

# Complements or Substitutes? How Institutional Arrangements Bind Traditional Authorities and the State in Africa

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

## INTRODUCTION


One of the fundamental issues of politics is how political power is distributed between the national center and local actors. In many developing countries, this issue takes the form of a central state confronting traditional local governance institutions such as village elders in South Asia (Chaudhary 1999), lineages in China (Tsai 2007), or caciques in Latin America (Díaz-Cayeros, Magaloni, and Ruiz-Euler 2014). In Africa, local governance is dominated by traditional authorities or chiefs that interact with the state in a myriad of ways (Baldwin 2016; de Kadt and Larreguy 2018; Logan 2013). Who holds power and whether these actors act as complements or substitutes plays an essential role in determining whether and how services are provided at the local level.

In this paper, I investigate how variation in state capacity affects the power, legitimacy, and effectiveness of traditional authorities (village chiefs) across different institutional settings in sub-Saharan Africa. Both the state and traditional authorities 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 traditional authorities. State capacity—that is, the ability of the state to mobilize resources and provide public goods—varies across and within countries. To understand the consequences of such variation in state capacity for local public goods provision, it is important to understand whether traditional authorities act as complements or substitutes to the state. Does higher

state capacity increase or decrease the ability of traditional authorities to provide local governance?

I provide a framework that outlines how state capacity interacts with the influence of traditional authorities to produce local public goods when the two are substitutes or complements. If they are complements, state capacity will increase service provision by the traditional leader (Van der Windt et al. 2019). Conversely, if they are substitutes, service provision by the traditional leader will decrease with greater state capacity. Additionally, as substitutes, traditional authorities would be able to better step in and compensate when the state is not providing public goods. Traditional authorities across the continent vary in terms of their historical context, their traditional structures, and current political realities. I identify one important source of variation that shapes their relation to the state: their institutional role (Baldwin 2016; Mustasilta 2019). I argue that whether traditional authorities and the state are complements or substitutes is shaped by whether the state integrates traditional authorities 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 traditional authorities become complements. If they are not integrated, they are substitutes. I test this hypothesis by comparing the effect of local state capacity on the influence of traditional authorities and development when they are integrated in the constitution with when they are not. Holding other variation (such as historical context) fixed, local variation in state capacity within a country will affect traditional leaders differently in countries where they are institutionalized as opposed to where they are not.

Studying the effect of differences in state capacity is challenging for at least two reasons. Measures of state capacity are not widely available, and differences in state capacity are typically correlated with other factors. This paper addresses these concerns with a spatial regression discontinuity design (RDD) that exploits

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Received: April 18, 2020; revised: February 28, 2021; accepted: September 30, 2022. First published online: November 08, 2022.

plausibly exogenous variation in distance to the state within countries. I consider the distance of villages to their administrative headquarters (e.g., provincial capitals and district headquarters) as a measure for *local* state capacity. Local state officials, who are tasked by the national state to govern the administrative divisions and are more likely to be located at the administrative headquarters, provide more public services, collect more taxes, etc. in villages closer to the headquarters. I then use administrative borders within countries to obtain exogenous variation in villages' distance to administrative headquarters and implement a RDD. Whereas people, goods, and services can move across internal administrative borders with relative ease, the state—in the form of state administrators—is unlikely to cross it, thus creating a sharp discontinuity of local state capacity at the administrative border. In contrast to a typical spatial RDD, the treatment (distance to the administrative headquarters) varies in space within and across treated geographical areas. To account for this difference in treatment intensity, I augment the standard spatial RD specification by creating an intensive treatment measure and scaling coefficients by how much distance matters for state capacity by country and administrative division.

The implementation of this empirical strategy requires precise geocoded information on the boundaries and headquarters of administrative divisions. I created an original dataset of 5,700 administrative unit boundaries and headquarters in 28 African countries and tracked changes to them over the last 20 years. I merge these data with locations of *Afrobarometer* and *Demographics and Health Survey* respondents and calculate each respondent's distance to their national, provincial, and district capitals, as well as administrative boundaries. Distance to administrative headquarters reduces outcomes related to local state capacity in both datasets. Furthermore, the spatial RDD successfully identifies jumps in local state capacity. Observations on the side of the boundary closer to the state consistently report higher levels of state capacity, whereas geographical and historical controls vary smoothly.

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

Using data from the Demographic and Health Surveys (DHS), I next show that whether traditional authorities are complements or substitutes with respect

to the national state matters for how state capacity affects development. Villages on the side of the boundary closer to headquarters have considerably better development outcomes, as measured by literacy rates, wealth measures, and water access. I find that the integration of traditional authorities makes economic development *more* dependent on the capacity of the nation state. The coefficient of state capacity on development is three times larger in countries in which traditional authorities are integrated into national institutions compared with 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 traditional authorities are complements or substitutes to state capacity and whether the location of administrative headquarters is endogenous. I show that possible determinants of the institutionalization of traditional authorities neither confound these heterogeneous findings nor independently explain whether traditional authorities are complements or substitutes. To deal with endogeneity concerns about the location of the administrative headquarters, I instrument their location with the most populated place in a given district in 1960 and show no effects of distance to randomly drawn placebo headquarters.

This paper contributes to the growing literature on traditional authorities in Africa (for an overview, see Baldwin and Raffler 2019; Holzinger, Kern, and Kromrey 2016; Honig 2017). How these influential actors interact with the state remains contested. Modernization theorists have argued that the traditional authority of chiefs stands in competition with that of the modern state (Mamdani 1996; Migdal 1988). Recent work has presented traditional authorities as modern actors that cooperate with the state and can be beneficial for accountability (e.g., Baldwin 2016). Van der Windt et al. (2019) specifically ask the question of whether attitudes toward traditional and state authorities are complements or substitutes in the DRC and determine that they are complements. However, scholars have shown that institutional structures around traditional authorities vary, which has far-reaching consequences for development and peace (Baldwin 2016; Mustasilta 2019). This paper builds on this insight and suggests institutionalization as the main moderating factor for the state–chief relationship, thus resolving the apparent tension between the two strands of literature that respectively argue that chiefs are complements or substitutes.

The paper also contributes to the literature on state capacity and limited statehood. Scholars have proposed a variety of definitions and measurement strategies to study state capacity (Fergusson, Larreguy, and Riaño 2022; Hendrix 2010; Lee and Zhang 2017; Soifer 2012). This paper provides a novel approach by using distance to administrative headquarters as a measure of local state capacity and using a regression discontinuity design around administrative boundaries to obtain exogenous variation. Scholars have

long been interested how state building affects areas of limited statehood, especially with respect to the legitimacy of state institutions (Englebort 2002; Karim 2019) and informal actors (Bratton 2007; Krasner and Risse 2014; Risse and Stollenwerk 2018). The findings of this paper suggest that constitutional choices have important consequences for how state building efforts affect nonstate actors and local development.

The paper also addresses a large literature on the importance of institutions and institutional arrangements, both formal and informal (Helmke and Levitsky 2004). Traditional institutions with authority independent of the state exist not only in Africa but also across the developing world. 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. In Africa, this process was used intensively during the colonial period in the form of indirect rule (Mamdani 1996; Müller-Crepon 2020). The paper provides a new lens for looking at the important postindependence institutional decisions of institutionalizing traditional authorities. Studies that vary institutional arrangements at the micro level allow scholars an in-depth look into the effects of institutions while holding important contextual factors fixed (Baldwin, Muyengwa, and Mvukiyeha 2022; Karim 2019). However, they do not allow cross-country comparison. This paper allows us to draw conclusions about variation in institutional arrangements across African countries while also providing an identification strategy that controls for contextual factors within country. The paper thereby also makes a new contribution to the literature on African constitutions. The previous literature has largely concluded that institutional arrangements in Africa have little *de facto* influence (Green 1996; Okoth-Ogendo 1991), whereas this paper shows that institutional arrangements crucially shape the relationship between the state and traditional authorities.

## THEORETICAL FRAMEWORK

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

The *state* can be separated into the central and the local state. The central state is the government. It is based in the capital of the country and is concerned with staying in power. This requires the central state to project power locally. It uses the local state to achieve its objectives. The local state consists of bureaucrats

who are hired and paid by the central government in order to establish and maintain a security apparatus, levy taxes, and provide public goods.

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

State institutions are not the only political institutions important for local development. In many developing countries, local nonstate actors play a crucial governance role. Such actors in Africa include *traditional authorities*, “rulers who have power by virtue of their association with the customary mode of governing a place-based community” (Baldwin 2016, 21). Across Africa (and often even within a country), this definition will encompass a variety of traditional leaders who vary in their historical origins and local power. Many traditional authorities are part of lineages that have been in power locally since before colonial occupations. Others were instituted, replaced, or propped up by colonial administrators (Mamdani 1996). Conceptually and empirically, I focus on the most local level of traditional authorities—namely village chiefs or headmen. These traditional authorities possess authority independent of the state, even if their office was created or modified by the colonial government.

Traditional leaders 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 (Boone 2014; Honig 2017), and their standing allows them to impose social sanctions (Zartman 2000). Although they might use their authority for their own benefit, this authority also enables them to provide services and public goods to the community such as allocating land and providing justice. Additionally, traditional leaders can convince the population to contribute labor to public construction works such as schools or boreholes (Baldwin 2016). Figure B1 in the Online Appendix shows pictures of public goods provided by village chiefs in the DRC collected by the author.

Both the local state and traditional authorities are involved in local governance and public goods provision. The state and traditional authorities have an interest in providing public goods if they care about local social welfare or if citizens reward them with votes or rents. Although promotion or removal of traditional leaders is rare, there are other avenues of accountability between the population and citizens. Many traditional leaders rely on contributions by the population for their own income. Less capable traditional leaders may encounter lower tax morale (De Herdt and Titeca 2019). Traditional leaders also care about their status in the community, which depends on their performance. Last, succession is not always within the same family but potentially among a number of “ruling families.” Traditional leaders could

thus be incentivized to perform by dynastic concerns (Acemoglu, Reed, and Robinson 2014).

The state and traditional leaders perform similar functions, and both rely on the population for resources and authority. Do they act as complements or substitutes with respect to each other? If they act as complements, low state capacity would lead to traditional leaders also providing less. Alternatively, if they act as substitutes, they would provide more when state capacity is low. This has clear implications for public goods provision. If the two are complements, public goods provision will be highly correlated with state capacity. If they are substitutes, public goods provision will be less dependent on state capacity because traditional leaders can compensate state weakness. Furthermore, whether they are substitutes or complements matters for political authority and whether traditional authorities lose or gain influence when the state is weak.

I argue that whether traditional authorities act as complements or substitutes to the state depends on whether they are institutionally integrated into the state apparatus. When they are institutionally integrated they act as complements; when they are not institutionally integrated they act as substitutes.

When traditional authorities are not institutionally integrated, it is easy for citizens to distinguish between inputs of the state and those of the traditional leader. Traditional leaders do not have access to state resources and lack formal channels to interact with the local state. Because of their competing claims of authority, traditional leaders and the state are particularly careful in clearly signaling the inputs they provide. Citizens are then able to reward each separately for their public goods provision. Local traditional leaders and state officials or politicians might still be able to find mutual agreeable ways to cooperate on public goods 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 (Bierschenk and de Sardan 2003). Researchers have identified several areas such as land, justice provision, or taxation where traditional leaders directly compete with the state and offer alternative solutions (De Herdt and Titeca 2019; Herbst 2000). Sometimes this conflict between the state and traditional authority can even lead to violence such as in Burkina Faso (Hagberg 2007).

When state capacity is low, the state is unable to provide public services. In the absence of provision by the state, citizens look to traditional leaders to provide them (Logan 2013). Because traditional leaders know that they will reap the benefits of organizing public goods provision, they will do so. Thus, when state capacity is low, there will still be some public goods provision and traditional authorities are held in high esteem. In contrast, when state capacity is high, the state can contribute more resources and citizens can observe the state's contribution. Because traditional leaders have less to gain in this scenario, they will not

contribute much. Thus when state capacity is high, there will be medium levels of public goods provision and traditional authorities are held in lower esteem. This leads to the first Hypothesis:

**Hypothesis 1.A.** *When the nation state and traditional authorities are institutionally separated, the influence of traditional authorities is negatively affected by state capacity. They are substitutes.*

When traditional authorities are institutionally integrated, they come to rely on the state for resources and citizens have difficulties distinguishing between public goods provided by the state and those provided by the traditional leader. Institutionalized traditional authorities receive salaries and funds or materials from the state to implement local projects. In South Africa, traditional rulers acting as electoral brokers rely on the funds provided by the government (Williams 2010). Similarly, in Zambia, chiefs coproduce local public goods as development brokers (Baldwin 2016) but are dependent on the state to also contribute resources. Just as traditional leaders became more responsive to the state than to the population during colonial rule (Mamdani 1996), formalization of traditional authorities makes the state a principal of the traditional leaders, thus weakening their responsiveness to the population (Carlson and Seim 2020). Institutionalization of traditional leaders thereby also links their legitimacy to the state and vice versa (Englebert 2002). In many instances, traditional leaders are considered part of the state apparatus, and they try to use their formal role to increase local authority (Lund 2003). Due to this linkage, cooperation with the state makes the proper attribution of credit for accomplishments (or blame for failures) more difficult. Accordingly, in a sample of countries where traditional authorities are institutionalized, Logan (2009) finds that trust in traditional leaders is positively correlated with perceptions of the performance of the local government. Citizens view traditional leaders and the local officials as part of the same system and evaluate them together. In the DRC, where chiefs are institutionalized, citizens' positive attitudes toward chiefs are correlated with support for the government (Van der Windt et al. 2019).

When state capacity is low, the state is unable to provide many resources for public goods provision. Citizens, cannot clearly distinguish between the resources from the state and traditional leaders. The traditional leader, knowing that he will be blamed for the shortcomings of the state, is less willing to organize public goods provision. Traditional leaders might still attempt to substitute for the weak state as they would when they are institutionally separated. In that case, they may gain influence as the only actor providing locally. Yet, institutionalization reduces their ability to substitute when the state is weak, even if they attempt to do so, by reducing their available resources and legitimacy. Thus, when state capacity is low, there will be low public goods provision and traditional authorities are held in low esteem. In contrast, when state



capacity is high, the state can contribute more resources. The involvement of the traditional leader will make the citizens' inputs more productive, and the traditional leader will get the full credit for the successful public goods provision he contributes as well. Thus when state capacity is high, there will be high public goods provision and traditional authorities are held in high esteem. Hypothesis 1.B follows:

**Hypothesis 1.B.** *When the state and chiefs are institutionally linked, the influence of traditional authorities is positively affected by state capacity. They are complements.*

We can combine Hypotheses 1.A and 1.B into Hypothesis 1:

**Hypothesis 1.** *Institutionalization of traditional authorities shapes their relationship with the state. When they are institutionalized they act as complements to state capacity. When they are not institutionalized they act as substitutes.*

Whether traditional authorities are complements or substitutes has implications for public goods provision. As outlined above, when not institutionalized traditional leaders will try to compensate for state weakness and provide public goods but have little incentive to provide when the state is strong. When institutionalized, traditional leaders will be less able to substitute for the state and provide when the state is weak, but there are synergies when state capacity is higher. We can thus expect the gap in public goods provision between high-state-capacity localities and low-state-capacity localities to be larger when traditional authorities are institutionalized.

**Hypothesis 2.** *When the state and traditional authorities are institutionally linked, public goods provision is more strongly affected by state capacity than when they are separated.*

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, traditional leaders act as an intermediary between politicians and the population. They use their superior information of local needs to advocate for the provision of public goods. Once development projects are allocated, traditional leaders' 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). The relationship between the state and traditional leaders is both nuanced and dynamic (Helmke and Levitsky 2004). Not all interactions will neatly fit into binary institutionalized or noninstitutionalized categories. The state might decide to cooperate with some traditional leaders while pushing aside others. Furthermore, the relationship could be reevaluated and changed over time.

The nuanced and dynamic aspect of institutionalization makes examining the effects of institutional integration empirically challenging. First, institutional integration is the outcome of a decision-making process determined by a variety of factors making institutional integration endogenous. Second, it is difficult to measure. I overcome these challenges by focusing on the national level variation of integration of traditional authorities via a country's constitution. Although 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 traditional authorities can only be made at the national or regional level. For example, whether or not traditional leaders 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. Constitutional integration is also easy to observe and measure. More importantly, it addresses endogeneity concerns. Because it is determined at the national level, this integration is independent of the local-level variation in state capacity and influence of traditional authorities this paper is measuring. This reduces the risk of reverse causality.

Although citizens are often not well-informed about the details of their constitution, the integration of traditional authorities manifests itself in ways that are quite visible. When traditional leaders have an administrative role, many state resources and formalities can only be accessed through the traditional leader (e.g., obtaining a birth, marriage, or death certificate). In many countries the constitution created a national or regional "House of Chiefs" (e.g., Ghana). The Houses of Chiefs are frequently in the news and formalize the enumeration of traditional authorities by the state, which is a frequent source of conflict and debate.

Previous research has identified democracy, colonial background, economic resources, state capacity, and decentralization as factors determining this decision (Baldwin 2016; Boone 2003; Herbst 2000). I argue that although these determinants might lead to differences on the national level, they are unlikely to affect the local relationship between the state and traditional authorities. This leads to Hypothesis 3:

**Hypothesis 3.** *Determinants of constitutional integration (democracy, colonial background, etc.) do not independently explain whether traditional leaders act as substitutes or complements to the state.*

Baldwin (2016) identifies a traditional leader's embeddedness as a primary determinant of their influence and strength. Traditional authorities 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. Conceptually, traditional authorities in both institutionalized and noninstitutionalized settings need to be embedded to remain effective and influential. When institutionalized, traditional authorities

work closely with the state and obtain resources from it, but their contribution comes from local knowledge and influence, which will be higher when embedded, as discussed in the *Zambian case* by Baldwin (2016). When not institutionalized, traditional authorities rely predominantly on the population for contributions and support, which creates incentives to be embedded. The framework presented above adds an additional component to understanding the power and effectiveness of traditional authorities. In situations where embeddedness can be plausibly expected to be the same, I offer institutional integration as a primary determining factor of whether traditional authorities are complements or substitutes to the state. State capacity and its interaction with institutional integration are thus two additional determinants in the influence of traditional authorities, alongside embeddedness.

This paper examines several implications from the framework presented above. First, the theory predicts that traditional authorities integrated via a country's constitution will be held in higher esteem when state capacity is high compared with when state capacity is low. Second, and conversely, when traditional authorities are not integrated in a country's constitution, they will be held in lower esteem when state capacity is high compared with when state capacity is low. In other words, the direction of the relationship between local state capacity and the local influence of traditional authorities depends on institutional integration. State capacity *increases* the influence of traditional authorities when they are institutionalized but *decreases* the influence of traditional authorities when they are not institutionalized.<sup>1</sup> Third, whether the two are complements or substitutes matters for local development. If institutional integration does indeed determine whether traditional authorities are complements or substitutes of the state, then we would expect the coefficient of state capacity on development to be *larger* when traditional authorities are institutionally integrated.

## DATA AND EMPIRICAL STRATEGY

To test the presented hypotheses, this study requires measures of the local influence of chiefs, development, constitutional integration, and state capacity, as well as an identification strategy to identify changes in state capacity.<sup>2</sup>

### Outcome Variables

How can we measure the primary outcome variable of the conceptual framework, the local influence of traditional authorities? The Afrobarometer survey offers

the most promising approach to compare attitudes toward traditional authorities in a large number of countries. It contains questions on how much influence traditional authorities have in the community, whether they are seen as corrupt or trustworthy, and how many times the respondent has been in contact with their traditional leader. I combine these into a *z*-score of the *perceptions of traditional authorities* in the community. This is the main outcome variable, which operationalizes how much influence traditional leaders have in their community.<sup>3</sup> It does not include direct measures of the traditional leaders' input into local public goods provision, as they are not part of the Afrobarometer. I assume that traditional leaders who are influential in their community and active in local public goods provision will be perceived more positively by the population, as measured in the *z*-score. A list with the exact question wording can be found in the Supplementary Materials. I also show robustness to using the individual variables instead of the index and leaving out individual components. Specifically, I use the third, fourth, fifth, and sixth rounds of Afrobarometer (Afrobarometer 2017) conducted between 2005 and 2015. For each respondent, Afrobarometer data contain the town or village of residence, which have been geocoded by AidData (BenYishay et al. 2017).<sup>4</sup>

Additionally, Hypothesis 2 predicts that state capacity will have a larger effect on service delivery when traditional authorities are institutionalized. A measure of service delivery comparable across countries comes from the DHS. The DHS data contain demographic information on households and data on the provision and use of health services. I construct a development index described in detail in the Supplementary Materials. I use all geocoded data available for the period (2002–2015) in 17 countries, those surveyed by the Afrobarometer plus the DRC.<sup>5</sup> The sample is visualized in Panel A of Figure 1. The Afrobarometer and DHS surveys are both designed to be representative at the regional level and are similar in their sampling strategies, survey design, and enumeration strategy. As, 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 geocoded data.

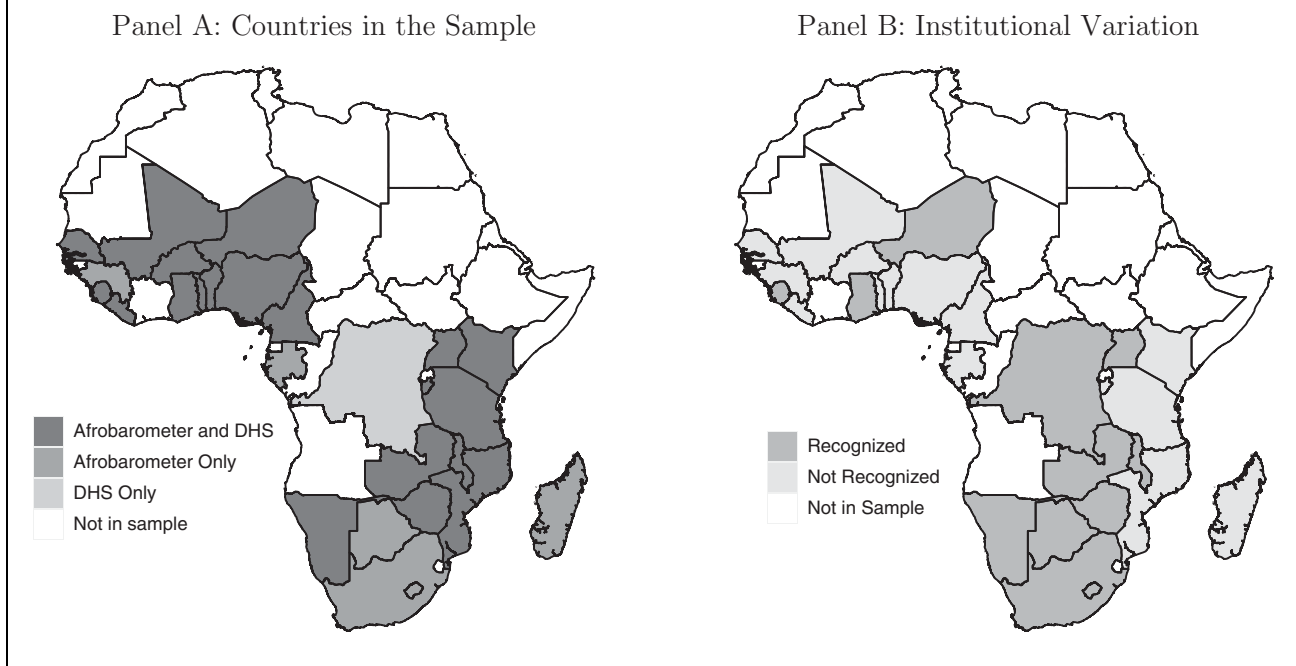
<sup>1</sup> Following the insights of Van der Windt et al. (2019), to determine the direction of the relationship one needs to look at causal estimates and not correlations of attitudes.

<sup>2</sup> Replication data are available at Henn (2022).

<sup>3</sup> Not every location may have a traditional leader. Logan (2009) for example finds that not all Afrobarometer respondents in round 1 report “having a traditional leader, chief or headman.” However, with the exception of South Africa, most respondents do have a traditional leader with the proportion varying from 55% to 99% by country. An absence of a village chief could clearly affect the component “Contact with Traditional Leader” but is less likely to affect the other components.

<sup>4</sup> I restrict my sample to the respondents geocoded at the town/village level, as opposed to the administrative level.

<sup>5</sup> The exact location of respondents is scrambled (up to 5 km in most cases and up to 10 km in rare cases). Although the majority of respondents is scrambled within their administrative division, I run a conservative robustness check where I weigh observations by the inverse probability that they are misassigned in column (7) in Table B3.

**FIGURE 1. Map of Sample**

### Institutional Variation

Data on institutional variation are obtained by examining the constitutional role of traditional authorities in every country in the sample. The text of all constitutions comes from the Constitute Project.<sup>6</sup> For each country, I have coded a binary variable, *Recognized*, whether the constitutions give traditional authorities an official role—for example, 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 authorities. Panel B in Figure 1 shows which countries have institutionalized traditional authorities via their constitution.<sup>7</sup> Moreover, as an alternative measure I assess whether village chiefs receive a salary from the state and also use a dataset of constitutional chief inclusion compiled by Baldwin (2016) as robustness check.

### Measuring State Capacity

To compare the effect of variation in state capacity within country, this study requires a measure that (a) is available (and comparable) for multiple countries in Africa and (b) varies at a subnational level.

I approximate state capacity by the physical distance to state institutions (Fergusson, Larreguy, and Riaño

2022). The ability of state agents to govern and implement policies in a given location decreases the farther away they are (Brinkerhoff, Wetterberg, and Wibbels 2018; Stasavage 2010). This paper posits that the relationship between distance and capacity is at work for most state agents, such as the tax collector, or officials tasked with overseeing infrastructure and service delivery. It works via at least three mechanisms: first, the cost of implementing policies and administrating increases farther away from the local state headquarters; second, overseeing the work of state agents becomes more difficult; and third, areas farther away from the local headquarters are typically less populated and have lower economic activity, which decreases the state's interest.

The relationship between distance and state capacity is especially relevant in the African context, where governments are heavily resource constrained and historically struggle to exercise power across their territory (Herbst 2000; Mamdani 1996). However, simply using the distance to the national capital as a measure of state capacity would limit this study and leave out important variation. The national capital is not the only location of state institutions. Aware of the difficulty of governing from afar, central states outsource many functions to lower-level administrative divisions such as provinces or districts in the form of either decentralization or deconcentration. The local governments of these units are located at the administrative headquarters, which also house local branches of state institutions such as national ministries or the police. The administrative headquarters are thus an important seat of state capacity.

I constructed a dataset with the administrative units and their headquarters for 28 African countries

<sup>6</sup> <https://www.constituteproject.org>.

<sup>7</sup> For each constitution I noted the year of its creation and the date of recent amendments. No country in the sample experienced changes to the institutionalization of traditional authorities during the study period.

surveyed in the Afrobarometer and DHS.<sup>8</sup> I identified the two administrative divisions most involved in public goods provision and created a list of all units, their headquarters, size, and population at the last census. This produces over 5,700 headquarters in 51 administrative divisions. I then geocoded the location of all headquarters using GoogleMaps.com, GeoNames.org, OpenstreetMap.org, Statoids.com, and Wikipedia.org. I use satellite imagery from Google Maps to verify that the coordinates fall on a settlement. To determine which administrative unit a given village belongs to, I obtained shapefiles of all 51 administrative divisions in the 28 countries using GADM.org, Humanitarian Data Exchange, and the countries' statistical offices. I tracked all changes to the administrative boundaries and headquarters since 2000. I calculated a village's distance to its administrative headquarters as well as the distance to the closest administrative boundary. Table A1 in the Supplementary Materials provides a list of the countries in my sample and the administrative units that are used. The data of geocoded headquarters and shapefiles, as well as the code to calculate the distances, are available on the author's website. An example of the data can be seen in Figure B2 in the Online Appendix, which maps the administrative headquarters, boundaries, and Afrobarometer observations in the regression sample in Burundi.

To validate distance to administrative headquarters as a measure of state capacity, I create a *State Presence Index* using outcomes typically associated with state presence or capacity from the Afrobarometer and DHS.<sup>9</sup> Table A3 and Figure A1 in the Supplementary Materials show a consistent negative relationship between state presence outcomes and distance to administrative headquarters.

Still, using distance does not solve the endogeneity problem, as it is also correlated with other confounding variables and village locations are not random.

## Using Administrative Borders as Identification

I identify the effect of variation in state capacity using a spatial RDD around internal administrative borders (Keele and Titiunik 2015). A spatial RDD measures the local treatment effect at a geographic boundary that splits observations into treated and control areas. These designs offer a precise causal estimate at the cutoff if two assumptions are satisfied: no sorting of observations around the boundary and all other relevant factors vary smoothly at the boundary. Given that the effect is only estimated at the boundary, it is important to consider how results translate to the rest of the sample. Implementing a spatial RDD requires restricting the sample to observations close to the boundary,

defining the treatment at the 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 sides of administrative boundaries within a country. Figure A2 in the Supplementary Materials, which shows state boundaries in Nigeria, visualizes the design. Although people, goods, and services move freely across these administrative borders, government officials tasked with administering specific units usually do not. Using distance to administrative headquarters as a measure of state capacity, we observe a discrete change in the distance to the state at the administrative border because the responsible administrative headquarters changes. At the same time, the distance to relevant nonstate locations does not change at the border. People can cross the internal border to go to the market, find employment, or travel. In fact, most of these internal boundaries are barely noticeable on the ground. Therefore, administrative boundaries will create a discontinuity in state capacity, whereas other observable and unobservable confounders should vary smoothly across the border.<sup>10</sup>

Not all local state services will respect every internal boundary. Some jurisdictions are based on higher-level administrative boundaries. For other public services (hospitals, for example) people can cross internal boundaries to use them. If there are spillover effects across the boundary (similar to those considered by Keele and Titiunik 2015), villages on the side far away from the state could experience slightly more state capacity. They would thus be "treated" less than the treatment variable suggests. This would lead to the estimates being downward biased. Still, to alleviate concerns about this potential violation of the stable unit treatment value assumption, as a robustness test I implement a "donut RDD," which involves removing observations within 1 km of the administrative boundary. In addition, I account directly for spillovers by controlling for a village's distance to the neighboring headquarters, and I also repeat my analysis including only the highest level of administrative divisions (states, provinces, regions, etc.), which should be less affected by this concern.

I restrict the sample to villages within 5 km of an internal administrative border *within* a country, for example, the boundary between two provinces or two districts. Villages are then assigned to "border regions," an area on both sides of an internal administrative border. That is, the border region variable indicates for each observation which border between two specific administrative units is closest and within 5 km. For example, a village in Nigeria is assigned to the border region "Yobe-Borno" if it is in "Yobe" state and within 5 km of "Borno" state or if it is in "Borno" state and within 5 km of "Yobe" state. Figure A4 in the Supplementary Materials illustrates border region assignment

<sup>8</sup> I omitted North African countries, the kingdom of Eswatini, and island nations (Cape Verde, Mauritius, Sao Tome).

<sup>9</sup> The exact variables used are explained in the Supplementary Materials.

<sup>10</sup> Table A6 and Figures B4–B5 test this directly by showing the effect of treatment on a range of geographical and historical controls.



in the case of districts in Malawi. I then include binary indicator variables for each border region in my specification. By including such a border region fixed effect, I only compare villages at the same internal border. 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.

Next, I create a *remoteness treatment* variable by assigning villages as being treated if they are on the side of a border region farther from their respective administrative headquarters than the villages on the other side of the border are from their headquarters, as measured by the mean distance of villages on each side. Using the mean assigns the same treatment to all villages on one side, which allows a cleaner implementation of the RD specification.<sup>11</sup>

*Treatment: (Mean Distance of Villages on Own Side of Border Region – Mean Distance of Villages on Other Side of Border Region) > 0.*

There is an important difference between this design and typical spatial RDDs: usually the treatment variable varies uniformly at the boundary and only at the boundary. However in this setting, observations within and across treated geographical areas also differ in their distance to the geographical headquarters, creating variation in treatment intensity. To account for this, I augment the typical RDD by creating an intensive treatment measure and incorporating heterogeneity in the effect of distance on state capacity by country and administrative division.

First, the binary treatment variable disregards this 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 headquarters is bigger on one side than on the other.

*Intensive Treatment: Treatment × (Mean Distance Own Side – Mean Distance Other Side).*

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 headquarters. Results in the Robustness Section indicate that this method generates findings qualitatively similar to those from 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.

<sup>11</sup> This could induce some measurement error, as villages could be classified as treated based on the mean distance even if their own distance is smaller than the distance of observations on the other side of the border region. Less than 7% of the final sample has observations with such misclassification issues. In the Supplementary Materials I show robustness to removing these observations.

## Specification

The identification strategy leads to the following main specification:

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

where the dependent variable  $Y_{v,s,r}$  is the outcome of interest in village  $v$  situated on side  $s$  of the border region  $r$ , and  $Tint_s$  is the treatment intensity indicating by how much the distance to administrative headquarters increases on side  $s$  of border region  $r$ . To account for a village's location relative to the boundary  $DB_v$ , we use the distance of village  $v$  to the administrative border; the distance to the border is interacted with a binary treatment variable  $T_s$  to control for the linear effect of distance to the border on the treated side;  $\chi_v$  is a vector of geographical and historical controls for village  $v$ , which are pretreatment including the size of its administrative unit (a full list and detailed descriptions of the methodology and sources of the controls can be found in the Supplementary Materials); and  $BR_r$  are the border region fixed effects. Standard errors are clustered at the administrative unit level. The coefficient of interest is  $\beta_1$ . It signifies the jump at the border. The coefficient  $\beta_2$  on  $DB_v$  controls for the effect of distance to the border on the side close to the state, and the coefficient  $\beta_3$  on  $T_s \times DB_v$  controls for the effect of distance to the border on the side farther from the state.

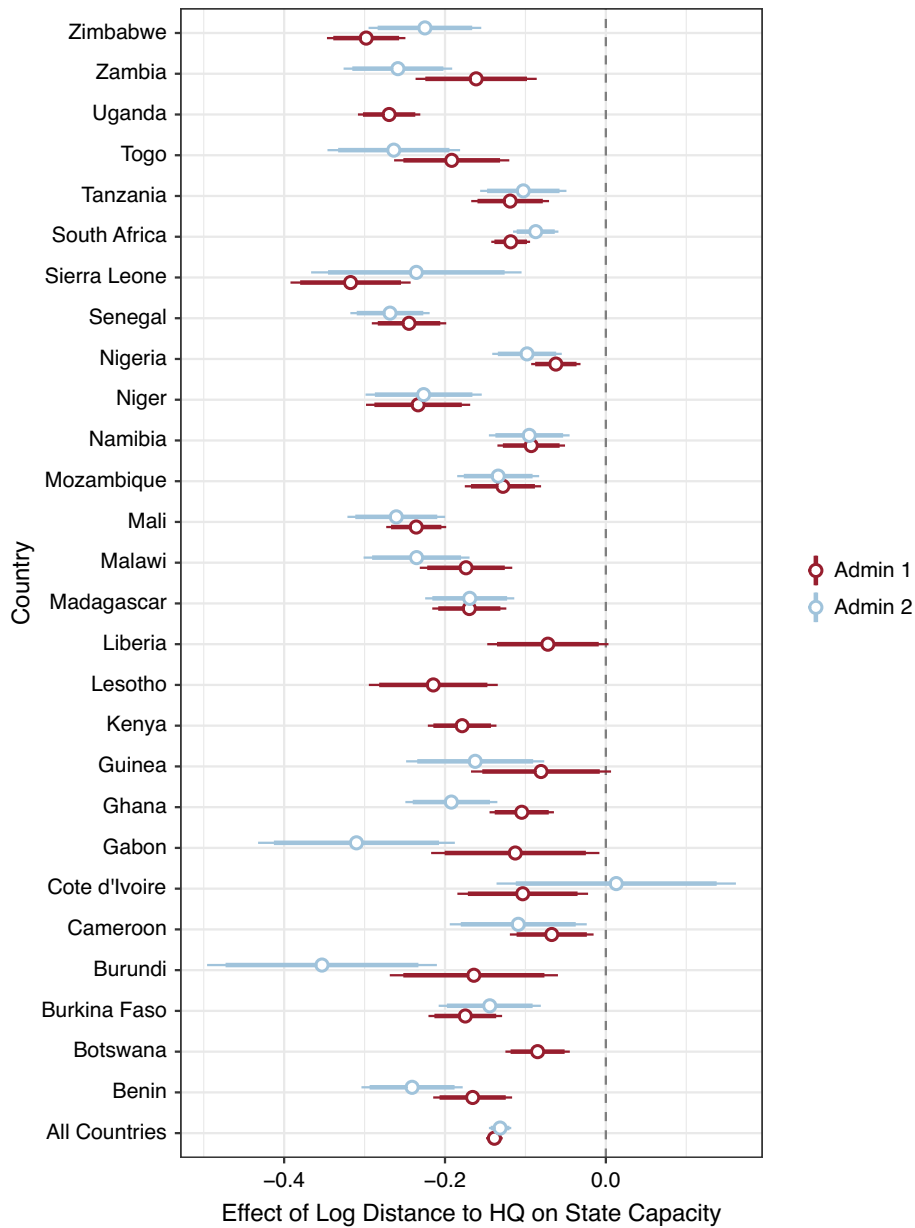
Distance to administrative headquarters is likely to have a different effect on state capacity depending on the country and administrative division. Some countries assign different responsibilities and resources to the province or district level, resulting in a different distance–state capacity relationship. Figure 2 illustrates these differences by showing the different coefficients of distance on an index of state-presence-related outcomes by country and administrative division. Treatment at the boundary will differ across cases. After first showing the result using the intensive treatment variable outlined above, I add a second addition to the typical RDD and account for such heterogeneity in the main specification by scaling the intensive treatment measure by the inverse of these coefficients. In other words, state capacity at an administrative border changes based on how much farther the administrative headquarters is on one side than on the other side multiplied by how much distance matters in the given country and administrative division.<sup>12</sup>

*Scaled Treatment: Intensive Treatment × (Coefficient of Distance on State Presence).*<sup>13</sup>

<sup>12</sup> Because this country- and administrative-unit-specific gradient of state presence might be endogenous to country-level decisions, I also run the specification without scaling of the treatment.

<sup>13</sup> The coefficient is estimated separately for each administrative division in each country using the following equation:  $StatePresence_v = \beta_0 + \beta_1 LogDistance_v + \beta_2 SurveyRound_v + \varepsilon$ .

**FIGURE 2. Correlation between State Capacity and Distance by Country and Administrative Division**



Note: This figure shows the coefficient of regressing log distance to administrative headquarters on the state presence index by administrative division and country. The results can be found in table form in the file “Full-models-Figures-2–4” in the article’s replication material at the *American Political Science Review* Dataverse (Tables 1–6) at Henn (2022).

This spatial discontinuity design relies on two fundamental 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. I test the validity of these assumptions and also show robustness to different choices for the main specification and the possible endogeneity of administrative borders and headquarters. I then introduce institutional variation by interacting the treatment

variable, distance to the border, and their interaction with an indicator of the constitutional recognition of traditional authority. The resulting specification can be seen in Equation 2, where  $Tint_s^*$  signifies the scaled intensive treatment measure and  $Recognized_c$  means a binary variable of whether traditional authorities are recognized by the constitution of the country. The coefficients of interests are  $\beta_1$  and  $\beta_5$ . The coefficient  $\beta_1$  signifies the effect of having low state capacity in noninstitutionalized countries and the combination of  $\beta_1$  and  $\beta_5$  signifies the effect of having low state capacity in institutionalized countries.

$$\begin{aligned}
Y_{v,s,y,c} = & \beta_0 + \beta_1 Tint_s^* + \beta_2 DB_v + \beta_3 T_s \times DB_v \\
& + \beta_4 Recognized_c + \beta_5 Tint_s^* \\
& \times Recognized_c + \beta_6 DB_v \times Recognized_c \\
& + \beta_7 T_s \times DB_v \times Recognized_c + \beta_8 \chi_v \\
& + \beta_9 \chi_v \times Inst_c + \beta_{10} BR_r + \varepsilon_{v,s,r}. \quad (2)
\end{aligned}$$

The data are aggregated to the location (i.e., village or neighborhood) level. Restricting to locations with at least one observation within 5 km of each side of a border and dropping extreme outliers results in a sample of 1,032 locations for the Afrobarometer data and 3,563 for the DHS data. Table A2 in the Supplementary Materials shows the summary statistic for this regression sample.

## RESULTS

First, I test whether state capacity—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 1 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. Increasing treatment by one standard deviation reduces the index of

state presence outcomes by a tenth of a standard deviation.

I now turn to the main prediction of the theoretical framework, Hypothesis 1: institutionalization determines whether the perceptions of traditional authorities act as complements or substitutes to state capacity. I first present the correlation in the full Afrobarometer sample before moving to the main result using different RDD specifications. I then look at the effect in the pooled sample of all countries and finally split the sample by institutionalization of traditional authorities.

Table 2 shows the effect of interacting low state capacity treatment with institutional integration of traditional authorities on the local perceptions of the traditional authorities' influence, corruption, and trustworthiness as measured by the traditional authorities z-score from the Afrobarometer data. Column 1 starts by looking at the correlation between log distance to administrative headquarters and the z-score in the full Afrobarometer sample. Column 2 restricts the sample to villages close to an administrative boundary and implements the regression discontinuity design, first with a binary indicator for whether the village is on the side farther away from its administrative headquarters while controlling for the distance to the administrative headquarters and its interaction with the treatment variable. Column 3 includes border region fixed effects and clusters standard errors at the district level. Column 4 replaces the treatment variable with an intensive measure of how much the distance to the administrative headquarters on one side is larger than on the other side of the internal administrative border. Column 5 includes geographic controls. Column 6 is the paper's main specification and scales the treatment indicator by how much distance affects state capacity, following Figure 2. Throughout the different specifications, the results consistently show the same finding: the treatment effect is positive, meaning traditional authorities are perceived more favorably when the state is weak and they are not institutionalized. Yet, the interaction of the low state capacity treatment and institutionalization is negative, indicating that traditional authorities lose influence farther away from the state when they are institutionalized. A one-standard-deviation increase in treatment decreases the perceptions of traditional authorities by two-tenths of a standard deviation when traditional authorities are institutionalized. Overall the results show clear evidence in support of Hypothesis 1.

Table 3 estimates the effect of the low state capacity treatment when not considering the institutional role of traditional authorities and then tests Hypotheses 1.A and 1.B separately by subsetting the data by countries where traditional authorities are not recognized in the constitution (column 3) versus countries where they are recognized (column 4). Confirming the two hypotheses, the results show heterogeneity by institutional context.

Columns 2–4 in Table A5 in the Supplementary Materials show the result separately for the different components of the traditional leader z-score. Respondents farther away from the state report their

**TABLE 1. Effect of Treatment on State Presence Index**

	Dependent variable	
	State presence index	
	Afrobarometer	DHS
	(1)	(2)
Remoteness treatment	-0.113** (0.048)	-0.082*** (0.018)
Fixed effects	Border region	Border region
Controls	✓	✓
Observations	1,032	3,563
Adjusted $R^2$	0.510	0.643

Note: This table shows the results of specification 1 with state capacity as the dependent variables. The treatment variable is the intensive measure of how much the distance to the administrative headquarters is larger than on the other side of the internal administrative border. Standard errors, clustered at the administrative unit level, are shown in parentheses. Full model results can be found in the file "Full-models-Tables-1–5" in the article's replication material at the *American Political Science Review* Database (Table 1) at Henn (2022); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

**TABLE 2. Effect of Distance to State on Perceptions of Traditional Authorities**

	Dependent variable					
	Traditional leader z-score					
	Ordinary least squares	Binary treatment	Fixed effects	Intensive treatment	Controls	Scaling
(1)	(2)	(3)	(4)	(5)	(6)	
Log distance to admin. HQ	0.152*** (0.020)					
Distance × recognized	-0.066** (0.029)					
Remoteness treatment		0.512** (0.213)	0.321** (0.143)	0.126*** (0.047)	0.164*** (0.059)	0.154*** (0.055)
Treatment × recognized		-	0.857*** (0.061)	-0.582*** (0.075)	-0.136** (0.067)	-0.208***
Fixed effects	-0.219*** (0.275)	Admin. unit	Border region	Border region	Border region	Border region
Controls	✓	×	✓	✓	✓	✓
Observations	10,962	801	801	801	703	703
Adjusted R <sup>2</sup>	0.547	0.044	0.640	0.637	0.638	0.639

Note: This table shows the results of specification 1 by institutional context with the traditional leader z-score as the dependent variable. Column (1) shows the correlation between log distance and traditional leader z score in the full sample. Column (2) uses the RDD with a binary treatment indicator. Column (3) includes border region fixed effects and clusters standard errors at the district level. Column (4) has an intensive treatment indicator. Column (5) includes geographic controls. Column (6) is the paper's main specification and scales the treatment indicator by how much distance affects state capacity, following Figure 1. Standard errors, clustered at the administrative unit level, are shown in parentheses. Full model results can be found in the file "Full-models-Tables-1-5" in the article's replication material at the *American Political Science Review* Dataverse (Table 2) at Henn (2022); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

traditional leader to be more influential, more trustworthy, less corrupt, and have more contact with them when not institutionalized. Yet, in countries where traditional authorities have an institutional role, respondents farther away have lower levels of all four indicators. In other words, all components of the z-score show a positive effect of the low-state-capacity treatment at the border and a negative coefficient of its interaction with institutionalization.

Whether traditional leaders are complements or substitutes to state capacity has important implications for local development, as outlined in Hypothesis 2. If traditional leaders are complements to state capacity, we would expect the gap in public service delivery between high-state-capacity localities and low-state-capacity localities to be large. In contrast, when traditional leaders are not institutionalized, they are better able to compensate for state weakness and thus narrow the gap. Using data from the DHS surveys, Table 4 tests this prediction.

Column 1 confirms that lower state capacity is associated with lower development outcomes. 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. A one-standard-deviation increase in distance to state headquarters being associated with a 0.1 standard-deviation drop in development.

Hypothesis 2 theorized that institutional integration of traditional leaders mediates how local state capacity affects rural welfare. The components of the development index, literacy, wealth, and access to water, are local development outcomes that traditional authorities 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.<sup>14</sup> By allocating land, administering local justice, and organizing public works (e.g., road maintenance), traditional leaders can facilitate economic development in their village.

Column 2 in Table 4 reveals a pattern that confirms Hypothesis 2. Countries where traditional leaders are not institutionally integrated via the constitution exhibit a smaller drop in development farther away from the state. This indicates that traditional leaders are better able to step in and compensate for the weak state when they are not integrated into it. Moreover, the effect of institutional integration is sizable. The coefficient of state capacity on development is almost three times larger in countries in which village chiefs are integrated into national institutions compared with countries where they are not integrated. Note that

<sup>14</sup> Qualitative Interview L5 and L6, May 2018, North Kivu, DRC.



**TABLE 3. Effect of Distance to State on Perceptions of Traditional Authorities by Constitutional Recognition**

	Dependent variable			
	Traditional leader z-score			
	Pooled sample	Pooled sample	Not recognized	Recognized
	(1)	(2)	(3)	(4)
Remoteness treatment	-0.010 (0.033)	0.154*** (0.055)	0.148** (0.057)	-0.068* (0.038)
Treatment × recognized		-0.219*** (0.067)		
Fixed effects	Border region	Border region	Border region	Border region
Controls	✓	✓	✓	✓
Observations	703	703	246	457
Adjusted $R^2$	0.627	0.639	0.544	0.653

Note: This table shows the results of ordinary least squares regressions by institutional context with the traditional leader z-score as the dependent variable. Standard errors, clustered at the administrative unit level, are shown in parentheses. Full model results can be found in the file "Full-models-Tables-1–5" in the article's replication material at the *American Political Science Review* Dataverse (Table 3) at Henn (2022); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

**TABLE 4. Effect of Distance to State on Development**

	Dependent variable	
	Development index	
	(1)	(2)
Remoteness treatment	-0.092*** (0.016)	-0.063*** (0.017)
Treatment × recognized		-0.100*** (0.033)
Fixed effects	Border region	Border region
Controls	✓	✓
Observations	3,563	3,563
Adjusted $R^2$	0.695	0.698

Note: This table shows the results of ordinary least squares regressions with development outcomes from the DHS survey as the dependent variable. Standard errors, clustered at the administrative unit level, are shown in parentheses. Full model results can be found in the file "Full-models-Tables-1–5" in the article's replication material at the *American Political Science Review* Dataverse (Table 4) at Henn (2022); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

these results do not show that institutional integration improves or decreases welfare in the *aggregate* but only how it shapes the effect of varying state capacity on local welfare.

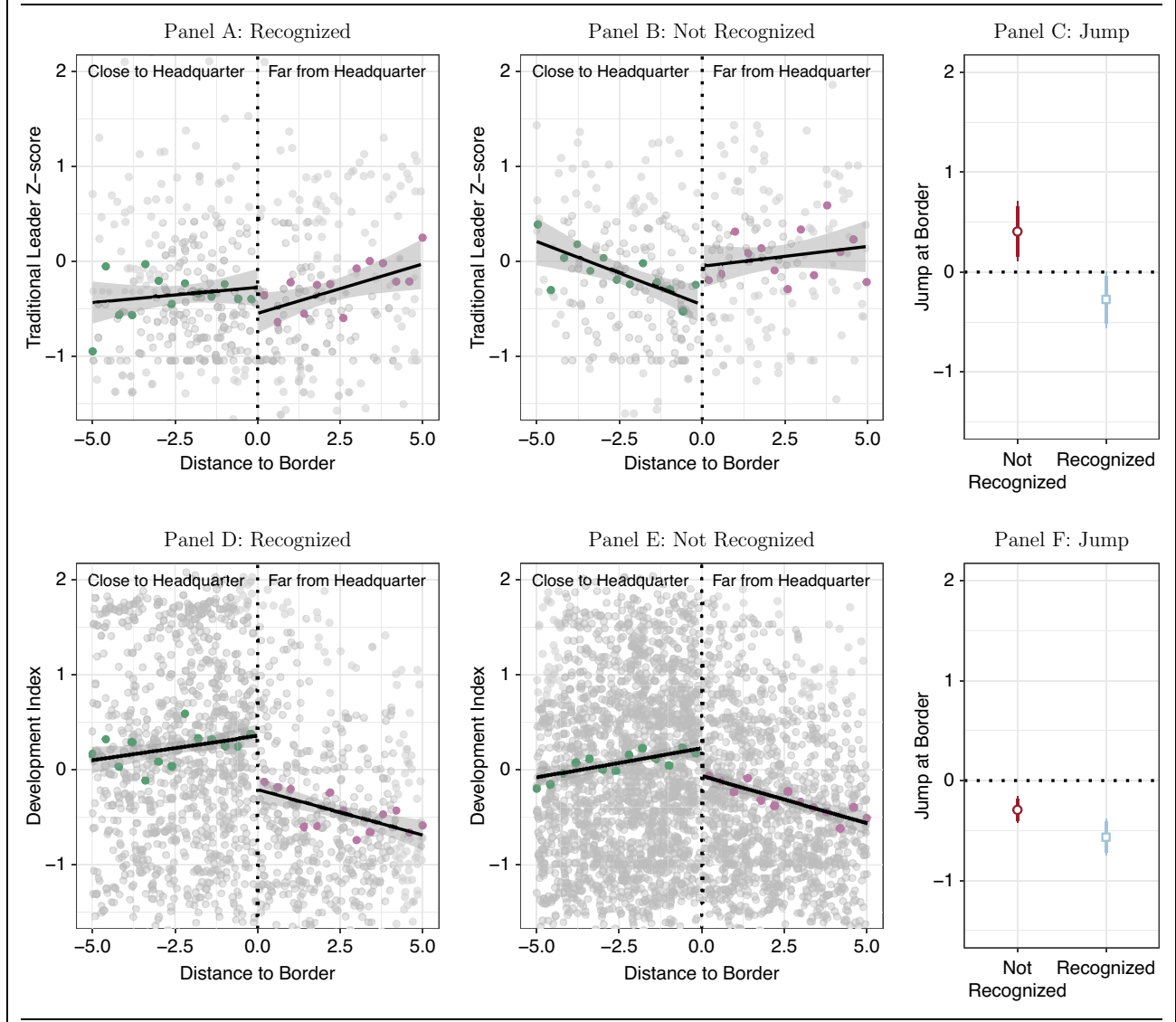
Table A4 in the Supplementary Materials shows the result separately for each component of the development index and reveals the same heterogeneity across measures. The results on development outcomes confirm Hypothesis 2 and provide further evidence that the relationship between the state and traditional authorities is shaped by institutional integration, with important consequences for local welfare.

Figure 3 visualizes the two main findings using the raw data. It shows the outcome variables plotted against the distance to the border for institutionalized countries (column 1) and noninstitutionalized countries (column 2). It also includes the bin scatter and the linear relationships between distance to the border and the outcome on both sides of the border. They help visualize the main feature of the RDD, the jump at the border, which is highlighted by column 3. Two patterns emerge: First, at the boundary, switching from the side close to the headquarters to the side farther from the headquarters results in opposite jumps in the perceptions of chiefs, depending on whether chiefs have an institutional role (Panel C). Second, at the boundary, switching from the side close to the headquarters to the side farther from the headquarters results in a jump in development outcomes of double the size when chiefs have an institutional role compared with 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 or controls.

The results are in line with Hypotheses 1 and 2 and indicate that the institutionalization of traditional authorities does indeed determine whether they are substitutes or complements. The conceptual framework has offered two channels through which this could happen.

First, I have argued that traditional authorities in noninstitutionalized settings are perceived favorably when compared with a weak state, whereas traditional authorities in institutionalized settings get blamed for the shortcomings of the state. Columns 6 and 7 in Table A5 provide some evidence for this mechanism. Traditional leader performance is rated higher when the state is far away but only when traditional authorities are not institutionalized.

**FIGURE 3. Raw Data around Cutoff**



Notes: Scatter, bin scatter, and 95% confidence intervals with the traditional leader 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. Panels C and F visualize the different jumps at the border. The results can be found in table form in the file “Full-models-Figures-2–4” in the article’s replication material at the *American Political Science Review* Dataverse (Table 7) at Henn (2022).

When they are, respondents farther away rate their traditional leader’s performance worse. Similar heterogeneous effects are found for whether the traditional leader listens to the concern of their population. Importantly, perceptions about the performance of other actors such as the president or members of parliament do not follow this heterogeneous pattern.

A second way complementarity in institutionalized settings could occur is through resources. Recognized traditional authorities receive salaries, development grants, and other resources from the state, some of which might be unavailable to traditional authorities in settings with low state capacity. If they use some of

these resources to provide public services, their ability to do so will be correlated with state capacity. Nonrecognized traditional authorities do not have an official way to obtain resources from the state. Instead they often rely on the population for contributions for which they sometimes compete with the state, making them substitutes. I coded whether traditional authorities receive an official government salary at the country level. There is a high degree of overlap: only two countries where chiefs are recognized do not give traditional authorities a salary and only traditional authorities in two countries where they are not recognized receive a salary. Column 2 in Table A7 shows the result interacting the RDD

specification with the binary salary indicator instead of recognition. The results are almost identical. Although this does not provide direct evidence that institutionalization matters through resources, it is suggestive evidence.

An alternative channel could be through changes in the local accountability of traditional authorities. Baldwin and Mvukiyehe (2015) established that local processes of accountability can be crucial for chief performance. Are traditional authorities more likely to be selected by the state when institutionalized? In the vast majority of institutionalized settings, the selection process follows custom, remains largely local, and if it requires state approval is largely limited to rubber-stamping. Still, it is possible that institutionalized traditional authorities become more accountable to the state and are more responsive to state officials rather than to the population. The extent to which this channel differs from the recognition-and-resources channel outlined above could be investigated in future studies.

## DETERMINANTS OF INSTITUTIONAL INTEGRATION

The spatial RDD provides exogenous variation in state capacity, allowing for a causal interpretation given certain assumptions whose validity I test. However, the main finding of the paper comes from the interaction of state capacity with a country's institutional integration of traditional authorities. Naturally, this raises the question of which factors have determined the institutional integration of traditional authorities and whether they could also explain the results. Below, I provide an overview of the main determinants of institutional integration according to existing research. I then show that none of these independently explains the findings.

Previous research has argued that democratization and its electoral incentives make governments more likely to recognize customary authority in an attempt to use them as electoral agents (Baldwin 2016). British colonizers were more likely to use existing traditional hierarchies as administrators (Müller-Crepon 2020). 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 traditional authorities (Herbst 2000) and decentralization policies determine how much local influence and independence the central state seeks to establish (Bardhan and Mookherjee 2006).

Democracy, colonial history, economic resources, state capacity, and decentralization are also likely to affect traditional authorities and the state. As a result, states and traditional authorities could be *on average* different in countries where traditional authorities are institutionalized compared with in countries where they are not. Yet, such differences at the country level are not enough to seriously cast

doubt on the findings. To illustrate this, we can consider the power of traditional authorities. States might be more likely to institutionalize traditional authorities when they are more influential. In that case, we would find traditional authorities in institutionalized settings to be more influential, not due to institutionalization but because their influence made them more useful partners to the state. However, the conceptual framework and empirical analysis has focused on variation of the influence of traditional authorities *within a country*. That traditional authorities in institutionalized settings might be on average more influential than in countries where they are not institutionalized does not explain how the influence of traditional authorities responds heterogeneously to state capacity. In other words, the RDD identifies the effect of *local* changes in state capacity on the perceptions of traditional authorities and development. They differ dramatically by institutional integration. For a determinant of institutional integration to independently explain the findings, it must result in traditional authorities and development being *differently* affected by low levels of state capacity.

To first test whether institutional linkages correspond with other country-level variation, I collect several country-level variables and perform two-sided *t* tests. I focus on variables in three categories: (a) historical institutions such as precolonial 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 A13 shows the covariate balance. Out of 22 variables, only five differ significantly between locations where traditional leaders are institutionalized and those where traditional leaders are not institutionalized. To test whether these differences are driving the results, I interact the main specification with these country-level variables. The results for the 10 variables with the lowest *p*-value in the *t* test are shown in Table 5 for the Afrobarometer data and Table B6 for the DHS data. The interaction with all other variables is shown in Tables A14 and A15.

The results confirm Hypothesis 3. Even when interacting treatment with these potential confounders, the interaction of treatment and institutionalization remains sizable, negative, and statistically significant.<sup>15</sup> I also rerun the main specification while only including former British colonies (column 2 in Table A12). Institutional integration is more common in Southern Africa. The heterogeneous effect of

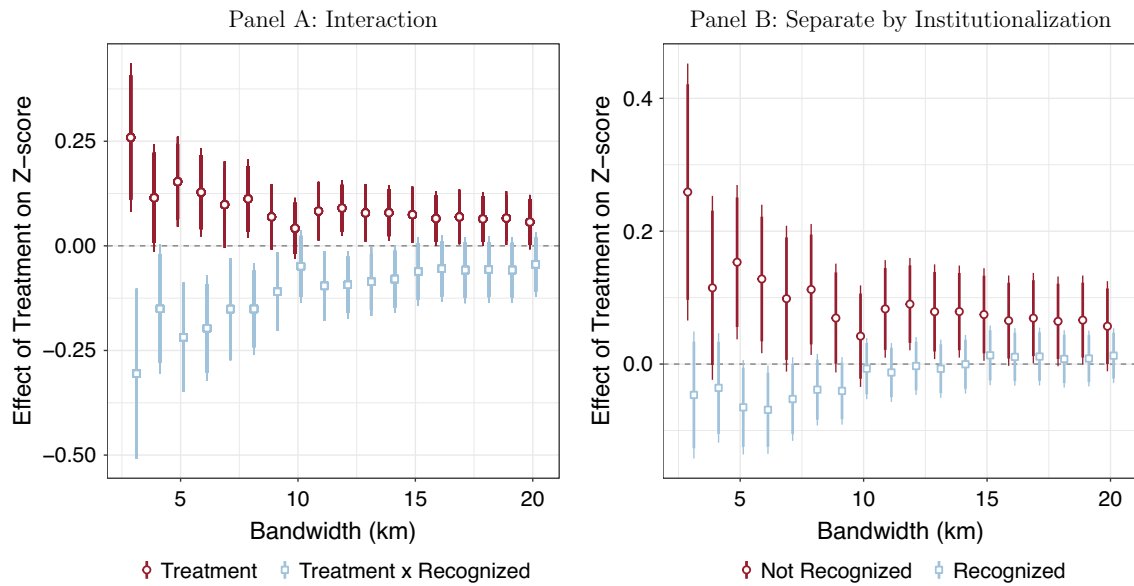
<sup>15</sup> The coefficient when including malaria suitability is not significant ( $p = 0.12$ ), yet it goes in the same direction and is of similar magnitude. In the main specification, I control for a more local measure of malaria suitability.

**TABLE 5. Robustness: Interaction with Country Variables**

	Dependent variable									
	Traditional leader z-score									
	Pop. 1400	Brit. colony	Brit. legal	Settler colony	Gemstones	Ruggedness	Malaria suit.	Dem. index	Rule of Law	Decentral.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Remoteness treatment	0.121*** (0.044)	0.109*** (0.041)	0.102** (0.040)	0.121*** (0.043)	0.104** (0.051)	0.118*** (0.044)	0.107* (0.058)	0.125*** (0.045)	0.107** (0.049)	0.147*** (0.047)
Treatment × recognized	-0.169*** (0.058)	-0.155** (0.060)	-0.144** (0.058)	-0.146** (0.058)	-0.130** (0.054)	-0.169*** (0.055)	-0.134 (0.085)	-0.167*** (0.052)	-0.144*** (0.055)	-0.169*** (0.058)
Treatment × country variable	0.016 (0.043)	-0.009 (0.034)	-0.016 (0.033)	-0.046* (0.026)	-0.030 (0.043)	-0.015 (0.021)	0.031 (0.052)	0.007 (0.021)	-0.016 (0.037)	-0.037 (0.029)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	703	703	703	703	703	703	703	703	703	633
Adjusted R <sup>2</sup>	0.637	0.637	0.637	0.639	0.641	0.640	0.640	0.637	0.638	0.607

Note: This table includes the interaction of treatment with several country-level variables to control for possible confounding factors. Border region fixed effects are included. Standard errors, clustered at the administrative unit level, are shown in parentheses. Full model results can be found in the file “Full-models-Tables-1–5” in the article’s replication material at the *American Political Science Review* Dataverse (Table 5) at Henn (2022); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



**FIGURE 4. Changing the Bandwidth**

Note: The results can be found in table form in the file “Full-models-Figures-2–4” in the article’s replication material at the *American Political Science Review* Dataverse (Tables 8–13) at Henn (2022).

institutional integration remains when excluding countries from Southern Africa.<sup>16</sup>

## ROBUSTNESS CHECKS

I show robustness to a range of different specifications and measurements, most notably, the validity of the assumptions underlying the RDD, different choices for the main specification, and the possible endogeneity of administrative borders and headquarters.

Table A6 and Figures B4–B5 demonstrate balance on geographical and historical characteristics. Table A8 shows low migration among respondents and no differential migration by state capacity. Figure B3 shows no indication for significant variation in density around the cutoff.

Figure 4 plots the main coefficients when changing the bandwidth. Institutionalization shapes the relationship between traditional leaders and the state at all bandwidths (Panel A). Panel B suggests that this is largely driven by traditional leaders who are not institutionalized. They show clear evidence of being substitutes for all bandwidths, thus confirming Hypothesis 1.A. Evidence of institutionalized traditional leaders as complements as stated by Hypothesis 1.B loses significance at bandwidths larger than 10 km.

The results also hold when implementing bias adjustments and when using alternative regression discontinuity specifications such as no geographic controls, binary

treatment variable, absolute distance, longitude-latitude specification, clustering at the highest administrative level, and removing observation where their own distance results in a different treatment assignment than the mean distance (Table A9).

To make sure outliers are not driving the results, I show robustness to dropping the most remote villages, using nonlogged distance, travel time, or restricting the sample to rural respondents (Table A10). Figure A3 leaves out individual countries one by one.

Spillovers in state capacity and thus violations of the stable unit treatment value assumption are a concern in this setting. To limit the amount of potential spillovers, Table A11 includes a “donut RD” that leaves out villages within 1 km of the border controls and specifications that control for the distance to neighboring headquarters and analyzes the first and second administrative divisions separately. Table A11 also includes Murdock-ethnicity fixed effects, instruments the location of headquarters with the most populated place in a given district in 1960, and shows no effects of distance to randomly drawn placebo headquarters.

Table A7 offers three alternative measures of institutionalization. Column (1) interacts the RDD with whether traditional leaders receive an official salary from the state and columns (2) and (3) include two measures from Baldwin 2016—namely whether the constitution protects or mentions chiefs. A full description of the robustness checks can be found in the Supplementary Materials.

Throughout the robustness checks, the results remain qualitatively the same: distance to the state is associated with a higher perception of traditional authorities when the state and traditional authorities are institutionally separated. When both are linked,

<sup>16</sup> There are only three cases of institutional integration outside of Southern Africa. The coefficient remains positive and sizable but loses significance.

traditional authorities act as complements and their perception is lower farther from the state. I also rerun all robustness checks for the DHS data, the results of which can be seen in Tables B3–B6.

## CONCLUSION

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

In this paper I have argued that whether traditional authorities are complements or substitutes is shaped by whether they are integrated into institutional structures of the state, measured by whether a country's constitution gives traditional authorities a formal role. I test this theory with a spatial RDD that uses distance of villages to their administrative headquarters as a measure of state capacity and compares villages in the border region of neighboring districts. Afrobarometer data confirm that traditional leaders farther away from the state are perceived less favorably when institutionalized but gain influence when not institutionalized. Furthermore, DHS data show that countries where traditional leaders are not institutionalized exhibit a smaller reduction in development outcomes when state capacity is low, indicating that traditional leaders are able to substitute for the state.

The results have implications for the relationship between traditional rulers and state capacity at the local and national level. Locally, it improves our understanding of the incentives of traditional leaders, citizens, and the state and the constraints they face in local governance and service provision. At the country level, the results offer a potential explanation for why in some African countries traditional leaders continue to play an important role but have been marginalized in others: it is the interaction of state capacity and the institutional integration of chiefs that determines how much space chiefs have to operate.

Furthermore, the findings shed light on where to direct investments in state capacity by the state and development projects by civil society and international organizations. When traditional authorities are institutionalized, it is crucial to invest in state capacity and development projects where the state is weak. Otherwise, these localities will be left behind, as traditional authorities cannot compensate for state weakness. When traditional authorities are not institutionalized, investments can be more widely distributed.

Regression discontinuity designs face a challenge of external validity. Do results hold further away from the cutoff and out of sample? Encouragingly, in the whole Afrobarometer sample the correlation of distance and the perceptions of traditional leaders is shaped by

institutionalization. This suggests that the causal estimates at the border translate to other settings. The study sample includes almost all countries in sub-Saharan Africa for which there are Afrobarometer data, and the results do not change when including or excluding individual cases. This bodes well for the findings translating to other cases on the continent and potentially beyond. Yet, some of the countries not surveyed by the Afrobarometer are distinctly more autocratic. Whether institutionalization shapes the relationship between traditional leaders and the state in these settings could be examined in future research.

## SUPPLEMENTARY MATERIALS

To view supplementary material for this article, please visit <http://doi.org/10.1017/S0003055422001137>.

## DATA AVAILABILITY STATEMENT

Replication files are available at the American Political Science Review Dataverse: <https://doi.org/10.7910/DVN/9JSSAJ>.

## ACKNOWLEDGMENTS

I am grateful to Alberto Alesina, Kate Baldwin, Robert Bates, Abhit Bhandari, Emily Breza, Peter Buisseret, Filipe Campante, Raj Chetty, Anne Degraeve, 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, Carl Müller-Crepon, Nathan Nunn, Pia Raffler, Gautam Rao, James Robinson, Cyrus Samii, Raul Sanchez de la Sierra, Priya Shanmugam, Michelle Torres, Elisabeth Wood, and four anonymous reviewers. I also thank seminar participants at Harvard, APSA, ASA, BREAD, Gothenburg, Harris, LSE, MPSA, NEUDC, NEWEPS, and WGAPE for their helpful comments and suggestions. Aimable Amani, Simeon Lukeno, Christian Mastaki, and Marakuja Kivu Research provided invaluable research assistance, and I am also grateful to Michelle Beckett for copyediting.

## FUNDING STATEMENT

Research funding was provided by the for Quantitative Social Science at Harvard.

## CONFLICT OF INTEREST

The author declares no ethical issues or conflicts of interest in this research.

## ETHICAL STANDARDS

The author affirms this research did not involve human subjects.

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