. *Health and the Political Agency of Women*. Forschungsinstitut zur Zukunft der Arbeit. Working Paper.

Bratton, Michael. 2003. "Briefing: Islam, Democracy and Public Opinion in Africa." *African Affairs* 102(408): 493–501.

———. 2008. "Vote Buying and Violence in Nigerian Election Campaigns." *Electoral Studies* 27(4): 621–32.

Careaga, Maite, and Barry R. Weingast. 2003. "Fiscal Federalism, Good Governance, and Economic Growth in Mexico." In *In Search of Prosperity: Analytic Narratives on Economic Growth*, ed. Dani Rodrik. Princeton, N.J.: Princeton University Press, 399–438.

Casey, Katherine. 2009. "Decentralization in Practice." In *Decentralization, Democracy, and Development: Recent Experience from Sierra Leone*, ed. Yongmei Zhou. World Bank Publications, 60–72.

Chattopadhyay, Raghabendra, and Esther Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India." *Econometrica* 72(5): 1409–43.

Chen, Li-Ju. 2010. "Do Gender Quotas Influence Women's Representation and Policies?" *The European Journal of Comparative Economics* 7(1): 12–60.

Clayton, Amanda. 2014. "Electoral Gender Quotas and Attitudes toward Traditional Leaders: A Policy Experiment in Lesotho." *Journal of Policy Analysis and Management* 33(4): 1007-1026.

Clots-Figuerasa, Irma. 2012. "Are Female Leaders Good for Education?" *American Economic Journal: Applied Economics* 4(1): 212–44.

Collier, Paul, and Pedro C. Vicente. 2012. "Violence, Bribery, and Fraud: The Political Economy of Elections in Sub-Saharan Africa." *Public Choice* 153(1-2): 117–47.

Edlund, Lena, and Rohini Pande. 2002. "Why Have Women Become Left-Wing? The Political Gender Gap and the Decline in Marriage." *Quarterly Journal of Economics* 17(3): 917–61.

Fanthorpe, Richard. 2005. "On the Limits of Liberal Peace: Chiefs and Democratic Decentralization in Post-War Sierra Leone." *African Affairs* 105(418): 27–49.

Fearon, James D., Jeremy M. Weinstein, and Macartan Humphreys. 2009. "Can Development Aid Contribute to Social Cohesion after Civil War? Evidence from a Field Experiment in Post-Conflict Liberia." *American Economic Review: Papers & Proceedings* 99(2): 287–91.

Fofanah, Mohamed. 2011. "Sierra Leone: Renewed Commitment to Local Government." *IPS News*. http://www.ipsnews.net/2011/04/sierra-leone-renewed-commitment-to-local-government/ (July 16, 2013).

Gberie, Lansana. 2005. *A Dirty War in West Africa: The RUF and the Destruction of Sierra Leone*. Bloomington, Ind.: Indiana University Press.

Gelman, Andrew and Jennifer Hill. 2007. *Data Analysis Using Regression and Multilevel/Hierarchical Models.* New York: Cambridge University Press.

Glennerster, Rachel, Edward Miguel, and Alexander Rothenberg. 2012. *Collective Action in Diverse Sierra Leone Communities*. National Bureau of Economic Research. http://www.nber.org/papers/w16196 (April 30, 2013).

Habyarimana, James, Macartan Humphreys, Daniel N. Posner, and Jeremy M. Weinstein. 2007. "Why Does Ethnic Diversity Undermine Public Goods Provision?" American Political Science Review 101(4): 709-725.

———. 2009. *Coethnicity: Diversity and the Dilemmas of Collective Action*. New York: Russell Sage Foundation Publications.

Hecock, R. Douglas. 2006. "Electoral Competition, Globalization, and Subnational Education Spending in Mexico, 1999–2004." *American Journal of Political Science* 50(4): 950–61.

Hoffman, Danny. 2011. *The War Machines: Young Men and Violence in Sierra Leone and Liberia*. Durham, N.C.: Duke University Press.

Humphreys, Macartan, and Jeremy M. Weinstein. 2008. "Who Fights? The Determinants of Participation in Civil War." *American Journal of Political Science* 52(2): 436–55.

Iversen, Torben, and Francis Rosenbluth. 2011. *Women, Work, and Politics: The Political Economy of Gender Inequality*. New Haven: Yale University Press.

Jablonski, Ryan, Audrey Sacks, and Marco Larizza. "The Clientelism Tradeoff: How Discretionary Revenue Shapes Spending Choices." Working Paper.

Johns, Sheridan, and Richard Riley. 1975. "Local and District Councils - Should They Be Forgotten?" *The Journal of Modern African Studies* 13(2): 309–32.

Keen, David. 2005. *Conflict and Collusion in Sierra Leone*. New York: Palgrave.

Kilson, Martin. 1966. *Political Change in a West African State: A Study of the Modernization Process in Sierra Leone*. Cambridge: Harvard University Press.

Ko, Kilkon, and Hui Zhi. 2013. "Fiscal Decentralization: Guilty of Aggravating Corruption in China?" *Journal of Contemporary China* 22(79): 35–55.

Kpaka, Henry Musa. 2011. *Report on the IRCBP 2008 Decentralization Stakeholders Survey*.

Larizza, Marco, and Vivek Srivastava. 2011. "Decentralization in Postconflict Sierra Leone: The Genie Is Out of the Bottle." In *Yes Africa Can: Success Stories from a Dynamic Continent*, eds. Punam Chuhan Pole and Manka Angwafo. Washington, D.C.: World Bank, 141–54.

Logan, Carolyn. 2008. Traditional leaders in modern Africa: Can democracy and the chief coexist? Working Paper Working Paper No. 93, Afro-Barometer.

Miguel, Edward and Mary Kay Gugerty. 2005. "Ethnic Diversity, Social Sanctions, and Public Goods in Kenya." Journal of Public Economics 89(11-12): 2325-2368.

Miller, Grant. 2008. "Women's Suffrage, Political Responsiveness, and Child Survival in American History." *The Quarterly Journal of Economics* 123(3): 1287–1327.

Mitton, Kieran. 2009. "Reconstructing Trust in Sierra Leone." *Round Table* 98(403): 461.

Mokuwa, Esther, Maarten Voors, Erwin Bulte, and Paul Richards. 2011. "Peasant Grievance and Insurgency in Sierra Leone: Judicial Serfdom as a Driver of Conflict." *African Affairs* 110(440): 339–66.

Munshi, Kaivan and Mark Rosenzweig. 2008. "The Efficacy of Parochial Politics: Caste, Commitment, and Competence in Indian Local Governments." Working Paper 964. Economic Growth Center, Yale University.

O'Brien, Kevin A., and Ismail Rashid. 2013. "Islamist Militancy in Sierra Leone." *Conflict, Security & Development* 13(2): 169–90.

Olken, Benjamin. 2010. "Direct Democracy and Local Public Goods: Evidence from a Field Experiment in Indonesia." *American Political Science Review* 104(2): 243-267.

Ostrom, Vincent, and Elinor Ostrom. 1999. "Public Goods and Public Choices." In *Polycentricity and Local Public Economies: Readings from the Workshop in Political Theory and Policy Analysis*, ed. Michael McGinnis. Ann Arbor: University of Michigan Press, 75–105.

Peters, Krijn, and Paul Richards. 1998. "'Why We Fight': Voices of Youth Combatants in Sierra Leone." *Africa: Journal of the International African Institute* 68(2): 183–210.

———. 2011. "Rebellion and Agrarian Tensions in Sierra Leone." *Journal of Agrarian Change* 11(3): 377–95.

Rehavi, M. Marit. 2008. *Sex and Politics: Do Female Legislators Affect State Spending?* University of California, Berkeley. Mimeo.

Richards, Paul. 1996. *Fighting for the Rain Forest: War, Youth & Resources in Sierra Leone*. Portsmouth, N.H.: Heinemann.

Robinson, James A. 2008. *Governance and Political Economy Constraints to World Bank CAS Priorities in Sierra Leone*. World Bank.

Rodden, Jonathan. 2004. "Comparative Federalism and Decentralization: On Meaning and Measurement." *Comparative Politics* 36(4): 481–500.

Sacks, Audrey. 2012. *Can Donors and Non-State Actors Undermine Citizens' Legitimating Beliefs?* Washington DC: Poverty Reduction and Economic Management Department, Africa Region. Working Paper.

Sacks, Audrey, and Marco Larizza. 2011. "Why Quality Matters: a Multi-Level Analysis of Decentralization, Local Government Performance and Legitimating Beliefs in Post-Conflict Sierra Leone."

Seay, Laura E. 2013. "Effective Responses: Protestants, Catholics and the Provision of Health Care in the Post-war Kivus." *Review of African Political Economy* 40(135): 83–97.

Sheely, Ryan. 2013. "Maintaining Local Public Goods: Evidence from Rural Kenya." Harvard Kennedy School. HKS Faculty Research Working Paper Series. RWP13-051.

Sierra Leone. Local Governance Act. 2004. Available at: http://www.sierra-leone.org/Laws/2004-1p.pdf

———. Chieftaincy Act. 2009. Available at: http://www.sierra-leone.org/Laws/2009-10.pdf

Singh, Nirvikar, and T. N. Srinivasan. 2006. "Indian Federalism, Economic Reform, and Globalization." In *Federalism and Economic Reform: International Perspectives*, eds. T.N. Srinivasan and Jessica S. Wallack. New York: Cambridge University Press, 301–63.

Snijders, Tom A.B. and Roel J. Bosker. 2012. *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. London: Sage Publishers. 2nd edition.

Swers, Michele. 2002. *The Difference Women Make: The Policy Impact of Women in Congress.* Chicago: University of Chicago Press.

Treisman, Daniel. 2000. "Decentralization and Inflation: Commitment, Collective Action, or Continuity." *The American Political Science Review* 94(4): 837.

———. 2006. "Fiscal Decentralization, Governance, and Economic Performance: A Reconsideration." *Economics & Politics* 18(2): 219–35.

Tsai, Lily. 2007. A*ccountability Without Democracy: Solidary Groups and Public Goods Provision in Rural China.* New York: Cambridge University Press.

Van de Walle, Nicolas. 2003. "Presidentialism and Clientelism in Africa's Emerging Party Systems." *The Journal of Modern African Studies* 41(2): 297–321.

———. 2007. "Meet the New Boss, the Same as the Old Boss?" In *Patrons, Clients, and Policies: Patterns of Democratic Accountability and Political Competition*, eds. Herbert Kitschelt and Steven I. Wilkinson. New York, N.Y.: Cambridge University Press, 50–67.

Wantchekon, Leonard. 2003. "Clientelism and Voting Behavior: Evidence from a Field Experiment in Benin." *World Politics* 55(April 2003): 399-422.

Weingast, Barry R. 2009. "Second Generation Fiscal Federalism: The Implications of Fiscal Incentives." *Journal of Urban Economics* 65(3): 279–93.

Wibbels, Erik. 2006. "Madison in Baghdad?: Decentralization and Federalism in Comparative Politics." *Annual Review of Political Science* 9(1): 165–88.

Wraith, Ronald. 1972. *Local Administration in West Africa*. 2nd ed. New York: Africana Pub. Corp.

Xydias, Christina V. 2007. "Inviting More Women to the Party: Gender Quotas and Women's Substantive Representation in Germany." *International Journal of Sociology* 37(4): 52–66.

Zhou, Yongmei, ed. 2009. *Decentralization, Democracy, and Development: Recent Experience from Sierra Leone*. Washington, D.C.: World Bank Publications.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	**0.59**	**0.48**	**0.54**	**0.55**	0.23
	[0.41; 0.73]	[0.38; 0.57]	[0.42; 0.64]	[0.41; 0.67]	[−0.21; 0.70]
EA: Mean War Experience	−0.03	−0.02	−0.01	−0.02	−0.02
	[−0.09; 0.04]	[−0.08; 0.05]	[−0.08; 0.06]	[−0.09; 0.04]	[−0.08; 0.05]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to District HQ	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	**0.28**	**0.28**	**0.28**	**0.28**	**0.28**
	[0.22; 0.35]	[0.22; 0.35]	[0.22; 0.34]	[0.21; 0.34]	[0.22; 0.35]
EA: 2008 % of Gov. School Use	0.02	0.02	0.02	0.01	0.02
	[−0.02; 0.06]	[−0.03; 0.06]	[−0.02; 0.06]	[−0.03; 0.06]	[−0.03; 0.06]
EA: 2008 ELF score	−0.03	−0.04	−0.04	−0.05	−0.04
	[−0.11; 0.04]	[−0.12; 0.03]	[−0.12; 0.03]	[−0.12; 0.03]	[−0.12; 0.03]
EA: 2008 Mean Poverty Score	−0.01	−0.03	−0.02	−0.03	−0.03
	[−0.10; 0.06]	[−0.11; 0.03]	[−0.10; 0.04]	[−0.11; 0.03]	[−0.10; 0.03]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 Mean Agricultural Work	**0.16**	**0.18**	**0.18**	**0.19**	**0.18**
	[0.09; 0.27]	[0.11; 0.28]	[0.11; 0.27]	[0.13; 0.28]	[0.12; 0.28]
EA: 2007 Malaria Treatment	0.04	0.03	0.03	0.03	0.03
	[−0.04; 0.10]	[−0.05; 0.10]	[−0.05; 0.10]	[−0.04; 0.10]	[−0.05; 0.10]
EA: 2007 PC Visit	−0.03	−0.03	−0.03	−0.03	−0.03
	[−0.06; 0.00]	[−0.06; 0.00]	[−0.06; 0.00]	[−0.06; 0.00]	[−0.06; 0.00]
EA: 2007 LC Visit	0.02	0.02	0.02	0.02	0.02
	[−0.01; 0.05]	[−0.01; 0.05]	[−0.01; 0.05]	[−0.01; 0.05]	[−0.01; 0.05]
EA: 2007 Well in Community	0.01	0.01	0.01	0.01	0.01
	[−0.02; 0.04]	[−0.02; 0.04]	[−0.02; 0.04]	[−0.02; 0.04]	[−0.02; 0.04]
LC: % Related to PC	**−0.19**				
	[−0.39; −0.05]				
LC: % Reporting PC Dispute		0.22			
		[−0.21; 0.60]			
LC: Median PC Contact			**−0.01**		
			[−0.02; 0.00]		
LC: Mean Education				−0.10	
				[−0.23; 0.05]	
LC: Mean Age					0.01
					[0.00; 0.02]
BIC	-224.24	-224.00	-219.97	-222.66	-216.87
Num. obs.	607	607	607	607	607
Num. groups: Local Council	19	19	19	19	19
Variance: Local Council (Intercept)	0.00	0.00	0.00	0.00	0.00

Coefficients with $p < 0.05$ in **bold**

Table 3: DV: 2011 EA-level percentage of households that report using government health facilities. Multi-level linear models with random intercepts at the council level level.

	Model 6	Model 7	Model 8	Model 9
Intercept	**0.54**	**0.50**	**0.49**	**0.54**
	[0.42; 0.65]	[0.40; 0.58]	[0.39; 0.57]	[0.44; 0.62]
EA: Mean War Experience	−0.03	−0.02	−0.02	−0.01
	[−0.09; 0.04]	[−0.08; 0.05]	[−0.09; 0.05]	[−0.08; 0.06]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to District HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	0.02	0.02	0.02	0.02
	[−0.02; 0.06]	[−0.03; 0.06]	[−0.03; 0.06]	[−0.02; 0.06]
EA: 2008 % of Gov. School Use	**0.28**	**0.28**	**0.28***	**0.29**
	[0.21; 0.34]	[0.22; 0.34]	[0.21; 0.34]	[0.22; 0.35]
EA: 2008 ELF score	−0.04	−0.05	−0.05	−0.03
	[−0.12; 0.03]	[−0.12; 0.03]	[−0.12; 0.03]	[−0.11; 0.04]
EA: 2008 Mean Poverty Score	−0.03	−0.03	−0.03	−0.04
	[−0.10; 0.03]	[−0.11; 0.03]	[−0.11; 0.03]	[−0.11; 0.03]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 Mean Agricultural Work	**0.17**	**0.19**	**0.19**	**0.15**
	[0.10; 0.27]	[0.13; 0.28]	[0.13; 0.28]	[0.08; 0.23]
EA: 2007 Malaria Treatment	0.03	0.03	0.03	0.02
	[−0.05; 0.10]	[−0.05; 0.09]	[−0.05; 0.09]	[−0.06; 0.08]
EA: 2007 PC Visit	−0.03	−0.03	−0.03	−0.03
	[−0.06; 0.00]	[−0.06; 0.00]	[−0.06; 0.01]	[−0.06; 0.00]
EA: 2007 LC Visit	0.02	0.02	0.02	0.02
	[−0.01; 0.05]	[−0.01; 0.05]	[−0.01; 0.05]	[−0.01; 0.05]
EA: 2007 Well in Community	0.01	0.01	0.01	0.01
	[−0.02; 0.04]	[−0.02; 0.04]	[−0.02; 0.04]	[−0.02; 0.04]
LC: % Female	−0.24			
	[−0.53; 0.07]			
LC: % CDF Participation		−0.11		
		[−0.37; 0.16]		
LC: % SLPP			0.00	
			[0.00; 0.00]	
LC: Competition				**−0.06**
				[−0.10; −0.02]
BIC	-224.78	-223.03	-212.91	-228.88
Num. obs.	607	607	607	607
Num. groups: Local Council	19	19	19	19
Variance: Local Council (Intercept)	0.00	0.00	0.00	0.00

Coefficients with $p < 0.05$ in **bold**

Table 4: DV: 2011 EA-level percentage of households that report using government health facilities. Multi-level linear models with random intercepts at the council level level.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	**3.45**	**3.29**	**3.71**	**3.56**	**3.22**
	[3.03; 3.86]	[2.98; 3.60]	[3.36; 4.07]	[2.87; 4.24]	[0.27; 6.13]
EA: Mean War Experience	−0.04	−0.04	−0.03	−0.03	−0.03
	[−0.21; 0.13]	[−0.21; 0.13]	[−0.20; 0.14]	[−0.21; 0.14]	[−0.21; 0.14]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00	0.00
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: Distance to District HQ	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	−0.10	−0.09	−0.10	−0.10	−0.10
	[−0.26; 0.06]	[−0.26; 0.07]	[−0.26; 0.06]	[−0.27; 0.06]	[−0.26; 0.06]
EA: 2008 % of Gov. School Use	0.05	0.05	0.06	0.05	0.05
	[−0.06; 0.16]	[−0.06; 0.16]	[−0.04; 0.17]	[−0.06; 0.16]	[−0.06; 0.16]
EA: 2008 ELF score	−0.17	−0.17	−0.18	−0.18	−0.17
	[−0.36; 0.02]	[−0.36; 0.02]	[−0.37; 0.01]	[−0.37; 0.01]	[−0.37; 0.02]
EA: 2008 Mean Poverty Score	−0.15	−0.16	−0.13	−0.15	−0.15
	[−0.33; 0.03]	[−0.34; 0.02]	[−0.31; 0.05]	[−0.33; 0.02]	[−0.33; 0.02]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	−0.07	−0.10	−0.09	−0.07	−0.07
	[−0.27; 0.13]	[−0.30; 0.09]	[−0.28; 0.11]	[−0.27; 0.12]	[−0.27; 0.13]
EA: 2007 Malaria Treatment	0.04	0.04	0.03	0.04	0.04
	[−0.15; 0.22]	[−0.15; 0.22]	[−0.15; 0.22]	[−0.14; 0.22]	[−0.15; 0.22]
EA: 2007 PC Visit	0.01	0.01	0.01	0.01	0.01
	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]
EA: 2007 LC Visit	0.03	0.03	0.03	0.03	0.03
	[−0.05; 0.11]	[−0.05; 0.10]	[−0.05; 0.10]	[−0.05; 0.11]	[−0.05; 0.11]
EA: 2007 Well in Community	0.01	0.01	0.01	0.01	0.01
	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]
LC: % Related to PC	−0.10				
	[−0.68; 0.49]				
LC: % Reporting PC Dispute		**2.53**			
		[0.59; 4.45]			
LC: Median PC Contact			**−0.06**		
			[−0.11; −0.02]		
LC: Mean Education				−0.24	
				[−1.21; 0.73]	
LC: Mean Age					0.00
					[−0.06; 0.07]
BIC	864.80	856.73	862.85	863.68	869.28
Num. obs.	607	607	607	607	607
Num. groups: Local Council	19	19	19	19	19
Variance: Local Council (Intercept)	0.13	0.10	0.08	0.13	0.13

Coefficients with $p < 0.05$ in **bold**

Table 5: DV: 2011 EA-level perceptions of recent improvements in government health services. Multi-level linear models with random intercepts at the council level level.

	Model 6	Model 7	Model 8	Model 9
Intercept	**3.20**	**3.64**	**3.64**	**3.51**
	[2.77; 3.63]	[3.30; 3.97]	[3.35; 3.93]	[3.15; 3.87]
EA: Mean War Experience	−0.03	−0.03	−0.02	−0.03
	[−0.21; 0.14]	[−0.21; 0.14]	[−0.20; 0.15]	[−0.21; 0.14]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: Distance to District HQ	**0.00**	**0.00**	**0.00**	**0.00**
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	0.05	0.05	0.04	0.05
	[−0.06; 0.16]	[−0.06; 0.16]	[−0.06; 0.15]	[−0.06; 0.16]
EA: 2008 % of Gov. School Use	−0.10	−0.10	−0.11	−0.10
	[−0.26; 0.06]	[−0.26; 0.06]	[−0.27; 0.05]	[−0.26; 0.06]
EA: 2008 ELF score	−0.18	−0.18	**−0.20**	−0.17
	[−0.37; 0.01]	[−0.38; 0.01]	[−0.40; −0.01]	[−0.36; 0.02]
EA: 2008 Mean Poverty Score	−0.16	−0.16	−0.16	−0.15
	[−0.34; 0.02]	[−0.34; 0.02]	[−0.33; 0.02]	[−0.33; 0.02]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00
	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	−0.04	−0.09	−0.06	−0.09
	[−0.24; 0.16]	[−0.28; 0.11]	[−0.25; 0.12]	[−0.30; 0.11]
EA: 2007 Malaria Treatment	0.04	0.03	0.02	0.04
	[−0.14; 0.22]	[−0.15; 0.22]	[−0.16; 0.20]	[−0.15; 0.22]
EA: 2007 PC Visit	0.01	0.01	0.01	0.01
	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]
EA: 2007 LC Visit	0.03	0.03	0.03	0.03
	[−0.05; 0.11]	[−0.05; 0.11]	[−0.05; 0.11]	[−0.05; 0.11]
EA: 2007 Well in Community	0.01	0.01	0.01	0.01
	[−0.07; 0.08]	[−0.07; 0.09]	[−0.07; 0.09]	[−0.07; 0.09]
LC: % Female	1.05			
	[−0.55; 2.65]			
LC: % CDF Participation		**−2.19**		
		[−3.85; −0.53]		
LC: % SLPP			**−0.02**	
			[−0.04; −0.01]	
LC: Competition				−0.11
				[−0.31; 0.10]
BIC	861.29	857.05	860.75	866.00
Num. obs.	607	607	607	607
Num. groups: Local Council	19	19	19	19
Variance: Local Council (Intercept)	0.12	0.09	0.06	0.12

Coefficients with $p < 0.05$ in **bold**

Table 6: DV: 2011 EA-level perceptions of recent improvements in government health services. Multi-level linear models with random intercepts at the council level level.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	0.21	0.11	**0.29**	0.20	−0.47
	[−0.02; 0.43]	[−0.05; 0.28]	[0.10; 0.48]	[−0.08; 0.47]	[−1.43; 0.49]
EA: Mean War Experience	0.06	0.06	0.08	0.06	0.07
	[−0.06; 0.17]	[−0.06; 0.17]	[−0.04; 0.19]	[−0.06; 0.17]	[−0.06; 0.18]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to District HQ	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	**0.32**	**0.32**	**0.33**	**0.32**	**0.32**
	[0.25; 0.40]	[0.24; 0.39]	[0.25; 0.40]	[0.24; 0.39]	[0.24; 0.39]
EA: 2008 % of Gov. School Use	0.02	0.02	0.02	0.01	0.02
	[−0.09; 0.13]	[−0.09; 0.13]	[−0.10; 0.13]	[−0.10; 0.13]	[−0.09; 0.13]
EA: 2008 ELF score	0.08	0.08	0.07	0.07	0.08
	[−0.05; 0.21]	[−0.05; 0.20]	[−0.05; 0.20]	[−0.06; 0.20]	[−0.05; 0.21]
EA: 2008 Mean Poverty Score	−0.02	−0.05	−0.02	−0.03	−0.03
	[−0.15; 0.10]	[−0.18; 0.07]	[−0.15; 0.10]	[−0.16; 0.09]	[−0.16; 0.09]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00	0.00
	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.00]	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	0.05	0.04	0.05	0.05	0.05
	[−0.07; 0.19]	[−0.08; 0.17]	[−0.07; 0.18]	[−0.07; 0.19]	[−0.08; 0.18]
EA: 2008 Mean No. of School-Age Children	0.00	0.00	0.00	0.00	0.00
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: 2007 Malaria Treatment	0.05	0.04	0.05	0.06	0.05
	[−0.08; 0.17]	[−0.10; 0.15]	[−0.09; 0.16]	[−0.08; 0.17]	[−0.08; 0.17]
EA: 2007 PC Visit	0.05	0.04	0.04	0.04	0.05
	[−0.01; 0.10]	[−0.01; 0.10]	[−0.01; 0.09]	[−0.01; 0.10]	[−0.01; 0.10]
EA: 2007 LC Visit	−0.01	−0.01	−0.01	0.00	0.00
	[−0.06; 0.05]	[−0.06; 0.05]	[−0.06; 0.05]	[−0.06; 0.05]	[−0.06; 0.05]
EA: 2007 Well in Community	0.01	0.01	0.01	0.01	0.00
	[−0.05; 0.06]	[−0.05; 0.06]	[−0.05; 0.06]	[−0.05; 0.06]	[−0.05; 0.06]
LC: % Related to PC	−0.13				
	[−0.41; 0.15]				
LC: % Reporting PC Dispute		**0.95**			
		[0.28; 1.61]			
LC: Median PC Contact			**−0.03**		
			[−0.05; −0.01]		
LC: Mean Education				−0.08	
				[−0.40; 0.24]	
LC: Mean Age					0.01
					[−0.01; 0.04]
BIC	427.91	420.64	423.71	428.15	432.28
Num. obs.	607	607	607	607	607
Num. groups: Local Council	19	19	19	19	19
Variance: Local Council (Intercept)	0.01	0.01	0.01	0.01	0.01

Coefficients with $p < 0.05$ in **bold**

Table 7: DV: 2011 EA-level percentage of households with school age children that report that their children attend government schools. Multi-level linear models with random intercepts at the council level level.

	Model 6	Model 7	Model 8	Model 9
Intercept	0.10	0.16	0.16	**0.19**
	[−0.11; 0.32]	[−0.02; 0.34]	[−0.01; 0.34]	[0.00; 0.38]
EA: Mean War Experience	0.06	0.06	0.07	0.06
	[−0.06; 0.17]	[−0.06; 0.18]	[−0.06; 0.18]	[−0.06; 0.18]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to District HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 % of Gov. Health Care Use	**0.32**	**0.32**	**0.32**	**0.32**
	[0.24; 0.39]	[0.24; 0.39]	[0.24; 0.39]	[0.24; 0.39]
EA: 2008 % of Gov. School Use	0.02	0.02	0.01	0.02
	[−0.10; 0.13]	[−0.10; 0.13]	[−0.10; 0.12]	[−0.09; 0.13]
EA: 2008 ELF score	0.07	0.07	0.07	0.08
	[−0.06; 0.20]	[−0.06; 0.20]	[−0.06; 0.20]	[−0.05; 0.21]
EA: 2008 Mean Poverty Score	−0.04	−0.03	−0.03	−0.03
	[−0.17; 0.08]	[−0.16; 0.08]	[−0.16; 0.08]	[−0.16; 0.09]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00
	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	0.07	0.05	0.06	0.03
	[−0.06; 0.23]	[−0.07; 0.19]	[−0.06; 0.20]	[−0.11; 0.17]
EA: 2008 Mean No. of School-Age Children	0.00	0.00	0.00	0.00
	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: 2007 Malaria Treatment	0.05	0.05	0.05	0.05
	[−0.09; 0.17]	[−0.08; 0.17]	[−0.09; 0.17]	[−0.08; 0.17]
EA: 2007 PC Visit	0.05	0.04	0.05	0.04
	[−0.01; 0.10]	[−0.01; 0.10]	[−0.01; 0.10]	[−0.01; 0.10]
EA: 2007 LC Visit	0.00	0.00	0.00	0.00
	[−0.05; 0.05]	[−0.06; 0.05]	[−0.06; 0.05]	[−0.06; 0.05]
EA: 2007 Well in Community	0.00	0.00	0.01	0.01
	[−0.05; 0.06]	[−0.05; 0.06]	[−0.05; 0.06]	[−0.05; 0.06]
LC: % Female	0.17			
	[−0.42; 0.78]			
LC: % CDF Participation		−0.18		
		[−0.81; 0.45]		
LC: % SLPP			0.00	
			[−0.01; 0.00]	
LC: Competition				−0.05
				[−0.13; 0.03]
BIC	426.78	426.74	435.95	429.70
Num. obs.	607	607	607	607
Num. groups: Local Council	19	19	19	19
Variance: Local Council (Intercept)	0.01	0.01	0.01	0.01

Coefficients with $p < 0.05$ in **bold**

Table 8: DV: 2011 EA-level percentage of households with school age children that report that their children attend government schools. Multi-level linear models with random intercepts at the council level level.

	Model 1 DV: 2011 Perceptions	Model 2 DV: 2011 Perceptions
Intercept	**3.41***	**3.40***
	[3.12; 3.69]	[3.11; 3.69]
LC: Median PC Contact (centered)	**−0.05***	**−0.05***
	[−0.09; 0.00]	[−0.09; 0.00]
EA: 2008 % Use of Gov. Health Fac.	−0.11	−0.10
	[−0.27; 0.05]	[−0.26; 0.06]
EA: 2008 % of Gov. School Use	0.07	0.06
	[−0.04; 0.18]	[−0.04; 0.17]
EA: 2008 ELF score	−0.17	−0.18
	[−0.36; 0.02]	[−0.36; 0.01]
EA: 2008 Mean Poverty Score	−0.13	−0.14
	[−0.31; 0.05]	[−0.31; 0.03]
EA: Mean War Experience	−0.03	0.05
	[−0.20; 0.14]	[−0.12; 0.21]
EA: 2008 Dist. to Passable Road	0.00	0.00
	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	−0.07	−0.07
	[−0.26; 0.12]	[−0.26; 0.12]
EA: 2007 Malaria Teatment	0.02	−0.01
	[−0.16; 0.20]	[−0.18; 0.17]
EA: Distance to District HQ	**0.00***	**0.00***
	[−0.01; 0.00]	[−0.01; 0.00]
EA: Distance to Freetown	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]
EA: 2007 PC Visit	0.01	0.00
	[−0.07; 0.09]	[−0.08; 0.07]
EA: 2007 LC Visit	0.02	0.04
	[−0.06; 0.10]	[−0.03; 0.12]
EA: 2007 Well in Community	0.01	0.01
	[−0.07; 0.09]	[−0.07; 0.08]
EA: Distance to Chiefdom HQ	0.00	0.00
	[−0.01; 0.00]	[−0.01; 0.00]
LC: Median PC Contact (centered) * EA: Dist. to Chiefdom HQ	**0.00***	
	[−0.01; 0.00]	
LC: Median PC Contact (centered) * EA: Distance to District HQ		**0.00***
		[0.00; 0.00]
BIC	785.80	740.83
Num. obs.	607	607
Num. groups: Local Council	19	19
Variance: Local Council (Intercept)	0.07	0.11
Variance: Local Council (Chief Dist.)	0.00	
Variance: Residual	0.16	0.15
Variance: Local Council (District Dist.)		0.00

Coefficients with $p < 0.05$ in **bold**

Table 9: Cross-level interactions. Multi-level linear models with random intercepts at the council level level.

	Model 1 DV: 2011 Gov. Health Care Use	Model 2 DV: 2011 Gov. Health Care Use	Model 3 DV: 2011 Gov. School Use	Model 4 DV: 2011 Gov. School Use
Intercept	**0.78**	**0.75**	**0.19**	**0.34**
	[0.58; 0.93]	[0.61; 0.86]	[0.02; 0.37]	[0.15; 0.54]
EA: Mean War Experience	−0.04	−0.03	0.06	0.07
	[−0.11; 0.03]	[−0.10; 0.04]	[−0.07; 0.17]	[−0.06; 0.19]
EA: Distance to Chiefdom HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to District HQ	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: Distance to Freetown	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.00]
EA: 2008 Mean No. of School-Age Children	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[−0.01; 0.00]	[−0.01; 0.00]
EA: 2008 ELF score	−0.04	−0.05	0.09	0.09
	[−0.12; 0.04]	[−0.13; 0.03]	[−0.04; 0.23]	[−0.04; 0.23]
EA: 2008 Mean Poverty Score	−0.02	−0.03	−0.03	−0.01
	[−0.13; 0.05]	[−0.12; 0.04]	[−0.17; 0.09]	[−0.14; 0.12]
EA: 2008 Dist. to Passable Road	0.00	0.00	0.00	0.00
	[0.00; 0.00]	[0.00; 0.00]	[0.00; 0.01]	[0.00; 0.01]
EA: 2008 Mean Agricultural Work	**0.25**	**0.26**	0.06	0.07
	[0.18; 0.37]	[0.19; 0.36]	[−0.07; 0.19]	[−0.05; 0.21]
EA: 2007 Malaria Treatment	0.03	0.03	0.02	0.03
	[−0.05; 0.10]	[−0.06; 0.10]	[−0.12; 0.14]	[−0.12; 0.15]
EA: 2007 PC Visit	−0.04	**−0.04**	0.04	0.04
	[−0.07; 0.00]	[−0.07; 0.00]	[−0.02; 0.09]	[−0.02; 0.09]
EA: 2007 LC Visit	0.02	0.02	−0.02	−0.02
	[−0.01; 0.05]	[−0.02; 0.05]	[−0.07; 0.04]	[−0.08; 0.04]
EA: 2007 Well in Community	0.01	0.01	0.02	0.02
	[−0.03; 0.04]	[−0.03; 0.04]	[−0.04; 0.08]	[−0.04; 0.08]
LC: % Related to PC	−0.16			
	[−0.36; 0.09]			
LC: Median PC Contact		**−0.01**		**−0.03**
		[−0.03; 0.00]		[−0.05; −0.01]
LC: % Reporting PC Dispute			**0.95**	
			[0.28; 1.62]	
BIC	-152.12	-149.15	474.58	481.66
Num. obs.	607	607	607	607
Num. groups: Local Council	19	19	19	19
Variance: Local Council (Intercept)	0.01	0.00	0.01	0.01
Variance: Residual	0.03	0.03	0.09	0.09

Coefficients with $p < 0.05$ in **bold**

Table 10: Robustness check: excluding 2008 baseline measures for EA-level use of health and education services. Multi-level linear models with random intercepts at the council level level.