The State, Chiefs, and Development: Evidence from Africa

Soeren J. Henn*

September 2019

Abstract

I study the effect of the presence of the national state on local governance in sub-Saharan Africa, which I show depends on whether traditional village chiefs are integrated in the country's constitution. 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 presence of the state on local economic development.

*IPA and University of Chicago, sjhenn@uchicago.edu. I am grateful to Alberto Alesina, Kate Baldwin, Robert Bates, Abhit Bhandari, Emily Breza, Filipe Campante, Raj Chetty, Anne Degrave, Oeindrila Dube, Jeff Frieden, Guy Grossman, Jonathan Homola, Laura Honig, Connor Huff, Torben Iversen, Asim Khwaja, Horacio Larreguy, Chris Lucas, Gauthier Marchais, John Marshall, Rebecca Martin, Gwyneth McClendon, Nathan Nunn, Pia Raffler, Gautam Rao, James Robinson, Cyrus Samii, Raul Sanchez de la Sierra, Priya Shanmugam, Michelle Torres, and seminar participants at Harvard, APSA, ASA, BREAD, Gothenburg, LSE, MPSA, NEUDC, NEWEPS, and WGAPE for helpful comments and suggestions; and Aimable Amani, Simeon Lukeno, Christian Mastaki, and Marakuja Kivu Research for invaluable research assistance. Research funding was provided by the Institute for Quantitative Social Science at Harvard.

I Introduction

Many states across the developing world struggle to effectively govern all their territory and populations. Federalism and decentralization present a potential remedy for the weakness of the central state. Scholars have studied the costs and benefits of delegating public service delivery to local governments and estimated the effects on development outcomes (Tiebout, 1956; Oates, 1972; Inman and Rubinfeld, 1997; Bardhan and Mookherjee, 2006; Rodden, 2008). However, in addition to local state governments, many developing countries feature local governance institutions that posses inherent local authority independent of the central state. Traditional leaders (village chiefs) are such an actor in rural Sub-Saharan Africa, henceforth Africa. They perform many state-like functions such as land allocation, justice provision, and informal tax collection. The role of traditional governance institutions remains poorly understood in the context of federalism and decentralization.

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 presence, 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 presence 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 presence. Alternatively, they could act as substitutes by offering alternative modes of producing public goods and compete with the state over local influence.

This study examines how the state and chiefs interact and affect development. I provide a framework to empirically assess whether they are substitutes or complements. If they are complements, state presence will increase service provision by the chief. Conversely, if they are substitutes, service provision by the chief will decrease with greater state presence. Additionally, as substitutes, chiefs would be able to better step in and compensate 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 presence 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 presence is challenging for at least two reasons.

First, measures of state presence are not widely available. Second, differences in state presence 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 presence.[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. Figure 1, which shows state boundaries in Nigeria, visualizes the design. The two villages (marked by triangles) are in close proximity to each other, but they are in different states and have different distances to their respective state capitals (marked by squares). Whereas people, goods, and services can move across this internal administrative boundary with relative ease, the state — in the form of state administrators — is unlikely to cross it, thus creating a sharp discontinuity of state presence at the state border.

Figure 1 about here.

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 validate the use of distance as a measure of state presence by showing that distance to administrative headquarters does indeed reduce outcomes related to state presence. 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 presence, I confirm that the spatial regression discontinuity design successfully identifies jumps in state presence. Observations on the side of the boundary closer to the state consistently report higher levels of state presence while geographical and historical controls vary smoothly.

Using the DHS data, I then find that the local presence of the nation state is an important determinant of economic development. Villages on the side of the boundary closer to

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

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 presence. 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 presence 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 presence 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 presence impacts development. I find that the integration of village chiefs makes economic development *more* dependent on the presence of the nation state. The coefficient of state presence 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 presence 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.

Further, I show robustness to a range of different specifications and measurements, specifically the validity of the assumptions underpinning the regression discontinuity design and different choices for the main specification. I demonstrate balance on geographical and historical characteristics, very low migration among respondents, and no differential migration by state presence. I verify that the results are robust to changing the bandwidth, the implementation of bias adjustments and alternative measures of distance to the administrative headquarters such as non-log and travel time, and control for the distance to the neighboring headquarter to account for spillovers in state presence. To make sure outliers are not driving the results, I show robustness to dropping the most remote villages, leaving out

individual countries, looking at the first and second administrative divisions separately, as well as a more flexible long-lat specification and more conservative clustering at the highest administrative division.

My findings make the following contributions. First, the study closely relates to the literature on federalism and decentralization (Tiebout, 1956; Oates, 1972; Inman and Rubinfeld, 1997; Bardhan and Mookherjee, 2006; Rodden, 2008). Scholars have mostly focused on the interaction between local governments and the central state. They showed that local governments can be better at mobilizing resources and ensuring local accountability. At the same time, they might lack the necessary capacity to implement policies and could be at risk of capture (Bardhan and Mookherjee, 2000). Scholars have further demonstrated that local governments and the central state could cooperate but also compete (Breton, 1996; Cai and Treisman, 2004; Volden, 2005). This study adds a new type of actor to this literature: governance institutions with inherent local authority independent of the state. This paper focuses on the case of chiefs in Africa but similar actors exist across the developing world, such as lineage groups in China (Tasi, 2007), village elders in South Asia (Acemoglu, Cheema, Khwaja and Robinson, 2019), or traditional leaders in Latin America (Díaz-Cayeros, Magaloni and Ruiz-Euler, 2014). 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. I show that whether institutions with independent authority act as complements or substitutes to the state depends on their integration into a country's constitution. The study thereby also contributes to the literature on indirect rule (Lange, 2009; Iyer, 2010; Padró i Miquel and Yared, 2012; Henn, Marchais and Sanchez de la Sierra, 2018).

Second, this paper contributes to the literature on the role institutions play in development. The majority of the literature focuses on national level institutions, such as fiscal capacity (Besley and Persson, 2013), property right protection (Claessens and Laeven, 2003; Gould and Gruben, 1996), democratic institutions (Barro, 1996; Persson and Tabellini, 2006; Aghion, Alesina and Trebbi, 2008; Siourounis and Papaioannou, 2008; Acemoglu, Naidu, Restrepo and Robinson, 2019), historical national institutions (Acemoglu, Johnson and Robinson, 2001; Glaeser and Shleifer, 2002; Banerjee and Iyer, 2005; Nunn, 2008; Dell, 2010), and historical state capacity (Acemoglu, Camilo and Robinson, 2015; Dell, Lane and Querubin, 2018; Lowes et al., 2017). The empirical strategy of using a spatial regression discontinuity design to causally identify the effect of the presence of the national state closely relates to previous regression discontinuity designs that estimate the effect of institutions (Dell, 2010; Michalopoulos and Papaioannou, 2014; Dell, Lane and Querubin, 2018). Most existing studies that identify local variation in institutions attempt to extrapolate to national institutions

raising questions about generalizability. Instead of using local variation to learn about national institutions, this study uses data from 25 African countries to estimate the causal effect of state presence on *local* development across the continent. Furthermore, this paper adds the interaction with local institution, variation that has previously been overlooked in the literature. This sheds light on the ambiguous effects of national institutions observed in previous studies (e.g. Michalopoulos and Papaioannou 2014) by showing that chiefs can moderate or compound the effect of state presence.

Third, the paper highlights the importance of village chiefs in local development, an actor that is largely overlooked in economics (Acemoglu, Reed and Robinson, 2014; Michalopoulos and Papaioannou, 2015; Casey et al., 2019). Sociologists and political scientists have documented the key role traditional leaders play in allocating land, providing justice, influencing voters, and implementing development projects (Logan, 2009, 2013; Koter, 2013; Baldwin, 2014, 2016; de Kadt and Larreguy, 2018). Yet, how village chiefs and the nation state interact remains poorly understood, with some scholars arguing that they are substitutes (Migdal, 1988; Mamdani, 1996) and others documenting complementarities (Baldwin, 2016; Van der Windt et al., 2019; Mustasilta, 2019). This paper provides a framework and evidence for understanding when local institutions and the nation state act as complements and when they act as substitutes instead. I further highlight that this interaction has important implications for local development.

Section II provides a background on state presence and traditional leaders in Africa and a framework to empirically assess their relationship. Section III explains the empirical strategy and validates distance as a measure of state presence. 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 Background and Empirical Implications

The weakness of national institutions in many African states has been well established.[2] Moreover, scholars have documented how African nation states have struggled to establish universal presence across their territory and population. Several factors have led to an underprovision of the state in rural Africa such as low population density (Herbst, 2000), political incentives (Bates, 1983), and principal agent problems (Evans, 1995). Such local variation in state presence is likely to affect local economic development.

State institutions are not the only governance institutions important for local develop-

[2]According to the Fragile State Index (2017), 20 of the 30 weakest states are in Africa and no African country is classified as "stable."

ment. In many developing countries local non-state actors play a crucial role for local politics and economics. One such actors in Africa are *traditional leaders*[3] or village chiefs. 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 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).

In their work, chiefs are likely to interact with the state in several ways. Not only do they perform similar functions, they also both rely on the population for resources and authority. In that context it is crucial to understand how the two interact, and specifically whether they act as complements or substitutes to each other. If the two are complements, an increase in state presence would lead to an increase in service provision by the chief. If they are substitutes, an increase in state presence would lead to a decrease in the influence of the chief. The existing literature offers competing opinions on whether chiefs and state presence are substitutes or complements. Modernization theorists have argued that the modern authority of the nation state will be a substitute for traditional leaders (e.g. Migdal 1988; Mamdani 1996), while recent research points to complementarities between chiefs and national institutions (Baldwin, 2016; Van der Windt et al., 2019; Mustasilta, 2019).

Understanding the nature of the interaction between the state and chiefs is crucial not only for the local influence of chiefs but also economic development. If the two are complements, a lower state presence will not only lead to lower development by itself, it will also decrease the influence of chiefs and thus reduce their ability to provide public goods, further hampering local development. When chiefs are substitutes on the other hand, they would be able to step in and provide public goods when the state is not present, thereby reducing the effect of state weakness on development. We would thus expect state presence to have a bigger impact on development when chiefs are complements than when they are substitutes, since when they are complements both the production of the state as well as of the chief is positively correlated with state presence. This potential compounding or compensating effect of chiefs on the relationship between state presence and development has important

[3]Baldwin provides a standard definition of traditional leaders as "rulers who have power by virtue of their association with the customary mode of governing a place-based community" (2016, 21). Conceptually and empirically, I focus on the most local level of traditional leaders, namely village chiefs or headmen.

consequences for the state building efforts of states.

States in Africa have chosen a wide array of strategies when dealing with traditional leaders that primarily vary on one key dimension: institutional integration of chiefs. I argue that this determines whether chiefs and the state are complements or 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] In both the administrative and developmental role chiefs become dependent on the state for resources and legitimacy. In villages with higher state presence, chiefs benefit from more resources and positive association with a successful state that increases their status. Inversely, chiefs in villages where the state is absent will suffer from a lack of resources and are blamed for state failures. Consequently, *when the nation state and chiefs are institutionally linked, chief power should be correlated with state presence*. They are complements.

When the central state does not institutionally integrate traditional leaders, their relationship is fundamentally different. Traditional leaders remain local elites and are active in their community. They care about their local status and thus continue to exert control and provide some public goods. Their local authority is not dependent on the state and often in direct competition to it, since they represent an alternative governance institution with their own source of legitimacy stemming from their link to customary authority. Traditional leaders also cannot rely on the state for resources and lack formal channels to interact with the local state. Furthermore, since chiefs rely on informal taxation of the population, in the form of contributions or labor, they are in direct competition for these resources with the state who also taxes the population. 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. In some areas such as land, justice provision, or taxation, traditional leaders might directly compete with the state and offer alternative solutions (Herbst, 2000; Olken and Singhal, 2011). The DRC

[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).

offers a few concrete examples of traditional leaders acting as direct substitutes to the state, such as in land provision that directly contradicts official law (De Herdt and Titeca, 2019). When the state is not providing public goods, chiefs in the DRC can mobilize the community to organize the provision themselves.[5] In other settings, they offer a more indirect local alternative that engages with the population and sometimes leads to the support of opposition parties or even local armed struggles (Hoffmann, Vlassenroot and Marchais, 2016). In this context increased state presence, increases the competition for chiefs and lowers demand for their services. Thus, *when the nation state and chiefs are institutionally separated, chief power should be negatively correlated with state presence.* They are substitutes.

Given these two options, the central state has an incentive to institutionally integrate traditional leaders in order to benefit from their superior local technology (information and societal control) and to be associated with their customary authority (Padró i Miquel and Yared, 2012; Henn, Marchais and Sanchez de la Sierra, 2018). On the other hand, institutional integration of chiefs makes them part of developmental, electoral, or administrative processes and allows them to capture rents. We would thus expect the central state to integrate chiefs when they posses sufficient local authority and have higher local capacity than the local state (making them more effective at implementing policies, delivering votes, and so on) but are not too powerful (allowing them to capture more rents).[6]

Examining the effects of institutional integration empirically poses two challenges: first, as the discussion above suggests, 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

[5]Figure B1 in the Online Appendix shows pictures of public goods provided by chiefs in the absence of the state in the DRC collected by the author.

[6]Previous research has also 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.

independent of the local level variation in state presence 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. 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 higher incentives to provide governance. The framework presented above complements this theory of embeddedness. For a given level of embeddedness, how does state presence 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 presence. 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 presence 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 presence.

This paper examines several implications from the framework presented above. First, it investigates the average effect of state presence on local economic development. Second, chiefs can be considered complements of the state when they become more influential as state presence increases. I test whether institutional integration via the constitution makes chiefs complements to the state by estimating the effect of state presence 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 presence on development to be *larger* when chiefs are institutionally integrated.

III Empirical Strategy

Studying state presence 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 presence of the national state and by comparing villages across internal administrative boundaries to obtain exogenous variation in state presence.

Measuring State Presence

To compare the effect of within country variation in state presence, 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 presence 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. Similar points have been made in the literature on the loss of strength gradient (Boulding, 1962). It is also consistent with the theoretical observation that remoteness makes administration costly (Stasavage, 2010) and recent studies that show the importance of geographical distance for service delivery (Brinkerhoff, Wetterberg and Wibbels, 2018). Consider a police station, for example. Two main responsibilities of any police department are patrolling and responding to emergencies. Both tasks will be easier to perform closer to the police station. Police will take a longer time responding to emergencies farther away, thus reducing efficiency. Patrolling areas more distant from the police station both takes more time and simultaneously leads to exposure to closer areas on the way to the locations farther away. This paper posits that this relationship between distance and presence 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 presence 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). Scholars have demonstrated that the physical distance to the national capital affects conflict, development, and the diffusion of national institutions (Michalopoulos and

Papaioannou, 2014; Campante, Do and Guimares, 2019). However, simply using the distance to the national capital as a measure of state presence 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 presence. As discussed above, administrators stationed at the local headquarters will have a harder time administrating (collecting taxes, providing public goods, etc.) locations farther away, creating variation in state presence. Consequently, this study uses the distance of African villages to the headquarters of their administrative units as a measure of state presence.

In order to validate this measure of state presence, 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 presence and have previously been used in the literature: tax payment, local development infrastructure, and usually state-provided public good provision. I have chosen measures that are typically provided by the state and not other actors such as NGOs or traditional rulers. The three measures are combined to create a state presence index. All three measures, as well as the index, indicate that state presence and distance to the administrative headquarters are negatively correlated (to the extent that the state is less capable of obtaining taxes from its citizens, or providing local development and public goods). Panel B in Table 1 shows the same strong correlation between distance to administrative headquarters and state presence 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 2 shows a bin-scatter of distance to the administrative headquarters and the state presence index, as well as their linear and polynomial relation. There seems to be a consistent negative relationship between state presence outcomes and distance to the administrative headquarters across both the Afrobarometer and DHS data.

Still, like all measures of state presence, using distance suffers several problems. Distance to administrative headquarters constitutes a compound treatment, as several other factors vary farther away from the state. State presence is correlated with many other variables, such as urbanization or economic activity. Furthermore, village locations and their distance to the headquarters are not random. Citizens living at the fringes of the state are different

or have chosen to live there (Scott, 2009). I use the following strategy to address these endogeneity concerns.

Table 1 and Figure 2 about here.

Using Administrative Borders as Identification

I identify the effect of variation in state presence 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.

The central idea of the identification strategy is to compare villages on both sites of administrative boundaries within a country. 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 presence, 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 presence, while other observable and unobservable confounder should vary smoothly across the border.[7]

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.[8] In Section

[7]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.

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

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 presence 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.[9] 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 similar 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 presence 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:

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

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

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;[10] 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;[11] 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 presence 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 presence relationship. Figure 3 illustrates these differences by showing the different coefficients of distance on the index of state presence-related outcomes by country and administrative division. In some countries, distance matters more for state presence 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 presence 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.[12]

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 (Card and Krueger, 1994; 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

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

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

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

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 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 3 about here.

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 presence, I use the third, fourth, fifth, and sixth rounds of Afrobarometer (Afrobarometer, 2017). Rounds 3, 4, 5, and 6 were conducted in 18, 20, 34, and 36 African countries, respectively, on a random and nationally representative sample of voting-age individuals (either 1,200 or 2,400 per country). Round 3 was conducted in 2005, round 4 between 2008 and 2009, round 5 between 2011 and 2013, and round 6 between 2014 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).[13]

Additionally, I use geo-coded responses to the Demographic and Health Surveys (DHS)

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

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 use all geo-coded data available for the time period (2002-2015) and countries surveyed by the Afrobarometer plus the DRC.[14] 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 24 of the countries that were surveyed in any of the four rounds of the Afrobarometer plus the DRC.[15] The sample is visualized in Panel A of Figure 4. First, I identified which administrative divisions are responsible for public good provision in each country in the sample. I then selected the two most relevant administrative divisions and created a list of all units, their headquarters, size, and population at the last census using multiple sources (official documents, OpenStreetMap, GoogleMaps, Statoids.com, Wikipedia). This produces over 5,500 headquarters in 46 administrative divisions. I then geo-coded the location of all headquarters using GoogleMaps, GeoNames.org, OpenstreetMap, 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. Since rounds 3 through 6 were conducted between 2002 and 2015, I tracked all changes to the administrative boundaries and headquarters during that time period.[16] I calculated a village's distance to its administrative headquarter as well as the distance to the administrative boundary and determined which border region it belongs to. Table B1 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 R package and code to calculate the distances, is available on the author's website. Figure B3 in the Appendix shows the resulting data for Burundi: it maps the administrative divisions and headquarters, as well as all villages in the Afrobarometer, with at least one observation within 5km of each side of a border.

The DHS data allow me to construct several indicators of rural welfare. First, I construct

[14]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. Results remain unchanged and can be seen in Column (7) of Table B6 in the Online Appendix.

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

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

a development index that combines several variables: a measure of literacy based on whether respondents can read a sentence shown to them by the enumerator, a measure of household asset wealth, and a whether the household has access to piped water. Second, I construct several health care outcomes such as a measure of infant mortality by dividing the number of children who have died before turning 5 over the total amount of births, and how many children in the household have been vaccinated. Third, I create an indicator for the use of traditional medicine by combining whether respondents have sought traditional medicine when their child had fever, diarrhea, or as a method for birth control. Fourth, the DHS data provide information on migration by asking respondents whether they still live in the location they were born. Fifth, I construct state capacity outcomes and combine them in an index: whether children have birth certificates, whether the family has electricity, and how far the household is from its water source.

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.[17] 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 4 shows which countries have institutionalized chiefs via their constitution. Moreover, I use a dataset of constitutional chief inclusion compiled by Baldwin (2016). The dataset categorizes the constitutions of 23 African countries on whether they mention traditional leaders and whether or not they protect chiefs. I identify the protection of chiefs in the constitution as an indication of the central state cooperating with traditional leaders and creating institutional linkages.

Figure 4 about here.

In order to study how the institutional context shapes the role of traditional leaders when the nation state is absent, I apply the empirical strategy outlined in Section III using questions in the Afrobarometer survey that ask about the role of traditional leaders and attitudes towards them. Specifically, 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.

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

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. They include the distance to the national capital, the distance to the national border, distance to the coast, elevation, ruggedness, agricultural suitability, malaria suitability, distance to historical cities, distance to Christian missions, and distance to colonial railroads. 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, resulting in a sample of 17,225 unique locations for the Afrobarometer data and 34,974 for the DHS. 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 B2 in the Appendix shows the summary statistic for this regression sample. Villages are, on average, 15km away from their administrative headquarters and over 150km away from the national capital. Half the respondents are literate, and average infant mortality is at 12%. Notably, there is very little migration. Over 95% of respondents in the DHS have always lived in the location where they were surveyed, and only 20% of children do not live at home.

V Results

First, I test whether state presence — measured by the indices created from state presence-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 presence 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 presence. Enumerators report significantly lower levels of state presence 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 presence. 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 about here.

How does state presence affect economic development? Column (3) in Table 2 uses data from the DHS surveys and shows that the local presence 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 presence 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 presence 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 presence following Figure 3. 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 about here.

Column (1) in Table 4 estimates the effect of the low state presence 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 presence. 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 presence 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 about here.

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 presence treatment at the border and a negative coefficient of its interaction with institutionalization.

Table 5 about here.

Through what mechanism does giving an institutional role to chiefs induce such heterogeneous effects of state presence 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 A2 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 presence 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 presence affects rural welfare. Specifically, the components of the development access, 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.[18] 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 about here.

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 presence 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 presence on local welfare.

Table B3 in the Online 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 5 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 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

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

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 5 about here.

VI Determinants of Institutional Integration

The spatial regression discontinuity design provides exogenous variation in state presence, 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 presence 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 presence. 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 presence 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 presence.

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 A4 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[19] 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.[20] The results are shown in Table A5 for the Afrobarometer data and Table B9 for the DHS data.

Even when interacting treatment with these potential confounders, the interaction of treatment and institutionalization remains sizable, negative, and statistically significant.[21] I also rerun the main specification while only including former British colonies. The results can be seen in Column (2) of Table B10 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.[22]

Table A5 about here.

VII 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

[19]Note that the sample size is only 23 countries.

[20]I also interact treatment with all other variables in Tables B11 and B12 in the Online Appendix.

[21]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.

[22]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.

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 B6-B9 in the Online Appendix.

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 presence, 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 A1 in the Appendix. 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).[23] Still, all variables in the table and their interaction with institutionalization of chiefs are included as controls in the main analysis.[24]

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 A1. 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 A1 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 A3 in the Appendix shows that neither migration by children, men, women, nor an indicator combining the three, is significantly

[23]Panel A in Figure A1 shows that dropping each country individually from the analysis does not affect the results.

[24]I also run the analysis without using controls in Column 2 of Table A6, and the results remain consistent.

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.[25] 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 be up to 40km away from each other and are thus less comparable. The results can be seen in Figure 6. 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.

Figure 6 about here.

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 presence outcomes. The results hold when using the more rudimentary specification with a binary treatment indicator (Column (3) in Table A6 in the Appendix). 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

[25] 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.

coefficient of distance on state presence also does not change the findings (Column (5) in Table A6 in the Appendix).

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 A6 in the Appendix). Furthermore, I also conservatively cluster the standard errors at the highest administrative division instead of the lowest (Column (7) in Table A6 in the Appendix).

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 A7, respectively, in the Appendix. In Panel A in Figure A1 in the Appendix, I show the results dropping one country at a time. Columns (4) of Table A7 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 A7. A more realistic measure of state presence 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 presence or the state-chief interaction. Nevertheless, the results remain consistent when using logged travel time (Column (6) of Table A7 in the Appendix).[26] 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 B10 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 admin-

[26]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.

istrative headquarter in the neighboring administrative unit (Column (2) in Table A8 in the Appendix).

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 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 presence.

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 A8 in the Appendix). 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 A8 in the Appendix).

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 A8 in the Appendix 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 A8 in the Appendix) and the low level of migration (Table B2 and A3) 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[27] to instrument for the location of the district cap-

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

itals. Putting the distance to the instrumented capitals in the specification returns similar results (Column (7) in Table A8 in the Appendix). 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 A8 in the Appendix. Reassuringly, distance to these placebo headquarters does not result in sizable or significant effects, whether chiefs are institutionalized or not.

VIII Conclusion

This paper investigated how the state interacts with traditional leaders in Africa. Given the weakness of the state in many developing countries, there has been an increasing focus on federalism and decentralization as an avenue for promoting local development. Yet, many developing countries feature local governance institutions that have inherent local authority independent of the state, such as village chiefs in Africa, clans, lineages, and village councils in Asia, or caciques in Latin America. How these governance institutions interact with the state has largely been overlooked.

In this paper I argue that it is crucial to identify whether chiefs are complements or substitutes to the state as it has important implications for local public good provision. I hypothesize that whether they 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 presence on the legitimacy, effectiveness, and public good provision of chiefs. Studying the effects of state presence is difficult due to the lack of fine-grained data, questions of how to measure state presence, 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 presence 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 presence 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 presence at the local and national level. Locally, it can help policy makers understand which traditional rulers are more influential, which are more independent, and how they are affected by state policies. At the country level, the results shed light on why traditional leaders remain influential in some successful states (e.g. South Africa) in contrast to predictions by modernization theory (Mamdani, 1996) while they have lost local standing in others (e.g. Rwanda). It further adds to our understanding of the incentives motivating politicians and traditional leaders when they bargain over institutional arrangements between the state and traditional authority.

The paper thus adds a new type of actor to the literate on federalism and decentralization: traditional leaders. It links the recently emerging literature on traditional chiefs to the literature on the effects of national institutions. It shows that when considering the impact of domestic institutions on economic development we also have to consider the role of local institutions and how they interact with the nation state.

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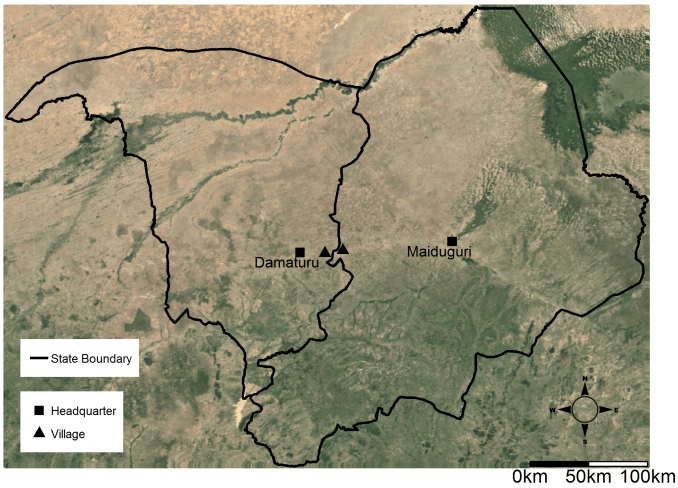
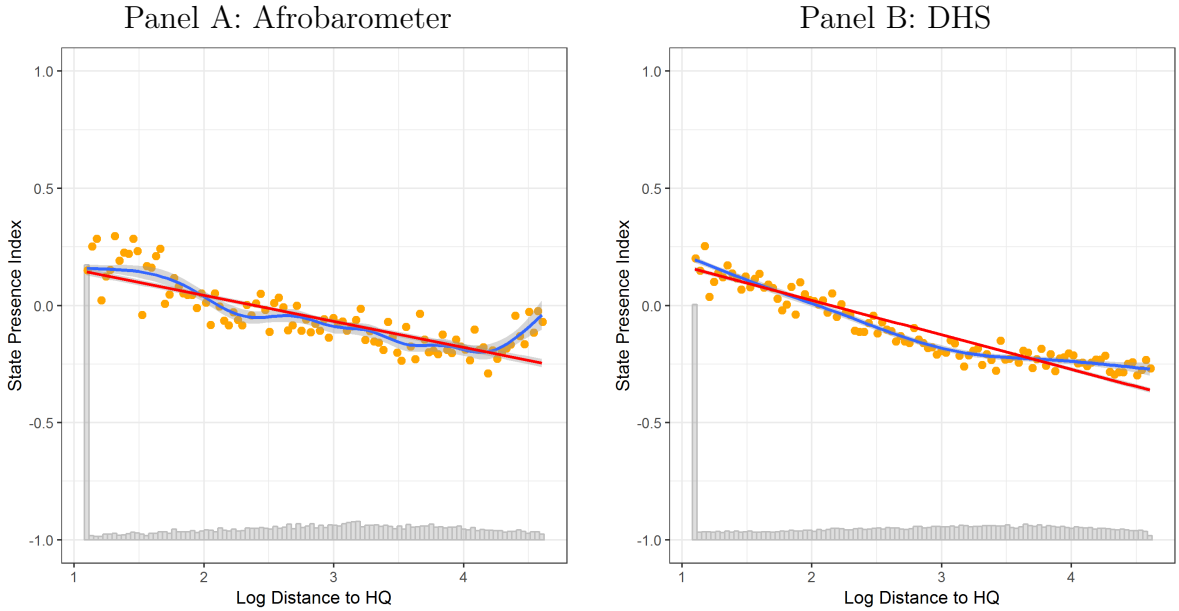
Figures

Figure 1: Illustration of Identification



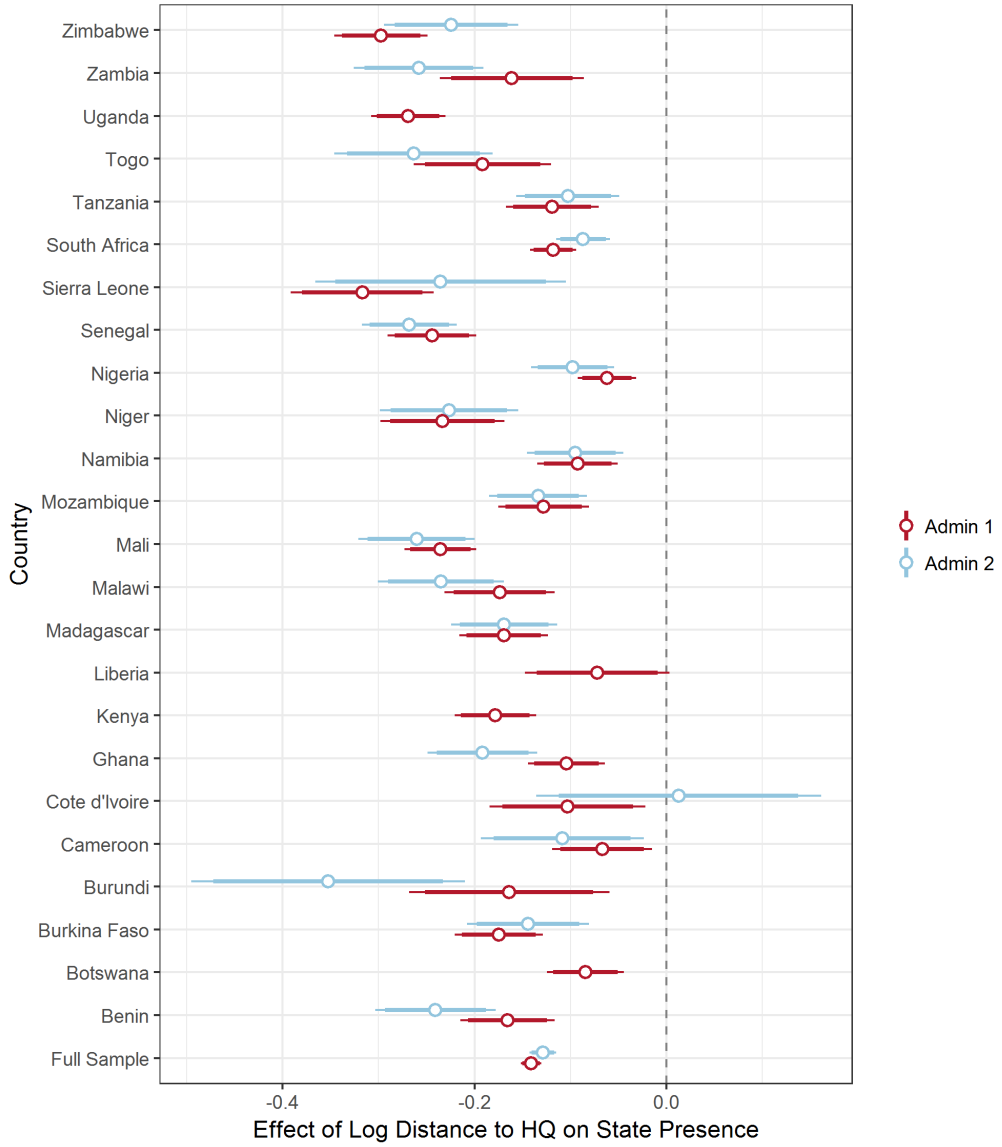
Notes: This figure shows the boundaries of two states (Yobe in the West and Borno in the East) in Nigeria. The state capitals are marked with a square. Two villages are shown by triangles.

Figure 2: Bin-scatter between state presence and distance



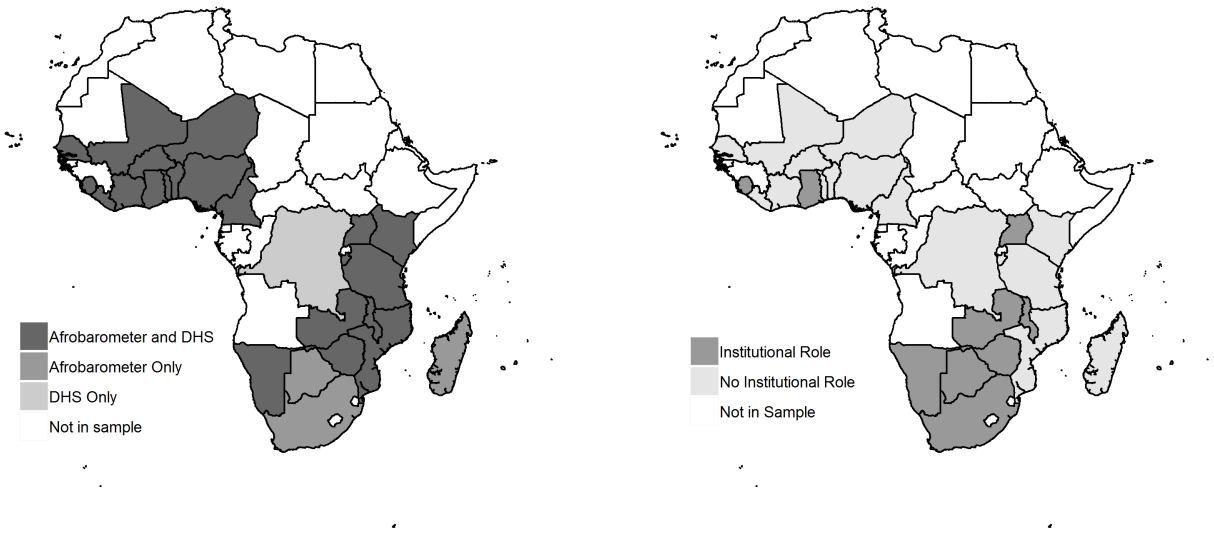
Notes: This figure shows shows a bin-scatter (orange) of distance to the headquarters and the state presence index as well as their linear (red) and polynomial relation (blue). A histogram of the distance measure is shown at the bottom. Panel A shows the Afrobarometer data and Panel B shows the DHS data. Figure B2 in the Appendix offers alternative ways to represent the data.

Figure 3: Correlation between state presence 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 constructed state presence variable. The specification is the same as in Table 1, but without fixed effects and clustering, and is run separately by country and administrative division. There is only one administrative division in my data set for Botswana, Kenya, Liberia, Malawi, and Uganda.

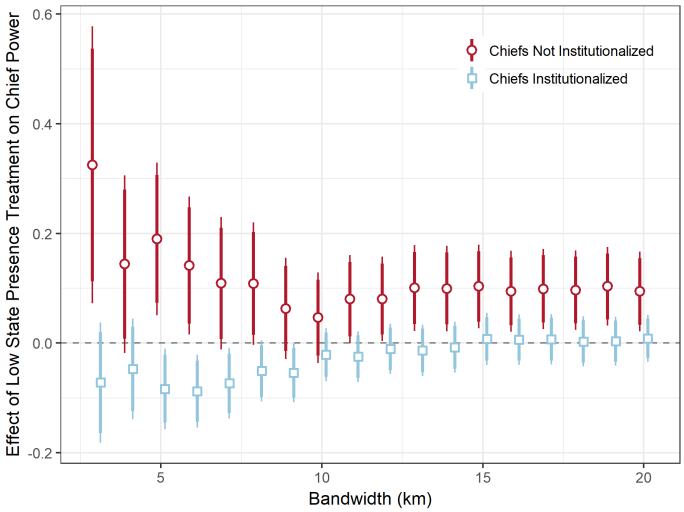
Figure 4: Map of Sample



Panel A: Countries in the Sample

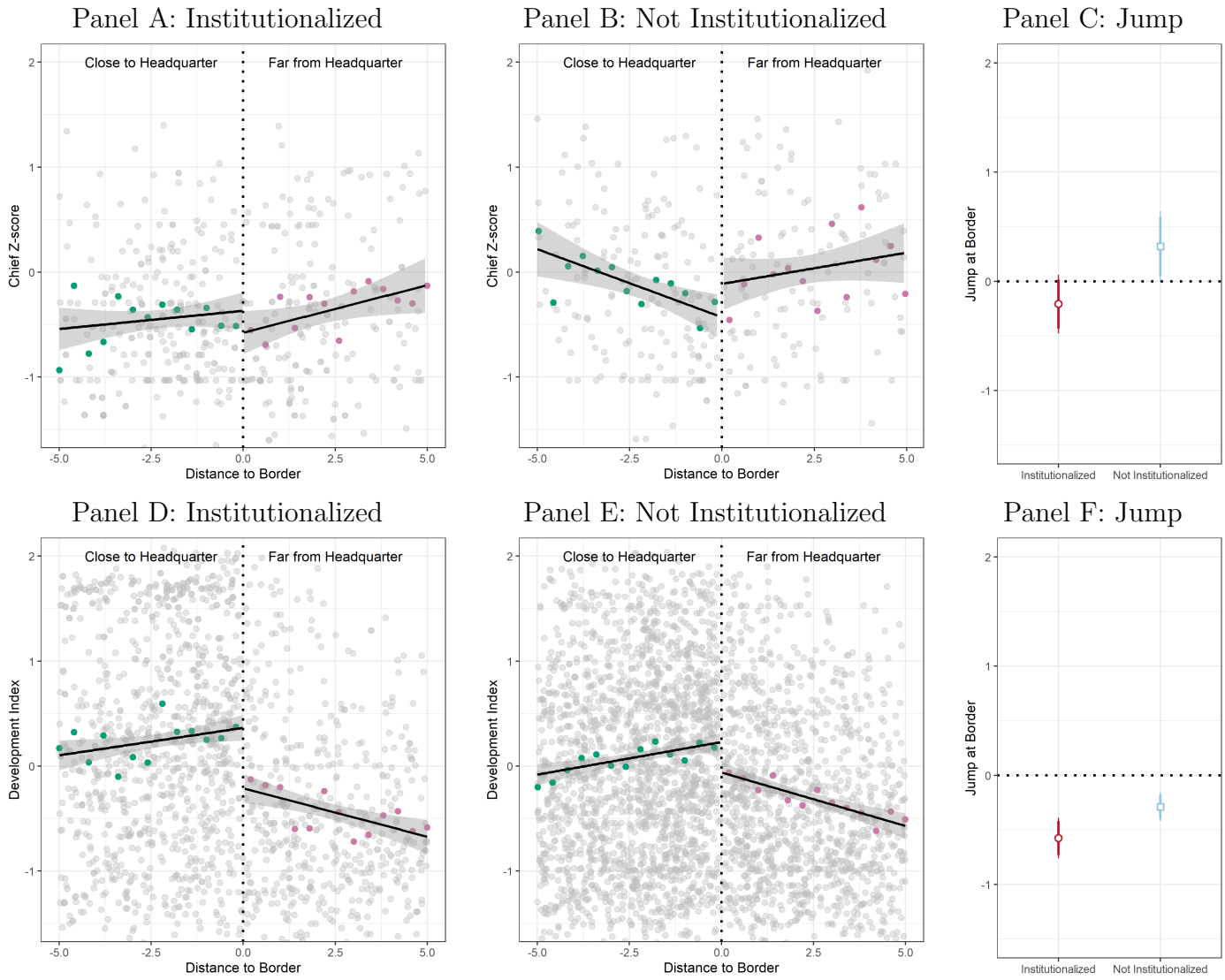
Panel B: Institutional Variation

Figure 6: Changing the Bandwidth



Notes: This figure shows the effect of the treatment measure on the dependent variable of Table 4 but varying the bandwidth from 3 to 20 kilometers. The 95% and 90% confidence intervals are plotted for each bandwidth.

Figure 5: 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 Graph also shows the scatter of the raw data in grey and 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 while Panels B and E show countries where chiefs are not institutionalized. The data is restricted to observations within 5 km of their administrative border and with an observations on the other side of the border. Panels C and F visualize the different jumps at the border of the institutional and not institutionalize settings.

Tables

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

Panel A: Afrobarometer Data	*Dependent variable:*			
	Taxes paid	Local Dev	Public Goods	State Presence 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 Presence 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 presence as the dependent variables. The countries in the sample can be seen in Figure 4. Geographic and historical controls are included as well as district level and survey round fixed effects. Panel A uses data from the Afrobarometer survey. The following standardized dependent variables are used: Column (1): A z-score of whether the respondent reported to have paid various taxes (only asked in round 4 of the Afrobarometer). Column (2): A z-score of local development infrastructure: running water, sewage, and electricity. Column (3): A z-score of local public good provision: hospitals, schools, post office, markets, and police stations. Column (4): An index of state presence created by combining columns 1-3. Panel B uses data from the DHS survey. The following dependent variables are used: Column (1): A z-score of the average percentage of household members registered with the state and whether children have vaccination cards (not asked in every DHS round). Column (2): Percentage of households with electricity. Column (3): How long it takes a household to get water (inversed). Column (4): An index of state presence created by combining columns 1-3. Standard errors, clustered at the district level, are shown in parentheses.

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

	Dependent variable:		
	State Presence Index		Development Index
	Afrobarometer	DHS	DHS
	(1)	(2)	(3)
Low State Presence 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 presence as the 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, I include border region fixed effects. An observation corresponds to a geographic location (i.e. village or neighborhood). Column (1) uses data from the Afrobarometer. The standardized state presence z-score combines local development, public good provision, and average of respondents who report having paid taxes. Column (2) uses data from the DHS. The state presence z-score combines electrification, registered births and time to the nearest water source. Column (3) has a development index as the outcome variable that combines respondents' literacy, wealth, and access to water. Standard errors, clustered at the district level, are shown in parentheses.

Table 3: Effect of State Presence 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. The chief z-score combines respondents' perception of traditional leaders' local influence, corruption, trust, and contact with the population. The sample is restricted to respondents who live within 5km of the internal administrative boundary. 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 presence following Figure 3. Standard errors are shown in parentheses.

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

	Dependent variable:			
	Chief Z-Score			
	Pooled Sample	Pooled Sample	Not Institutionalized	Institutionalized
	(1)	(2)	(3)	(4)
Low State Presence 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. The chief z-score combines respondents' perception of traditional leaders' local influence, corruption, trust, and contact with the population. 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). The first Column (1) shows the result for the pooled sample. Column (2) interacts treatment with whether traditional leaders are institutionalized via a country's constitution. Column (3) subsets the data to countries that do not give chiefs an institutional role via their constitution. Column (4) subsets the data to countries that do institutionalize chiefs in their constitution. Standard errors, clustered at the district level, are shown in parentheses.

Table 5: Effect of State Presence 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 Presence 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. The chief z-score combines respondents' perception of traditional leaders' local influence, corruption, trust, and contact with the population. 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). 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. Column (2): How much influence do traditional leaders currently have in governing your local community? Column (3): 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? Column (4): How much do you trust each of the following, or haven't you heard enough about them to say: Traditional leaders? Column (5): 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? (Inversed). Standard errors, clustered at the district level, are shown in parentheses.

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. 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). 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 7: Effect of State Presence on Development

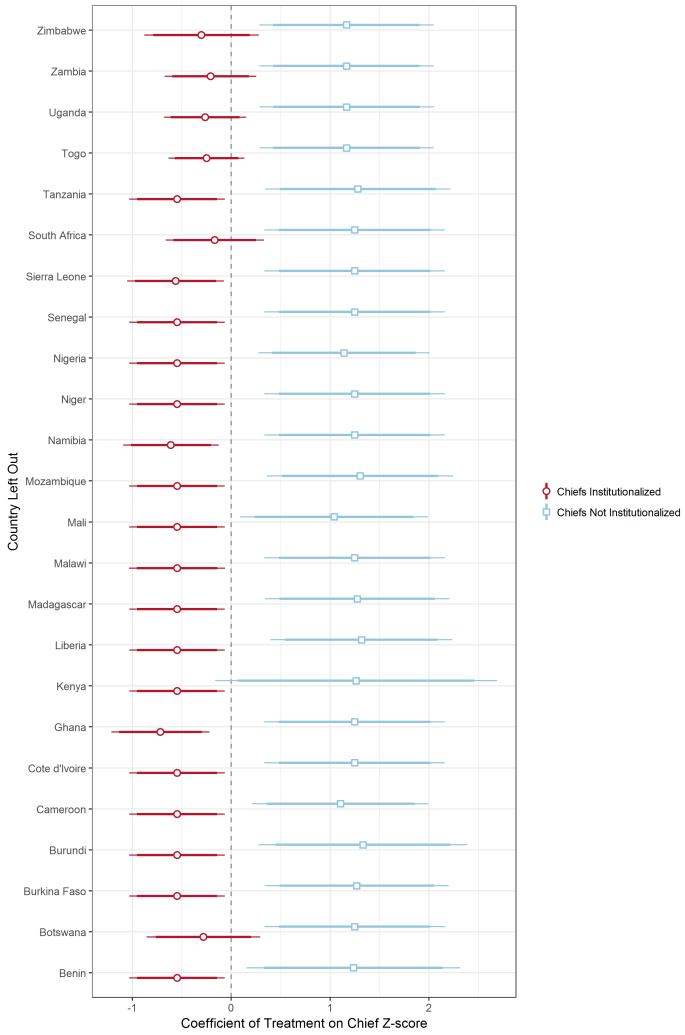
	Dependent variable:	
	Development Index	
	(1)	(2)
Low State Presence Treatment	-0.091^{***}	-0.061^{***}
	(0.016)	(0.017)
Treatment X Institutionalized		-0.108^{***}
		(0.032)
Fixed effects?	Yes	Yes
Cluster	Admin. Unit	Admin. Unit
Observations	3,563	3,563
Adjusted R^2	0.696	0.699

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. The development index combines respondents' literacy, wealth, and access to water. 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). The first Column (1) shows the result for the pooled sample. Column (2) interacts treatment with whether traditional leaders are institutionalized via a country's constitution. Standard errors, clustered at the district level, are shown in parentheses.

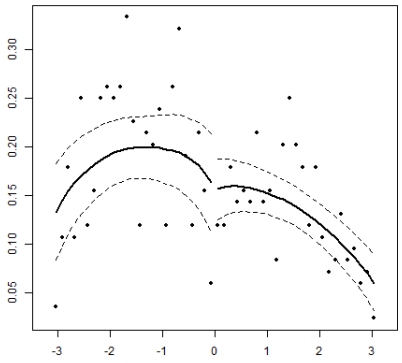
A Additional Figures

Figure A1: Results of Leaving out Countries and McCrary Test with Different Bandwidths

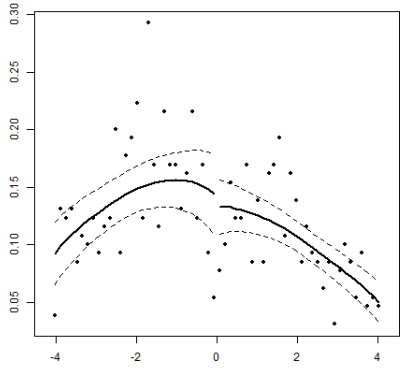
Panel A: Leave Countries Out



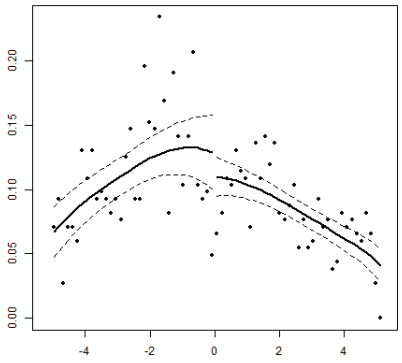
Panel B: McCrary 3km



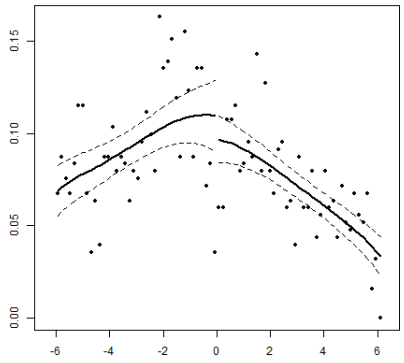
Panel C: McCrary 4km



Panel D: McCrary 5km



Panel E: McCrary 6km



B Additional Tables

Geographic Outcomes

Table A1: 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 Presence 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 A2: Robustness: Different Measures of Institutional Context

	Dependent variable:		
	Chief Z-Score		
	(1)	(2)	(3)
Low State Presence 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 Online 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 A3: Effect of Treatment on Migration

	Dependent variable:			
	Migration			
	Children	Men	Women	Z-score
	(1)	(2)	(3)	(4)
Low State Presence 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 A4: 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 A5: 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 Local State Presence	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 via 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 are clustered at the admin. unit level. Standard errors, clustered at the district level, are shown in parentheses.

Table A6: Robustness: Different Specifications

	Dependent variable:						
	Main	No Controls	Binary Treatment	Chief Z-Score 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 A7: 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 A8: 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 Presence 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.