Complements or Substitutes? How Institutional Arrangements Bind Chiefs and the State in Africa

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Abstract

How does the central state interact with local actors in providing public goods? I study the effect of state capacity on local governance in sub-Saharan Africa, which I argue depends on whether traditional village chiefs are integrated in the country's constitution. I use distance to administrative headquarters as a measure of state capacity and estimate a regression discontinuity design around administrative boundaries. If chiefs are not integrated then the state and chiefs compete with each other, working as substitutes. That is, a stronger state undermines the power of chiefs. If traditional chiefs are integrated, then the two work as complements. A stronger state then increases the power of chiefs. I show that these relationships are crucial to understand the effect of the capacity of the state on local economic development.

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I Introduction

One of the fundamental issues of politics is how political power is distributed between federal and local actors. In federal countries, such as the United States, this manifests itself in the struggle between local, state, and federal rights. In many other countries, this takes a different form as they feature traditional governance institutions with authority independent of the state, such as village elders in South Asia (Acemoglu et al., 2019), lineages in China (Tasi, 2007), or caciques in Latin America (Díaz-Cayeros, Magaloni and Ruiz-Euler, 2014). In Africa, local governance is dominated by traditional leaders or chiefs that interact with the state in a myriad of ways (Logan, 2013; Baldwin, 2016; de Kadt and Larreguy, 2018). Who holds power, and whether these actors act as complements or substitutes plays an essential role in determining whether and how services are provided at the local level.

In this paper, I investigate how variation in state capacity affects the power, legitimacy, and effectiveness of traditional leaders (village chiefs) across different institutional settings in sub-Saharan Africa. Both the state and chiefs produce public goods. They rely on the population for resources, which they can mobilize with their authority: taxation in the case of the state, contributions and labor in the case of chiefs. State capacity, i.e. the ability of the state to mobilize resources and provide public goods, varies across and within countries. To understand the consequences of such variation in state capacity for local public good provision, it is important to understand whether chiefs act as complements or substitutes to the state. They could act as complements to the state by producing local public goods together and local governance is enhanced by higher state capacity. Alternatively, they could act as substitutes by offering alternative modes of producing public goods and compete with the state over local influence.

I provide a framework to empirically assess whether they are substitutes or complements. If they are complements, state capacity will increase service provision by the chief. Conversely, if they are substitutes, service provision by the chief will decrease with greater state capacity. Additionally, as substitutes, chiefs would be able to better step in and compen-

sate when the state is not providing public goods. I argue that whether chiefs and the state are complements or substitutes is shaped by whether the state integrates chiefs into its institutional structure, which I measure by whether they are given a role in the country's constitution. If they are integrated into the institutional structure chiefs become complements. If they are not integrated they are substitutes. I test this hypothesis by comparing the effect of state capacity on the power, legitimacy, and effectiveness of village chiefs and development when they are integrated in the constitution to when they are not.

Studying the effect of differences in state capacity is challenging for at least two reasons. First, measures of state capacity are not widely available. Second, differences in state capacity are typically correlated with other factors. This paper addresses these concerns with a spatial regression discontinuity design that exploits plausible exogenous variation in distance to the state. To begin with, I consider the distance of villages to their district headquarters as a measure for state capacity.[1] Local administrators, who are tasked by the national state to administer the district and are more likely to be located at the district headquarters, provide more public services, collect more taxes, etc. in villages closer to district headquarters. I then use administrative district borders within countries to obtain exogenous variation in villages' distance to administrative headquarters and implement a regression discontinuity design. Whereas people, goods, and services can move across internal administrative boundaries with relative ease, the state — in the form of state administrators — is unlikely to cross it, thus creating a sharp discontinuity of state capacity at the district border.

The implementation of this empirical strategy requires precise geo-coded information on the boundaries and headquarters of administrative divisions. I created an original data set of 5,500 administrative unit boundaries and headquarters in 25 African countries and tracked changes to them over the last 20 years. I merge this data with locations of *Afrobarometer* and *Demographics and Health Survey* respondents and calculate each respondent's distance to their national, regional, and district capitals as well as administrative boundaries. I first

[1] I use the term *district* interchangeably with other administrative divisions found in various countries such as "commune" or "municipality."

validate the use of distance as a measure of state capacity by showing that distance to administrative headquarters does indeed reduce outcomes related to state capacity. Respondents farther away report paying less taxes, receive less public goods by the state, and are less likely to be registered. In addition to the correlation between distance to the state and state capacity, I confirm that the spatial regression discontinuity design successfully identifies jumps in state capacity. Observations on the side of the boundary closer to the state consistently report higher levels of state capacity while geographical and historical controls vary smoothly.

Using the DHS data, I then find that the local capacity of the nation state is an important determinant of economic development. Villages on the side of the boundary closer to headquarters have considerably better development outcomes, as measured by literacy rates, wealth measures, and water access.

Using data from the Afrobarometer survey, I then investigate how village chiefs are affected by different levels of state capacity. I find that the effect of proximity to the state on chiefs hinges critically on whether or not a country's constitution recognizes chiefs. In countries in which village chiefs are integrated into national institutions, stronger capacity of the state causes village chiefs to be more influential and to provide more public goods. By contrast, in countries in which village chiefs are not integrated, more state capacity actually causes chiefs to be *less* influential and to provide *fewer* public goods. That is, if village chiefs are not integrated nationally, then national and local institutions actually work as substitutes rather than complements.

I then show that whether chiefs are complements or substitutes to the national state matters for how state capacity impacts development. I find that the integration of village chiefs makes economic development *more* dependent on the capacity of the nation state. The coefficient of state capacity on development is 3 times larger in countries in which village chiefs are integrated into national institutions compared to countries where they are not integrated.

The empirical strategy raises two questions about the causal interpretation of the results: Whether the institutional setup is endogenous to underlying factors that also determine whether chiefs are complements or substitutes to state capacity and whether the location of administrative headquarters is endogenous. I show that possible determinants of the institutionalization of traditional leaders neither confound these heterogeneous findings nor independently explain whether chiefs are complements or substitutes. Further, I show that the heterogeneous findings hold when restricting the sample to former British colonies. To deal with endogeneity concerns about the location of the administrative headquarters, I instrument their location with the most populated place in a given district in 1960, and show no effects of distance to randomly drawn placebo headquarters.

This paper contributes to the growing literature on traditional leaders in Africa (for an overview see Nuesiri (2014); Holzinger, Kern and Kromrey (2016); Baldwin and Raffler (2018)). Many scholars have documented the role chiefs play in allocating land, providing justice, influencing voters, and implementing development projects (Boone, 2003; Logan, 2009, 2013; Koter, 2013; Baldwin, 2014; Acemoglu, Reed and Robinson, 2014; Michalopoulos and Papaioannou, 2015; Baldwin, 2016; de Kadt and Larreguy, 2018; Casey et al., 2019). The question of how these influential actors interact with the state remains contested. Modernization theorists have argued that the traditional authority of chiefs stands in competition to that of the modern state and that they are an obstacle for development (Migdal, 1988; Mamdani, 1996). Recent work has presented chiefs as modern actors that cooperate with the state and can be beneficial for accountability (Baldwin, 2016; Van der Windt et al., 2019; Mustasilta, 2019). This paper brings the two strands of the literature together and resolves the apparent tension by introducing institutional arrangement as the key determining factor for the state-chief relationship. When chiefs are not institutionally integrated, they are in competition to the state as described by modernization theory. They get displaced when they state is strong, but empowered when the state is weak. When they are institutionally integrated, however, they act as complements to the state and play important roles as

developmental or administrative brokers linking citizens to the state.

The paper also contributes to the literature on state capacity and limited statehood. Scholars have proposed a variety of definitions and measurement strategies to study state capacity (Hendrix, 2010; Soifer, 2012; Lee and Zhang, 2017; Berwick and Christia, 2018; Fergusson, Larreguy and Riaño, 2018; Stollenwerk, 2018). This paper provides a novel approach by using distance to administrative headquarters as a measure of local state capacity and using a regression discontinuity design around administrative boundaries to obtain exogenous variation. This sub-national measure correlates strongly with other measures of state capacity and has the advantage of being readily available (a data set of administrative headquarters across Africa and code to calculate distances are available on the author's website) and comparable within and across countries. The RD design makes it possible to investigate the causal effects of different levels of state capacity. Scholars have long been interested how state building affects areas of limited statehood, especially with regards to the legitimacy of state institutions (Englebert, 2002; Karim, 2019) and informal actors (Bratton, 2007; Krasner and Risse, 2014; Risse and Stollenwerk, 2018). The findings of this paper suggest that constitutional choices have important consequences how state building efforts affect non-state actors and local development.

The paper thus also speaks to a large literature on the importance of institutions and institutional arrangements, both formal and informal (Helmke and Levitsky, 2004). Traditional institutions with authority independent of the state exist not only in Africa but across the developing world, for example in Latin America (Díaz-Cayeros, Magaloni and Ruiz-Euler, 2014), South Asia (Chaudhary, 1999; Acemoglu et al., 2019), and China (Tasi, 2007). Even in many federal countries in the developed world, local governments originally possessed local authority that predated the nation state, such as states in the United States or kingdoms in the German Empire. The paper thus provides a new lens to look at the important institutional decisions of institutionalizing these traditional authorities, a process also known as indirect rule (Lange, 2009; Iyer, 2010; Padró i Miquel and Yared,

2012; Henn, Marchais and Sanchez de la Sierra, 2018; Müller-Crepon, 2020). Studies that vary institutional arrangements at the micro-level allow scholars an in-depth look into the effects of institutions while holding important contextual factors fixed (Baldwin, Muyengwa and Mvukiyehe, 2017; Karim, 2019). However, they do not allow cross-country comparison. This paper allows us to draw conclusions about variation in institutional arrangements across African countries while also providing an identification strategy that controls for contextual factors. The paper thereby also makes a new contribution to the literature on African constitutions. The previous literature has largely concluded that institutional arrangements in Africa have little de-facto impact (Okoth-Ogendo, 1991; Green, 1996) whereas this paper shows that institutional arrangements crucially shape the relationship between the state and traditional leaders.

Section II provides a theoretical framework for the relationship between the state and chiefs and how it is shaped by institutional arrangements. Section III explains the empirical strategy and validates distance as a measure of state capacity. Section IV presents the data, and Section V gives the results. Section VI discusses determinants of institutional integration of chiefs, and Section VII shows robustness. Section VIII offers concluding remarks.

II Theoretical Framework

Political institutions operate at multiple levels. Below, I first distinguish between the central and the local state. I will then discuss the role of traditional leaders as local elites and provide a theoretical framework to explain how the state and chiefs interact in the production of public goods. I will consider how local effects of state capacity on local political power and public good provision are shaped by the institutional integration of chiefs.

To understand how political institutions function and interact, we first have to make a distinction between the central and the local state. The central state is the government.[2] It

[2]I assume that political leaders can control the central state apparatus and abstract from potential agency problems at the central state level for simplicity.

is based in the capital of the country and is concerned with staying in power. This requires the central state to project power locally. It uses the local state to achieve its objectives. The local state consists of bureaucrats who are hired and paid by the central government in order to establish and maintain a security apparatus, levy taxes, and provide public goods (Carter and Hassan, 2020). [3]

I consider state capacity as the ability of the central state to govern and implement policies through its local state apparatus. Considerable variation in local state capacity exists both within and across African countries and several scholars have noted an under-provision of the state in rural Africa (Herbst, 2000; Bates, 1983). Such local variation in state capacity affects local public good provision and ultimately local economic development.

State institutions are not the only political institutions important for local development. In many developing countries local non-state actors play a crucial governance role. One such actor in Africa are *traditional leaders*, "rulers who have power by virtue of their association with the customary mode of governing a place-based community" (Baldwin, 2016, 21). Across Africa (and often even within a country), this definition will encompass a variety of traditional leaders who vary in their historical origins and local power. Many traditional leaders are part of lineages that have been in power locally since before colonial occupations. Others were instituted, replaced, or propped up by colonial administrators (Ranger, 1983; Mamdani, 1996). Conceptually and empirically, I focus on the most local level of traditional leaders, namely village chiefs or headmen. These chiefs posses authority independent of the state, even if their office was created or modified by the colonial government. Village chiefs are highly influential in their communities. Through their association with customs and traditions, they are endowed with local authority over the population (Zartman, 2000). They control resources, most importantly land (Goldstein and Udry, 2008; Boone, 2014; Honig, 2017), and their standing allows them to impose social sanctions (Sheely, 2018). Whilst they might use their authority for their own benefit (Clayton, Noveck and Levi, 2015), this

[3] In practice, there are also local politicians who interact with the local bureaucrats (see e.g. Raffler 2019). For this paper, I do not consider local politicians and their agency relationship with local bureaucrats.

authority also enables them to provide services and public goods to the community. Land allocation and justice provision are clear examples of how authority is used in such a way. Additionally, chiefs can convince the population to contribute labor to public construction works such as schools or boreholes (Baldwin, 2016; Voors et al., 2018).

Both the local state and chiefs are involved in local governance and public good provision. I now provide a theoretical framework that formalizes the interaction of the local state and chiefs in the production of public goods. Local public goods improve social welfare and economic production. They are produced by a combination of inputs from the local state, citizens, and chiefs. Citizens will only provide labor or resources if they are provided organizational resources from the state or chief. Citizens contribute after observing these contributions made by the state and chief and reward or punish the state and chief after the realization or failure of the public good production. However, citizens can not always tell the difference of what is contributed by the state and what is contributed by chiefs. The state and chiefs have an interest in providing public goods if they care about local social welfare or receive a reward from the citizen in the form of votes or rent.

Given the fact that the state and chiefs perform similar functions and both rely on the population for resources and authority, it is important to understand how the two interact. Specifically, we need to understand whether they act as complements or substitutes to each other. When the state provides less inputs, do chiefs also provide less, meaning they act as complements? Or, do they provide more, meaning they act as substitutes? This has clear implications for public good provision. If the two are complements public good provision will be highly correlated with state capacity. If they are substitutes, public good provision will be less dependent on state capacity since chiefs can compensate state weakness. Furthermore, whether they are substitutes or complements matters for political authority and whether chiefs loose or gain influence when the state is weak.

I argue that whether chiefs act as complements or substitutes to the state depends on whether they are institutionally integrated into the state apparatus. When they are insti-

tutionally integrated they act as complements, when they are not institutionally integrated they act as substitutes.

Institutional integration can be understood as states giving traditional leaders a formalized role in local governance. Such integration can happen in the form of development brokers and/or administrative brokers. In the developmental broker setting, chiefs act as an intermediary between politicians and the local population. They use their superior information of local needs to advocate for the provision of public goods. Once development projects are allocated, the chiefs' ability to mobilize resources is put into action (Baldwin, 2016). In the administrative setting, traditional leaders take over low-level administrative functions typically associated with the state, such as justice provision, land allocation, and titling (Miles, 1993).[4]

When chiefs are institutionally integrated, it becomes harder for citizens to distinguish between public goods provided by the state and those provided by the chief. This is because both the state and chiefs are very explicit about their cooperation. Citizens know that chiefs are part of the state apparatus and have access to state resources. As a result, citizens will reward both for the level of public good provision. When state capacity is low, the state is unable to provide much resources to public good provision. Citizens, being unable to distinguish between the resources from the state and chiefs, consider the project doomed and are unwilling to contribute their own resources. The chief, knowing that he will be blamed for the shortcomings of the state does not contribute much either. Thus, when state capacity is low, there will be low public good provision and chiefs are held in low esteem. In contrast, when state capacity is high, the state can contribute more resources and citizens, seeing the available resources chip in to produce the public good. Since the involvement of the chief will make the citizens' inputs more productive and since the chief will get the full credit for the successful public good provision he contributes as well. Thus when state capacity is high,

[4]Another form of cooperation between the state and chiefs might exist, namely the role of electoral broker. In the electoral broker setting, chiefs use their local authority to convince voters to vote for a given party in return for private or public benefits (de Kadt and Larreguy, 2018).

there will be high public good provision and chiefs are held in high esteem. Consequently, *when the state and chiefs are institutionally linked, chief power should be correlated with state capacity.* They are complements.

When the central state does not institutionally integrate traditional leaders, their relationship with the state is fundamentally different. Chiefs are still important local elites with their independent source of authority. But they do not have access to state resources and lack formal channels to interact with the local state. Local chiefs and state officials or politicians might still be able to find mutual agreeable ways to cooperate on public good provision or elections. Yet, the lack of institutionalization makes cooperation less likely by precluding a formal relationship and increases competition through rival claims of local authority. Researchers have identified several areas such as land, justice provision, or taxation, where traditional leaders directly compete with the state and offer alternative solutions (Herbst, 2000; Olken and Singhal, 2011; De Herdt and Titeca, 2019). Figure A2 in the Appendix shows pictures of public goods provided by chiefs in the absence of the state in the DRC collected by the author.

As a consequence, when chiefs are not institutionally integrated, it is easy for citizens to distinguish between inputs of the state and those of the chief. Because of their competing claims of authority, chiefs and the state are particularly careful in clearly signaling the inputs they provide. As a result, the citizen is able to reward each separately for their role in the public good provision. When state capacity is low, the state is unable to provide much resources. Citizens, realizing that public good provision hinges on their involvement can be persuaded by the chief to contribute. Since the chief knows that he will be reap the benefits of organizing public good provision he will do so. Thus, when state capacity is low, there will still be some public good provision and chiefs are held in high esteem. In contrast, when state capacity is high, the state can contribute more resources and citizens, seeing the available resources do not see the need to contribute themselves. Since chiefs have less to gain in this scenario, they will not contribute much. Thus when state capacity is high,

there will be medium levels of public good provision and chiefs are held in lower esteem. Thus, *when the nation state and chiefs are institutionally separated, chief power should be negatively correlated with state capacity.* They are substitutes.

Examining the effects of institutional integration empirically poses two challenges: first, institutional integration is the outcome of a decision-making process determined by a variety of factors making institutional integration endogenous. Second, it is hard to measure. I overcome these challenges by focusing on the national level variation of integration of chiefs via a country's constitution. While some *de facto* variation in local institutional integration might exist, national-level decisions create meaningful structures for cooperation and send important signals. Constitutionally, the decision to incorporate chiefs can only be made at the national or regional level. For example, whether or not chiefs are legally recognized as local governance actors, sit on development boards, or can allocate land titles has to be decided uniformly for the whole country or province. Whether or not chiefs are integrated into a country's institutional structure via the constitution is straightforward to observe and measure. More importantly, it addresses endogeneity concerns in two ways. First, since it is determined at the national level, this integration is independent of the local level variation in state capacity and influence of chiefs this paper is measuring. This reduces the risk of reverse causality. Second, the constitutional writing is often the result of historical factors and idiosyncrasies unlikely to be correlated with the state-chief relationship and their impact on development.[5] I hypothesize that chiefs integrated via a country's constitution act as complements to the state. Chiefs in countries where they are not integrated act as substitutes.

Baldwin (2016) identifies a chief's embeddedness as a key determinant of their influence and impact. Chiefs that live in the community they are responsible for, and that have social and economic interest in its development, have more information about the community and

[5]Previous research has identified democracy, colonial background, economic resources, state capacity, and decentralization as factors determining this decision. Section VI presents evidence which shows that these possible determinants of the institutionalization of traditional leaders neither confound these heterogeneous findings nor independently explain the local state-chief relationship.

higher incentives to provide governance. The framework presented above complements this theory of embeddedness. For a given level of embeddedness, how does state capacity affect the role of chiefs and thus their ability to promote local development? I offer institutional integration as a key determining factor of whether chiefs are complements or substitutes to the state. Naturally, this raises the question whether institutionally integrated chiefs are more or less embedded than those that are not integrated. While I have not found any indication that institutionally integrated chiefs are more or less embedded on average, embeddedness is a promising potential mechanism for the heterogeneous effects of state capacity. When institutionally integrated, chiefs work closely with the state and obtain resources from it and could thus displace towards where the state is present. Chiefs will then be more embedded when state capacity is higher, making them complements. When not institutionally integrated, chiefs have less incentives to gravitate towards where the state is present, but remain embedded in their communities on which they rely on for influence and rents. Communities where the state is less present will offer more opportunities for chiefs to play a role thus increasing their embeddedness, making them substitutes to state capacity.

This paper examines several implications from the framework presented above. First, it investigates the average effect of state capacity on local economic development. Second, chiefs can be considered complements of the state when they become more influential as state capacity increases. I test whether institutional integration via the constitution makes chiefs complements to the state by estimating the effect of state capacity on the power and legitimacy of chiefs when they are integrated and when they are not. Third, whether the two are complements or substitutes matters for local development. If institutional integration does indeed determine whether chiefs are complements or substitutes of the state, then we would expect the coefficient of state capacity on development to be *larger* when chiefs are institutionally integrated.

III Empirical Strategy

Studying state capacity comes with two central challenges: measurement and causality. My empirical strategy overcomes these challenges by using distance to administrative headquarters as a measure of the capacity of the national state and by comparing villages across internal administrative boundaries to obtain exogenous variation in state capacity.

Measuring State Capacity

To compare the effect of within country variation in state capacity, this study requires a measure that (i) is available (and comparable) for multiple countries in Africa; and (ii) varies at a subnational level. The measures proposed in the literature are problematic in terms of both requirements, especially due to the lack of high-quality subnational data.

Instead, I measure state capacity based on the idea that it varies with the physical distance to state institutions (Fergusson, Larreguy and Riaño, 2018). The ability of state agents to govern and implement policies in a given location decreases the farther away they are (Stasavage, 2010; Brinkerhoff, Wetterberg and Wibbels, 2018). This paper posits that the relationship between distance and capacity is at work for most state agents, such as the tax collector, or officials tasked with overseeing infrastructure and service delivery. It works via at least three mechanisms: First, the cost of implementing policies and administrating increases farther away from the local state headquarters; second, overseeing the work of state agents becomes more difficult; and third, areas farther away from the local headquarters are typically less populated and have lower economic activity, which decreases the state's interest to project power.

The relationship between distance and state capacity is especially relevant in the African context, where governments are heavily resource constrained and historically struggle to project and exercise power across their territory (Bates, 1983; Mamdani, 1996; Herbst, 2000). However, simply using the distance to the national capital as a measure of state capacity

would limit this study and leave out important variation. The national capital is not the only location of state institutions. Aware of the difficulty of governing from afar, central states outsource many functions to lower-level administrative divisions such as provinces or districts. The local governments of these units are located at the administrative headquarters, which also house local branches of state institutions such as the police, postal service, or ministries. The administrative headquarters are thus an important seat of state capacity.

In order to validate this measure of state capacity, Panel A in Table 1 shows the OLS results of regressing log distance to the appropriate administrative headquarters on measures from the Afrobarometer survey that are suggestive of state capacity and have previously been used in the literature: tax payment, local development infrastructure, and usually state-provided public good provision. The three measures are combined to create a state capacity index. All three measures, as well as the index, indicate that state capacity and distance to the administrative headquarters are negatively correlated. Panel B in Table 1 shows the same strong correlation between distance to administrative headquarters and state capacity outcomes in data obtained from the Demographic and Health Surveys. Again, I have chosen outcomes that are typically provided by the state: whether children have birth certificates and vaccination cards, whether the family has electricity, and how far away the household is from its water source. To illustrate the relationship, Figure 1 shows a bin-scatter of distance to the administrative headquarters and the state capacity index, as well as their linear and polynomial relation. There seems to be a consistent negative relationship between state capacity outcomes and distance to the administrative headquarters across both the Afrobarometer and DHS data.

Still, like all measures of state capacity, using distance suffers several problems. Distance to administrative headquarters constitutes a compound treatment, as several other factors vary farther away from the state. State capacity is correlated with many other variables, such as urbanization or economic activity. Furthermore, village locations and their distance to the headquarters are not random. I use the following strategy to address these endogeneity

concerns.

Table 1: Effect of Log Distance to HQ on Outcomes Related to State Capacity

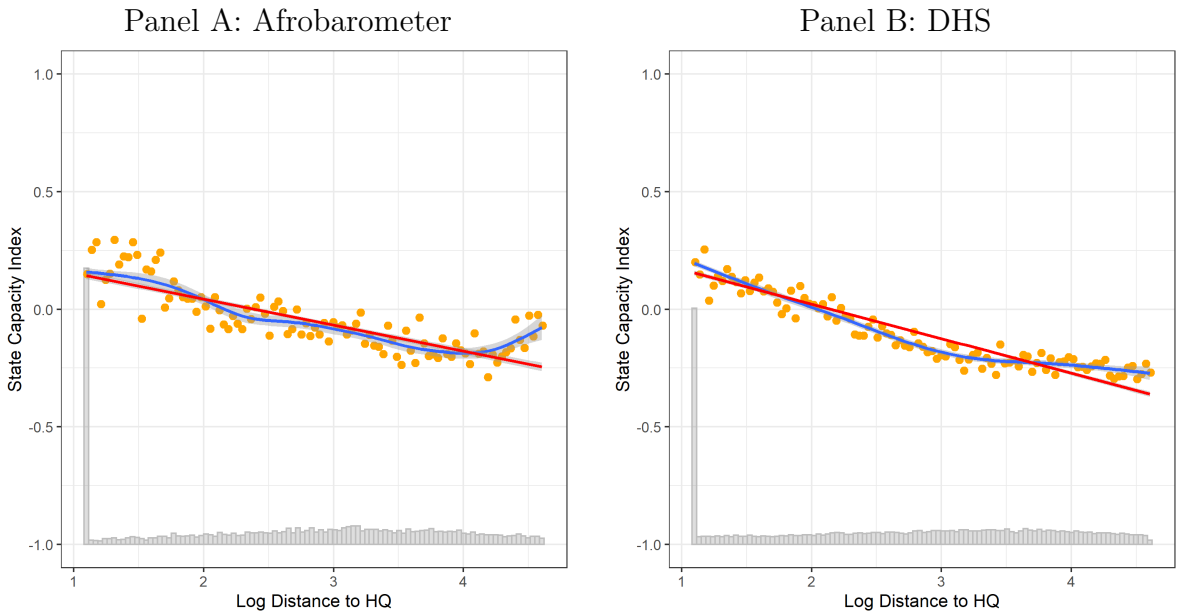
Panel A: Afrobarometer Data	*Dependent variable:*			
	Taxes paid	Local Dev	Public Goods	State Capacity Index
	(1)	(2)	(3)	(4)
Log Distance to HQ	-0.153^{***}	-0.206^{***}	-0.094^{***}	-0.150^{***}
	(0.030)	(0.015)	(0.016)	(0.013)
Observations	3,346	15,524	15,544	15,544
Adjusted R^2	0.221	0.605	0.333	0.481
Panel B: DHS Data	*Dependent variable:*			
	Registered	Electricity	Water Access	State Capacity Index
	(1)	(2)	(3)	(4)
Log Distance to HQ	-0.128^{***}	-0.311^{***}	-0.261^{***}	-0.216^{***}
	(0.009)	(0.012)	(0.014)	(0.008)
Observations	28,814	30,239	30,239	30,239
Adjusted R^2	0.758	0.559	0.463	0.624

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with log distance to the administrative headquarters as the independent variable and various outcomes of state capacity as the dependent variables. Geographic and historical controls are included as well as district level and survey round fixed effects. Panel A uses data from the Afrobarometer survey. Standard errors, clustered at the district level, are shown in parentheses.

Using Administrative Borders as Identification

I identify the effect of variation in state capacity using a spatial regression discontinuity design (RDD) around internal administrative borders (Dell, 2010; Keele and Titiunik, 2015, 2016). A spatial RDD measures the local treatment effect at a geographic boundary that splits observations into treated and control areas. It assumes that the division around the boundary is as-if random. Implementing a spatial RDD requires restricting the sample to observations close the boundary, defining the treatment at boundary, and measuring a running variable that indicates each observation's distance to the boundary.

Figure 1: Bin-scatter between state capacity and distance



The central idea of the identification strategy is to compare villages on both sites of administrative boundaries within a country. Figure A4 in the Appendix, which shows state boundaries in Nigeria, visualizes the design. While people, goods, and services move freely across these administrative borders, government officials, tasked with administrating specific districts usually do not. Specifically, using distance to the administrative headquarters as a measure of state capacity, we observe a discrete change in the distance to the state on each side of an administrative border since the relevant administrative headquarter changes. At the same time, the distance to relevant non-state locations does not change at the border. People can (and do) cross the internal border to go to the market, find employment, or travel. In fact, most of these internal boundaries are barely noticeable on the ground. Therefore, administrative boundaries will create a discontinuity in state capacity, while other observable and unobservable confounder should vary smoothly across the border.[6]

[6]Note that not all local state services will fully respect every internal boundary. Some jurisdictions are based on higher or lower level administrative boundaries. For other public services (hospitals, for example) people can cross internal boundaries to use them. In this paper, I will abstract from these differences and posit that for a given administrative boundary, there will always be a considerable number of local state agents and services that are bound by the border and thus create a jump in local state capacity. While I will address spillovers more directly in the robustness section, in general this local state capacity spillover across the boundary should downward bias my results.

First, I restrict the sample to villages close to the internal administrative border (within 5 km for the main specification) *within* a country. Villages are then assigned to "border regions", i.e. an area on both sides of an internal administrative boundary. A village is assigned to the border region 'XY' if it is in district 'X' and within 5 km of its closest neighboring district 'Y' or if it is in district 'Y' and within 5 km of district 'X'. By including border region fixed effect, I only compare villages at the same internal border.[7] In Section VII, I show that the exact choice of bandwidth does not drive the results by replicating the findings using bandwidths ranging from 3 km to 20 km.

Second, I create a low state capacity treatment variable by assigning villages as being treated if they are on the side of a border region farther from their respective administrative headquarter than the villages on the other side of the border are from their headquarters. I create a binary treatment variable by calculating the mean distance to their administrative headquarter of villages on each side of the border region and then comparing the two sides. The treatment variable indicates for each village whether the mean distance on its side of the border region is larger than on the other side.

Treatment: (Mean Distance in Own District Border Region - Mean Distance in Neighboring District Border Region) > 0

Such a binary treatment variable, however, disregards potentially important variation. It treats border regions where the distance to the state is only slightly different on each side the same way as border regions with a big change in distance from one side to the other. Therefore, I also create an intensive treatment measure that measures by how much the log-distance to the administrative headquarter is bigger on one side than on the other.[8] In Section VII, I show robustness to using only the binary treatment variable. An alternative would be to not create a treatment indicator and simply use each village's distance to its headquarter. Results in Section VII indicate that this method generates qualitatively sim-

[7] Also note that these fixed effects will control for all country level variation.

[8] Using the logged distance takes into account the relative change across the two sides. I also show robustness using the non-logged distance.

ilar findings to the main specification. However, using the treatment indicator described above estimates the exogenous jump at the border more precisely by following the standard regression discontinuity structure.

In this design, distance to administrative headquarters jumps discontinuously at the administrative border. Yet, not every village in a border region will be situated directly at the boundary. Therefore, in order to identify the jump in state capacity at the border I implement a local linear regression discontinuity design. To do so, I control for a village's distance to the border as well as the interaction of that distance with the treatment variable.

Specification

The identification strategy leads to the following main specification:

$$Y_{v,s,r} = \beta_0 + \beta_1 Tint_s + \beta_2 DB_v + \beta_3 T_s \times DB_v + \beta_4 \chi_v + \beta_5 BR_r + \epsilon_{v,s,r} \tag{1}$$

where the dependent variable $Y_{v,s,r}$ is the outcome of interest in village v situated on side s of the border region r; $Tint_s$ is the treatment intensity indicating by how much distance to administrative headquarters drops on side s of border region r; to account for a village's location relative to the boundary DB_v is the distance of village v to the administrative border;[9] the distance to the border is interacted with a binary treatment variable T_s (whether the average distance on the village's side s of the border region r is larger than on the other side) to complete the regression discontinuity design; χ_v is a vector of geographical and historical controls for village v which are pre-treatment;[10] and BR_r are the border region fixed effects that will also eliminate cross-country variation. Standard errors are clustered at the district level. The coefficient of interest here is β_1. It signifies the jump at the border, after β_2 and β_3 control for the linear trends on both sides.

Distance to an administrative headquarter is likely to have a different impact on state

[9]Note that it is inversed when treatment is 0.

[10]I also show robustness to leaving out these control variables.

capacity depending on the country and administrative division. Some countries assign different responsibilities and resources to the province or district level, resulting in a different distance-state capacity relationship. Figure 2 illustrates these differences by showing the different coefficients of distance on the index of state capacity-related outcomes by country and administrative division. In some countries, distance matters more for state capacity outcomes than in other countries, and even within countries there are differences between administrative divisions. As a result, the treatment at the boundary will differ across cases. After first showing the result using the intensive treatment variable outlined above, I account for such heterogeneity in the main specification by scaling the intensive treatment measure by the inverse of these coefficients. In other words, state capacity at an administrative border changes based on how much farther the administrative headquarter is on one side than on the other side multiplied by how much distance matters in the given country and administrative division.[11]

This spatial discontinuity design relies on two key assumptions: other covariates vary smoothly at the boundary and no selective sorting of individuals around the boundary. Looking at internal administrative boundaries provides a good setup for this design. Other factors — for example, market access — are not influenced by these borders and thus should vary smoothly. Similar assumptions have been made in previous studies (Dell, 2010; Dell, Lane and Querubin, 2018). I show robustness in Section VII, which addresses several concerns regarding the empirical strategy, most notably the validity of the assumptions underpinning the regression discontinuity design, different choices for the main specification, and the possible endogeneity of administrative borders and headquarters.

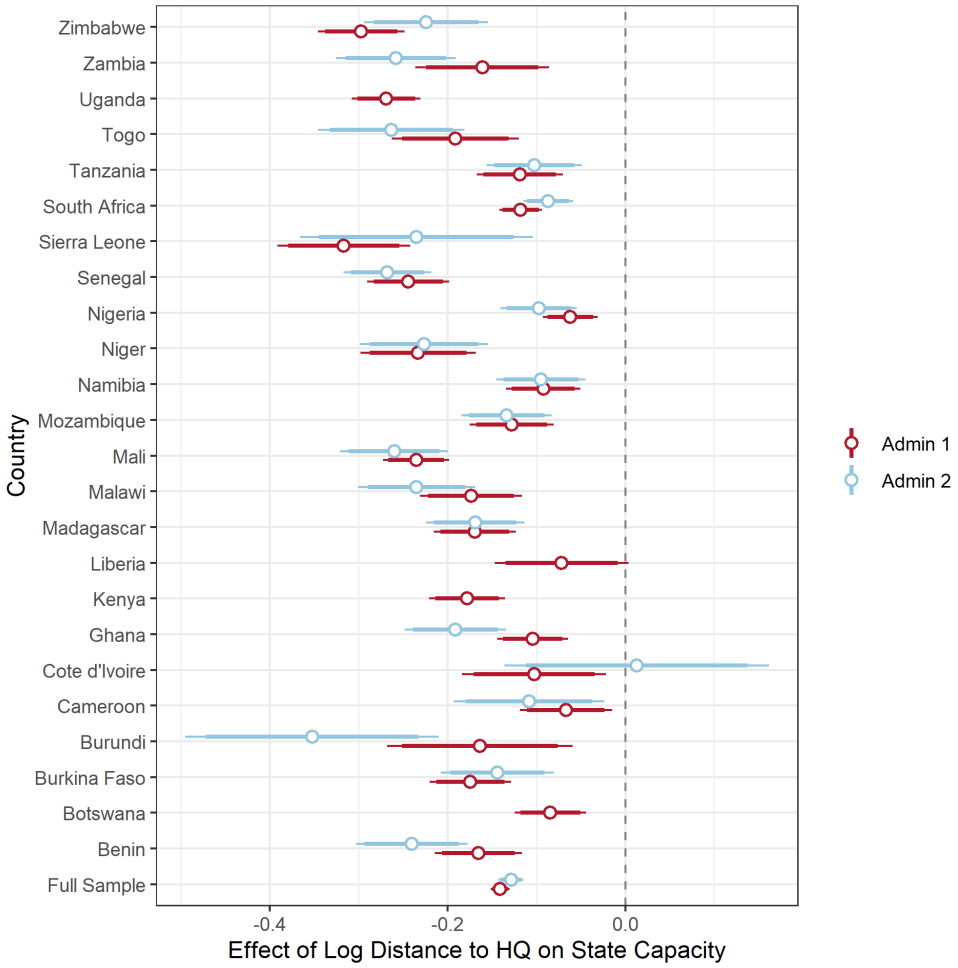
I then introduce institutional variation in two alternative ways. First, I interact the treatment variable, the distance to the border and their interaction with an indicator of the institutional setting. The coefficient of interest is the one on the interaction between institutionalization and the treatment indicator. Second, I subset the data and run the

[11]Since this country and administrative unit specific gradient of state capacity might be endogenous to country-level decisions, I run the specification without scaling of the treatment in Section VII.

analysis separately for the sample where traditional leaders are institutionalized and where they are not.

The above specification differs from some geographical regression discontinuity designs that use polynomial longitude-latitude specification (e.g. Dell 2010; Dell, Lane and Querubin 2018). These studies estimate differences across a single geographical boundary. In that case using longitude and latitude offers a precise way of controlling for an observation's location vis-a-vis the boundary. However, when analyzing the differences across multiple boundaries, and in different countries as is the case here, using longitude and latitude becomes problematic. Since boundaries are in many different locations, longitude and latitude controls do not adequately capture an observation's location vis-a-vis its boundary in this setting. Distance to the border, as used in this paper, represents a clean measure. It has the added benefit of closely mirroring the standard regression discontinuity specification that incorporates a control for the distance to the cutoff.

Figure 2: Correlation between state capacity and distance by country and admin. division



Notes: This figure shows the coefficient of the log distance to administrative headquarter when regressing it on the state capacity index separately for each administrative division in a country using the same specification as in Table 1, but without fixed effects and clustering.

IV Data

This study uses geo-coded data from the Afrobarometer and Demographic and Health Surveys, as well as an original data set of administrative headquarters and borders.

To investigate the impact of variation in state capacity, I use the third, fourth, fifth, and sixth rounds of Afrobarometer (Afrobarometer, 2017) conducted between 2005 and 2015. For each respondent, Afrobarometer data contains the town or village of residence, which have been geo-coded by AidData (BenYishay et al., 2017).[12] The Afrobarometer data contains several measures of local state capacity and respondents' attitudes towards traditional leaders. I create a z-score for the power of chiefs in the community by combining questions on how much influence chiefs have in the community, whether they are seen as corrupt or trustworthy, and how many times the respondent has been in contact with the chiefs. A list with the exact question wording can be found in the Appendix. I also show robustness to using the individual variables instead of the index.

Additionally, I use geo-coded responses to the Demographic and Health Surveys (DHS) conducted by the United States Agency for International Development (USAID) in 17 countries in Africa. The DHS data contains demographic information on households and data on the provision and utilization of health services. I construct a development index and a state capacity index. I use all geo-coded data available for the time period (2002-2015) and countries surveyed by the Afrobarometer plus the DRC.[13] Since, due to data availability, the samples for the Afrobarometer and DHS analysis are not identical, I check robustness to using a sample of only the countries for which I have both Afrobarometer and DHS geo-coded data.

Next, I constructed a data set with the administrative units and their headquarters for

[12] I restrict my sample to the respondents geo-coded at the town/village level, as opposed to the 'district' level.

[13] Note that the exact location of respondents is slightly scrambled in the DHS data (up to 5km in most cases and up to 10km in rare cases). While in most cases the respondents are scrambled within their administrative division, I run a conservative robustness check where I weight observations by the inverse probability that they are misassigned in Column (7) of Table A13 in the Appendix.

25 African countries surveyed in the Afrobarometer and DHS.[14] The sample is visualized in Panel A of Figure 3. I identified the two administrative divisions most involved in public good provision and created a list of all units, their headquarters, size, and population at the last census. This produces over 5,500 headquarters in 46 administrative divisions. I then geo-coded the location of all headquarters using GoogleMaps, GeoNames.org, OpenstreetMap, Statoids.com, and Wikipedia. I use satellite imagery from GoogleMaps to verify that the coordinates did indeed fall on a larger population center. In order to determine which administrative unit a given village belongs to, I obtained shapefiles of all 46 administrative divisions in the 25 countries using GADM.org, The Humanitarian Data Exchange, and the countries' statistical offices. I tracked all changes to the administrative boundaries and headquarters since 2000.[15] I calculated a village's distance to its administrative headquarter as well as the distance to the closest administrative boundary. Table A1 in the Appendix provides a list of the countries in my sample and the administrative units that are used. The data of geo-coded headquarters and shapefiles, as well as the code to calculate the distances, is available on the author's website. An example of the data can be seen in Figure A6 in the Appendix which maps the administrative headquarters, boundaries, and Afrobarometer observations in the regression sample in Burundi.

Data on institutional variation is obtained by examining the constitutional role of traditional leaders in every country in the sample. The text of all constitutions comes from the Constitute Project.[16] For each country, I have coded whether the constitutions give traditional leaders an official role e.g. by establishing a House of Chiefs, recognizing traditional courts, or recognizing the role of chiefs in local governance. Such passages in a country's constitution are evidence for institutional linkages between the state and traditional leaders. Panel B in Figure 3 shows which countries have institutionalized chiefs via their constitution. Moreover, I use a dataset of constitutional chief inclusion compiled by Baldwin (2016) as

[14] I omitted North African countries, small kingdoms (Lesotho, Swaziland), island nations (Cape Verde, Mauritius, Sao Tome), and countries where shapefiles or headquarters were unavailable.

[15] Cross-referencing my data with Grossman and Lewis (2014) suggests high levels of accuracy.

[16] https://www.constituteproject.org

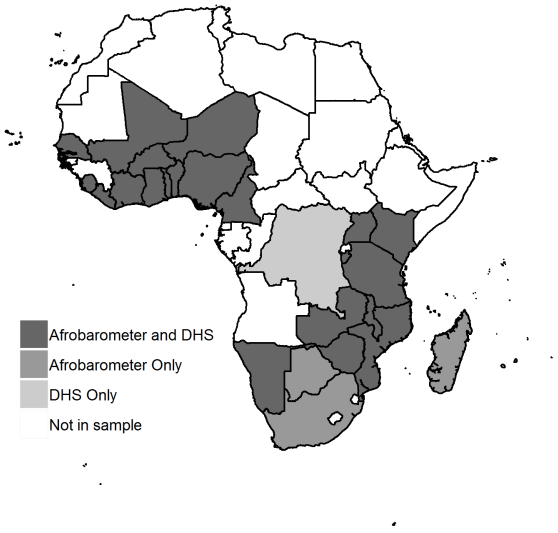
robustness.

Lastly, I obtain geographical and historical variables from a wide array of sources to use as controls and to check the balance of the sample. A full list and detailed descriptions of the methodology and sources can be found in the Appendix.

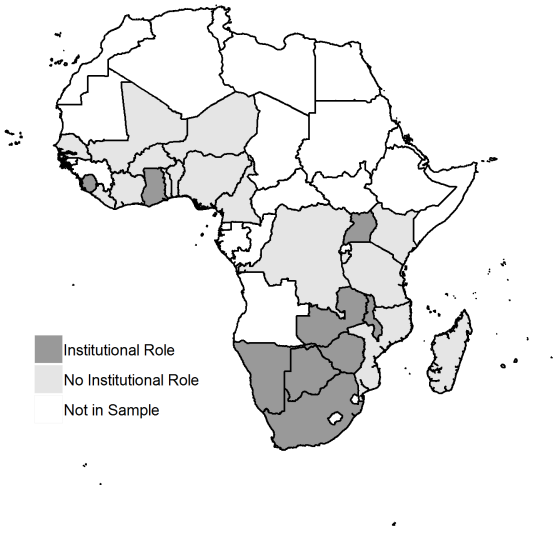
The combined data are then aggregated to the location (i.e. village or neighborhood) level. Restricting to locations with at least one observation within 5km of each side of a border and dropping extreme outliers results in a sample of 1,129 locations for the Afrobarometer data and 3,842 for the DHS data. Table A2 in the Appendix shows the summary statistic for this regression sample.

Figure 3: Map of Sample

Panel A: Countries in the Sample



Panel B: Institutional Variation



V Results

First, I test whether state capacity — measured by the indices created from state capacity-related outcomes in the Afrobarometer and DHS — does indeed change discontinuously at

the border. To that end, Table 2 shows the results of the main specification, with state capacity as the dependent variable. Both the data from the Afrobarometer (Column 1) and the DHS (Column 2) reveal a sizable and significant jump in state capacity. Enumerators report significantly lower levels of state capacity on the side of the border farther away from the administrative headquarters, indicating that the empirical strategy is successful in identifying a jump in state capacity. Furthermore, the effect is sizable. Increasing treatment by one standard deviation reduces the index of state capacity outcomes by a tenth of a standard deviation.

Table 2: Effect of Treatment on State Capacity Index and Development

	Dependent variable:		
	State Capacity Index		Development Index
	Afrobarometer	DHS	DHS
	(1)	(2)	(3)
Low State Capacity Treatment	-0.115^{**}	-0.085^{***}	-0.091^{***}
	(0.051)	(0.019)	(0.016)
Fixed effects?	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit
Observations	936	2,930	3,563
Adjusted R^2	0.521	0.624	0.696

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with state capacity as the dependent variables. The treatment variable is the intensive measure of how much the distance to the administrative headquarter is larger than on the other side of the internal administrative border while controlling for the distance to the administrative headquarter and its interaction with treatment variable. Border region fixed effects as well as geographical controls are included. Standard errors, clustered at the district level, are shown in parentheses.

How does state capacity affect economic development? Column (3) in Table 2 uses data from the DHS surveys and shows that the local capacity of the nation state is an important determinant of economic development. Villages on the side of the border closer to headquarters have considerably higher development outcomes, as measured by literacy rates, wealth measures, and water access. The effects are sizable with a 1 standard deviation

increase in distance to state headquarters being associated with a 0.1 standard deviation drop in development.

Subsequently, I test whether this change in state capacity affects the power of traditional leaders to understand whether the two act as substitutes or complements. I first present the main result using different RDD specifications. I then look at the effect in the pooled sample of all countries, run the interaction with institutional setting, and finally split the sample by institutionalization of chiefs.

Table 3 shows the effect of interacting low state capacity treatment with institutional integration of traditional leaders on the local power of the chief as measured by the chief z-score from the Afrobarometer data. Column (1) simply has a binary indicator whether the village is on the side farther away from its administrative headquarter while controlling for the distance to the administrative headquarter and its interaction with the treatment variable. Column (2) includes border region fixed effects and clusters standard errors at the district level. Column (3) replaces the treatment variable with an intensive measure of how much the distance to the administrative headquarter on one side is larger than on the other side of the internal administrative border. Column (4) includes geographic controls. Column (5) is the paper's main specification and scales the treatment indicator by how much distance affects state capacity following Figure 2. Throughout the different specifications, the results consistently show the same finding: The treatment effect is strongly positive, meaning chiefs become more powerful when the state is weak and they are not institutionalized. Yet, the interaction is negative, indicating that chiefs lose influence farther away from the state when they are institutionalized. Again, the effect is sizable. A one standard deviation increase in treatment decreases (increases) the power of the chief by three (two) tenths of a standard deviation when chiefs are (not) institutionalized.

Table 3: Effect of State Capacity on Chief Power

	Dependent variable:				
	Chief Z-Score				
	Binary Treatment	Fixed Effects	Intensive Treatment	Controls	Scaling
	(1)	(2)	(3)	(4)	(5)
Low State Capacity Treatment	0.423*	0.232	0.129**	0.184***	0.194***
	(0.224)	(0.158)	(0.051)	(0.064)	(0.066)
Treatment X Institutionalized	−0.700**	−0.460**	−0.142**	−0.244***	−0.279***
	(0.286)	(0.219)	(0.066)	(0.083)	(0.077)
Fixed effects?	No	Yes	Yes	Yes	Yes
Cluster	No	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	733	733	733	635	635
Adjusted R^2	0.067	0.595	0.594	0.596	0.598

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions by institutional context with the chief z-score as the dependent variable. Column (1) has a binary treatment indicator. Column (2) includes border region fixed effects and clusters standard errors at the district level. Column (3) has an intensive treatment indicator. Column (4) includes geographic controls. Column (5) is the paper's main specification and scales the treatment indicator by how much distance affects state capacity following Figure 2. Standard errors are shown in parentheses.

Column (1) in Table 4 estimates the effect of the low state capacity treatment when not considering the institutional role of chiefs. In the pooled sample, running the same specification as Table 2 on the local power of the chief reveals no effect of state capacity. This is not surprising considering that the Afrobarometer sample contains countries with very distinct institutional setups and thus different state-chief relationships.

Next, Table 4 shows the effect of interacting treatment with institutional integration of traditional leaders (Column 2) following the main specification. Only when also considering the institutional integration of chiefs does low state capacity treatment have an effect on chief power. To further examine this pattern, Columns 3 and 4 subset the data by countries where chiefs are not given an institutionalized role in the constitution (Column 3) vs countries where they are institutionalized (Column 4). As predicted, the results show heterogeneity by institutional context. Chiefs become stronger in villages farther away from the state — they act as substitutes — but only when they are not institutionalized by the constitution (and thus institutionally separated). When chiefs are institutionalized in the constitution (and thus institutionally linked to the state), this relationship is reversed. Their role decreases farther away from the state — they act as complements.

Table 4: Effect of State Capacity on Chief Power by Institutional Integration

	Dependent variable:			
	Chief Z-Score			
	Pooled Sample	Pooled Sample	Not Institutionalized	Institutionalized
	(1)	(2)	(3)	(4)
Low State Capacity Treatment	−0.022	0.194***	0.176***	−0.094**
	(0.037)	(0.066)	(0.066)	(0.042)
Treatment X Institutionalized		−0.279***		
		(0.077)		
Fixed effects?	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	635	213	422
Adjusted R^2	0.586	0.595	0.547	0.570

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions by institutional context with the chief z-score as the dependent variable. Standard errors, clustered at the district level, are shown in parentheses.

Table 5 shows the result separately for the different components of the chief z-score. Respondents farther away from the state report their chief to be more influential, more trustworthy, less corrupt, and have more contact with them when not institutionalized. Yet, in countries where chiefs have an institutional role, respondents farther away have lower levels of all 4 indicators. In other words, all components of the z-score show a positive effect of the low state capacity treatment at the border and a negative coefficient of its interaction with institutionalization.

Table 5: Effect of State Capacity on Components of Chief Z-Score

	Dependent variable:				
	Chief Z-Score	Influence of Chief	Contact with Chief	Trust in Chief	Chief not Corrupt
	(1)	(2)	(3)	(4)	(5)
Low State Capacity Treatment	0.194***	0.411***	0.216**	0.086	0.226***
	(0.066)	(0.112)	(0.096)	(0.087)	(0.081)
Treatment X Institutionalized	−0.279***	−0.827***	−0.252**	−0.098	−0.240**
	(0.077)	(0.264)	(0.106)	(0.100)	(0.110)
Fixed effects?	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	139	635	478	478
Adjusted R^2	0.598	0.536	0.564	0.529	0.434

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with the chief z-score and its components as the dependent variable. Column (1) uses the chief z-score as the dependent variable as in Table 4. The other columns use the sub-indicators of the z-score as the dependent variable. The exact wording can be found in Section .I in the Appendix. Standard errors, clustered at the district level, are shown in parentheses.

Through what mechanism does giving an institutional role to chiefs induce such heterogeneous effects of state capacity on the influence of chiefs? In Section II I have argued that chiefs in non-institutionalized settings are perceived favorably when compared to a weak state while chiefs in institutionalized settings get blamed for the shortcomings of the state. Table 6 provides some evidence for this mechanism. Chief performance is rated higher when the state is far away, but only when chiefs are not institutionalized. When they are, respondents farther away rate their chief's performance worse. Similar heterogenous effects are found for whether the chief listens to the concern of their population. Importantly, perceptions about the performance of other actors such as the president or MPs do not follow this heterogeneous pattern.

Table 6: Potential Mechanism

	Dependent variable:	
	Performance of Chief	Chief Listens
	(1)	(2)
Low State Capacity Treatment	0.150	0.588***
	(0.100)	(0.152)
Treatment X Institutionalized	−0.313***	−0.746***
	(0.116)	(0.272)
Fixed effects?	Yes	Yes
Cluster	Admin. Unit	Admin. Unit
Observations	335	137
Adjusted R^2	0.573	0.577

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with different perceptions of traditional leaders as the dependent variable. The first Column (1) shows the result for how respondents evaluate the performance by traditional leaders. Column (2) has as outcome whether respondents think traditional leaders listen to their concerns. Standard errors, clustered at the district level, are shown in parentheses.

Table A4 in the Appendix offers two alternative measure of legal inclusion according to Baldwin 2016, namely whether the constitution protects or mentions chiefs. The results closely mirror those of the previous tables.

How does the interaction between the state capacity and traditional leaders affect rural welfare? Institutional choice by the central state to institutionalize traditional leaders will have important implications for local public service delivery. Column (2) in Table 7 investigates whether the institutional integration of village chiefs mediates how local state capacity affects rural welfare. Specifically, the components of the development index, literacy, wealth, and access to water, are local development outcomes that chiefs have some influence over. They affect literacy by organizing the construction and maintenance of classrooms and can be an important mechanism for villagers to coordinate the hiring and payment of teachers.[17] By allocating land, administrating local justice, and organizing public works (e.g. road maintenance), traditional leaders can influence economic development in their village.

Table 7: Effect of State Capacity on Development

	Dependent variable:	
	Development Index	
	(1)	(2)
Low State Capacity Treatment	-0.091^{***}	-0.061^{***}
	(0.016)	(0.017)
Treatment X Institutionalized		-0.108^{***}
		(0.032)
Fixed effects?	Yes	Yes
Cluster	Admin. Unit	Admin. Unit
Observations	3,563	3,563
Adjusted R^2	0.696	0.699

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with the development outcomes from the DHS survey as the dependent variable. Standard errors, clustered at the district level, are shown in parentheses.

[17]Qualitative Interview L5 and L6, May 2018, North Kivu province, DRC.

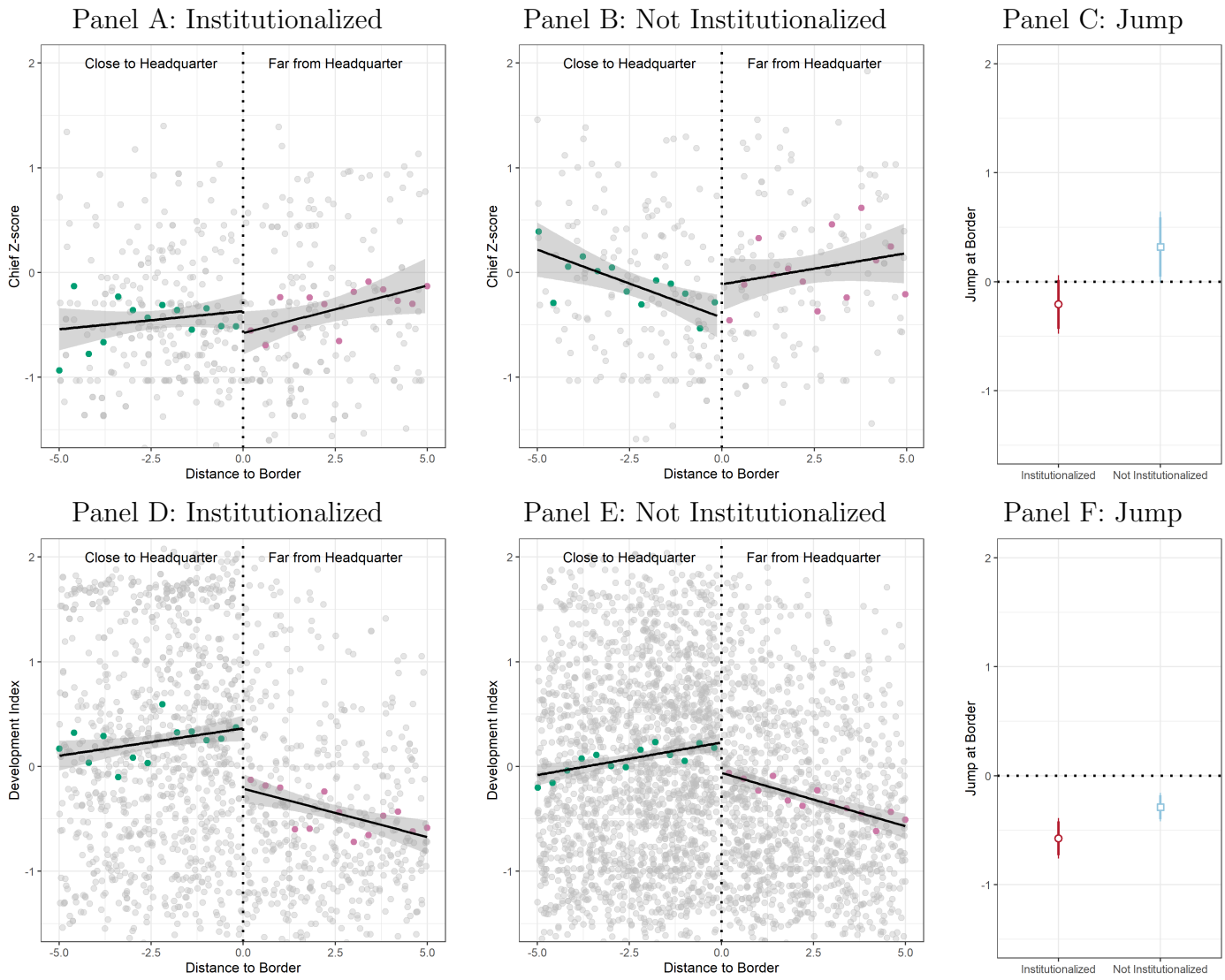
Column (2) in Table 7 reveals a pattern that is in line with the framework of complements and substitutes outlined in Section II. Countries where traditional leaders are not institutionally integrated via the constitution exhibit a smaller drop in development farther away from the state. This indicates that traditional leaders are better able to step in and compensate for the weak state when they are not integrated into it. Moreover, the effect of institutional integration is sizable. The coefficient of state capacity on development is 3 times larger in countries in which village chiefs are integrated into national institutions compared to countries where they are not integrated. Note that these results do not show that institutional integration improves or decreases welfare on *aggregate*, but only how it shapes the effect of varying state capacity on local welfare.

Table A10 in the Appendix shows the result separately for each component of the development index and reveals the same heterogeneity across measures. The results on development outcomes further confirm the different nature of the state-chief relationship based on institutional integration and the important consequences it has for local welfare.

Figure 4 visualizes the two main findings using the raw data. Panels A and B show the scatter and bin-scatter of the chief z-score against distance to the administrative borders, separately for the observations on the side close to the respective headquarter and the ones on the side farther away. The linear relationship between distance to the border and the outcome on each side of the border is also shown. Panels D and E plot the same relationships, but with the DHS development index as an outcome. Panels A and D show the data in countries where chiefs are institutionalized, while Panels B and E only include countries where chiefs are not institutionalized. Two patterns emerge that are highlighted in Panels C and F: First, at the boundary, switching from the side close to the headquarter to the side farther from the headquarter results in opposite jumps in chief power depending on whether chiefs have an institutional role (Panel C). Second, at the boundary, switching from the side close to the headquarter to the side farther from the headquarter results in a jump in development outcomes of double the size when chiefs have an institutional role as compared to when they

do not (Panel F). Both relationships are clearly visible and statistically significant even when just using the raw data, a zero-one treatment indicator, and no-fixed effects.

Figure 4: Raw data around cut-off



Notes: This figure shows shows a bin-scatter with the chief z-score (Panels A and B) and the development index (Panels D and E) on the y-axis and distance to the border on the x-axis. Observations on the side of the border that is close to the administrative headquarter are on the left and in green while observations on the side far from the headquarter are on the right and in purple. The scatter of the raw data is included in grey as is the trend lines with 95% confident intervals on each side of the border. Panels A and D show the data for countries where chiefs are institutionalized and Panels B and E the not institutionalized cases. Panels C and F visualize the different jumps at the border.

VI Determinants of Institutional Integration

The spatial regression discontinuity design provides exogenous variation in state capacity, allowing for a causal interpretation given certain assumptions whose validity I test in Section VII. However, the main finding of the paper comes from the interaction of state capacity with a country's institutional integration of chiefs. Naturally, this raises the question which factors have determined the institutional integration of chiefs and whether they could also explain the results. In other words, maybe it is not the integration of chiefs that matters, but whichever factor determined this arrangement also explains why chiefs are affected differently by low levels of state capacity. Below, I provide an overview of the main determinants of institutional integration according to existing research. I then show that none of these independently explain the findings.

Previous research has identified democracy as a factor in determining this decision (Baldwin, 2016). Electoral incentives make governments more likely to recognize customary authority in an attempt to use them as electoral agents. Colonial background is another factor influencing the state-chief relationship, as British colonizers were more likely to use existing traditional hierarchies as administrators. Local economic resources further determined the state's interest in a given area and subsequent cooperation with local elites (Boone, 2003). At the same time, states with higher capacity are more likely to be able to sidestep the chiefs (Herbst, 2000), and decentralization policies determine how much local influence and independence the central state seeks to establish (Bardhan and Mookherjee, 2006).

On average, it is likely that these factors result in both the state and chiefs being different in settings when chiefs are institutionally integrated to when they are not. However, this is not enough to cast doubt on the findings. The regression discontinuity design identifies the effect of *local* changes in state capacity on the power of chiefs and development. They differ dramatically by institutional integration. For a determinant of institutional integration to independently explain the findings, it must result in chiefs and development being *differently* impacted by low levels of state capacity.

To first test whether institutional linkages correspond with other country-level variation, I collect several country-level variables and perform two-sided t-tests. I focus on variables in three categories: a) historical institutions such as pre-colonial centralization, settler colonies, or whether the country was a British colony; b) geographic determinants of economic activity and vulnerability, such as soil quality, malaria suitability, or ruggedness; and c) more recent measures of institutions such as rule of law, democracy index or failed state index. Table A6 shows the covariate balance. Out of 21 variables, only 2 (whether the country was a British colony and whether the legal system is based on the British system) differ significantly[18] between where traditional leaders are institutionalized from when traditional leaders are not institutionalized. To test whether these differences are driving the results, I rerun the analysis for all covariates, with $p<0.2$ interacting treatment with the covariate.[19] The results are shown in Table 8 for the Afrobarometer data and Table A16 for the DHS data.

Even when interacting treatment with these potential confounders, the interaction of treatment and institutionalization remains sizable, negative, and statistically significant.[20] I also rerun the main specification while only including former British colonies. The results can be seen in Column (2) of Table A17 and closely mirror the main findings. Looking at the map of institutional integration one notices that many cases of institutional integration are in Southern Africa. The heterogeneous effect of institutional integration remain when excluding countries from Southern Africa.[21]

[18]Note that the sample size is only 25 countries.

[19]I also interact treatment with all other variables in Tables A18 and A19 in the Appendix.

[20]The coefficient for the specification with malaria suitability is not significant ($p=0.12$), yet goes in the same direction and is of similar magnitude. In the main specification, I control for a more local measure of malaria suitability.

[21]Since there are only three cases of institutional integration outside of Southern Africa, the sample for institutional integration is drastically reduced. The coefficient remains positive and sizable but loses significance.

Table 8: Robustness: Interaction with Country Variables

	Dependent variable:								
	Pop. 1400	Brit. Colony	Brit. Legal	Settler Colony	Chief Z-Score Gemstones	Ruggedness	Malaria Suit.	Dem. Index	Q Rule of Law
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Low State Capacity Treatment	0.141***	0.127***	0.120***	0.151***	0.127**	0.104**	0.109*	0.143***	0.118*
	(0.051)	(0.040)	(0.039)	(0.048)	(0.057)	(0.051)	(0.062)	(0.051)	(0.061)
Treatment X Institutionalized	−0.202***	−0.177***	−0.164***	−0.183***	−0.159***	−0.145**	−0.133	−0.202***	−0.175***
	(0.065)	(0.058)	(0.056)	(0.063)	(0.059)	(0.061)	(0.086)	(0.060)	(0.062)
Treatment X CountryVariable	0.024	−0.022	−0.033	−0.049*	−0.029	−0.081**	0.071	−0.009	−0.042
	(0.043)	(0.042)	(0.040)	(0.029)	(0.044)	(0.040)	(0.055)	(0.022)	(0.046)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	635	635	635	635	635	635	635	635
Adjusted R^2	0.596	0.596	0.596	0.598	0.603	0.602	0.600	0.596	0.597

Notes: *p<0.1; **p<0.05; ***p<0.01. This table includes the interaction of treatment with several country-level variables to control for possible confounding factors. Border region fixed effects are included. Standard errors, clustered at the district level, are shown in parentheses.

VII Robustness Checks

I show robustness to a range of different specifications and measurements; most notably, the validity of the assumptions underpinning the regression discontinuity design, different choices for the main specification, and the possible endogeneity of administrative borders and headquarters.

Table A3 demonstrates balance on geographical and historical characteristics, Table A5 very low migration among respondents, and no differential migration by state capacity. Panel B in Figure A5 shows no indication for significant variation in density on around the cutoff.

Figure 5 plots the main coefficients when changing the bandwidth. The results also hold when implementing a bias adjustments and when using alternative regression discontinuity specifications such as no geographic controls, binary treatment variable, absolute distance, longitude-latitude specifcation, and clustering at the highest administrative level (Table A7).

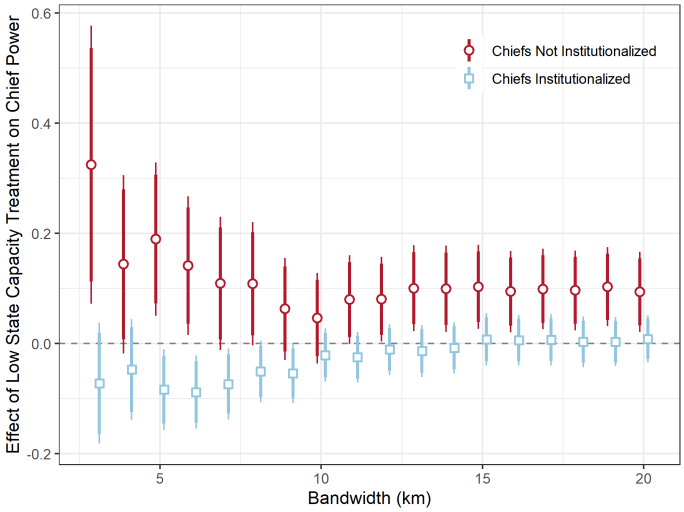
To make sure outliers are not driving the results, I show robustness to dropping the most remote villages, using non-logged distance, traveltime or restricting the sample to rural respondents (Table A8). Panel A in Figure A5 leaves out individual countries one by one.

Table A9 controls for the distance to neighboring headquarters to account for spillovers, analyzes the first and second administrative divisions separately, reports a Donut RD that leaves out villages within 1km of the border, includes Murdock-ethnicity fixed effects, instruments the location of headquarters with the most populated place in a given district in 1960, and shows no effects of distance to randomly drawn placebo headquarters.

A full description of the robustness checks can be found in Section .II in the Appendix.

Throughout the robustness checks, the results remain qualitatively the same: distance to the state leads to an increased role of traditional leaders when the state and chiefs are institutionally separated. When both are linked, chiefs act as complements and their role decreases when the state is weak. I also rerun all robustness checks for the DHS data, the results of which can be seen in Tables A13-A16 in the Appendix.

Figure 5: Changing the Bandwidth



VIII Conclusion

This paper investigated how the state interacts with traditional leaders in Africa. How power is distributed across different levels of government is a central question of politics across political systems. Many developing countries not only feature a very weak state, but also local governance institutions that have inherent local authority independent of the state. Understanding whether these traditional institutions act as complements or substitutes to the state has important consequences for local politics and public good provision.

In this paper I provide a theoretical framework which outlines how the state and chiefs interact in the production of public goods. I hypothesize that whether chiefs are complements or substitutes is shaped by whether they are integrated into institutional structures of the state, measured by whether a country's constitution mentions chiefs and gives them a formal role. I then test this hypothesis by estimating the effects of state capacity on the legitimacy, effectiveness, and public good provision of chiefs. Studying the effects of state capacity is difficult due to the lack of fine-grained data, questions of how to measure state capacity, and endogeneity concerns.

I address these challenges via a spatial regression discontinuity design that uses distance

of villages to their administrative headquarters as a measure of state capacity and compares villages in the border region of neighboring districts. Using geo-coded data from the Afrobarometer survey I find that the interaction between the state and traditional leaders depends critically on their institutional integration. When chiefs are not integrated in the constitution, their role increases when the state is weak — they act as substitutes. In countries where chiefs are integrated in the constitution, chiefs have a weaker role in the community when the state is weak — evidence for complementarity. This heterogeneity has important implications for rural welfare. Using data from the Demographics and Health Survey, I show that countries where traditional leaders are not institutionalized exhibit a smaller reduction in development outcomes when state capacity is low, indicating that traditional leaders are able to substitute for the state.

The results have implications for the relationship between traditional rulers and state capacity at the local and national level. Locally, it improves our understanding of the incentives of traditional leaders, citizens, and the state and the constraints they face in local governance and service provision. At the country level, the results offer a potential explanation why in some African countries traditional leaders continue to play an important role while they have been marginalized in others: it is the interaction of state capacity and the institutional integration of chiefs that determines how much space chiefs have to operate. What determines the institutional integration of traditional leaders and how does the role of chiefs in Africa compare to other traditional institutions across the world? These questions offer interesting avenues for future research.

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Online Appendix

.I Data Appendix

Table A1: Administrative Divisions in Sample

Country	Admin Unit	# in 2002	# in 2005	# in 2008	# in 2012	# in 2015
Benin	department	12	12	12	12	12
Benin	commune	77	77	77	77	77
Botswana	district	15	15	16	16	16
Burkina Faso	province	45	45	45	45	45
Burkina Faso	department	351	351	351	351	351
Burundi	province	17	17	17	17	18
Burundi	commune	115	129	129	129	129
Cameroon	department	58	58	58	58	58
Cameroon	arrondissement	360	360	360	360	360
Cote d'Ivoire	department	58	70	81	107	108
Cote d'Ivoire	sub-prefectures				510	510
D.R.C	province	11	11	11	11	26
D.R.C	territory	166	166	166	166	166
Ghana	region	10	10	10	10	10
Ghana	district	110	110	170	216	216
Kenya	province	8	8	8		
Kenya	county				46	46
Liberia	county	15	15	15	15	15
Madagascar	region		22	22	22	22
Madagascar	district	110	110	114	114	114
Malawi	region	3	3	3	3	3
Malawi	district	27	28	28	28	28
Mali	cercle	49	49	49	49	49
Mali	commune	701	701	701	701	701
Mozambique	province	10	10	10	10	10
Mozambique	district	128	128	128	128	151
Namibia	region	13	13	13	13	14
Namibia	constituency	102	107	107	107	121
Niger	region	7	7	7	7	7
Niger	department	36	36	36	63	63
Nigeria	state	36	36	36	36	36
Nigeria	lga	774	774	774	774	774
Senegal	region	11	11	14	14	14
Senegal	cr	364	364	364	431	431
Sierra Leone	district	14	14	14	14	14
Sierra Leone	chiefdom	149	149	149	149	149
South Africa	district	53	53	52	52	
Tanzania	region	25	26	26	30	30
Tanzania	district	129	129	130	149	149
Togo	region	5	5	5	5	5
Togo	prefecture	31	31	31	36	36
Uganda	district	56	70	80	112	112
Zambia	province	9	9	9	10	10
Zambia	district	72	72	72	72	110
Zimbabwe	province	10	10	10	10	10
Zimbabwe	district	59	59	59	59	59

Survey Questions

The Chief Z-score is composed of the following variables in the Afrobarometer survey:

- **Influence Chief**: "How much influence do traditional leaders currently have in governing your local community?" (Question 65 in Round 4)
- **Trust Chief**: "How much do you trust each of the following, or haven't you heard enough about them to say: Traditional leaders?" (Question 49I in Round 4, Q52K in Round 6)
- **Corr Chief**: "How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say: Traditional leaders?" (Question 50H in Round 4, Q53H in Round 6)
- **Contact Chief**: "During the past year, how often have you contacted any of the following persons about some important problem or to give them your views: A traditional ruler?" (Question 23F in Round3, Q27B in Round 4, Q24E in Round 6)

Note that each question offers the option of "Don't Know" or "Refuse to Answer". I code both cases as missing. There is no significantly different occurrence of these cases in the four variables across institutional settings.

Control Variables

- **Distance to the Capital**: The distance of a village from the capital city, measured in kilometers. *Source: OpenStreetMap*
- **Distance to the National Border**: The distance of a village from the national border, measured in kilometers. *Source: Digital Chart of the World*
- **Distance to the Coast**: The distance of a village from the nearest coastline, measured in kilometers. *Source: Digital Chart of the World*
- **Elevation**: Average value of elevation for grid cells of 30 Arc-Seconds (equivalent to 250 meters), measured in meters above sea level. *Source: SRTM version 4.1 (NASA)*
- **Ruggedness**: Averaging the Terrain Ruggedness Index of 30 by 30 arc-second cell. It is measured by dividing the millimeters of elevation difference by the area of the 30 by 30 arc-second cell. *Source: Nunn and Puga (2012)*

– **Land Suitability for Agriculture**: The fraction of each grid cell that is suitable to be used for agriculture. It is based on the temperature and soil conditions of each grid cell. *Source: Atlas of the Biosphere*

– **Distance to Historical Cities**: The distance of a village from the nearest historical city, measured in kilometers. *Source: Chandler (1987)*

– **Malaria Ecology Index:**: The index takes into account the prevalence and type of mosquitoes indigenous to a region, their human biting rate, their daily survival rate, and their incubation period. The index has been constructed for 0.5 degree by 0.5 degree grid-cells. *Source: Kiszewski et al. (2004)*

– **Distance to Catholic and Protestant mission stations**: The distance of a village from the nearest Catholic or Protestant mission station, measured in kilometers *Source: Nunn (2010)*

– **Distance to Railroad**: The distance of a village from the nearest railroad built before 1960, measured in kilometers. *Source: Jedwab and Moradi (2015)*

.II Description of Robustness Checks

The following section shows robustness to a range of different specifications and measurements; most notably, the validity of the assumptions underpinning the regression discontinuity design, different choices for the main specification, and the possible endogeneity of administrative borders and headquarters.

Throughout the robustness checks, the results remain qualitatively the same: distance to the state leads to an increased role of traditional leaders when the state and chiefs are institutionally separated. When both are linked, chiefs act as complements and their role decreases when the state is weak. I also rerun all robustness checks for the DHS data, the results of which can be seen in Tables A13-A16.

Testing the RDD assumption

Two underlying assumptions are crucial for the causal validity of any regression discontinuity specification: smooth variation of covariates and no sorting around the cutoff.

If treatment is indeed as if random around the border and not the result of confounding factors, treatment should not have an effect on pretreatment covariates. In the case of changes in state capacity, few potential variables are pretreatment. Therefore, to test the balance of my sample, I run the main specification on a set of geographical and historical

variables. The results are reported in Table A3. Two out of ten are significantly different on the side of the border farther away from the state — distance to the national border and distance to colonial railways. A look at the observations on the map and sensitivity analysis finds that this is driven by observations from one country (Cameroon).[22] Still, all variables in the table and their interaction with institutionalization of chiefs are included as controls in the main analysis.[23]

For observations on both sides of the border to be comparable, there must be little or no sorting. I.e. chiefs and citizens should not move across internal borders to be closer or farther away from the state. One indication for sorting would be different densities on both sides of the border. To test for this, I perform McCrary tests on the Afrobarometer sample for the different bandwidth specification, the results of which can be seen in Panels B-E in Figure A5. Unfortunately, neither the Afrobarometer nor the DHS data contains information on the population of the settlement. Consequently, these graphs only show the distribution of settlements around the bandwidth used in the specification to see whether settlements cluster close to administrative boundaries on the side closer or farther from the headquarter. Figure A5 shows no indication for significant variation in density on around the cutoff. Second, I use the DHS data to test whether the low state capacity treatment induces migration on either side of the border. Table A5 shows that neither migration by children, men, women, nor an indicator combining the three, is significantly different on one side of the border.

Different Specifications

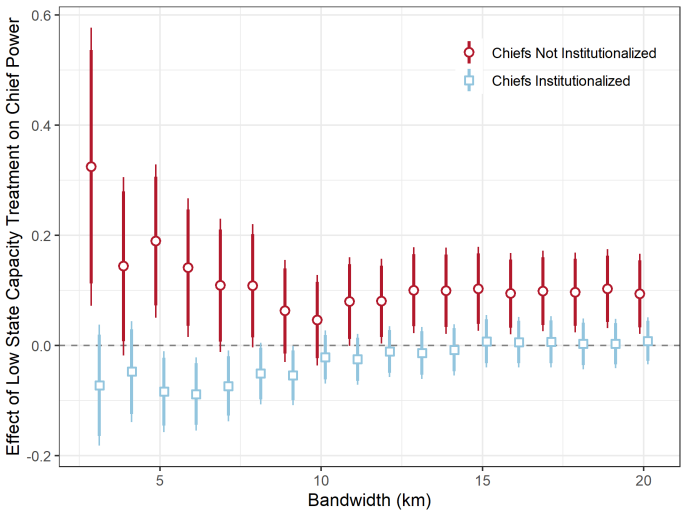
The choice of optimal bandwidth is a crucial step in any regression discontinuity design. Various strategies exist to select an optimal bandwidth (Imbens and Kalyanaraman, 2012; Calonico, Cattaneo and Titiunik, 2014). The matched regression discontinuity design in this paper, however, creates inconsistent estimators for the optimal bandwidth.[24] In order to check the robustness of these results, I vary the bandwidth between 3 and 20 kilometers. Sample size restricts the possibility to use bandwidths smaller than 3km, and larger bandwidths than 20km become less meaningful from an identification standpoint, as villages can

[22] Panel A in Figure A5 shows that dropping each country individually from the analysis does not affect the results.

[23] I also run the analysis without using controls in Column 2 of Table A7, and the results remain consistent.

[24] This is due to the matching aspect of the specification. In a normal RD setting, extending the bandwidth from X to X+1 only adds observations that are between X and X+1 from the cutoff. In this case, however, increasing the bandwidth from X to X+1 will not only add observations between X and X+1 from the cutoff but also their matched observations on the other side of the border, which could be anywhere from 0 to X+1 from the cutoff. Thus, the variance bias trade-off calculated by the standard optimal bandwidth algorithms is not consistent.

Figure A1: Changing the Bandwidth



Notes: This figure shows the effect of the treatment measure on the dependent variable of Table 4 but varyi
20 kilometers. The 95% and 90% confidence intervals are plotted for each bandwidth.

be up to 40km away from each other and are thus less comparable. The results can be seen in Figure A1. The results follow general regression discontinuity specifications, larger but less precise coefficients when using smaller bandwidths. No matter the bandwidth choice, chiefs remain substitutes from the state when not institutionalized by the constitution and they show the opposite relationship when being institutionalized. Still, the associated confidence intervals may not have correct coverage even if the estimator is unbiased, suggesting that it might be appropriate to use a higher critical value (Armstrong and Kolesar, 2017). Both the difference between treatment coefficients of the institutionalized and not institutionalized samples and the coefficient in the interaction specification surpass the most conservative critical value of 2.8.

The main specification uses an intensive treatment measure that indicates how much the distance to the administrative headquarter on one side is larger than on the other side of the internal administrative border. This intensive treatment measure is then scaled by the country and administrative division specific effect of distance on state capacity outcomes. The results hold when using the more rudimentary specification with a binary treatment indicator (Column (3) in Table A7). Using absolute log distance to the administrative headquarter instead of the treatment indicator returns similar results (Column (4)). Removing the scaling of treatment by the country and administrative division specific coefficient of distance on state capacity also does not change the findings (Column (5) in Table A7).

In Section III I explained why a Cubic Polynominal RD specification, e.g. similar to Dell (2010), is not appropriate when considering multiple boundaries. Nevertheless, I show that using this specification results in the same heterogeneous pattern (Column (6) in Table A7). Furthermore, I also conservatively cluster the standard errors at the highest administrative division instead of the lowest (Column (7) in Table A7).

The specification could also be sensitive to the inclusion or exclusion of outliers, both in terms of extreme values of the explanatory variable as well as specific countries. To make sure the results are not driven by such outliers, I drop extreme outliers that are more than 100 km and 50 km away from the administrative headquarters in Columns (2) and (3) of Table A8, respectively. In Panel A in Figure A5, I show the results dropping one country at a time. Columns (4) of Table A8 does not restrict to border segments by also including villagers whose nearest village on the other side of the border is farther than 30km.

More generally, the results are also robust to different typical geographic regression discontinuity specification. While the logged distance is used in the main specification, the non-logged distance is used in Column (5) in Table A8. A more realistic measure of state capacity could be obtained by using travel time between villages and administrative headquarters. Travel time is linked to infrastructure investments that could be affected by state capacity or the state-chief interaction. Nevertheless, the results remain consistent when using logged travel time (Column (6) of Table A8).[25] I also restrict the analysis to rural observations since the dynamics between the state and chiefs might be different in an urban setting. Column (7) shows that the results hold when focusing on cases where observations on both sides of the border are classified as rural. Due to data availability, the samples for the Afrobarometer and DHS analysis are not identical. Column (3) in Table A17 shows that the results remain unchanged when limiting the sample to countries for which I have both Afrobarometer and DHS geo-coded data.

Endogenous Borders and Headquarters

Previous studies have found spillovers in state capacity (Acemoglu, Camilo and Robinson, 2015). If local state capacity spillovers were sizable in the African context, it would downward bias my results and reduce the potency of the regression discontinuity design. To test whether such spillovers influence the results, I control for a village's distance to the administrative headquarter in the neighboring administrative unit (Column (2) in Table A9).

A concern in this particular regression discontinuity design might be that the locations of the administrative borders and headquarters are not random. Indeed, both the boundaries

[25]Following methodology by Alegana et al. (2012) I use, altitude, land cover, rivers, and road network to calculate the travel time between a village and its administrative headquarters.

and the district capitals are likely to be the result of economic and political processes. Scholars have demonstrated, for example, that African governments routinely create more lower-level administrative units as part of political bargaining processes (Grossman and Lewis, 2014; Gottlieb et al., 2018). However, the endogeneity of borders and headquarters is unlikely to impact the results of this study, since both decisions are unlikely to be based on the particular villages and chiefs surveyed. Borders follow natural boundaries such as rivers or are straight lines and rarely altered for individual villages or chiefs. In other words, a strong local chief is unlikely to have the ability to influence the drawing of borders to put her village in a district with high or low state capacity.

Since the splitting of districts and the redrawing of boundaries is more prevalent in lower administrative divisions, I run the results separately for the first and second administrative divisions of the countries in my sample (Columns (3) and (4) in Table A9). Additionally, if borders were drawn to explicitly include or exclude a particular village, the boundary should be right next to the village. To exclude such potential cases I run a "Donut" RDD, where I exclude all villages within 1km of the border (Column (5) in Table A9).

Another omitted factor in the analysis that could create discontinuity at the border is ethnicity. If administrative borders consistently coincide with ethnic demographics, the results and their interpretations could be affected. Column (6) in Table A9 indicates that this is not a concern. When controlling for ethnicity fixed effects based on the pre-colonial locations of ethnic groups, the results remain virtually unchanged.

Similarly to administrative boundaries, the location of headquarters is not based on the power of local chiefs but typically follows population density or economic activity: the biggest or economically most important village or town becomes the administrative capital. While these factors determine the location of the capital, they don't change discontinuously at the border. The fact that controlling for the distance to the neighboring headquarters does not affect the results (Column (2) in Table A9) and the low level of migration (Table A2 and A5) supports this.

Still, in some cases, the location of the capital might be influenced by a particular influential chief. To make sure the results are not driven by this phenomenon I use the most populated place in each district in 1960[26] to instrument for the location of the district capitals. Putting the distance to the instrumented capitals in the specification returns similar results (Column (7) in Table A9). Lastly, I also run a placebo test where I chose a random location within an administrative division as the headquarter and estimate the effect of its distance on local chief power. The result can be seen in Column (8) in Table A9. Reassuringly, distance to these placebo headquarters does not result in sizable or significant effects,

[26]Earlier data on population density is not disaggregated enough.

whether chiefs are institutionalized or not.

.III Photos

Figure A2: Public Goods Provided by Traditonal Leaders in DRC

Panel A: Meeting Room

Panel B: Bridge

Panel C: Water Tap

Panel D: Water Source

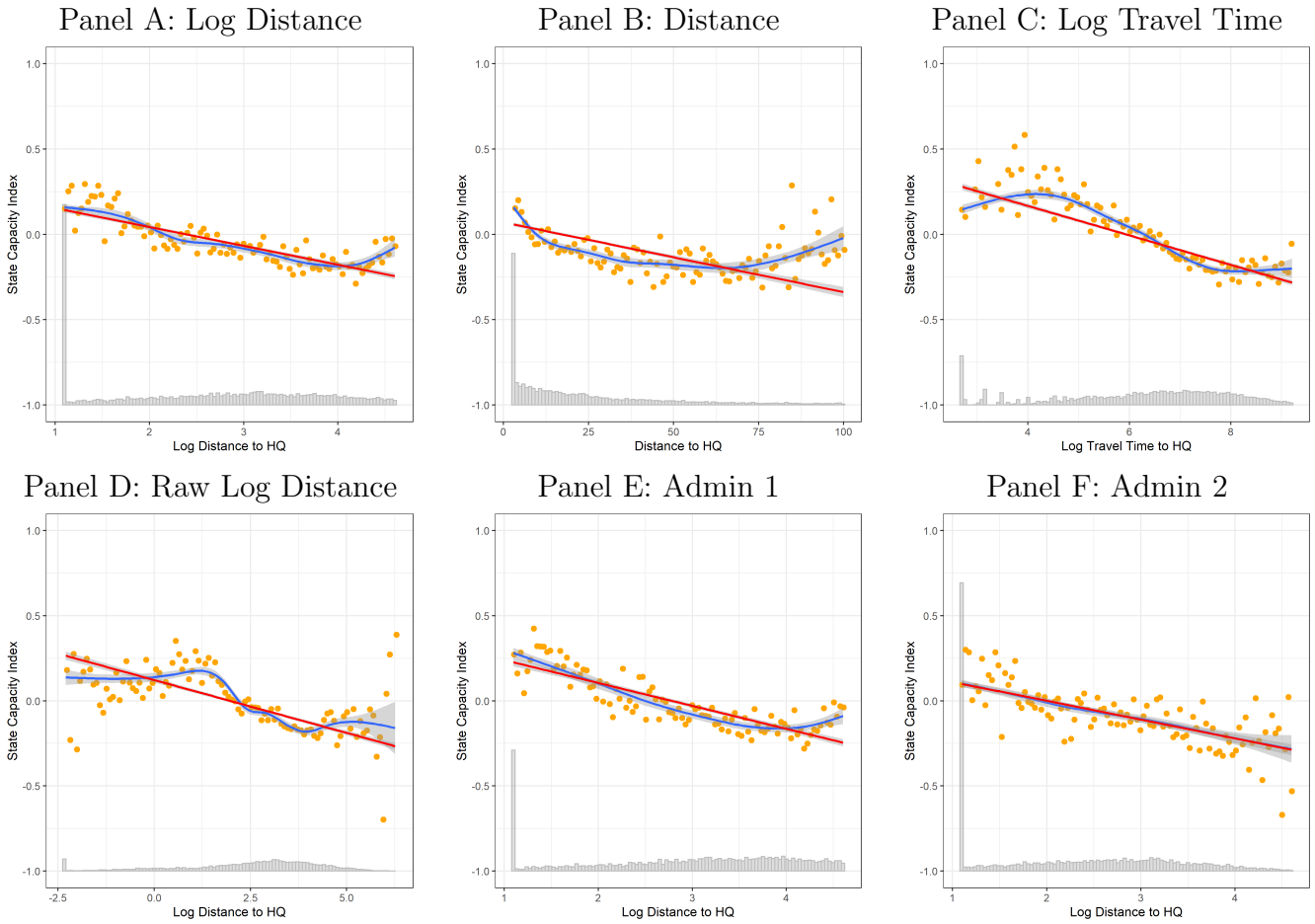
Panel E: Bricks

Panel F: Road Clearing

Notes: These pictures show public goods provided by chiefs in villages in the Democratic Republic of the Congo. The pictures were taken during the collection of qualitative interviews with village chiefs in more than 20 villages in the North and South Kivu provinces of the DRC.

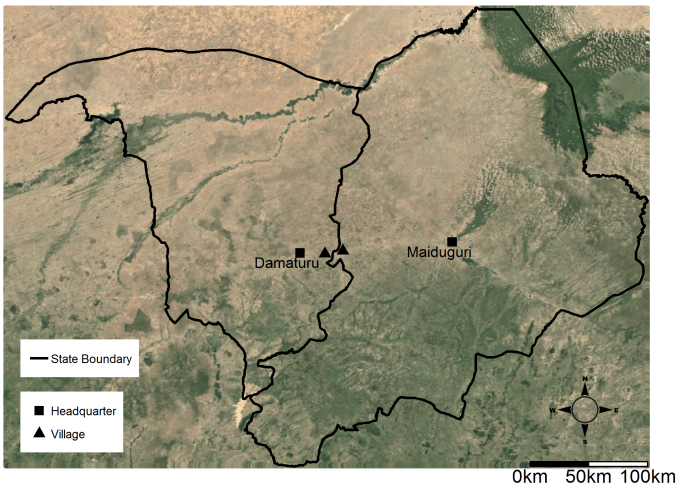
.IV Additional Figures

Figure A3: Plotting Distance to State Capacity



Notes: These figures show the bin-scatter (orange) of distance to the headquarters and an index of state capacity as well as their linear (red) and polynomial relation (blue). A histogram of the distance measure is shown at the bottom of each figure. Panels A, B, C, E, and F have outliers removed and very close distances pooled. Panel D shows the raw logged data (distances of 0 are set to 0.1)

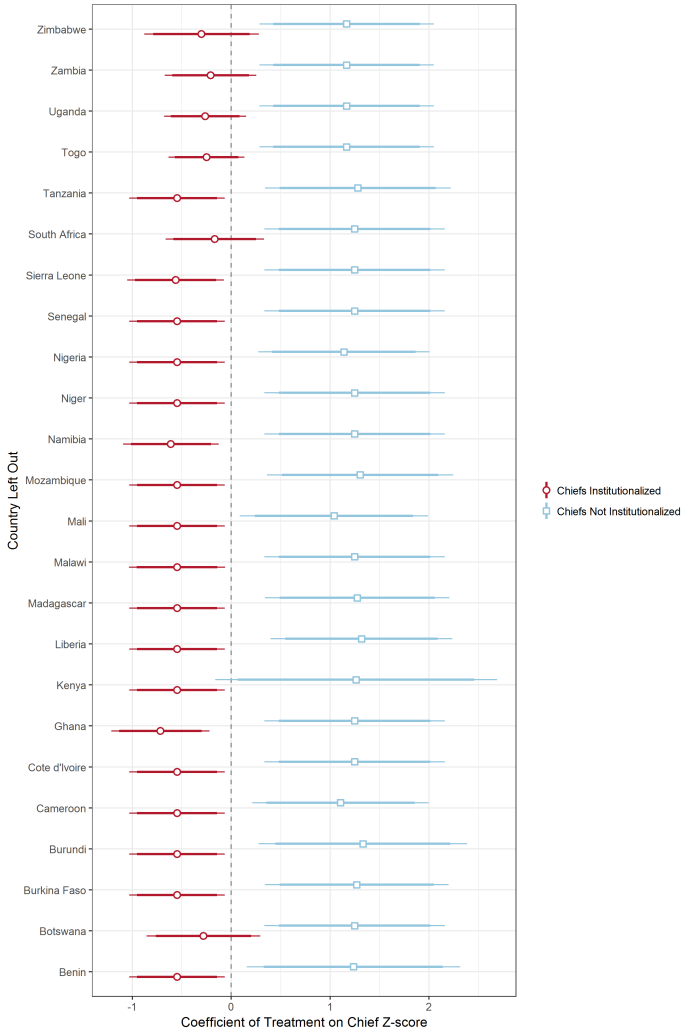
Figure A4: Illustration of Identification



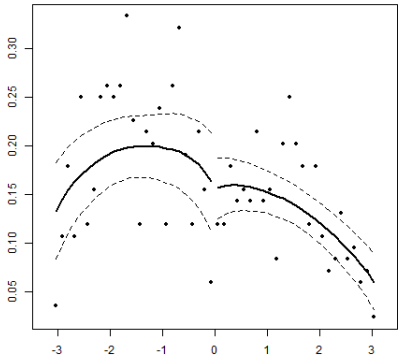
Notes: This figure shows the boundaries of two states (Yobe in the West and Borno in the East) in Nigeria. The state capitals are marked with a square. Two villages are shown by triangles.

Figure A5: Results of Leaving out Countries and McCrary Test with Different Bandwidths

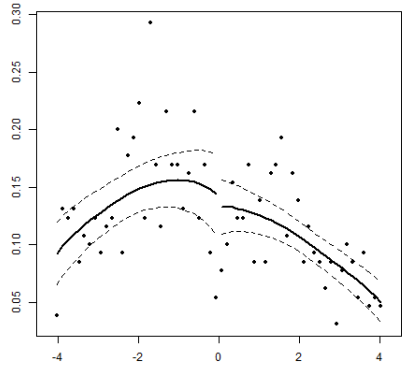
Panel A: Leave Countries Out



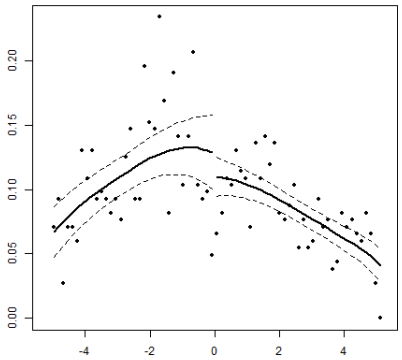
Panel B: McCrary 3km



Panel C: McCrary 4km



Panel D: McCrary 5km



Panel E: McCrary 6km

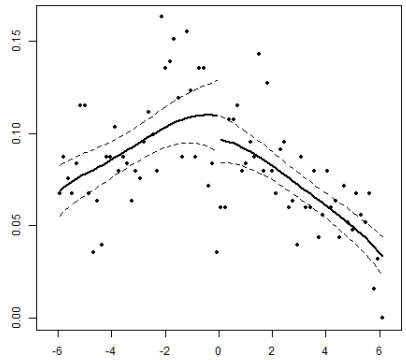
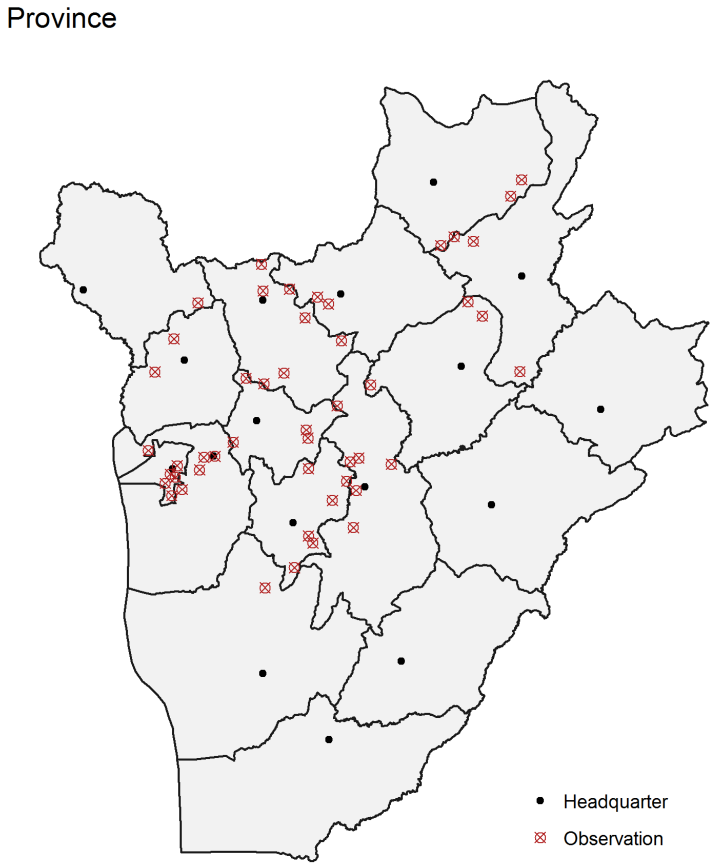
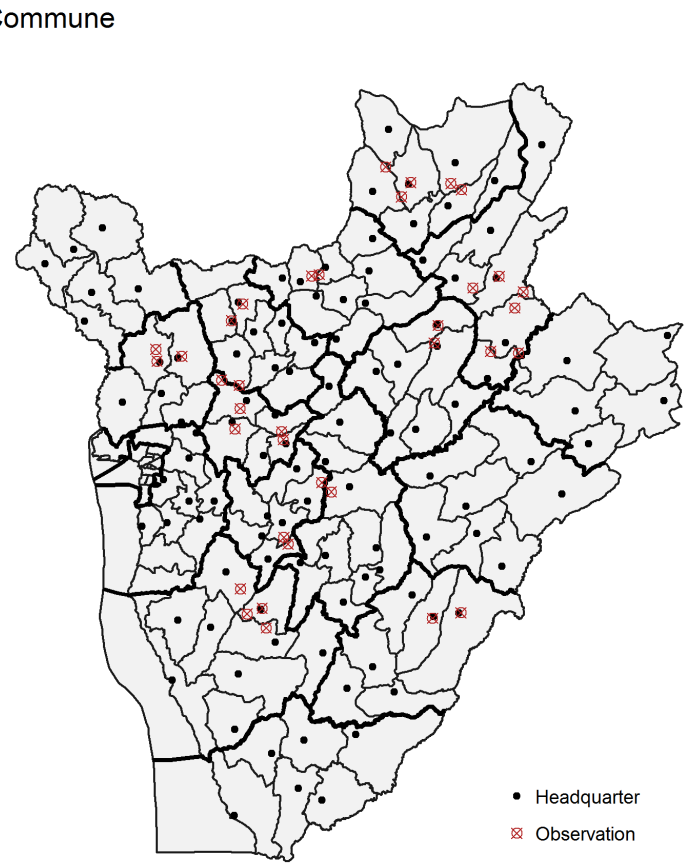


Figure A6: Borders, Headquarters, and Observations

Panel A: Admin Level 1 Burundi



Panel B: Admin Level 2 Burundi



Notes: This figure maps the administrative divisions and headquarters of Burundi as well as all villages in the Afrobarometer data included in the sample (i.e. at least one observation within 5km on each side of an administrative border). Panel A uses the first administrative division, provinces. Panel B shows the second level, communes.

.V Additional Tables

Summary Statistics

Table A2: Summary Statistics for Full Regression Sample

Statistic	N	Mean	St. Dev.	Min	Max
Distance to Headquarter (km)	4,971	15.51	16.42	3.00	145.11
Distance to Admin. Border (km)	4,971	−0.17	4.06	−5.00	66.78
Distance to Village on Other Side (km)	4,971	8.28	6.11	0.24	29.97
Distance to Neighboring HQ (km)	835	88.35	158.75	0.47	1,081.75
Traveltime to HQ (in min)	1,098	702.33	986.21	0.00	10,036.79
Treatment Intensity	4,748	0.47	1.00	0.00	7.97
Urban	4,971	0.50	0.50	0	1
Distance to National Capital (km)	4,876	157.53	198.76	0.43	1,583.64
Distance to National Border	4,876	80.40	73.18	0.02	378.52
Distance to Coast (km)	4,971	390.27	371.59	0.05	1,204.80
Elevation	4,971	646.60	625.85	−1	2,766
Ruggedness	4,971	0.07	0.11	0.00	1.02
Malaria Suitability	4,971	11.47	11.58	0.00	35.71
Agricultural Suitability	4,175	0.38	0.20	0.00	0.99
Distance to Christian Missions (km)	4,971	55.67	111.99	0.16	742.50
Distance to Historical Cities (km)	4,971	417.44	370.35	0.0000	1,940.92
Distance to Colonial Railroad (km)	4,971	70.60	104.76	0.004	968.55
Admin. Unit Size (sqkm)	4,876	2,858.15	8,168.96	2.22	175,770.30
Chief Z-score	754	−0.28	0.75	−2.60	2.92
Chief Influence	171	−0.13	0.96	−2.09	2.12
Trust in Chief	579	−0.35	1.06	−2.82	1.70
Corrupt Chief (Inverse)	579	−0.25	1.03	−3.94	1.93
Contact with Chief	754	−0.28	0.90	−1.03	4.16
State Capacity Index	4,971	0.00	1.00	−2.96	3.02
Percentage of HH with Electricity	3,842	0.46	0.40	0.00	1.00
Percentage of Children Registered	2,809	0.51	0.33	0.00	1.00
Average Time to Water (min)	3,757	16.81	17.66	0.00	255.62
Literacy	3,088	0.56	0.31	0.00	1.00
Wealth Index	3,686	3.51	1.09	1.00	5.00
Infant Mortality	3,148	0.13	0.07	0.00	0.52
Traditional Medicine	3,265	−0.01	0.97	−0.28	9.74
Percentage of Kids Gone	3,148	0.24	0.11	0.00	0.75
Percentage of Men Born in Location	1,766	0.99	0.04	0.60	1.00
Percentage of Women Born in Location	1,759	0.98	0.04	0.55	1.00

Notes: This table shows the summary statistic of the regression sample. Only villages within 5km of an administrative border, and which have a village on the other side of the border, are included. Villages farther than 150km from their headquarter are dropped as are those where the neighboring village is more than 30 kilometers away. The sample for the DHS and Afrobarometer are pooled. Separate summary statistics can be found in Tables A11-A12.

Geographic Outcomes

Table A3: Effect of Treatment on Historical and Geographical Controls using Afrobarometer and DHS Data

	Dependent variable:									
	Dist Capital	Dist Nat Border	Dist Coast	Elevation	Ruggedness	Agriculture	Hist Cities	Malaria	Missions	Dist Rail
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Low State Capacity Treatment	0.001	0.027**	0.001	0.003	0.136	0.042	0.004	0.091	0.004	0.018***
	(0.003)	(0.012)	(0.003)	(0.025)	(0.145)	(0.041)	(0.003)	(0.073)	(0.006)	(0.007)
Treatment X Institutionalized	0.010	−0.016	0.005	−0.015	−0.091	−0.037	0.005	−0.050	−0.014	0.008
	(0.006)	(0.031)	(0.006)	(0.042)	(0.230)	(0.075)	(0.006)	(0.079)	(0.014)	(0.013)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit	Admin Unit
Observations	3,866	3,866	3,866	3,866	3,866	3,866	3,866	3,866	3,866	3,866
Adjusted R^2	0.999	0.994	1.000	0.984	0.639	0.928	1.000	0.961	0.998	0.997

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with various geographical and historical variables as dependent variables. Following the main specification, the treatment variable is the intensive measure of how much the distance to the administrative headquarter is larger than on the other side of the internal administrative border while controlling for the distance to the administrative headquarter and its interaction with treatment variable. The sample is restricted to respondents who live within 5km of the internal administrative boundary. In order to only compare respondents in neighboring districts, border region fixed effects are included. The following dependent variables are used: Column(1): Distance to the Capital. Column(2): Distance to the National Border. Column(3): Distance to the Coast. Column(4): Elevation. Column(5): Ruggedness. Column(6): Land Suitability for Agriculture. Column(7): Distance to Historical Cities. Column(8): Malaria Ecology Index. Column(9): Distance to Catholic and Protestant mission stations. Column(10): Distance to Railroads in 1960. Standard errors, clustered at the district level, are shown in parentheses.

Robustness Checks

Table A4: Robustness: Different Measures of Institutional Context

	Dependent variable:		
	Chief Z-Score		
	(1)	(2)	(3)
Low State Capacity Treatment	0.194***	0.189***	0.190***
	(0.066)	(0.066)	(0.061)
Treatment X Institutionalized	−0.279***		
	(0.077)		
Treatment X Mentioned		−0.272***	
		(0.077)	
Treatment X Protected			−0.285***
			(0.073)
Fixed effects?	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	635	635
Adjusted R^2	0.598	0.594	0.600

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 4 in Column (1). Additionally, instead of noting whether chiefs are institutionalized in the constitution, it interacts treatment with Baldwin (2016) measure of whether chiefs are mentioned in the constitution (Column 2) or protected in the constitution (Column 3). Table **??** and **??** in the Appendix show the results for these measures when subsetting the data by institutional linkage instead of the interaction. The results closely mirror those of the previous table. Standard errors, clustered at the district level, are shown in parentheses.

Table A5: Effect of Treatment on Migration

	Dependent variable:			
	Migration			
	Children	Men	Women	Z-score
	(1)	(2)	(3)	(4)
Low State Capacity Treatment	0.017	−0.049	−0.016	−0.035
	(0.025)	(0.053)	(0.040)	(0.023)
Treatment X Institutionalized	0.011	0.054	−0.022	0.030
	(0.056)	(0.066)	(0.069)	(0.039)
Fixed effects?	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	2,650	1,398	1,467	2,697
Adjusted R^2	0.316	0.130	0.204	0.571

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of OLS regressions with various measures of migration as outcomes. It follows the same specification as Table 7. The following dependent variables from the DHS survey are used: Column(1): Percentage of children that do not live at home. Column(2): Percentage of men that have always lived in their current location. Column(3): Percentage of women that have always lived in their current location. Column(4): Z-score combination of the three measures. Standard errors, clustered at the district level, are shown in parentheses.

Table A6: Covariate Balance — Country-Level Variables

	Not Institutionalized		Institutionalized		
Covariates (country level)	**N**	**Mean**	**N**	**Mean**	**p-value**
Historical Centralization	14	0.77	9	0.81	0.62
Year of Indpendence	14	1,953.64	9	1,961.56	0.48
Violent Independence?	14	0.21	9	0.33	0.56
Slave Exports	14	384,400.07	9	204,491.85	0.44
Population in 1400	14	1,103,483.21	9	456,059.78	0.13
Log Settler Mortality	13	6.06	4	5.26	0.43
British Colony	14	0.21	9	1.00	0.00
British Legal Origins	14	0.29	9	1.00	0.00
Settler Colony	14	0.14	9	0.44	0.16
Colonial Railroads (km)	14	1,019.29	9	1,126.10	0.78
Gemstones	14	1,583.93	9	48,910.22	0.10
Soil Quality	14	39.20	9	29.41	0.26
Average Distance to Coast	14	17.52	9	11.94	0.49
Land area (1000 Ha)	14	55,019.07	9	48,056.33	0.69
Ruggedness	14	0.51	9	0.81	0.18
Oil Production in 2000	14	8,501.92	9	74.09	0.31
Malaria Suitability	14	15.38	9	8.93	0.08
Rule of Law	14	-0.86	9	-0.35	0.05
GDP 1950	14	780.64	9	1,021.56	0.40
Failed State Index 2006	13	85.98	9	80.36	0.43
Taxes as % of GDP 2010	14	13.28	8	16.87	0.22
Democracy Index 2017	14	4.96	9	5.79	0.17

Notes: Difference in means between countries where traditional leaders are institutionalized and where they are not. All reported p-values are from two-sided t-tests.

Table A7: Robustness: Different Specifications

	Dependent variable:						
	Chief Z-Score						
	Main	No Controls	Binary Treatment	Absolute Distance	No Scaling	Long/Lat	Cluster
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low State Capacity Treatment	0.194***	0.109**	0.311	0.200**	0.184***	0.112*	0.194**
	(0.066)	(0.052)	(0.225)	(0.097)	(0.064)	(0.058)	(0.081)
Treatment X Institutionalized	−0.279***	−0.149**	−0.534*	−0.293**	−0.244***	−0.132**	−0.279***
	(0.077)	(0.063)	(0.284)	(0.121)	(0.083)	(0.066)	(0.091)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	733	635	635	635	635	635
Adjusted R^2	0.598	0.594	0.595	0.595	0.596	0.592	0.598

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 4 for Column (1). Column (2) removes geographical controls. Column (3) uses only a binary treatment. Column (4) uses absolute log distance to the hq instead of the treatment indicator. Column (5) does not scale the treatment variable. Column (6) uses a long-lat specification similar to Dell (2010). Column (7) clusters at the highest admin. division. Standard errors, clustered at the district level, are shown in parentheses.

Table A8: Robustness: Different Measurement

	Dependent variable:						
	Chief Z-Score						
	Main	Drop 100km	Drop 50km	No Restriction	Non-Logged	Traveltime	Rural Only
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low State Capacity Treatment	0.194***	0.239**	0.262***	0.174***	0.144**	0.116	0.201**
	(0.066)	(0.097)	(0.100)	(0.049)	(0.061)	(0.083)	(0.095)
Treatment X Institutionalized	−0.279***	−0.307***	−0.350***	−0.250***	−0.243***	−0.206**	−0.294**
	(0.077)	(0.107)	(0.126)	(0.061)	(0.069)	(0.092)	(0.141)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	627	592	712	635	619	284
Adjusted R^2	0.598	0.604	0.602	0.599	0.598	0.598	0.549

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 4 for Column (1). Column (2) drops outliers farther than 100km away from their administrative headquarter. Column (3) drops observations more than 50km away. Column (4) includes observations that do not have an observation on the other side of the border within 30km. Column (5) uses non-logged distance. Column (6) uses travel time to the administrative headquarter instead of straight distance. Column (7) restricts to rural observations. Standard errors, clustered at the district level, are shown in parentheses.

Table A9: Robustness: Headquarters and Boundaries

	Dependent variable:							
	Chief Z-Score							
	Main	Neighbor HQ	Admin 1	Admin 2	Donut RD	Ethnicity FE	Instrumented HQs	Placebo
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low State Capacity Treatment	0.194***	0.215**	0.190***	0.120	0.080	0.193***	0.145**	0.094
	(0.066)	(0.092)	(0.068)	(0.126)	(0.065)	(0.073)	(0.064)	(0.067)
Treatment X Institutionalized	−0.279***	−0.300***	−0.294***	−0.175	−0.156*	−0.272***	−0.133*	−0.114
	(0.077)	(0.114)	(0.089)	(0.141)	(0.087)	(0.084)	(0.075)	(0.084)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	490	357	278	506	634	658	663
Adjusted R^2	0.598	0.543	0.589	0.613	0.584	0.597	0.583	0.593

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 4 for Column (1). Column (2) controls for distance to the neighboring headquarter. Columns (3) and (4) only uses the first and second administrative division in each country respectively. Column (5) includes ethnic homeland fixed effects. Column (6) uses instrumented locations for the administrative headquarters based on 1960 population density. Column (7) shows the effect of distance to randomly assigned "placebo" headquarters. Standard errors, clustered at the district level, are shown in parentheses.

Table A10: Effect of State Capacity on Components of Development Index

	Dependent variable:		
	Literacy	Wealth	Piped Water
	(1)	(2)	(3)
Low State Capacity Treatment	-0.027^{**}	-0.068^{***}	-0.051^{**}
	(0.012)	(0.019)	(0.021)
Treatment X Institutionalized	-0.067^{***}	-0.125^{***}	-0.131^{***}
	(0.026)	(0.036)	(0.048)
Fixed effects?	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit
Observations	3,061	3,516	3,563
Adjusted R^2	0.813	0.713	0.586

Standard errors in parentheses *p<0.1; **p<0.05; ***p<0.01

Notes: This table shows the results of OLS regressions on several outcome variables from the DHS survey. Following the main specification, the treatment variable is the intensive measure of how much the distance to the administrative headquarter on one side is larger than on the other side of the internal administrative border while controlling for the distance to the administrative headquarter and its interaction with the treatment variable. The sample is restricted to respondents who live within 5km of the internal administrative boundary. In order to only compare respondents in neighboring districts, I include border region fixed effects. An observation corresponds to a geographic location (i.e. village or neighborhood). Standard errors are clustered at the district level. Column (1) looks at literacy. Column (2) shows the results on wealth. Column (3) considers access to piped water.

Table A11: Summary Statistics for Afrobarometer Regression Sample

Statistic	N	Mean	St. Dev.	Min	Max
Distance to Headquarter (km)	1,129	18.11	20.47	3.00	145.11
Distance to Admin. Border (km)	1,129	−0.15	3.32	−5.00	33.94
Distance to Village on Other Side (km)	1,129	9.28	6.34	0.83	29.93
Distance to Neighbouring HQ (km)	835	88.35	158.75	0.47	1,081.75
Traveltime to HQ (in min)	1,098	702.33	986.21	0.00	10,036.79
Treatment Intensity	1,098	0.06	0.12	0.00	0.86
Urban	1,129	0.65	0.48	0	1
Distance to National Capital (km)	1,129	145.26	232.00	0.73	1,298.90
Distance to National Border	1,129	103.00	86.52	0.09	276.66
Distance to Coast (km)	1,129	426.01	358.49	0.13	1,182.26
Elevation	1,129	861.60	662.63	0	2,205
Ruggedness	1,129	0.10	0.12	0.00	1.02
Malaria Suitability	1,129	7.12	9.92	0.00	34.24
Agricultural Suitability	961	0.36	0.18	0.01	0.99
Distance to Christian Missions (km)	1,129	34.87	73.85	0.16	742.50
Distance to Histroical Cities (km)	1,129	566.44	397.40	0.0000	1,940.92
Distance to Colonial Railroad (km)	1,129	111.82	146.86	0.12	968.55
Admin. Unit Size (sqkm)	1,129	3,570.48	10,863.80	2.22	146,680.40
Chief Z-score	754	−0.28	0.75	−2.60	2.92
Chief Influence	171	−0.13	0.96	−2.09	2.12
Trust in Chief	579	−0.35	1.06	−2.82	1.70
Corrupt Chief (Inverse)	579	−0.25	1.03	−3.94	1.93
Contact with Chief	754	−0.28	0.90	−1.03	4.16
State Capacity Index	1,129	0.19	0.61	−1.16	1.43

Notes: This table shows the summary statistic of the regression sample using the Afrobarometer data only. Only villages within 5km of an administrative border, and which have a village on the other side of the border, are included. Villages farther than 150km from their headquarter are dropped as are those where the neighboring village is more than 30 kilometers away.

Table A12: Summary Statistics for DHS Regression Sample

Statistic	N	Mean	St. Dev.	Min	Max
Distance to Headquarter (km)	3,842	14.75	14.95	3.00	74.61
Distance to Admin. Border (km)	3,842	−0.17	4.26	−5.00	66.78
Distance to Village on Other Side (km)	3,842	7.99	6.01	0.24	29.97
Treatment Intensity	3,650	0.08	0.16	0.00	1.21
Urban	3,842	0.45	0.50	0	1
Distance to National Capital (km)	3,747	161.22	187.47	0.43	1,583.64
Distance to National Border (km)	3,747	73.60	67.20	0.02	378.52
Distance to Coast (km)	3,842	379.76	374.75	0.05	1,204.80
Elevation	3,842	583.41	600.24	−1	2,766
Ruggedness	3,842	0.07	0.11	0.00	1.01
Malaria Suitability	3,842	12.75	11.72	0.00	35.71
Agricultural Suitability	3,214	0.39	0.20	0.00	0.99
Distance to Christian Missions (km)	3,842	61.78	120.26	0.29	741.09
Distance to Histroical Cities (km)	3,842	373.66	350.21	0.23	1,187.07
Distance to Colonial Railroad (km)	3,842	58.49	84.97	0.004	536.42
Admin. Unit Size (sqkm)	3,747	2,643.52	7,148.85	8.92	175,770.30
State Capacity Index	3,842	0.30	0.70	−1.74	2.33
Percentage of HH with Electricity	3,842	0.46	0.40	0.00	1.00
Percentage of Children Registered	2,809	0.51	0.33	0.00	1.00
Average Time to Water (min)	3,757	16.81	17.66	0.00	255.62
Literacy	3,088	0.56	0.31	0.00	1.00
Wealth Index	3,686	3.51	1.09	1.00	5.00
Infant Mortality	3,148	0.13	0.07	0.00	0.52
Traditional Medicine	3,265	−0.01	0.97	−0.28	9.74
Percentage of Kids Gone	3,148	0.24	0.11	0.00	0.75
Percentage of Men Born in Location	1,766	0.99	0.04	0.60	1.00
Percentage of Women Born in Location	1,759	0.98	0.04	0.55	1.00

Notes: This table shows the summary statistic of the regression sample using the DHS data only. Only villages within 5km of an administrative border, and which have a village on the other side of the border, are included. Villages farther than 150km from their headquarter are dropped as are those where the neighboring village is more than 30 kilometers away.

Robustness of DHS Results

Table A13: Robustness: Different Specifications

	Dependent variable:						
	Development Index						
	Main	No Controls	Binary Treatment	No Scaling	Long/Lat	Cluster	Scramble
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low State Capacity Treatment	-0.062^{***}	-0.067^{***}	-0.057	-0.080^{***}	-0.096^{***}	-0.062^{***}	-0.064^{***}
	(0.017)	(0.015)	(0.048)	(0.020)	(0.015)	(0.020)	(0.019)
Treatment X Institutionalized	-0.109^{***}	-0.076^{**}	-0.092	-0.056^{*}	-0.076^{***}	-0.109^{***}	-0.116^{***}
	(0.033)	(0.032)	(0.097)	(0.034)	(0.025)	(0.041)	(0.033)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	3,563	4,417	3,563	3,563	3,563	3,563	3,563
Adjusted R^2	0.698	0.740	0.692	0.698	0.695	0.698	0.702

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 7 for Column (1). Column (2) removes geographical controls. Column (3) uses only a binary treatment. Column (4) does not scale the treatment variable. Column (5) uses a long-lat specification similar to Dell (2010). Column (6) clusters at the highest admin. division. Column (7) adjusts for potential scrambling of coordinates in the DHS sample. Standard errors, clustered at the district level, are shown in parentheses.

Table A14: Robustness: Different Measurement

	Dependent variable:				
	Development Index				
	Main	Drop 50km	No Restriction	Non-Logged	Traveltime
	(1)	(2)	(3)	(4)	(5)
Low State Capacity Treatment	−0.062***	−0.074***	−0.077***	−0.028*	−0.067***
	(0.017)	(0.018)	(0.019)	(0.016)	(0.016)
Treatment X Institutionalized	−0.109***	−0.119***	−0.105***	−0.035	−0.098***
	(0.033)	(0.037)	(0.035)	(0.028)	(0.033)
Fixed effects?	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	3,563	3,358	3,763	3,563	3,484
Adjusted R^2	0.698	0.701	0.695	0.692	0.701

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 7 for Column (1). Column (2) drops outliers farther than 100km away from their administrative headquarter. Column (3) drops observations more than 50km away. Column (4) includes observations that do not have an observation on the other side of the border within 30km. Column (5) uses non-logged distance. Column (6) uses travel time to the administrative headquarter instead of straight distance. Standard errors, clustered at the district level, are shown in parentheses.

Table A15: Robustness: Headquarters and Boundaries

	Dependent variable:						
	Development Index						
	Main	Distance to Neigh HQ	Admin 1	Admin 2	Donut RD	Ethnicity FE	Placebo
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low State Capacity Treatment	-0.062^{***}	-0.076^{***}	-0.039	-0.062^{***}	-0.076^{***}	-0.057^{***}	-0.014
	(0.017)	(0.016)	(0.027)	(0.019)	(0.024)	(0.018)	(0.014)
Treatment X Institutionalized	-0.109^{***}	-0.116^{***}	-0.151^{*}	-0.113^{***}	-0.116^{***}	-0.105^{***}	-0.053
	(0.033)	(0.032)	(0.088)	(0.037)	(0.036)	(0.032)	(0.042)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	3,563	2,166	1,359	2,204	2,762	3,555	3,857
Adjusted R^2	0.698	0.700	0.766	0.646	0.691	0.697	0.703

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 7 for Column (1). Column (2) controls for distance to the neighboring headquarter. Columns (3) and (4) only uses the first and second administrative division in each country respectively. Column (5) estimates a Donut RD by removing observations within 1km of the border. Column (6) includes ethnic homeland fixed effects. Column (7) shows the effect of distance to randomly assigned "placebo" headquarters. Standard errors, clustered at the district level, are shown in parentheses.

Table A16: Robustness: Interaction with Country Variables

	Dependent variable:								
	Development Index								
	Pop. 1400	Brit. Colony	Brit. Legal	Settler Colony	Gemstones	Ruggedness	Malaria Suit.	Dem. Index	Q Rule of Law
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Low Local State Capacity	-0.074^{***}	-0.064^{***}	-0.065^{***}	-0.061^{***}	-0.079^{***}	-0.063^{***}	-0.056^{***}	-0.083^{***}	-0.101^{***}
	(0.022)	(0.015)	(0.015)	(0.019)	(0.022)	(0.021)	(0.018)	(0.016)	(0.019)
Treatment X Institutionalized	-0.093^{**}	-0.106^{***}	-0.102^{***}	-0.109^{***}	-0.077^{**}	-0.124^{***}	-0.134^{***}	-0.100^{***}	-0.040
	(0.037)	(0.034)	(0.033)	(0.031)	(0.037)	(0.035)	(0.032)	(0.032)	(0.036)
Treatment X CountryVariable	0.012	-0.001	-0.004	0.002	-0.036	0.019	-0.038^{*}	0.016	-0.063^{***}
	(0.009)	(0.015)	(0.015)	(0.019)	(0.032)	(0.026)	(0.019)	(0.011)	(0.018)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	3,540	3,540	3,540	3,563	3,540	3,540	3,563	3,540	3,540
Adjusted R^2	0.700	0.700	0.700	0.698	0.701	0.702	0.699	0.702	0.702

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the main specification but also includes the interaction of treatment with several country level variables to control for possible confounding factors. This results in the following specification: $Y_{i,s,r} = \beta_0 + \beta_1 Tint_s + \beta_2 DB_i + \beta_3 T_s \times DB_i + \beta_4 Tint_s \times Institutionalized + \beta_5 DB_i \times Institutionalized + \beta_6 T_s \times DB_i \times Institutionalized + \beta_7 Tint_s \times CountryVariable + \beta_8 DB_i \times CountryVariable + \beta_9 T_s \times DB_i \times CountryVariable + \beta_{10}\chi_i + \beta_{11} BR_r + \epsilon$. Border region fixed effects are included and standard errors, clustered at the district level, are shown in parentheses.

Additional Robustness

Table A17: Additional Robustness

	Dependent variable:		
	Chief Z-Score		
	Main	British Colonies	Drop Non-DHS Countries
	(1)	(2)	(3)
Low State Capacity Treatment	0.194***	0.203**	0.227***
	(0.066)	(0.087)	(0.080)
Treatment X Institutionalized	−0.279***	−0.288***	−0.196**
	(0.077)	(0.096)	(0.098)
Fixed effects?	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	492	419
Adjusted R^2	0.598	0.572	0.639

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the same specification as Table 4 for Column (1). Column (2) restricts the sample to former British colonies.

Table A18: Robustness: Interaction with Country Variables

	Dependent variable:						
	Hist. Central.	Year Indep.	Violent Indep.	Chief Z-Score Slave Export	Settler Mortality	Colonial Rail	Soil Quality
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low Local State Capacity	0.143***	0.106*	0.153***	0.137***	0.087*	0.139***	0.147***
	(0.051)	(0.057)	(0.049)	(0.048)	(0.048)	(0.052)	(0.051)
Treatment X Institutionalized	−0.207***	−0.197***	−0.200***	−0.180***	−0.094	−0.197***	−0.214***
	(0.070)	(0.062)	(0.059)	(0.062)	(0.085)	(0.062)	(0.059)
Treatment X CountryVariable	−0.001	0.085	−0.040*	0.044	0.129**	0.003	−0.012
	(0.029)	(0.057)	(0.022)	(0.051)	(0.062)	(0.025)	(0.029)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	635	635	635	544	635	635
Adjusted R^2	0.596	0.601	0.599	0.598	0.594	0.597	0.595

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the main specification but also includes the interaction of treatment with several country level variables to control for possible confounding factors. This results in the following specification: $Y_{i,s,r} = \beta_0 + \beta_1 Tint_s + \beta_2 DB_i + \beta_3 T_s \times DB_i + \beta_4 Tint_s \times Institutionalized + \beta_5 DB_i \times Institutionalized + \beta_6 T_s \times DB_i \times Institutionalized + \beta_7 Tint_s \times CountryVariable + \beta_8 DB_i \times CountryVariable + \beta_9 T_s \times DB_i \times CountryVariable + \beta_{10}\chi_i + \beta_{11} BR_r + \epsilon$. Border region fixed effects are included and standard errors, clustered at the district level, are shown in parentheses.

Table A19: Robustness: Interaction with Country Variables

	Dependent variable:						
	Chief Z-Score						
	Near Coast	Land Area	Oil Production	RGDP 1950	Years Schooling	Fragile State Index	Tax Revenue over GDP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low Local State Capacity	0.104**	0.151***	0.142***	0.051	0.032	0.098**	0.064
	(0.048)	(0.052)	(0.049)	(0.063)	(0.065)	(0.047)	(0.052)
Treatment X Institutionalized	−0.234***	−0.209***	−0.205***	−0.150***	−0.082	−0.162***	−0.135**
	(0.062)	(0.057)	(0.059)	(0.058)	(0.071)	(0.058)	(0.068)
Treatment X CountryVariable	−0.105**	−0.049	0.005	−0.139**	−0.158**	0.028	−0.087
	(0.053)	(0.044)	(0.045)	(0.066)	(0.075)	(0.026)	(0.062)
Fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit	Admin. Unit
Observations	635	635	635	635	595	633	584
Adjusted R^2	0.599	0.600	0.599	0.603	0.606	0.593	0.590

Notes: *p<0.1; **p<0.05; ***p<0.01. This table shows the results of the main specification but also includes the interaction of treatment with several country level variables to control for possible confounding factors. This results in the following specification: $Y_{i,s,r} = \beta_0 + \beta_1 Tint_s + \beta_2 DB_i + \beta_3 T_s \times DB_i + \beta_4 Tint_s \times Institutionalized + \beta_5 DB_i \times Institutionalized + \beta_6 T_s \times DB_i \times Institutionalized + \beta_7 Tint_s \times CountryVariable + \beta_8 DB_i \times CountryVariable + \beta_9 T_s \times DB_i \times CountryVariable + \beta_{10}\chi_i + \beta_{11} BR_r + \epsilon$. Border region fixed effects are included and standard errors, clustered at the district level, are shown in parentheses.

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