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Mapping state capacity in Africa: Professionalism and reach

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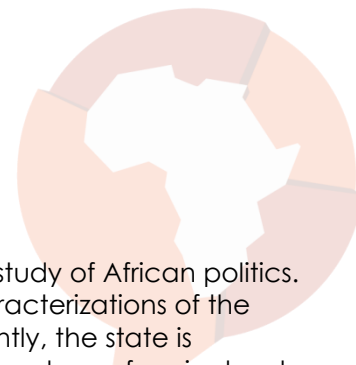
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Abstract

Whether depicted as bloated, extractive, or remote from the lives of ordinary citizens, the African state is widely seen to lack the necessary capacity to provide for the physical and material security of its citizens or to command legitimacy. Yet scholars have rarely attempted to assess the performance of the African state through the prism of the lived experiences of those whom the state is meant to serve – its citizens. Most studies rely on data supplied by national statistics agencies or the judgments of expert observers. And while scholars acknowledge that the quality of the African state is likely shaped by geographic and ethnic differences within countries, few have measured how state capacity varies at the sub-national level. In this paper, we address this situation by using survey research measures of respondents' proximity to state services and actual experiences with civil servants to measure two distinct dimensions of the state salient to the African context: its reach, or physical presence at the grassroots across the breadth of a country, and its professionalism, or ability to deliver public services in a proficient and ethical manner. The results reveal new perspectives on which states excel on either or both dimensions. They also illustrate how widely state performance varies at the sub-national level. Finally, we use survey data to assess the performance of the state, and show that it is the degree of professionalism, and sometimes reach, that enables the state to provide security and welfare, satisfy demands, and secure popular legitimacy. But in contrast to usual expectations, the size of the state at senior levels has no impact.

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Introduction

The weakness of the state is one of the most prominent truisms in the study of African politics. Proceeding from theories of personal rule or neo-patrimonialism, characterizations of the state in Africa routinely emphasize three distinct images. Most frequently, the state is described as too big, or “bloated,” functioning as a haven for large numbers of senior-level functionaries employed on the basis of their personal allegiance to neo-patrimonial “big man” leaders, rather than their individual merit or expertise. On the other hand, some scholars describe the state as too small, or at least too remote, with little meaningful presence at the grassroots, especially in far-flung regions or in areas dominated by opposition parties or by non-co-ethnics of ruling parties. Third, the African state has also been widely characterized as extractive, or predatory, dominated by senior- and mid-level officials who channel public funds to clients and supporters or siphon them into their own pockets, or by lower-level officials who prey on ordinary citizens with little interest in the efficient provision of public services. All these factors conspire to create a weak state deprived of the capacity to control its borders, collect taxes, enforce rules, or provide social welfare. Probably the most apocalyptic description can be found in the work of Robert Kaplan’s *The Coming Anarchy* (1994), in which he described a journey across a succession of dysfunctional states in West Africa characterized by abject poverty, lawlessness, and violence.

Yet such accounts sit uncomfortably alongside several discordant findings. For instance, Rachel Sigman and Staffan Lindberg (2017) find that African countries do not score appreciably higher on cross-national scales of neo-patrimonialism than regimes elsewhere in the developing world. And Thandika Mkandawire (2015) has shown that, after controlling for population size and national income, civilian public sector employment has actually been lower in Africa than in other developing regions. Moreover, he found that African states perform no worse in terms of aggregated World Bank governance scores than other states at the same levels of wealth.

Indeed, recent trends suggest that important changes are afoot. For instance, Winnie Mitullah and her colleagues (2016) found important increases in the presence of key state development infrastructure, such as paved roads and electricity and piped water grids, over the previous decade. Not coincidentally, the extent to which Africans go without a basket of basic necessities decreased over roughly the same time period, with important linkages to the growing penetration of paved roads (Mattes, Dulani, & Gyimah-Boadi, 2016). But while the African state appears to be expanding, and poverty falling, trends vary across different dimensions of the state and across different sets of countries. And many things remain the same. For instance, the gap in access to state services between cities and the countryside remains large (Harding, 2020; Mattes, 2020), and large proportions of state officials continue to extort ordinary citizens (Peiffer & Rose, 2018; Richmond & Alpin, 2013).

In this paper, we endeavour to contribute to our understanding of the state in Africa conceptually, methodologically, and substantively. First, most studies of the state rely on data generated by national statistics agencies or the judgments of expert observers. Yet scholars have rarely attempted to assess the performance of the African state through the prism of the lived experiences of those whom the state is meant to serve – its citizens. We build on efforts from other world regions (e.g. Luna & Soifer, 2017) and use survey data to develop new citizen-centered measures of two distinct dimensions of state-ness. First, we examine the “hardware” of the state, that is, the extent to which state security and development infrastructure are present within reasonable proximity of citizens, or what we call the *reach* of the state. But while physical infrastructure may be necessary to provide public goods to communities and households, its presence does not guarantee these goods. Thus, we also measure the “software” of the state, that is, the extent to which people are

able to access public services with ease and without being extorted for bribes and favours, or what we call *professionalism*.

While many scholars acknowledge that the quality of the African state is likely shaped by geographic and ethnic differences within countries, few have measured how state capacity varies at the sub-national level. Thus we not only combine and aggregate interviewer observations and respondent answers to the country level to produce valid and reliable national indicators of core state services, but we also create sub-national scores – our second important contribution.

Substantively, we find that the African state exhibits tremendous variation, both across and within countries. A small number of states possess high levels of both state hardware and software in that they have managed to build state delivery infrastructure near large proportions of its citizens and have also designed systems and trained officials to deliver public services efficiently and with minimal levels of extortion. In many countries in Africa, however, the state remains absent from the lives of most citizens, and civil servants continue to extort resources from and frustrate substantial proportions of their citizens. Yet we also find substantial geographic variation within countries, even in the best-governed states.

Moreover, we demonstrate that our indices do not tap into a single underlying dimension of state-ness. Rather, reach and professionalism are distinct dimensions. Mapping countries on a two-dimensional plot of these two dimensions identifies several distinct clusters of states. And while we find that our measure of professionalism correlates well with other measures of the state, the introduction of reach adds important nuance to the analysis of state-ness. Moreover, we show that reach and professionalism have little to do with whether the state is “bloated” (measured either as the absolute number of cabinet ministers or ministries, or as the number of ministries devoted to providing a basket of essential human services frequently provided by governments).

Finally, we also use survey data to assess the performance of the state in terms of its ability to provide citizens with physical and material security, satisfy their demands, or command legitimacy. The results demonstrate that while the reach of the state can affect citizens’ everyday lives, the quality of the civil service has a much larger and consistent positive impact. People who live in countries, and in regions within countries, with more professional bureaucrats are less likely to live in poverty or experience crime, more likely to exhibit satisfaction with government performance, and more likely to see the state as honest and trustworthy. But in contrast to usual expectations, the size or bloatedness of the state has no impact.

The rest of this paper proceeds as follows. We begin by conceptualizing what we mean by state reach and professionalism, and discuss these concepts in the context of existing efforts to measure state capacity in Africa. Next, we justify our focus on basic, essential government services (safety and security, education, health care, electricity, water and sanitation), demonstrate the value of a citizen-centered measure of state-ness, and operationalize these concepts. We then present descriptive results, focusing on the degree to which these measures meaningfully distinguish among various types of state capacity across Africa. We also assess the extent to which our measures correspond to previous attempts to measure state-ness. We conclude by testing whether our measures can account for commonly expected consequences of state-ness, such as human security, citizen satisfaction, and political legitimacy.

The state in Africa

As we observed at the outset of this paper, most political scientists who focus on Africa see the state at best as uneven, and at worst as unable to provide physical or material security to all its citizens or to command legitimacy (e.g. Boone, 2003; Herbst, 2000; Hyden, 2013; Jackson & Rosberg, 1982b; Mentan, 2004; Migdal, 1989; Reno, 1997). The common starting point is the personal nature of the chief executive and personal rule. While civil servants occupy positions with formal job descriptions and are allocated to various agencies,

departments, or ministries in accordance with official organograms, scholars emphasize the endurance – from the pre-colonial era – of informal patterns of patrimonial authority, where leaders rule “by dint of personal prestige and power” and according to their personal preferences rather than codified laws (Bratton & van de Walle, 1997; Jackson & Rosberg, 1982a). As a dominant narrative of the post-colonial state, neo-patrimonialism (a hybrid of traditional and modern forms of authority) is characterized as a system in which civil servants, military leaders, and cabinet officials owe their positions as much to their personal connections to the president or prime minister as to their personal expertise and fit with their formal position. Connections among officials are said to follow reciprocal exchanges of loyalty and favours rather than the lines of authority expressed in formal organizational flow charts (Bratton & van de Walle, 1997; Chabal & Daloz, 1999; Medard, 1982). In the words of Göran Hyden (2013, p. 101),

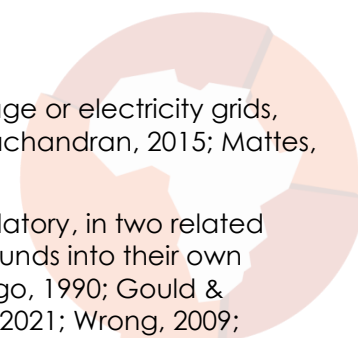
A political system of personal rule is not a system that responds to public demands and support by means of public policies and actions ...[or] a system in which the ruler aims at policy goals and steers the governmental apparatus by information feedback and learning. ... Personal rule is a system of relations linking rulers not with citizens but with patrons, clients, supporters, and rivals, who constitute the system.

Different sets of scholars have claimed that this system generates three distinct consequences, all of which have deleterious effects on the state's capacity to deliver public goods. The first and perhaps most frequently advanced perspective focuses on the number of cabinet ministers and senior bureaucrats, and argues that neo-patrimonialism results in states that are too large or “bloated” (Diamond, 1987). If only as a way of increasing their personal influence over the state, African leaders often multiply ministries, departments, advisory councils, or sub-national units, and duplicate functions, to create larger numbers of patronage positions and a broader network of clients (Arriola, 2009; Bratton & van de Walle, 1997; Chabal & Daloz, 1999; Wehner & Mills, 2021).¹

A second perspective focuses on physical state infrastructure or lower-level civil servants, and argues that the state is too small and remote, with little meaningful presence at the grassroots, especially in far-flung regions or in areas dominated by opposition parties or non-co-ethnics of ruling parties (e.g. Goldsmith, 1999; Herbst, 2000; Mkandawire, 2015; Olowu, 1988). Much of this absence has roots that can be traced to the colonial era (Mamdani, 1996). For instance, the borders of many countries – as drawn by colonial powers – create major challenges, and at times disincentives, for governments to extend state services to vast territories distant from any major city (Herbst, 2000).² And in many countries, patterns of underdevelopment left the post-independence state with few key managerial and administrative skills (Rodney, 1972). But these problems were often exacerbated by the actions of post-independence governments and international donors. Following a period of intensive state-building in the early post-colonial period, economic mismanagement and decline created a brain drain and massive loss of middle- and high-level managers in many countries in the 1980s (Meredith, 2011). And in the 1990s, reforms advocated by the International Monetary Fund and World Bank designed to reduce the scope of state intervention in economic affairs often resulted in a reduction of bureaucratic quality (Reinsberg, Kentikelenis, Stubbs, & King, 2019) and of state investments in roads, schools, and public health (Fukuyama, 2004a). Scholars have also long pointed to African governments' “urban bias” in state investment and price supports (Bates, 1981; Lipton, 1977). While the gap has been closing, surveys still find massive differences in the presence of state-built or state-

¹ However, these claims have rarely been tested empirically. Recent work on Ghana by Brierley (2021) challenges these commonly held assumptions, demonstrating that governments do prioritize meritocratic recruitment for higher-level bureaucrats while using patronage for lower-level jobs.

² A related literature has shown that state-building has remained uneven at the sub-national level due to the configuration of the local political economy and variation in center-provincial bargaining across different regions within African countries (e.g. Boone, 2003).



financed development infrastructure, such as piped water and sewage or electricity grids, between urban and rural areas (Harding, 2020; Leo, Morello, & Ramachandran, 2015; Mattes, 2020).

A third perspective characterizes African states as extractive, or predatory, in two related ways. On the one hand, senior- and mid-level officials siphon public funds into their own pockets or re-direct them for political financing (Brierley, 2020; Cabogo, 1990; Gould & Mukendi, 1989; Joseph, 1987; Makumbe, 1994; Olowu, 1988; Sigman, 2021; Wrong, 2009; Young & Turner, 1985), or channel them to clients and supporters in their home region (Kramon & Posner, 2016; Lemarchand & Legg, 1972; Soest, 2007). On the other hand, lower-level officials with little interest in the efficient provision of public services are often described as preying on ordinary citizens (Justesen & Bjørnskov, 2014; Peiffer & Rose, 2018; Richmond & Alpin, 2013).

Taken together, these factors conspire to create a weak state deprived of the capacity to control its borders, collect taxes, enforce rules, or provide social welfare evenly across the country (Brinkerhoff, Wetterberg, & Wibbels, 2018; Iddawela, Lee, & Rodríguez-Pose, 2021; Müller-Crepon, forthcoming).

What do we know about measuring state capacity?

Ever since the admonition to “bring the state back in” to the study of social, economic, and political outcomes (Skocpol, Evans, & Rueschemeyer, 1999), scholars have attempted to develop ways to isolate the state as an entity distinct from society and to assess its ability to enforce rules and provide goods to its citizens in a systematic way. In doing so, however, the number of dimensions of state capacity on which scholars focus has increased substantially (Cingolani, 2013; Enriquez & Centeno, 2012; Hanson & Sigman, 2021), though the degree of focus remains uneven across these dimensions (Soifer & vom Hau, 2008). Some scholars have focused on the *strength* of the state, conceived either as the ability to “plan and execute policies, and to enforce laws cleanly” (Fukuyama, 2004a, p. 22) or as the physical and human capital of state administration (Bäck & Hadenius, 2008; Bersch, Praça, & Taylor, 2016; Hanson, 2015; Holt & Manning, 2014). Others have focused on the *autonomy* of the state, defined as the ability to make decisions in the public interest independently of class, ethnic, religious, partisan, or other sectional interests (Bates, 1981; Evans & Rauch, 1999; Kopecký, 2011; Nordlinger, 1982; Nordlinger, Lowi, & Fabbrini, 1988; Skocpol et al., 1999).

And as mentioned above, scholars of African politics have paid special attention to the *size* of the state, particularly the negative effect of too many cabinet ministers and senior civil servants (Ariotti, 2021; LeVan & Assenov, 2016; Wehner & Mills, 2021). Fukuyama (2004a), in contrast, has argued that the real problem in developing countries is a philosophy of governance that leads states to policy overreach. He contends that while the desire of the “Washington Consensus” to reduce the policy scope of the state was correct, it should be carried out without simultaneously reducing the number of state managers and thus damaging the capacity of the state to enforce laws and regulations. Similarly, Olowu (2003) has warned against uncritically accepting the image of “bloated” African bureaucracies, arguing that the high concentration of positions in central government should be distinguished from the overall number of personnel relative to the size of the population (also see Mkandawire, 2015).

Evans and Rauch (1999) and Fukuyama (2004b) helped stimulate empirical research on these issues, including on countries in the developing world (e.g. Bäck & Hadenius, 2008; Bersch et al., 2016; Holt & Manning, 2014). And important measurement projects now collect systematic data on a range of key dimensions such as “government effectiveness” and “control of corruption” (World Bank Governance Indicators), the “professionalism” and “impartiality” of public administration (Quality of Governance Project; see Teorell et al., 2016), “basic administration” (Bertelsmann Stiftung, 2020), and “corruption” (Transparency International, 2021).

Yet despite many important advances, we contend that these approaches still face severe limitations in coming to grips with the state in Africa. First, we agree that weak states, with little autonomy from entrenched societal interests, are unlikely to deliver public goods in a systematic and unbiased way. But the opposite is not necessarily true. That is, we need to go further and ascertain whether states are financially able, and their leaders are politically committed, to build the infrastructure necessary to deliver basic services or to produce competent and well-compensated public servants who provide efficient service to citizens. And we are agnostic as to whether cabinet size or the scope of policy necessarily renders states less or more able to do these things.

Second, we contend that the best way to assess whether states actually deliver public services is through “bottom-up” and fine-grained measure of the “hardware” of the state, measured as citizens’ *proximity to service delivery infrastructure*, and the “software” of the state, measured as citizens’ *experiences with state officials and agencies*, both generated through survey research rather than through “top-down” judgments provided by experts or official statistics.

Government-generated data suffer from both capability and incentive problems. That is, the quality and availability of these data are also often uncertain because their collection assumes a certain level of state capacity and interest (Luna & Soifer, 2017). Indeed, the ability of African states to produce even basic indicators such as gross domestic product remains extremely uneven (Jerven, 2013). And while official statistics agencies may be able to publish data on state procurement and expenditures on services such as building health clinics, this may not tell us how many are actually built, how many are functioning, or how many are easily accessible to citizens. Moreover, states may have political disincentives to collect and disseminate such data. And as we will argue more fully below, the perspective of experts is generally dominated by the affairs of central government and national-level state machinery, rather than the presence of the state at the grassroots level. Finally, while some measurement projects make use of public opinion survey data – such as the World Bank’s (2020) Government Effectiveness Index – they use responses about citizen satisfaction with various aspects of state delivery as a measure of state capacity. But satisfaction is a possible consequence of state performance, rather than a measure of actual citizen experiences with the state.

Third, many scholars of Africa, and the developing world more broadly, have worried about the uneven presence and authority of the state across its territory (Bates, 1981; Lipton, 1977; Mann, 1984), in particular across far-flung areas (Herbst, 2000; Iddawela et al., 2021; Müller-Crepon, forthcoming; Oliveira, 2015). Yet while some researchers have brought geography and the urban-rural divide into their measurement strategies (Brinkerhoff et al., 2018; Coppedge et al., 2017; Iddawela et al., 2021; Kyle & Resnick, 2019; Luna & Soifer, 2017), no studies have, as far as we can determine, combined this issue with other dimensions of state capacity on a cross-national basis. What is more, most measurement efforts are only able to produce country-level scores, treating the state as a single homogenous entity.

A new citizen-centered measure of state capacity

We attempt to correct these shortcomings by using Afrobarometer survey data to develop a new citizen-centered index of state capacity that answers two questions. First, to what extent is the state physically present at the grassroots level, and how (un)even is this presence across the country (reach)? And second, how well do African states enforce rules and provide goods to citizens (professionalism)? But which manifestations, and which rules and services, should we measure? Following Amartya Sen (2001), we argue that the most essential tasks of the state in Africa are to provide an environment free from crime and violence, and access to basic social services: schooling, water, sanitation, electricity, and health care (see Table 1). While some of these services might be provided by parastatal companies, public-private partnerships, or civil society groups and donor organizations (Cammett & MacLean, 2011), the effectiveness of non-state providers can vary substantially, and the state still bears ultimate responsibility. Thus, to use the language of the 1997 World

Development Report, we assess whether African states “get the fundamentals right” (World Bank, 1997, p. 4).³

Table 1: Afrobarometer measures of six public services

Service	Survey questions answered by fieldworker (F) or respondent (R)
Police	<p>Are the following facilities present in the primary sampling unit/enumeration area or in easy walking distance: police station? (F)</p> <p>In the past 12 months, have you requested assistance from the police? (R)</p> <p>How easy or difficult was it to obtain the assistance you needed? (R)</p> <p>And how often, if ever, did you have to pay a bribe, give a gift, or do a favour for a police officer in order to get the assistance you needed? (R)</p>
School	<p>Are the following facilities present in the primary sampling unit/enumeration area or in easy walking distance: school (private or public, or both)? (F)</p> <p>In the past 12 months, have you had contact with a public school? (R)</p> <p>How easy or difficult was it to obtain the services you needed from teachers or school officials? (R)</p> <p>And how often, if ever, did you have to pay a bribe, give a gift, or do a favour for a teacher or school official in order to get the services you needed from the schools? (R)</p>
Health care	<p>Are the following facilities present in the primary sampling unit/enumeration area or in easy walking distance: health clinic (private or public, or both)? (F)</p> <p>In the past 12 months, have you had contact with a public clinic or hospital? (R)</p> <p>How easy or difficult was it to obtain the medical care you needed?</p> <p>And how often, if ever, did you have to pay a bribe, give a gift, or do a favour for a health worker or clinic or hospital staff in order to get the medical care you needed? (R)</p>
Water	<p>Please tell me whether each of the following are available inside your house, inside your compound, or outside your compound: your main source of water for household use? (R)</p> <p>Do you have an electric connection to your home from the mains? [If yes:] How often is electricity actually available from this connection? (R)</p> <p>Please tell me whether each of the following are available inside your house, inside your compound, or outside your compound: a toilet or latrine? (R)</p> <p>In the past 12 months, have you tried to get water, sanitation, or electric services from government? How easy or difficult was it to obtain the services you needed? (R)</p> <p>And how often, if ever, did you have to pay a bribe, give a gift, or do a favour for a government official in order to get the services you needed? (R)</p>
Electricity	
Sewage	

³ For additional justification of our selection, we point to the fact that public health and education as well as water and sanitation are key components of global development indices such as the Human Development Index and the Sustainable Development Goals. Moreover, Bratton’s (2009) work on public satisfaction with health and education in Africa recognized the intimate link between these services and economic growth and human welfare. Nevertheless, our proposed measure can easily be adapted to incorporate other functions of the state. For example, it could include the provision of paved roads, or the effective distribution of government documents (e.g. birth certificates). The composition of the professionalism and reach dimensions is limited, however, by the research question at hand as well as the availability of survey items. For a different example focusing on taxation and land rights, see Luna and Soifer (2017).

Citizens as experts?

It is becoming increasingly common to aggregate expert judgments to evaluate state capacity (e.g. Varieties of Democracy and Quality of Governance projects). A clear advantage of such data-collection projects is their expansive geographic coverage. However, these top-down assessments also have several inherent shortcomings. Most importantly, it is unclear to what extent these assessments capture citizens' lived experiences of the state and its ability to deliver basic services. In contrast, we argue that the best way to assess whether the state has provided these things is through a "bottom-up" perspective using survey research. Survey enumerators and citizen respondents are better placed than expert judges to provide valid and reliable assessments of state capability at the grassroots level. Not only are fieldworkers and respondents closer to the relevant phenomena, but there are also simply many more of them. Thus, rather than relying on a few academic experts to judge a country's entire bureaucratic apparatus, we treat each of our respondents as one of several hundred service-specific "local-level experts."

Through their laudable commitment to transparency, the Quality of Governance (QoG) and Varieties of Democracy (V-Dem) projects provide aggregate data on their participating experts around the world (Table 2). Among the 36 African countries included in our study, only five were evaluated by 10 or more QoG experts. V-Dem provides a country score based on the judgments of at least 10 experts in just 10 countries, and no country score is based on more than 12 expert judges. By way of contrast, our citizen-centered measures of state capacity draw on representative pools of 1,200 or 2,400 citizens and between 12 and 136 Afrobarometer fieldworkers who visit anywhere from 150 to 300 primary sampling units per country.⁴ Even when we take into account that sizable proportions of respondents have no contact with a government service, the average number who actually went to a police station, school, clinic, or government office is still far larger than the number of QoG and V-Dem experts. In Malawi, for instance, the QoG expert survey relies on eight country experts to assess the level of bureaucratic professionalism, and V-Dem relies on 12. In comparison, our citizen-based measure draws on the observations or experiences of 883 citizens and 50 fieldworkers. It is difficult to imagine how QoG and V-Dem experts would have a better understanding of the skill and integrity of street-level bureaucrats than 933 Malawian respondents for any single service, let alone the six different services covered by Afrobarometer.

In addition to overall numbers, it is important to compare the characteristics of traditional experts and their citizen alternatives, and to consider how this affects the accuracy of their assessments of the proximity of infrastructure and bureaucratic professionalism. To get a sense of the variation, we compare the data for all 43 African countries judged by QoG experts (N=256 experts) and the 36 countries surveyed by Afrobarometer in Round 6. As can be seen in Table 3, the average expert judging state capacity in Africa in the pooled QoG Expert Survey II is male, highly educated, and comparatively old (43% are above age 50). Moreover, not all experts live in the country that they evaluate. According to the global sample, approximately one-quarter of experts live outside the country (Dahlström et al., 2015). While data for the Africa sample are not available, it seems reasonable to assume that the global average of outside experts represents a conservative estimate, given that African countries have the lowest average number of experts per country across the global QoG sample. Unfortunately, similar data are not available for V-Dem. While Afrobarometer respondents are less educated than the experts, they are representative of the general population, are evenly balanced by gender, and reside across the breadth of the country and community about which they tell us, in both cities and countryside, and thus provide a valuable vantage point from which local state capacity can be evaluated.

⁴ Regarding the number of enumeration areas in Round 6, South Africa (with 600) is an exception, due to a slightly adapted sampling procedure to account for the effects of the apartheid legacy.

Table 2: Number of experts, respondents, and fieldworkers across 36 countries

Country	Quality of Governance	V-Dem	Afrobarometer		
	Experts	Experts ⁱ	Field-workers	Primary sampling units ⁱⁱ	Average number of respondents with contact with at least one service ⁱⁱⁱ
Algeria	5	9	28	150	602/1200
Benin	6	12	28	150	355/1200
Botswana	5	12	28	150	570/1200
Burkina Faso	3	10	24	150	301/1200
Burundi	2	9	28	150	247/1200
Cabo Verde	-	9	26	150	341/1200
Cameroon	7	7	24	150	525/1182
Côte d'Ivoire	6	12	24	150	296/1199
Egypt	5	7	68	150	519/1198
Eswatini	2	8	32	150	355/1200
Gabon	-	5	28	150	357/1198
Ghana	21	11	51	300	459/2400
Guinea	4	7	24	150	232/1200
Kenya	11	8	35	300	966/2397
Lesotho	-	9	12	150	306/1200
Liberia	-	6	32	150	683/1199
Madagascar	5	6	34	150	336/1200
Malawi	8	12	50	300	883/2400
Mali	2	8	30	150	257/1200
Mauritius	4	5	31	150	432/1200
Morocco	7	7	20	150	610/1200
Mozambique	4	9	53	300	1013/2400
Namibia	6	10	17	150	562/1200
Niger	3	7	22	150	309/1200
Nigeria	32	10	136	300	1355/2400
São Tome & Prin.	-	7	15	150	403/1196
Senegal	5	6	20	150	356/1200
Sierra Leone	1	9	16	150	359/1191
South Africa	24	9	72	600	832/2390
Sudan	2	7	28	150	553/1200
Tanzania	10	11	25	300	611/2386
Togo	3	8	30	150	268/1200
Tunisia	3	8	25	150	403/1200
Uganda	6	11	61	300	993/2400
Zambia	2	6	38	150	336/1199
Zimbabwe	5	7	48	300	733/2400
Average	6.7	8.4	35.1	196	519/1498

i Highest number of experts for "Public sector corrupt exchanges" (v2excrpts_nr) between 2013 and 2015

ii Each primary sampling unit (usually a census enumeration area) contains eight interviews and indicates the number of observations for schools, police stations, and clinics per country. South Africa is the only exception to this, with four interviews per enumeration area.

iii The first number represents the average number of interviewees who were in contact with at least one service across four survey questions. The second number represents the country sample, and also indicates the number of observations for water/sanitation and electric connections.

Table 3: Profile of QoG experts and Afrobarometer respondents and fieldworkers

	Quality of Governance experts ⁱ	Afrobarometer fieldworkers ⁱⁱ	Afrobarometer respondent ⁱⁱⁱ
Gender (male)	81%	51%	50%
Education	99% at least undergrad. university degree	57% at least undergrad. university degree 98% at least completed high school	6% at least undergrad. university degree 31% at least completed high school
Age	2% < 30 years 55% 30-50 years 43% > 50 years	29 years	41 years
Live in country	N/A	100%	100%
Live in urban area	N/A	76%	42%

ⁱ Percentages describe expert judges in the pooled African sample of 43 countries in the QoG Expert Survey II (N=256); 41 judges did not identify by gender; 38 did not record level of education; 45 did not record age. Percentages are calculated after dropping experts who did not provide information.

ⁱⁱ Percentages reflect the characteristics of the fieldworkers adjusted for the number of interviews that were conducted by each interviewer. In total, Afrobarometer used 1,263 fieldworkers across 36 countries. Median number of interviews was 28 per country.

ⁱⁱⁱ In total, Afrobarometer interviewed 53,935 respondents in Round 6. For additional technical information (e.g. response rate) for the specific survey in each country, please refer to the [Merged Round 6 Codebook](#).

Other advantages

The survey data collected by Afrobarometer offer two other advantages. First, while expert assessments are usually limited to judgments about the bureaucracy as a whole, the interview observations and citizen experiences measured by this survey project tell us about variation across specific services in terms of both the physical presence of relevant infrastructure and the quality of citizen interactions with civil servants in these bureaucratic organizations. Second, because Afrobarometer measures these phenomena on a regular basis, it is possible to track short-term changes and compare them across many countries, which helps to distinguish long-term structural determinants of state capacity from short-term effects (Dargent, Feldmann, & Luna, 2017; Giraudy & Luna, 2017; Luna & Soifer, 2017; Rueschemeyer, 2005; Soifer, 2015).

In this paper, we primarily use survey questions from Round 6 (2014/2015) to operationalize our two dimensions of interest. However, the same data are also available from Round 5 (2011/2013), Round 7 (2016/2018), and Round 8 (2019/2021), allowing researchers to create four separate estimates across a decade for 30 countries and their respective sub-national units.

State reach

Our first dimension of state capacity is meant to tap the geographic “reach” of the state in terms of the extent to which African states provide public services to all citizens across the country. To measure the “hardware” of African states, we draw on two types of survey data. First, we rely on Afrobarometer Round 6 fieldworkers for observations of the presence (or absence) of a range of state infrastructure in the areas in which they conducted interviews. Specifically, we examine whether fieldworkers observed a school, health clinic, or police station “in the primary sampling unit/enumeration area or in easy walking distance.” Second, we rely on respondents’ answers in the same Round 6 surveys as to whether they have a working toilet, piped water, and an electricity connection in the household (for question wording, see Appendix E).

To begin with, we find tremendous variation in state reach according to the type of service. Across 36 countries, an average of 88% of Africans live within easy walking distance of a school, and 72% have a flush toilet or latrine in their home or compound. Yet just 49% have a water tap in their home or compound, and only 38% live within walking distance of a police station (Figure 1).

Figure 1: State reach by sector | 36 countries | 2014/2015

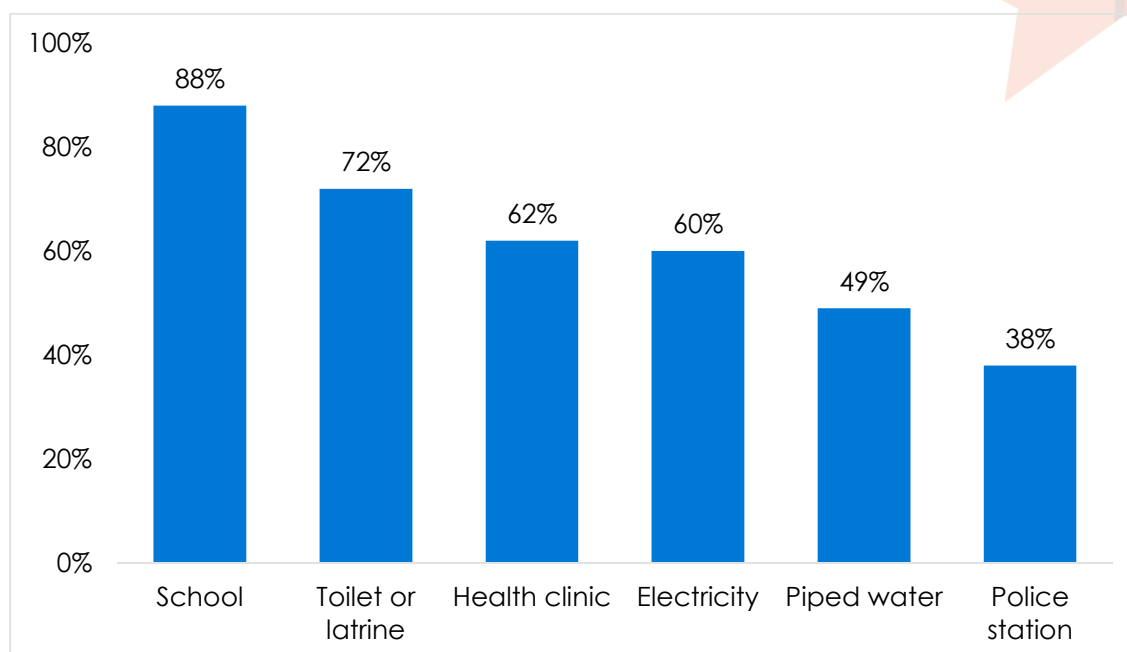


Figure shows % of enumeration areas with nearby school, health clinic, and police station and % of households with toilet, electricity, and piped water.

To aggregate these responses and generate national- or provincial-level scores, we follow a three-step process. First, we aggregate the responses for each of the six services for each respondent, giving all types of infrastructure or household connection equal weight. Second, to enable comparison with the professionalism dimension, we re-scale the scores on a scale of 0 to 1, so that respondents who have access to all six services get a score of 1, those with access to three services score 0.5, and those with access to none of the services score 0. Third, we calculate the average of all respondents at the provincial or national level.⁵

The mean country score across these six services is 0.61 (or 61%), suggesting that the average citizen is connected to or lives close to just under four of the six services. But there is substantial cross-national variation around the central tendency: While citizens in Mauritius, Algeria, and Egypt have, on average, access to about 90% (or 5.4) of the services, Burundians have access to just 36% (2.2) (Figure 2).

⁵ For more information on factor analyses and reliability tests, see Appendix A.

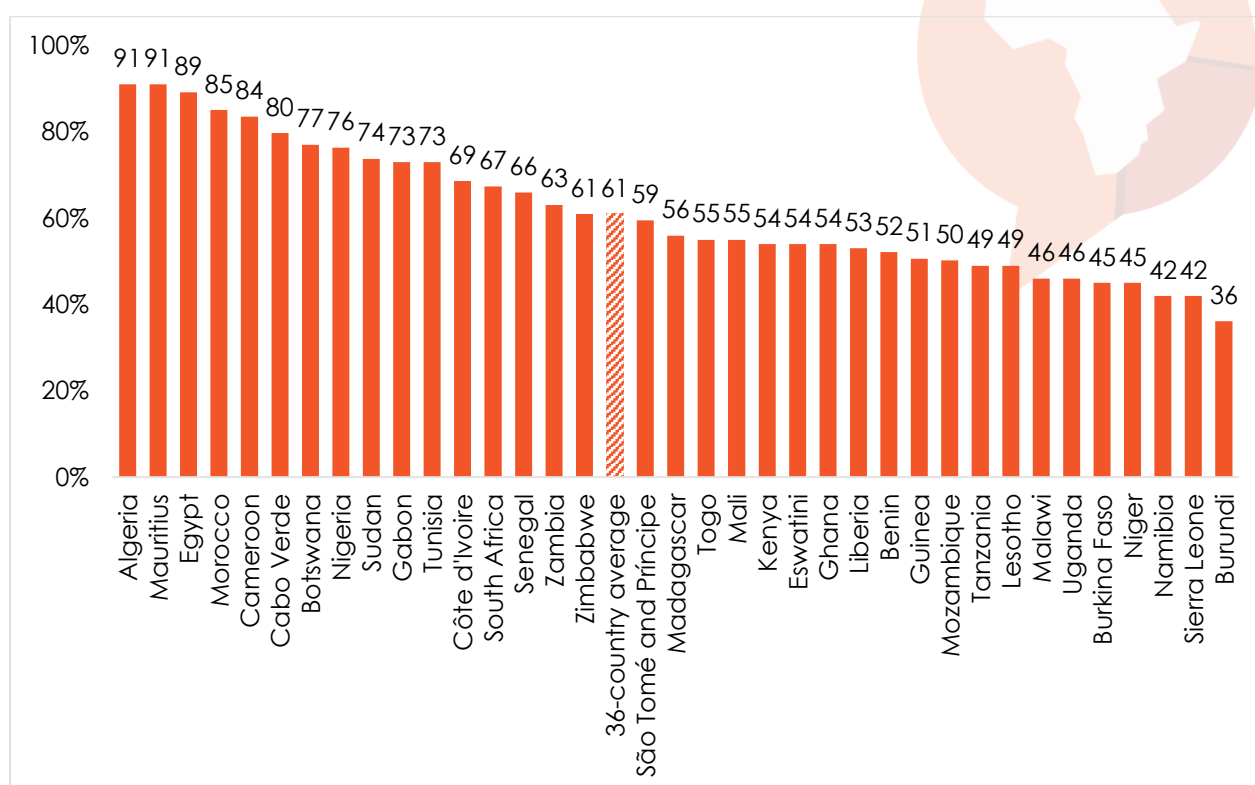
Figure 2: State reach: Community and household services | 36 countries | 2014/2015

Figure shows country scores on an index combining questions about access to six services (school, health care, police, piped water, toilet, and electricity). See Appendix E for more information about question phrasing and weighting.

Besides providing national-level estimates, the survey data allow us to drill down for a higher degree of resolution (though with larger confidence intervals) at the level of the largest sub-national administrative units within each country. We use the term “province” for stylistic purposes even though countries use different labels for this unit of analysis.⁶

Confirming worries about the geographic evenness of the African state, our measure reveals substantial geographic variation in the reach of the state within countries. While Namibia, for instance, has a country reach score of 42%, there is a 59-point range between its best-performing province (Erongo, 74%) and worst-performing province (Kavango West, 15%). On the other hand, there is just a 4-point difference across Eswatini's four provinces (Table 4).

⁶ The largest sub-national unit is *county* in Liberia, while it is *district* in Botswana, Burkina Faso, Burundi, Guinea, Lesotho, Madagascar, Mali, Mauritius, Niger, Sierra Leone, and Togo. In Gabon, Mozambique, South Africa, Zambia, and Zimbabwe, we aggregate to the level of *province*, while in Benin, Cameroon, Cabo Verde, Côte d'Ivoire, Eswatini, Ghana, Malawi, Namibia, Nigeria, São Tomé and Príncipe, Senegal, Tanzania, and Uganda it is *region*. Lastly, in Algeria, Egypt, Morocco, Sudan, and Tunisia it is *state*. For more information, please see the Afrobarometer Codebook.

Table 4: State reach by province | 36 countries | 2014/2015

Country	National average	Minimum	Maximum	Range (percentage points)*	No. of provinces
Algeria	91%	83%	96%	13	7
Benin	52%	28%	77%	49	12
Botswana	77%	36%	79%	44	16
Burkina Faso	45%	23%	48%	25	13
Burundi	36%	8%	52%	44	17
Cabo Verde	80%	60%	88%	28	5
Cameroon	84%	49%	82%	33	12
Côte d'Ivoire	69%	35%	69%	34	16
Egypt	89%	62%	100%	38	16
Eswatini	54%	32%	37%	4	4
Gabon	73%	33%	63%	30	9
Ghana	54%	27%	60%	33	10
Guinea	51%	24%	52%	28	8
Kenya	54%	18%	66%	48	8
Lesotho	49%	11%	46%	36	10
Liberia	53%	30%	64%	35	12
Madagascar	56%	29%	57%	28	18
Malawi	46%	28%	37%	9	3
Mali	55%	23%	61%	37	8
Mauritius	91%	71%	95%	24	10
Morocco	85%	70%	97%	27	13
Mozambique	50%	21%	59%	38	11
Namibia	42%	15%	74%	59	14
Niger	45%	31%	64%	33	7
Nigeria	76%	38%	79%	42	34
São Tomé and Príncipe	59%	48%	53%	5	2
Senegal	66%	26%	79%	53	13
Sierra Leone	42%	23%	44%	21	4
South Africa	67%	42%	90%	48	9
Sudan	74%	49%	91%	42	6
Tanzania	49%	14%	71%	57	28
Togo	55%	36%	61%	25	6
Tunisia	73%	54%	89%	35	17
Uganda	46%	29%	60%	32	5
Zambia	63%	28%	67%	39	10
Zimbabwe	61%	23%	78%	55	10
Average	61%	35%	69%	34	

Note: Only sub-national units with at least 30 observations are included. * Due to rounding, range may differ by 1 percentage point from difference between reported maximum and minimum.

Professionalism

While our measure of state reach tells us whether governments have built the infrastructure to deliver public services, it says nothing about how well these services actually work. Thus, in contrast to reach, we understand state professionalism as the quality with which state institutions and the officials embedded within them (especially lower-level civil servants) perform their functions.

To measure the professional dimension of African states, we focus on two aspects that are central to our definition. First, how easy or difficult is it for ordinary citizens to access and use a certain service? And second, how scrupulous are state officials when they engage with the public? Importantly, the battery of questions in Afrobarometer is designed in a way that allows us to isolate the answers of respondents who actually had contact with the state in the 12 months preceding the survey.⁷ We argue that these responses reflect several aspects of the human capital of the state. Most obviously, they reflect citizen experiences of the personal qualities of government officials. But they also reflect the informal routines and formal rules and systems within which those officials function. And finally, they reflect the sufficiency of remuneration and the quality of training received by those officials.

We measure state professionalism across the same four functional areas that we use to measure reach: public safety, education, health care, and household services (electricity, water, and sanitation). Our measure is composed of two sets of questions. The first begins by asking respondents whether they attempted to secure help or services from police, a local school, or a public health clinic or hospital, or water, sanitation, or electric services from a state agency in the previous 12 months. If they did, respondents were then asked to evaluate how easy or difficult it was for them to obtain these services. The second set of questions asks respondents whether they had to pay a bribe, give a gift, or do a favour for an official to access any of the above services, and if so, how often.

To measure the professionalism of the overall civil service, either nationally or sub-nationally, we use a slightly different method of aggregation than with regard to reach. First, using the reports of respondents who actually used the service in the past year, we create separate professionalism scores for each of the services (the average of the two items on the ease of obtaining services and on the payment of bribes). We then average the four national or provincial scores. Because Afrobarometer asks about electricity, water, and sanitation via a single “household” question, we adjust the weight for this question to make it equivalent to the reach score.

Across 36 countries, the average measure of state professionalism is 70% (Figure 7).⁸ As we might expect, there is considerable cross-national variation in how African states enforce rules and provide goods to citizens. At one end of the spectrum, large proportions of users report positive experiences with state officials in Mauritius (83%), Botswana (81%), Algeria (80%), Namibia (80%), and South Africa (79%). At the other end, Egypt (58%), Gabon (58%), and Liberia (51%) score lowest on our index (Figure 3).

⁷ This measure builds on Bratton (2009), who developed service experience measures for education and health care services using a similar battery of questions. For the exact question wording of the variables, see Appendix E.

⁸ Results of factor analyses and reliability tests can be found in Appendix A.

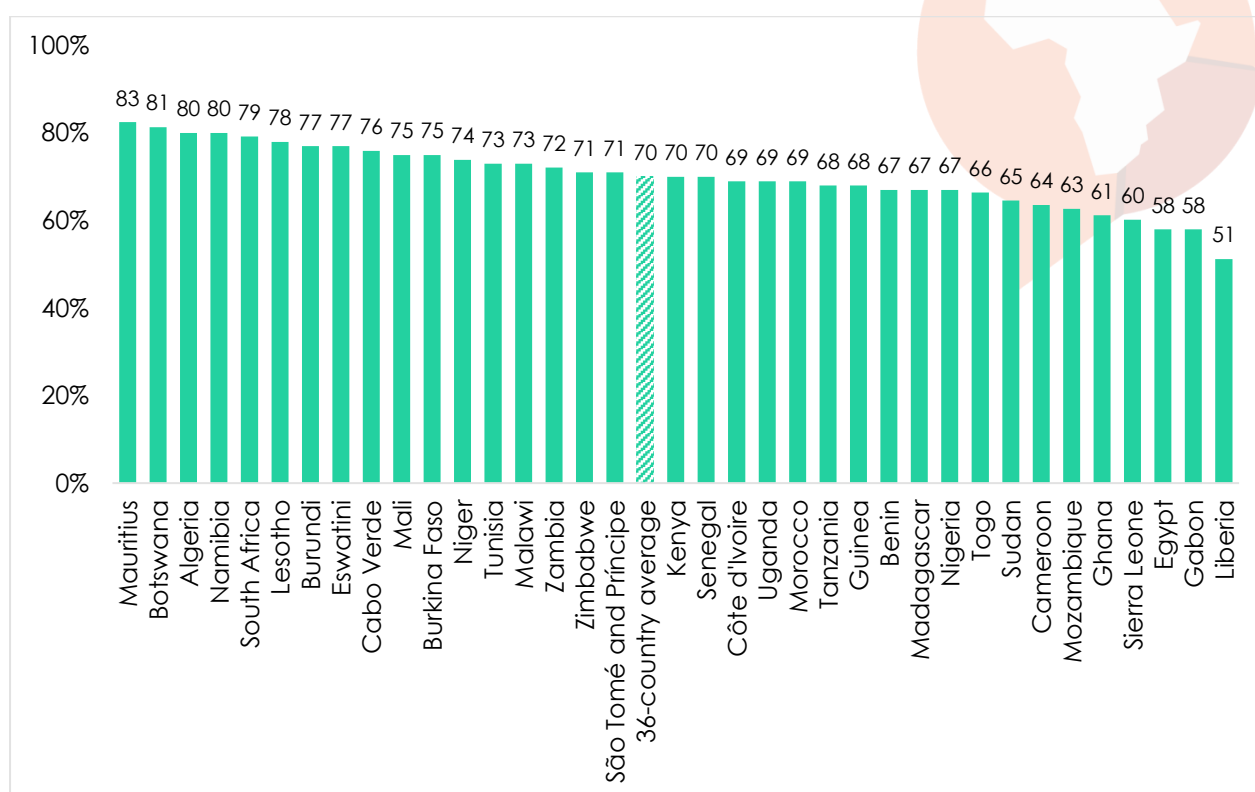
Figure 3: Professionalism of African states | 36 countries | 2014/2015

Figure shows country scores on an index combining eight question items about the ease of obtaining state services and the payment of bribes. See Appendix E for more information about question phrasing and weighting.

The within-country variation in professionalism is even greater than for state reach. Egyptians, for example, confronted (at that time) very different qualities of bureaucracies in Giza, where an average of 83% of people who used government services reported positive experiences, than in Gharbia, where just 18% did. There were also wide chasms in citizens' experiences with bureaucracy in Nigeria (39 percentage points), Liberia (33 points), Mozambique (32 points), and Côte d'Ivoire (32 points) (Table 5).

An intuitive question about the integrity of our estimates of state-ness concerns their over-time stability or over-time reliability. While we would expect the reach and professionalism indices to be able to detect real changes in a country over time, we would not anticipate huge fluctuations in either country estimates or the rank orders of country estimates over time.

To assess this, we create the professionalism and reach measures for Round 7 (2016/2018) of Afrobarometer surveys and find strong product-moment and rank-order correlations between the Round 6 and Round 7 country-level estimates for both reach ($r=.871$, $p\leq .000$, $\text{Tau } b=.633$, $p\leq .000$, $n=33$) and professionalism ($r=.807$, $p\leq .000$, $\text{Tau } b=.576$, $p\leq .000$, $n=33$). While the rank-order (Tau-b) correlations indicate that the relative ranking of countries changes somewhat across surveys, the product-moment correlation (r) means that countries that score higher (lower) on either dimension in Round 6 of the Afrobarometer survey are very likely to also score higher (lower) in the subsequent round.

Table 5: State professionalism by province | 36 countries | 2014/2015

Country	National average	Minimum	Maximum	Range (percentage points)	No. of provinces
Algeria	80%	74%	85%	10	7
Benin	67%	55%	74%	19	12
Botswana	81%	65%	90%	25	16
Burkina Faso	75%	51%	82%	30	13
Burundi	77%	64%	95%	30	12
Cabo Verde	76%	71%	81%	10	5
Cameroon	64%	49%	72%	23	12
Côte d'Ivoire	69%	60%	92%	32	13
Egypt	58%	18%	83%	65	16
Eswatini	77%	75%	78%	3	4
Gabon	58%	56%	68%	12	9
Ghana	61%	51%	76%	25	10
Guinea	68%	50%	74%	24	8
Kenya	70%	68%	74%	6	8
Lesotho	78%	65%	86%	21	10
Liberia	51%	35%	67%	33	12
Madagascar	67%	57%	86%	29	16
Malawi	73%	69%	76%	6	3
Mali	75%	69%	82%	13	8
Mauritius	83%	75%	89%	13	10
Morocco	69%	57%	82%	24	13
Mozambique	63%	43%	76%	32	11
Namibia	80%	71%	87%	15	14
Niger	74%	71%	84%	13	7
Nigeria	67%	45%	84%	39	34
São Tomé and Príncipe	71%	71%	72%	1	2
Senegal	70%	65%	77%	12	12
Sierra Leone	60%	58%	74%	16	4
South Africa	79%	72%	87%	15	9
Sudan	65%	60%	73%	14	6
Tanzania	68%	59%	85%	26	27
Togo	66%	60%	70%	10	6
Tunisia	73%	65%	80%	15	17
Uganda	69%	66%	74%	8	5
Zambia	72%	63%	82%	19	10
Zimbabwe	71%	62%	78%	16	10
Average	70%	60%	80%	20	

Note: Only sub-national units with at least 30 observations are included. This results in a reduced number of provinces in five countries (Burundi, Côte d'Ivoire, Madagascar, Senegal, and Tanzania) because of the proportion of respondents who had no contact with these government officials in the previous year.

Reach vs. professionalism: Together or separate?

While we have conceptualized state reach and state professionalism as separate dimensions, do they differ empirically? In fact, our results demonstrate that these measures tap almost completely distinct aspects of state-ness across our sample of 36 countries. At the meso level (province), a factor analysis of all four “professionalism” and all six “reach” items, using principal component extraction and varimax rotation, extract two separate factors corresponding to reach and professionalism. At the macro level, the country scores for each dimension are not correlated at all (Pearson's $r=0.039$, $p=.823$).

While a thorough exploration of the antecedents of these two seemingly unrelated dimensions of state capacity is beyond the scope of this paper, we nevertheless provide some insights that illustrate the value of our indices. Within the state-building literature, there are two dominant views on what drives state capacity. While some scholars argue that wealth leads to the emergence of a capable state, proponents of the democracy advantage argue that democracy precedes state capacity (Bäck & Hadenius, 2008; Chong & Calderón, 2000; Enriquez & Centeno, 2012; Grassi & Memoli, 2016; Halperin, Siegle, & Weinstein, 2010). We find that wealth and democracy have surprisingly different relationships with state reach and professionalism. National wealth (measured as the average log gross domestic product (GDP) per capita from 1990 to 2014) is strongly related to the extent to which African governments have been able to make the substantial financial investments to build schools, clinics, police stations, electricity grids, and water and sewer systems ($r=.738$, $p<.001$). Yet wealth is only weakly connected to the level of bureaucratic professionalism ($r=.270$, $p=.111$). In contrast, it is countries with a longer history of democracy (measured as the average reversed Freedom House score from 1990 to 2014) that have done a better job of developing efficient and non-extortive bureaucracies ($r=.385$, $p=.073$). While this finding is far from conclusive, and requires a more thorough analysis, the results nevertheless suggest that while wealth enables the hardware, democracy facilitates the software of the state (Table 6).

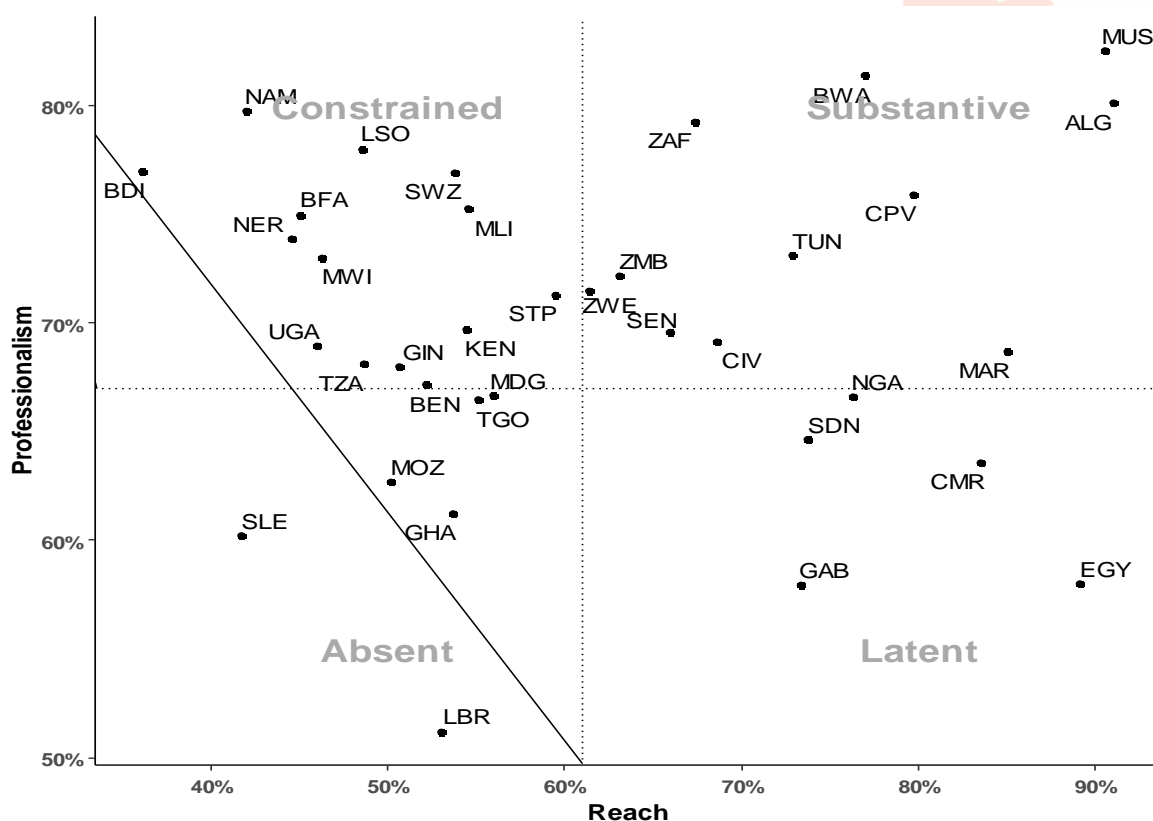
Table 6: Exploring drivers of state reach and professionalism

	Reach	Professionalism
Log GDP/capita (1990-2014)	.738***	.278
Freedom House score (1990-2014)	.048	.385*

* Correlation is significant at the .05 level (2-tailed); ** correlation is significant at the .01 level (2-tailed);

*** correlation is significant at the .001 level (2-tailed).

Now that we have confirmed that reach and professionalism are distinct dimensions of state-ness, we turn to consider how they are jointly distributed. Conceptually, we can think of dividing each dimension into two groups (high and low) at its mean value, producing four distinct quadrants. In the northeast quadrant, we would find *substantive* states that approximate a Weberian variant that combines an extensive reach of public services with a rule-governed and impartial public administration. In the southwest quadrant, in contrast, we would find *absent* states that are either unable or unwilling to extend public service infrastructure to their citizens and whose lower-level officials frustrate citizens and extort payments on a regular basis. In the southeast, we would find *latent* states where governments demonstrate the ability to build and extend the hardware of the state across the country but have yet to make hard political choices about the software and (re)design administrative procedures, train civil servants to provide quality basic services, and pay sufficient salaries to remove incentives to extort resources from citizens. And in the northwest, we would find *constrained* states where governments have shown the willingness to hire and train quality civil servants, but have not extended development infrastructure across the territory. Figure 4 shows how our countries fit these ideal types.

Figure 4: State reach and state professionalism | 36 countries | 2014/2015

Dotted lines represent the mean values on each dimension (reach = 0.61 and professionalism = 0.67)

In order to test whether these four types usefully identify empirically distinct clusters of countries, we subject the observed data to a k-means cluster analysis in which we test a specified number of clusters of observations in a two-dimensional space. The observations are arranged around a centroid point that minimizes the spatial distance from other cases in that cluster and maximizes the distance from other cluster centroids (Figure 5). The results suggest that a four-cluster solution provides a reasonable fit, confirming the ideal types; a five-cluster solution performs similarly.⁹

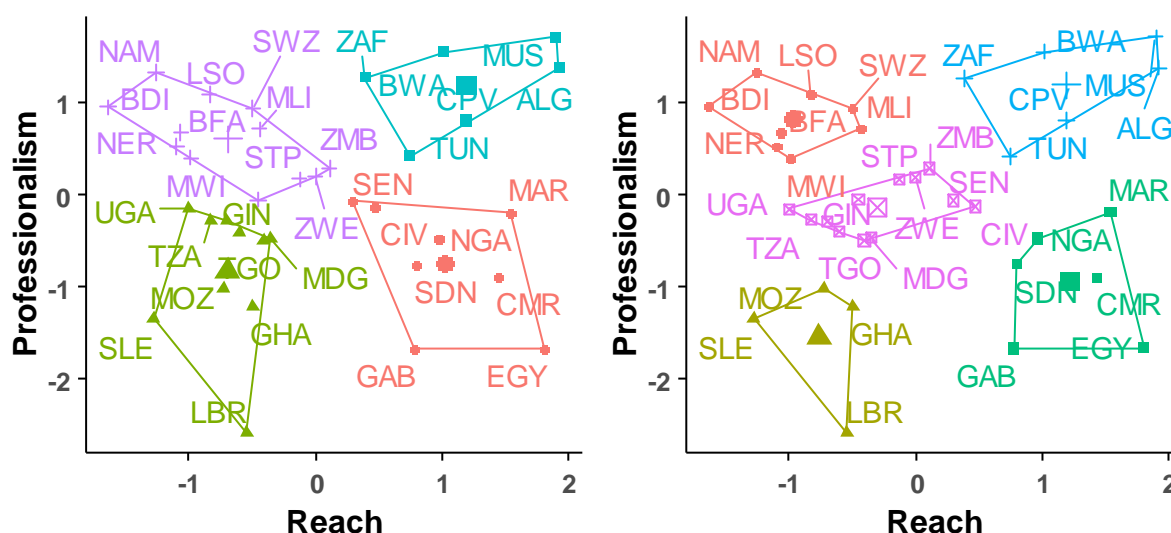
For both the k=4 and the k=5 cluster solutions, the northeast quadrant remains identical. In the northeast, Algeria, Botswana, Cabo Verde, Mauritius, South Africa, and Tunisia fall where we would expect to find substantive states, with relatively high levels of both reach and professionalism. And to the southeast, Cameroon, Egypt, Gabon, Morocco, Sudan, and Nigeria are characterized by relatively well-developed state infrastructure but poor public services (latent). In the k=4 cluster analysis, this group of countries also includes Côte d'Ivoire and Senegal.

In the southwest quadrant, the combination of countries changes slightly depending on the number of clusters. For the four-cluster solution, Benin, Ghana, Guinea, Liberia, Madagascar, Mozambique, Sierra Leone, Tanzania, Togo, and Uganda fall where we would expect to find absent states, with relatively low levels of both reach and professionalism, while the 12-country cluster in the northwest quadrant represents states that have as yet not extended state infrastructure across the territory (constrained). The five-cluster solution splits the last three groups and reveals a middling group of 12 countries that have average levels of

⁹ For additional information on the cluster analysis, see Appendix B.

professionalism and mostly below-average levels of geographic reach, and a residual group that more accurately fits the *constrained ideal* type (Burkina Faso, Burundi, Lesotho, Mali, Namibia, Niger, and Eswatini).¹⁰

Figure 5: K-means cluster analysis for 36 countries (Panel A: k=4; Panel B: k=5)

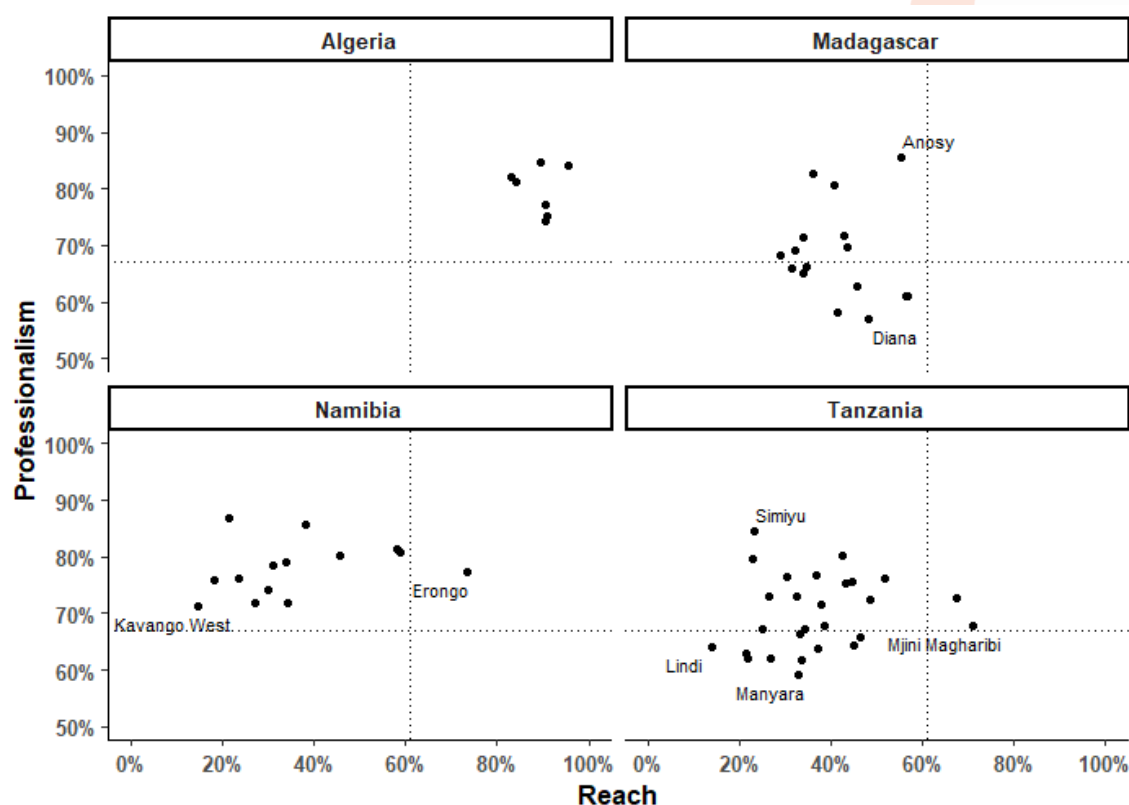


As we have noted, scholars who point to the limited nature of the African state often focus on its spatial unevenness, especially along rural/urban, ethnic, or partisan lines. And as we have argued, an important advantage of our citizen-centered, survey-based measure is that it can be calculated at sub-national levels. As anticipated, when we drill down to the provincial level, we often find very different spatial patterns of reach and professionalism than those suggested by national point estimates.

For illustrative purposes, we select four countries that display four different patterns of sub-national variation in state-ness (Figure 6). In Algeria, the provincial results reflect the national estimate, with all entities exhibiting fairly high standards in both professionalism and reach. In Namibia, however, while the civil service is almost uniformly well regarded by users, the presence of state infrastructure varies widely, from 74% in Erongo (the coastal municipality of Swakopmund) to 15% in Kavango West, along the country's northern border with Angola. In Madagascar, most provinces fall broadly within the same level of state reach, but they vary widely in terms of professionalism, ranging from 86% in Anosy (along the southern tip of the country) to 57% in Diana (on the opposite, northern tip of the island). And in Tanzania, we observe large provincial differences on both dimensions. Citizen users experience extremely low levels of professionalism in Manyara (between Arusha and Dodoma) and very high levels in Simiyu (bordering the southern shore of Lake Victoria). State development infrastructure is scarce in Lindi (in the southeastern corner of the country) but fairly widespread in Mjini Magharibi (the city of Zanzibar).

An important question when moving between the national and sub-national levels of analysis is related to measurement accuracy. While the confidence intervals for our measures at the national level is $\pm 2-3$ percentage points, the margin of error increases for the estimates of sub-national units depending on the sample size of each unit. Please see Appendix C for additional information on this, as well as options to mitigate this problem.

¹⁰ For additional cluster analyses with alternative numbers of clusters, see Appendix B.

Figure 6: Patterns of sub-national variation in state-ness | 4 countries

Dotted lines represent the mean values on each dimension (reach = 0.61 and professionalism = 0.67)

The bloated African state?

How do the two dimensions we just discussed relate to the third scholarly perspective on the African state that we introduced at the outset, that is, that the African state is generally oversized or bloated and duplicates functions? How do the states covered in this analysis vary on this dimension? And how does this dimension relate to either service delivery or legitimacy?

In the past, scholars often focused on the number of cabinet ministers and size of the senior-level bureaucracy as both a result of “big man” patronage networks and an indication of increased rent-seeking opportunities and ways to balance political power. Indeed, over the past 40 years, the average cabinet size has increased substantially (LeVan & Assenov, 2016). Yet the empirical literature on the economic and political impact of a bloated state at the ministerial level is less clear than one might suspect. On the one hand, Wehner and Mills (2021) have demonstrated a systematic negative relationship across African countries, and over time within countries, between the number of cabinet ministers and several indicators of governance outcomes based on expert judgments and other commonly employed aggregate indices (e.g. V-Dem, World Governance Indicators, and Ibrahim Index of African Governance). On the other hand, Ariotti (2021) found that a larger number of ministers does not increase government spending. Similarly, measuring cabinet size in terms of the number of ministries, LeVan and Assenov (2016) have shown that big cabinets are not correlated with government deficits, and only weakly correlated with higher levels of patronage spending.

However, we ask two different questions. First, to what extent is the size of the state at the ministerial level related to its ability to build development infrastructure or develop a professional civil service? And second, are citizens in “bloated” states any less likely to enjoy basic necessities, feel secure from crime, express satisfaction with government performance, trust government institutions, or see them as legitimate? Building on previous efforts, we

develop a new measure of bloatedness. While previous efforts have focused on the overall number of *ministers* or *ministries* – which could be an indication of increased government scope, but not necessarily reflect bloatedness – we count the number of cabinet-level line ministries across these same 36 countries between 2009 and 2013 for a specific set of policy areas. Since the idea of the “bloated” (or what Diamond (1987) called “swollen”) state also implies duplication and inefficiency, with too many officials performing the same tasks, we examine how each country distributes its ministries across various functional policy areas.

Thus, our measure encompasses not only the number of politically accountable department heads, but also approximates the presence of deputy ministers, senior civil servants, and associated administrative structures. And again following Sen's (2001) arguments about the essential tasks of the state, we focus on how these ministries are distributed across the basic government functions essential to human development: the provision of safety and security, schooling, water, sanitation, electricity, and health care.

To investigate these questions, we begin by developing an inductive coding scheme that spans 19 potential policy areas, using the categorization of the World Bank's (1997) World Development Report as a point of reference (see Table 7). We then gather data from the annual handbooks of *Africa South of the Sahara* and *The Middle East and North Africa* (Europa Publications, 2008, 2009a, 2009b, 2010a, 2010b, 2011a, 2011b, 2012a, 2012b, 2013a, 2013b) to identify the existence of ministries and their policy functions. Excluding ministries or offices of the president, vice president, or prime minister, we find 869 ministries across 36 countries, or an average of 24 ministries per country.¹¹ Using only the 2013 data, we are able to identify most (76%) of the 869 observed ministries as belonging to a single policy area based on their official name. For example, the Ministry of Defence in Ghana falls within the “defense” policy area. One-fourth (24%) of all ministries, however, cover multiple areas, such as Lesotho's Ministry of Home Affairs, Public Safety, and Parliamentary Affairs. Here, because of the lack of detailed data across countries, we categorize such a ministry as 50% “interior” and 50% “governance.”¹² Based on this decision rule, we assign 20% of all ministries to two separate policy areas, and 4% to three policy areas.

There is substantial variation in how African states create or assign ministries across various policy areas. As might be expected, a broader policy area such as “infrastructure” requires on average more than two ministries. Yet African states devote twice as many ministries to “education” (2.0) as to “health” (0.9), despite the fact that both types of departments deliver services through fairly similar delivery systems (decentralized infrastructure such as schools and clinics) and require roughly similar types of resources (textbooks and medication) as well as professionally trained practitioners (teachers, doctors and nurses) (see Figure 7). But we also find considerable variation in how African governments structure their bureaucratic apparatuses. For instance, the cross-national variation in coverage of functional areas such as “trade,” “industry” and “infrastructure” is much higher than that for “communication” or “finance.” Indeed, 11 countries have no dedicated ministry for at least one policy area.¹³ In Kenya, for instance, there is no ministry (or part of a ministry) that oversees the judiciary, while neither Tanzania nor Liberia has a ministry that explicitly deals with “governance.” At the same time, Tanzania has five ministries tasked with the provision of some form of public infrastructure (compared to the average of 3.1 for all other countries). Because we are

¹¹ We believe this is a conservative estimate. If we were able to code specific departments or other agencies and commissions, we would obtain a higher number, but there appears to be no reliable source that tracks these. For a comparison with the average number of ministries between 2009 and 2013, see Appendix D.

¹² It is of course possible that the split between these two functional areas is not equal and that the ministry spends most of its resources on the “Interior,” rather than the “Governance” function.

¹³ Countries that do not have a ministry for at least one policy area are Botswana, Cameroon, Cabo Verde, Eswatini, Kenya, Liberia, Mauritius, São Tomé and Príncipe, Tanzania, Togo, and Tunisia. An additional 15 countries have a maximum score of 0.5 for at least one policy area (Algeria, Burkina Faso, Burundi, Gabon, Lesotho, Malawi, Mali, Mozambique, Namibia, Niger, Senegal, Sierra Leone, South Africa, Uganda, and Zimbabwe), while the remaining 10 countries have at least the equivalent of one full ministry per policy area.

particularly interested in the functional areas most important for human security, we calculate the average number of ministries devoted to “education,” “health care,” “interior” (which includes policing), and “infrastructure” (which includes the provision of water, sanitation, and electricity). Again we find substantial variation. While São Tomé and Príncipe devotes, on average, less than one ministry (0.8) to each of these sectors, South Africa assigns almost three (2.9) (Figure 8).¹⁴

Table 7: Categories of potential policy areas | 36 countries

Agriculture and land†	Includes livestock/cattle, food, land and rural affairs, forestry, fisheries, animal resources and wildlife (protection), natural resources
Arts and culture	Includes social cohesion, national languages, religion
Communication	Includes information, postal services, new technologies, public broadcasting
Defense	Includes military equipment
Education	Includes basic/primary, secondary, higher, vocational and technical, science and technology
Environment and sustainability	Includes environment, sustainable development
Finance	Includes economic planning, budget
Foreign affairs	Includes international and regional cooperation, diaspora
Governance	Includes decentralization, territorial administration, governmental coordination and relations, inter-governmental affairs, traditional leaders, civil service/state administration reform
Health	Includes health care
Industry	Includes commerce, development of small and medium-sized enterprises, microfinance, mining, business development, industrial regulation, energy
Infrastructure†‡	Includes aviation, roads, transport, works, public works, equipment, water, sanitation, and electricity
Interior	Includes policing/domestic safety and security, home affairs, disaster management, refugee management
Justice	Includes human rights
Labour	Includes labour and employment
Settlement planning	Includes housing, town planning, urban planning, lands, and rural development
Social protection	Includes social affairs, vulnerable groups: women, youth, children, elderly, military veterans
Sports	Includes sports and leisure
Trade	Includes tourism and handicrafts

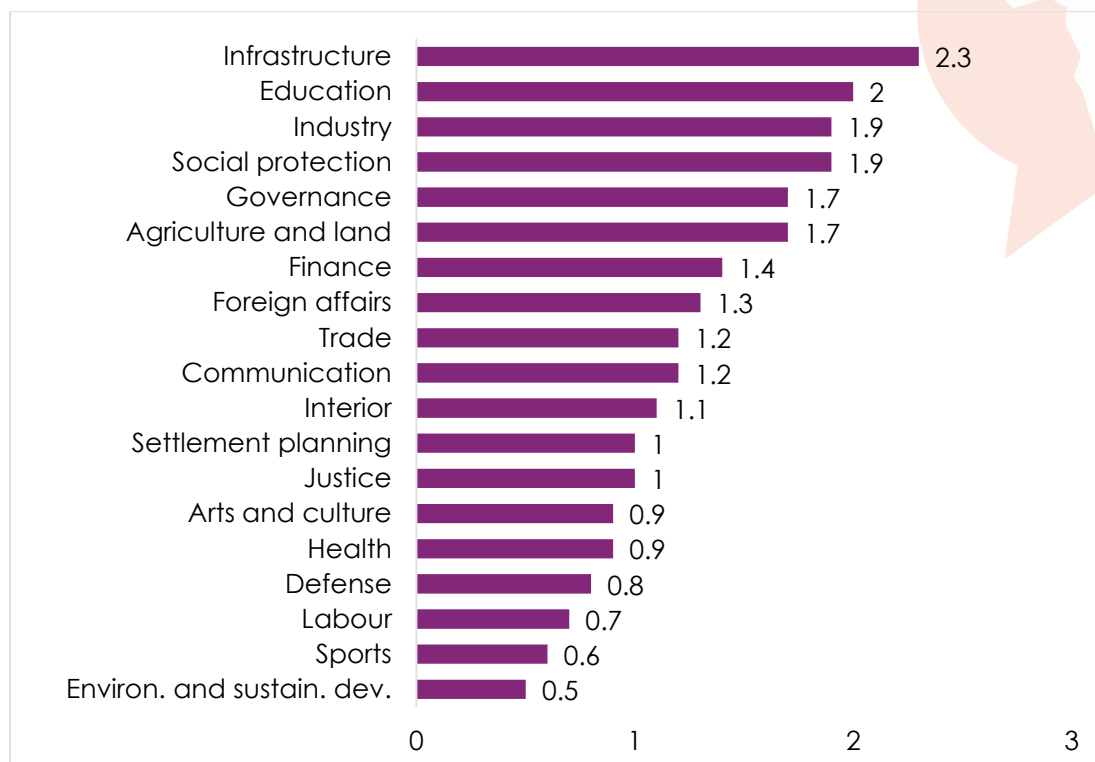
Note: The following exceptions were made in our classification scheme:

† If “water” appeared in the title as “Water and forests,” we coded it as part of the “Agriculture and land” policy area; otherwise it was coded as “Infrastructure.”

‡ If “energy” appeared in the title together with mining, we coded it as part of “Industry”; otherwise we interpreted it to be electricity and coded it as part of the “Infrastructure” policy area.

¹⁴ We arrive at a score such as 0.8 because a country might have ministries that are split across two or three functional areas, contributing 0.5 or 0.33 to each area.

Figure 7: Average number of line ministries per functional area, per country
| 36 countries | 2013



Source: Africa South of the Sahara (2010-2014), The Middle East and North Africa (2010-2014), authors' calculation.

Figure 8: Scope of African states: Ministries assigned to interior, education, health care, and infrastructure | 36 countries | 2013

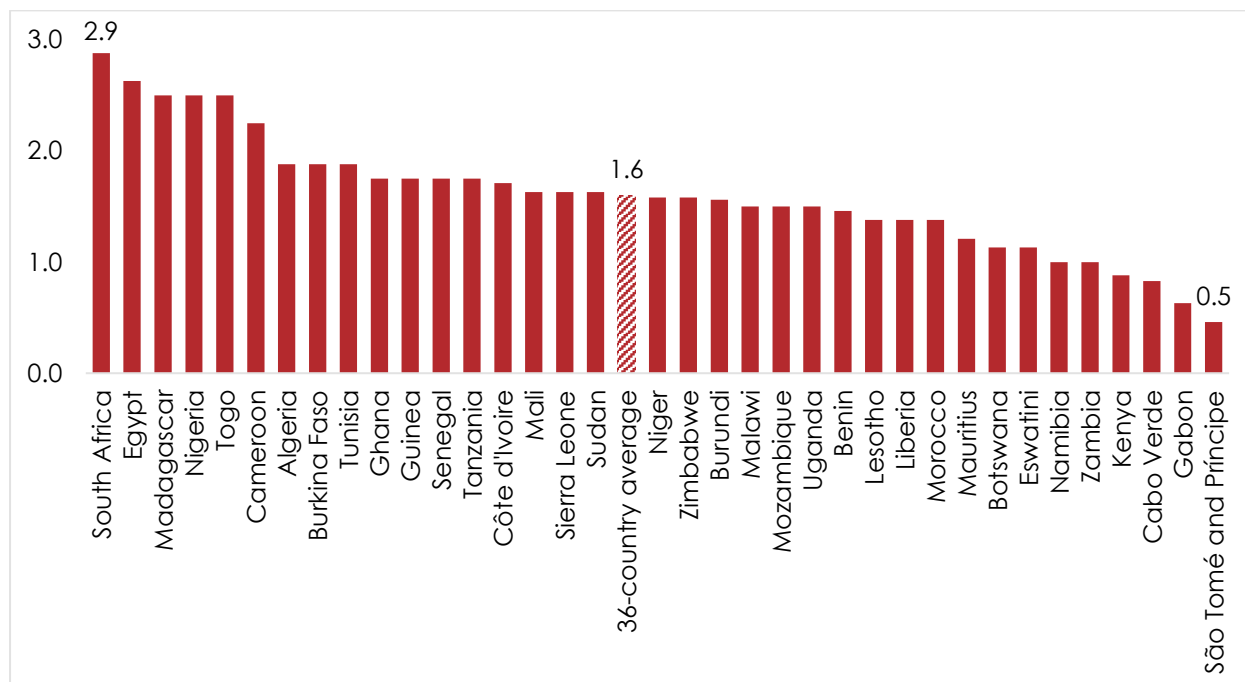


Figure shows the average number of ministries across four essential functional areas (education, health, infrastructure, and interior). For interior, we counted ministries with responsibility for domestic policing. For infrastructure, we counted ministries with responsibility for electricity, water, sanitation, or some other element of infrastructure.

The scholarly focus on the size of African governments might lead us to expect that states with bloated cabinets with high levels of duplication would be less likely to have developed extensive service-delivery infrastructure or professional civil services. In fact, across 36 countries, we find no significant linear relationship between “bloatedness” (whether measured by our new measure or as the average number of ministries per country between 2009-2013) and reach or professionalism (Table 8).¹⁵

Table 8: Measures of the bloatedness, reach, and professionalism of the African state

	Bloatedness (# ministries across 4 performance areas)	Bloatedness (# ministries '09-'13)	Wehner & Mills (# ministers '09-'13)	Reach (R6)	Professionalism (R6)
Bloatedness (# ministries across 4 performance areas)	1	.647**	.546**	.134	-.161
Bloatedness (# ministries '09-'13)	.647**	1	.890**	.222	-.168
Wehner & Mills (# ministers '09-'13)	.546**	.890**	1	.193	-.233
Reach (R6)	.134	.222	.193	1	.039
Professionalism (R6)	-.161	-.168	-.234	.039	1

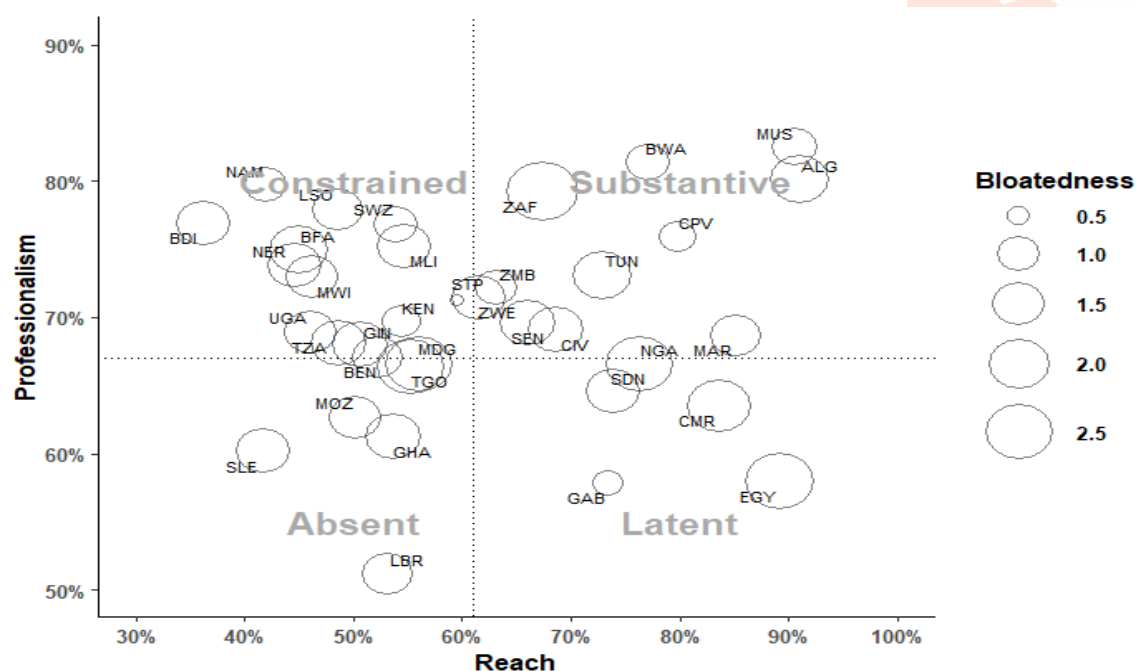
**** Correlation is significant at the 0.01 level (2-tailed).**

N=36 except for correlations with Wehner & Mills measure (N=32).

We then examine whether over-sized and duplicative states vary with particular combinations of reach and professionalism by using the same four quadrants of reach and professionalism displayed in Figure 4, but with the third dimension – bloatedness – indicated by the size of the country bubbles (with large bubbles indicating a relatively large number of ministries devoted to the delivery of essential services). In contrast to what the common wisdom might expect, we find states that are over-sized and duplicative in three of the four combinations of reach and professionalism – South Africa (substantive), Egypt (latent), and Madagascar and Togo (absent) (Figure 9).

¹⁵ Wehner and Mills' (2021) data on the number of cabinet ministers (for either 2013 or 2009-2013) exhibit similar non-significant relationships with reach ($r=.074$ and not significant, $r=.193$ and not significant, respectively) and professionalism ($r=-.130$ and not significant, $r=-.137$ and not significant).

Figure 9: State reach, professionalism, and bloatedness | by ideal type | 36 countries



Note: The average number of ministries devoted to the delivery of essential services is represented by the size of the circle for each country.

Convergent and discriminatory validity

We have now conceptualized and operationalized measures of the infrastructural reach of the state, the professionalism of lower-level state servants, and the bloatedness of the state. We have found that these three dimensions are largely independent of one another. Before we move to test which of these dimensions, if any, helps account for the extent to which African states are able to provide human security, citizen satisfaction, and state legitimacy, we examine whether any of our measures tap the same characteristics captured by other expert- or results-based measures of state-ness. In this way, we pursue additional strategies of measurement validation proposed by Adcock and Collier (2001).

We identify 11 measures that seem most directly related to various aspects of state capacity, produced by the World Bank World Governance Indicators (WGI), Quality of Governance (QoG) Project, Transparency International (TI), V-Dem, Fragile State Index (FSI), Bertelsmann Transformation Index (BTI), and scholars Jonathan Hanson and Rachel Sigman. While in some cases one index includes other indices in this list as data sources (e.g. TI uses the BTI and V-Dem), we nevertheless treat them as separate indices below.¹⁶ Two measures explicitly ask experts to assess the territorial reach of the administration of basic public service: the “basic administration” sub-dimension of the BTI and the “public services” sub-dimension of the FSI (2017). While these measures conflate reach and professionalism to various degrees, both explicitly refer to the geographic distribution of state infrastructure as well as the accessibility of state services for the general population, making them ostensibly similar to our measures of both professionalism and reach.

Other measures come closer to the concept of state autonomy. In its measure of the impartiality of public administration, QoG asks experts to assess the degree to which government officials react only to the law or the merits of citizen request when taking actions. Similarly, V-Dem experts are asked to focus on the extent to which “public administration is characterized by arbitrariness and biases (i.e. nepotism, cronyism, or

¹⁶ For more information on each of the measures, please see Appendix E.

discrimination)." Thus, we expect these measures to correlate positively with our measure of professionalism, but negatively with bloatedness and not at all with reach.

Another set of measures focuses on corruption. The WGI and TI's index on corruption perceptions use both expert and citizen assessments to assess corruption or the extent to which the state controls corruption. V-Dem's neopatrimonialism index is based only on expert judgments but includes measures of clientelism and the use of public resources for private or political purposes. Similar to the state autonomy measures, we expect these corruption-related measures to correlate positively with bloatedness, negatively with professionalism, and not at all with reach.

Finally, the WGI combines a range of both expert and citizen perceptions data on the quality, independence, and credibility of the public service to develop an overall measure of "government effectiveness", while Hanson and Sigman (2021; 2020) developed a general-purpose aggregate estimate of state capacity that covers three distinct dimensions – the extractive, coercive, and administrative capacities of the state. We expect these measures of the overall quality of the state to correlate positively with both professionalism and reach.

As it turns out, our reach scores are related strongly only to the FSI public services indicator – among the alternative measures, this indicator is most explicit about the geographic reach of the state (Table 9). Our measure of professionalism exhibits moderate to strong relationships with the corruption and overall state effectiveness measures. And as expected, our measure of bloatedness is moderately linked with the corruption and some public service indices, but weakly related to all others.

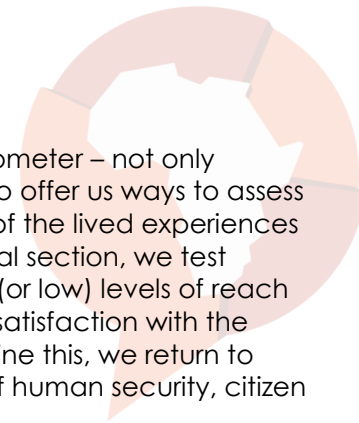
Together, these correlations suggest that our measures tap three separate aspects of state-ness. That is, our three measures converge with the conceptually most similar alternative measures, but also discriminate from the other dimensions of state-ness.

Table 9: State capacity measures compared | 36 countries | 2014/2015

Index	Source	N	Reach	Professionalism	Bloatedness
Infrastructure					
Public services (absence of)	FSI	36	-.635***	-.391**	.157
Basic administration	BTI	32	.265	.465**	-.132
Public service					
Professional public administration	QoG	22	.175	.284	-.393*
Impartial public administration	QoG	22	.313	.412	-.258
Rigorous and impartial public administration	V-Dem	35	-.069	.421**	-.410**
Corruption					
Control of corruption	WGI	36	.255	.481***	-.330**
Regime corruption	V-Dem	36	-.078	-.461***	.375**
Neopatrimonial rule	V-Dem	35	.032	-.363**	.399**
Corruption perceptions†	TI	35	.212	-.443***	.351**
Overall effectiveness					
Government effectiveness	WGI	36	.301*	.603***	-.253
State capacity	Hanson & Sigman	35	.135	.496***	-.180

Bivariate Pearson correlation (2-tailed). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

† We reversed the TI measures so that a higher value indicates more corruption.



Consequences of state reach and professionalism

We contend that survey data – such as those generated by Afrobarometer – not only provide us with new, unique, and valid measures of the state, but also offer us ways to assess the consequences of state structures and actions through the prism of the lived experiences of those whom the state is meant to serve – its citizens. Thus, in this final section, we test whether individuals who live in states that are characterized by high (or low) levels of reach or professionalism are any more (or less) likely to feel secure, express satisfaction with the performance of government, or see the state as legitimate. To examine this, we return to data from Afrobarometer Round 6 to develop a series of measures of human security, citizen satisfaction, and political legitimacy.

Although our measures of reach and professionalism are based on individual proximity to or personal experiences with the state, we know that these phenomena are highly clustered within countries (because respondents from the same country are reacting to the same overall state). They are also clustered within provinces (because respondents living in the same province also react to the same provincial manifestations of the state, which, as we have shown above, can vary considerably within a country). Thus, we use a multilevel model that includes both national-and provincial-level fixed effects.¹⁷ When measuring the main independent variables of interest (reach and professionalism), we take full advantage of our newly developed measure employing the provincial-level scores. At the national level, we control for wealth (GDP per capita based on purchasing power parity), ethnic diversity (the Alesina (2002) measure of ethnic heterogeneity), and democratic history (a count of the number of years as a democracy, according to Freedom House (2019), since 1989). Given the salience of the issue in the literature, we also control for the bloatedness of the state (using our measure of the number of ministries devoted to four essential service-delivery areas). At the individual level, we also control for age, gender, geographic location (urban/rural), employment, and occupation, as well as the potential confounding effects of co-partisanship (whether the respondent identifies with the ruling party) and (for some models) evaluations of national economic trends (an index of past and current evaluations and expectations for the future).

As for the dependent variables, we measure *human security* in two ways. First, we use a well-developed Afrobarometer measure of *lived poverty*, an index that assesses the frequency with which people went without food, water, heating fuel, medical care, and income in the previous 12 months. Second, we apply a construct of *physical safety*, composed of whether the respondent was physically attacked or suffered a theft from his/her home in the previous 12 months (Mattes, 2008) (Table 10). We develop three measures of *citizen satisfaction*. The first two are based on whether respondents approve of the government's *micro-economic* performance (an index of approval of government handling of health care, education, water and sewage, electricity, and roads and bridges) and *macro-economic* performance (an index of approval of government handling of the economy, job creation, prices, living standards, income disparities, and food security) (Bratton, 2009; Bratton, Mattes, & Gyimah-Boadi, 2005). The third is a measure of satisfaction with *security performance* (a construct of approval of government handling of crime and corruption) (Mattes, 2006) (Table 11). Finally, we use two measures of *political legitimacy*: *perceived corruption* in four state institutions (the army, courts, police, and tax department) and the *perceived trustworthiness* of those same state institutions (Mattes & Moreno, 2017) (Table 12).

For each dependent variable, we test three successively expanding models (levels 3, 2, and 1 in the tables), beginning with national-level variables only, then adding the provincial-level measures of reach and professionalism, and then adding the individual-level controls. Among other things, this allows us to observe the change in explanatory power at each level of analysis as we add in successive sets of variables. Importantly, this process demonstrates

¹⁷ For most models, this means 36 countries and 400 provinces (after excluding 52 provinces in which fewer than 30 interviews were conducted).

that in virtually every instance, the addition of the provincial-level estimates of reach and professionalism not only explain important degrees of cross-province variation within states, but also increase the national-level adjusted r^2 over that accounted for by only national-level variables, suggesting that reach and professionalism are both important sources of performance variables between and within countries. The same thing occurs with the introduction of individual-level variables, which not only accounts for some of the cross-respondent variation within provinces, but also increases our ability to discriminate across provinces (suggesting that the within-province variation of individual characteristics such as education explains less than the cross-provincial variation).

On its face, the extent to which governments are able to expand service-delivery infrastructure to larger proportions of the population (reach) would seem an obvious and important factor in both material and political development. In confirmation of such expectations, our first model (Table 10) demonstrates that people who live in countries, and in provinces, in which the state provides more local-level services are indeed less likely to experience lived poverty ($b=-.084$, $p=.000$).

Yet our second model indicates that the same people are not any less likely to have experienced crime in the previous year. Indeed, extensive state structures are not associated with any greater satisfaction with micro- or macro-economic performance. And against expectations, people who live in areas with high levels of service infrastructure (including police stations) express *less* satisfaction with government performance on security (fighting crime and limiting corruption) ($b=-.080$, $p<.001$) and are *less* likely to trust state institutions ($b=-.115$, $p=.000$). This is illustrated by the fact that citizens in four out of five countries that fall into the latent category in Figure 4 above (Cameroon, Gabon, Nigeria, and Sudan) have below-average trust in state institutions. This is an important puzzle that merits specialized focus in future research.

The professionalism of the state is an altogether different story. Consistent with our expectations, we find strong associations in the expected direction with every dependent variable that we model. Over and above the level of national wealth, ethnic diversity, and democratic history, or the existence of service-delivery infrastructure, the presence of efficient administration and helpful and honest civil servants is strongly correlated with lower levels of poverty ($b=-.339$, $p=.000$). And regardless of whether people live near a police station (or other services), the professional quality of the police (and other officials) in that province is associated with reduced experience of crime ($b=-.110$, $p<.001$). People who live in countries and provinces characterized by more professional civil servants are also more likely to be satisfied with the macro-economic ($b=.169$, $p<.015$) and micro-economic performance ($b=.124$, $p<.045$) of the government, as well as its performance on security ($b=.166$, $p<.001$). And finally, they are less likely to see state institutions as corrupt ($b=.207$, $p<.004$) and more likely to say that state institutions are trustworthy ($b=.274$, $p<.007$).

It is important to note that the bloatedness of the state consistently has no impact on our key dependent variables, regardless of whether bloatedness is measured by our indicator of the number of ministries in four essential service-delivery areas or by the number of ministries or the average total number of ministers (2009-2013). Thus, states with streamlined (or swollen) cabinets are equally liable to do well (or badly) in terms of delivering human security, generating performance satisfaction, or achieving legitimacy. This might be an indicator of ineffectual inter-governmental relations, or of the limited impact that the size and institutional configuration of the national bureaucracy has on sub-national delivery. Nevertheless, we should not under-estimate the consequences of an overly expansive national bureaucracy consuming scarce operational resources that could otherwise be allocated to expanding reach and improving strength.

The real issue, it would appear, is whether or not the state comprises efficient, helpful, and honest civil servants at the local level.

Table 10: Consequences of state capacity for human security | 36 countries | 2014/2015

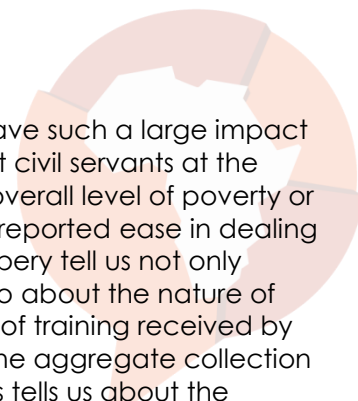
	LIVED POVERTY						EXPERIENCE OF CRIME					
	Country		Country and province		Country and province		Country		Country and province		Country and province	
Intercept	3.019	.000	2.393	.000	1.979	.000	0.233	.033	0.466	.000	0.364	.000
GDP per capita, 2014 (log)	-0.240	.001	-0.035	.092	--		-0.001	.863	--		--	
Ethnic heterogeneity	0.403	.081	0.420	.044	0.472	.024	0.320	.000	0.250	.003	0.159	.032
Years democratic, 1989-2016	-0.009	.104	-0.010	.037	-0.009	.043	-0.002	.343	--		--	
Bloatedness	-0.069	.482	--		--		-0.060	.121	--		--	
Reach			-0.149	.000	-0.084	.000			0.008	.415		
Professionalism			-0.322	.000	-0.339	.000			-0.163	.000	-0.110	.001
Age					0.002	.000					-0.001	.000
Rural					0.159	.000					-0.052	.000
Female					-0.020	.009					-0.019	.001
Education					-0.059	.000					0.006	.000
Employed					-0.057	.000					--	
Middle-class occupation					-0.112	.000					--	
Lived poverty											0.116	.000
											--	
Level 3 r²	.526		.596		.597		.354		.434		.521	
Level 2 r²			.152		.204				.056		.189	
Level 1 r²					.053						.024	
Countries	36		36		36		36		36		36	
Provinces			391		391				391		391	
Respondents (weighted)	41,771		41,148		40,619		41,792		41,169		40,830	

Table 11: Consequences of state capacity for citizen satisfaction | 36 countries | 2014/2015

	GOVERNMENT MACRO-ECONOMIC PERFORMANCE						GOVERNMENT MICRO-ECONOMIC PERFORMANCE						GOVERNMENT SECURITY PERFORMANCE					
	Country		Country and province		Country and province		Country		Country and province		Country and province		Country		Country and province		Country and province	
Intercept	2.329	.000	1.010	.000	1.045	.000	1.724	.000	1.015	.000	0.651	.000	2.305	.000	1.317	.000	1.604	.000
GDP per capita	-0.021	.336	--	--	--	--	-0.039	.032	-0.035	.068	-0.032	.027	-0.033	.169	--	--	--	--
Ethnic heterogeneity	-0.244	.279	--	--	--	--	-0.218	.227	--	--	--	--	-0.401	.107	--	--	--	--
Years democratic	0.012	.029	0.012	.013	0.009	.035	0.011	.011	0.011	.010	0.008	.014	-0.001	.804	--	--	--	--
Bloatedness	-0.154	.143	--	--	--	--	-0.007	.937	--	--	--	--	-0.097	.390	--	--	--	--
Reach			0.027	.258	--	--			-0.014	.535	--	--			-0.087	.001	-0.080	.001
Professionalism			0.300	.000	0.169	.015			0.268	.000	0.124	.045			0.259	.002	0.166	.036
Age					0.001	.027					0.001	.000					0.001	.010
Rural					-0.089	.000					--	--					0.052	.000
Female					--	--					--	--					--	--
Education					--	--					-0.010	.000					-0.015	.000
Employed					-0.018	.003					-0.021	.000					-0.026	.000
Middle-class occupation					--	--					--	--					--	--
Lived poverty					-0.173	.000					-0.115	.000					-0.179	.000
Co-partisanship					0.158	.000					0.225	.000					0.295	.000
Econ. evaluations					0.286	.000					0.365	.000					--	--
Level 3 r²	.292		.369		.566		.311		.306		.438		.148		.085		.102	
Level 2 r²			.046		.322				.086		.203				.092		.181	
Level 1 r²					.095						.109						.030	
Countries	36		36		36		36		36		36		36		36		36	
Provinces			391		391				391		391				391		391	
Respondents (weighted)	40,519		39,896		34,898		40,524		39,901		34,826		40,566		39,943		37,167	

Table 12: Consequences of state capacity for state legitimacy | 36 countries | 2014/2015

	PERCEIVED CORRUPTION IN STATE INSTITUTIONS						TRUST IN STATE INSTITUTIONS					
	Country		Country and province		Country and province		Country		Country and province		Country and province	
Intercept	1.443	0.000	1.969	0.000	1.822	0.000	3.735	0.000	3.186	0.000	3.251	0.000
GDP per capita, 2014 (log)	0.020	0.244					-0.049	0.180				
Ethnic heterogeneity	0.698	0.001	0.587	0.002	0.644	0.002	-0.748	0.050	-0.902	0.010	-0.874	0.014
Years democratic, 1989-2016	-0.008	0.059	-0.006	0.117			0.007	0.453				
Bloatedness	-0.063	0.462					0.012	0.944				
Reach			0.051	0.012					-0.151	0.000	-0.115	0.000
Professionalism			-0.260	0.000	-0.207	0.004			0.363	0.001	0.274	0.007
Age											0.005	0.000
Rural					-0.068	0.000					0.132	0.000
Female					-0.046	0.000						
Education					0.020	0.000					-0.039	0.000
Employed					0.033	0.000						
Middle-class occupation												
Lived poverty					0.109	0.000					-0.195	0.000
Co-partisanship					-0.180	0.000					0.403	0.000
											--	
Level 3 r²	.406		.472		.474		.170		.335		.421	
Level 2 r²			.085		.102				.102		.182	
Level 1 r²					.010						.030	
Countries	36		36		36		36		36		36	
Provinces			391		391				391		391	
Respondents (weighted)	40,689		37,348						41,113		38,343	



But why does the character of lower-level civil servants appear to have such a large impact on our governance outcomes? Why do efficient, helpful, and honest civil servants at the local level matter for seemingly unrelated phenomena such as the overall level of poverty or crime in a given area? As we indicated above, we believe that the reported ease in dealing with state agencies and the reported experience of (the lack of) bribery tell us not only about the immediate episode of contact with these officials, but also about the nature of the administrative systems employed by a state agency, the quality of training received by those officials, and the adequacy of remuneration. In other words, the aggregate collection of episodic interactions between individual citizens and civil servants tells us about the software of the state in its overall administrative design and human capital. Thus, we believe the observed relationships are not simply the result of individual virtue (i.e. some civil servants are nice, eager, and honest while others are not), but of the larger national approach to public administration and its provincial variation.

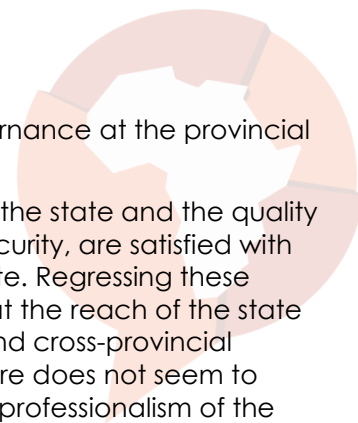
Conclusion

The social-scientific study of the African state has consisted of three images or perspectives. Focusing on the cabinet and senior administrative levels, some scholars have argued that it is too large, “bloated,” or “swollen.” Others, focusing on service line agencies, have drawn the opposite conclusion, arguing that the state is too small and too remote from the lives of ordinary people. And a third group of scholars has seen the state primarily as a corrupt, rent-seeking, extractive structure, both at senior levels (through devices such as embezzlement and the demand for bribes in return for government contracts or positions) and lower levels (mostly through the demand for bribes in return for the provision of basic services).

While these images were sustained for many years through qualitative observation, scholars increasingly make use of systematic databases. Virtually all of these databases, however, rely on the judgments of academic and professional experts or the financial and administrative data provided by national statistical agencies, and confront the limitations associated with both types of data generation. In contrast to these “top-down” measures of the state, little if any of our understanding of the African state is based on the “bottom-up” experiences of those people whom the state is meant to serve – its citizens.

In this paper, we have attempted to remedy this situation by using survey data to develop two new measures of crucial aspects of state-ness. The first, reach, assesses the presence of the state in the lives of ordinary citizens by measuring the proximity of citizens to state service-delivery infrastructure with regard to security, education, and health, and household access to water, sewerage, and electricity (or what we have called the “hardware” of the state). The second, professionalism, assesses the human capital by which states provide public services in an efficient and extortion-free manner (or what we have called the “software” of the state). We have shown that these measures are both valid and reliable, and by demonstrating substantial correlations between both indices and other existing measures of the state, we have provided evidence that our measures reflect many of the same phenomena as expert- or output-based indices. Yet the modest strength of many of these correlations also suggests that our measures capture unique, previously untapped aspects of state-ness.

Both measures reflect substantial cross-national variation in terms of the highest and lowest levels of professionalism and reach. Yet the two dimensions are completely distinct. In other words, countries that have taken steps to build extensive networks of state infrastructure are not necessarily any more or less likely to have also taken the steps to train and sustain a professionalized civil service. While a few African states have managed to do both relatively well (e.g. Mauritius, Botswana, Cabo Verde, and Algeria), and a few states do badly on both dimensions (Liberia and Sierra Leone), a much larger number of states provide discordant patterns, with either extensive infrastructure matched by a poor bureaucracy (e.g. Egypt) or a professional bureaucracy with little infrastructure (e.g. Namibia). Moreover, because both reach and professionalism are based on survey data, the measures can be disaggregated to lower levels to describe the extent to which the quality of governance varies within

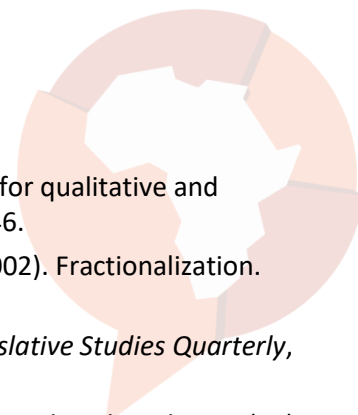


countries. Depending on sample size, this allows us to examine governance at the provincial and even municipal levels.

We also use survey data to measure the potential consequences of the state and the quality of governance, that is, the extent to which Africans enjoy human security, are satisfied with the performance of their government, and see the state as legitimate. Regressing these measures on our measures of reach and professionalism, we find that the reach of the state constitutes an important part of any explanation of cross-national and cross-provincial differences in lived poverty. However, the extent of state infrastructure does not seem to matter for any of the other putative outcomes. In stark contrast, the professionalism of the state has consistently positive consequences. People who live in provinces and in countries with helpful and honest civil servants are less likely to live in poverty or experience crime. They are more satisfied with the macro- and micro-economic performance and the security performance of their government. And they are far less likely to view state institutions as corrupt and much more likely to see the state as trustworthy.

We have suggested that these findings reflect not only the impact of the character of individual civil servants (e.g. helpfulness and honesty) but also tell us about the national approach to public administration, particularly in the administrative design of service-delivery systems, civil-servant training, and satisfactory remuneration. However, this is just informed speculation. Understanding what it is that professional civil servants and professional civil-service systems actually do that, for instance, lowers poverty or crime is an important avenue for future scholarship and inventive research designs.

Finally, these results carry important lessons for those interested in the relationships between economic development, the endurance of democracy, and state building. While many scholars have focused on characteristics of the state such as the number of government ministers or departments and agencies, its autonomy from society or political parties, or the extent to which it produces public or particularistic goods, the evidence presented here suggests that the nature of the state at the grassroots is extremely important. While building roads and extending the infrastructure of the state to greater proportions of its citizens is important, many states lack either the economic capacity or the political will to do so. By this evidence, however, it seems clear that even poor societies that lack the budget or donor support necessary to build vast electricity, water, or sewage systems across the countryside might still be able to cut poverty and build legitimacy by "getting the public administration right." Although we do not provide conclusive evidence on why some states might prioritize designing efficient, humane, and people-friendly administrative procedures, or build basic service infrastructure, our preliminary results suggest that economic wealth and democratic accountability drive different dimensions of state capacity to varying degrees. Future research could build on these findings to help us better understand the antecedents of state capacity in Africa.

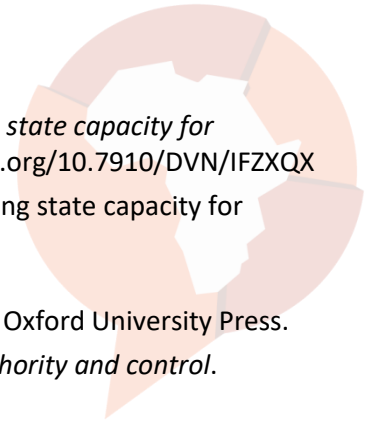


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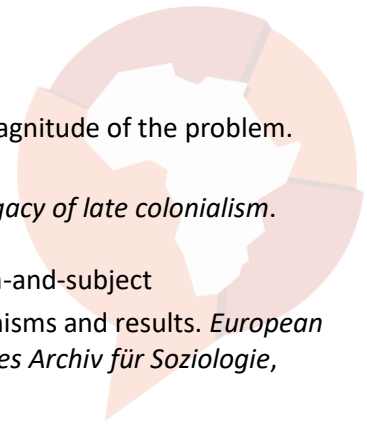
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Appendices

Appendix A: Factor analyses and reliability tests

Reach

The six items for state reach were subjected to maximum likelihood analysis with direct oblimin rotation using SPSS. Using the individual-level sample of $N=53,031$, the Kaiser-Meyer-Olkin measure reached .665. Bartlett's test of sphericity reached statistical significance, supporting the use of factor analysis. Two factors with eigenvalues above 1 were initially extracted. These explained 48.4% and 25.6% of the variance, respectively. The two factors represented the household-level measures (household toilets and water and electricity hook-ups) and the enumeration area-level measures (school, clinic, police station). However, for theoretical reasons, only one factor was extracted. After rotation, this factor explained a total of 37.77%.

Cronbach's alpha = .670,

Professionalism

The four items for state professionalism were subjected to maximum likelihood analysis with direct oblimin rotation using SPSS. Using the province-level sample ($N=391$), the Kaiser-Meyer-Olkin value was .795. Bartlett's test of sphericity reached statistical significance, supporting the use of factor analysis.

One factor with an eigenvalue above 1 was initially extracted. It explains 69.93% of the variance.

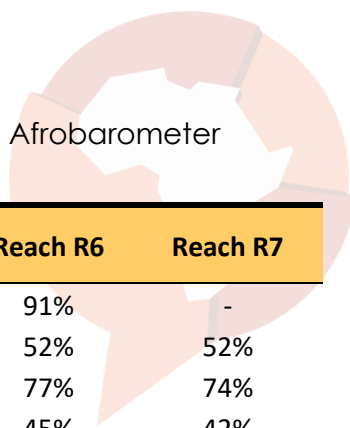
Cronbach's alpha = .842.

Professionalism and reach

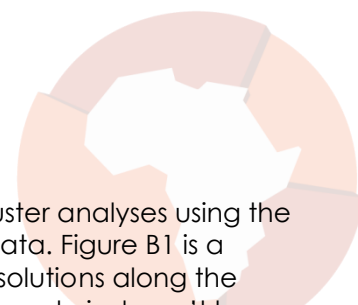
The 10 items for state professionalism and reach were subjected to principal components analysis with varimax rotation using SPSS. Using the province-level sample ($N=391$), the Kaiser-Meyer-Olkin value was .745. Bartlett's test of sphericity reached statistical significance, supporting the use of factor analysis.

Three factors with eigenvalues above 1 were initially extracted. These explained 31.94%, 26.7%, and 15.26%, respectively. However, for theoretical reasons, only two factors – reach and professionalism – were extracted. After rotation, these factors explained 31.94% (professionalism) and 26.7% (reach).

Cronbach's alpha (professionalism) = .842; Cronbach's alpha (reach) = .788.

Table A1: Country-level scores for reach and professionalism | Afrobarometer
Round 6 (2014/2015) and Round 7 (2016/2018)


Country	Professionalism R6	Professionalism R7	Reach R6	Reach R7
Algeria	80%	-	91%	-
Benin	67%	65%	52%	52%
Botswana	81%	77%	77%	74%
Burkina Faso	75%	74%	45%	42%
Burundi	77%	-	36%	-
Cabo Verde	76%	72%	80%	71%
Cameroon	64%	60%	84%	67%
Côte d'Ivoire	69%	66%	69%	53%
Egypt	58%	-	89%	-
Eswatini	77%	72%	54%	61%
Gabon	58%	59%	73%	66%
Ghana	61%	65%	54%	56%
Guinea	68%	59%	51%	54%
Kenya	70%	65%	54%	62%
Lesotho	78%	75%	49%	46%
Liberia	51%	56%	53%	42%
Madagascar	67%	64%	56%	49%
Malawi	73%	64%	46%	46%
Mali	75%	71%	55%	56%
Mauritius	83%	77%	91%	90%
Morocco	69%	70%	85%	79%
Mozambique	63%	67%	50%	54%
Namibia	80%	73%	42%	49%
Niger	74%	71%	45%	45%
Nigeria	67%	63%	76%	72%
São Tomé and Príncipe	71%	73%	59%	52%
Senegal	70%	71%	66%	72%
Sierra Leone	60%	58%	42%	51%
South Africa	79%	70%	67%	67%
Sudan	65%	68%	74%	80%
Tanzania	68%	75%	49%	41%
Togo	66%	64%	55%	58%
Tunisia	73%	66%	73%	82%
Uganda	69%	64%	46%	45%
Zambia	72%	66%	63%	52%
Zimbabwe	71%	67%	61%	61%
<i>Average</i>	<i>70%</i>	<i>67%</i>	<i>61%</i>	<i>59%</i>



Appendix B: Reach and professionalism cluster analysis

Table B.1 displays the number of countries per cluster for different cluster analyses using the 36-country sample employing Afrobarometer Round 6 (2014/2015) data. Figure B1 is a graphical representation of the data displaying the different cluster solutions along the Reach and Professionalism dimensions. While the k-means clustering analysis doesn't have a definitive evaluation metric that we can use to assess the outcome of different clustering algorithms, we present two of the most common metrics to evaluate what a good k number of clusters would be in Figures B2 and B3. Although these metrics suggest that the k=4 solution is reasonable in some ways, the distribution of countries across these two dimensions suggests that the k=5 clusters with a middling fifth cluster is a potentially even better solution.

Table B.1: K-means cluster analysis, 36 countries, size of clusters

	K=2	K=3	K=4	K=5	K=6	K=7
Cluster 1	14	22	10	8	4	1
Cluster 2	22	6	12	4	5	5
Cluster 3		8	6	6	7	3
Cluster 4			8	6	8	6
Cluster 5				12	6	6
Cluster 6					6	7
Cluster 7						8

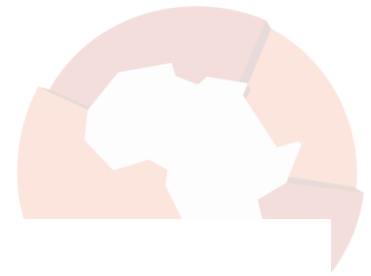


Figure B.1: K-means cluster analysis comparisons

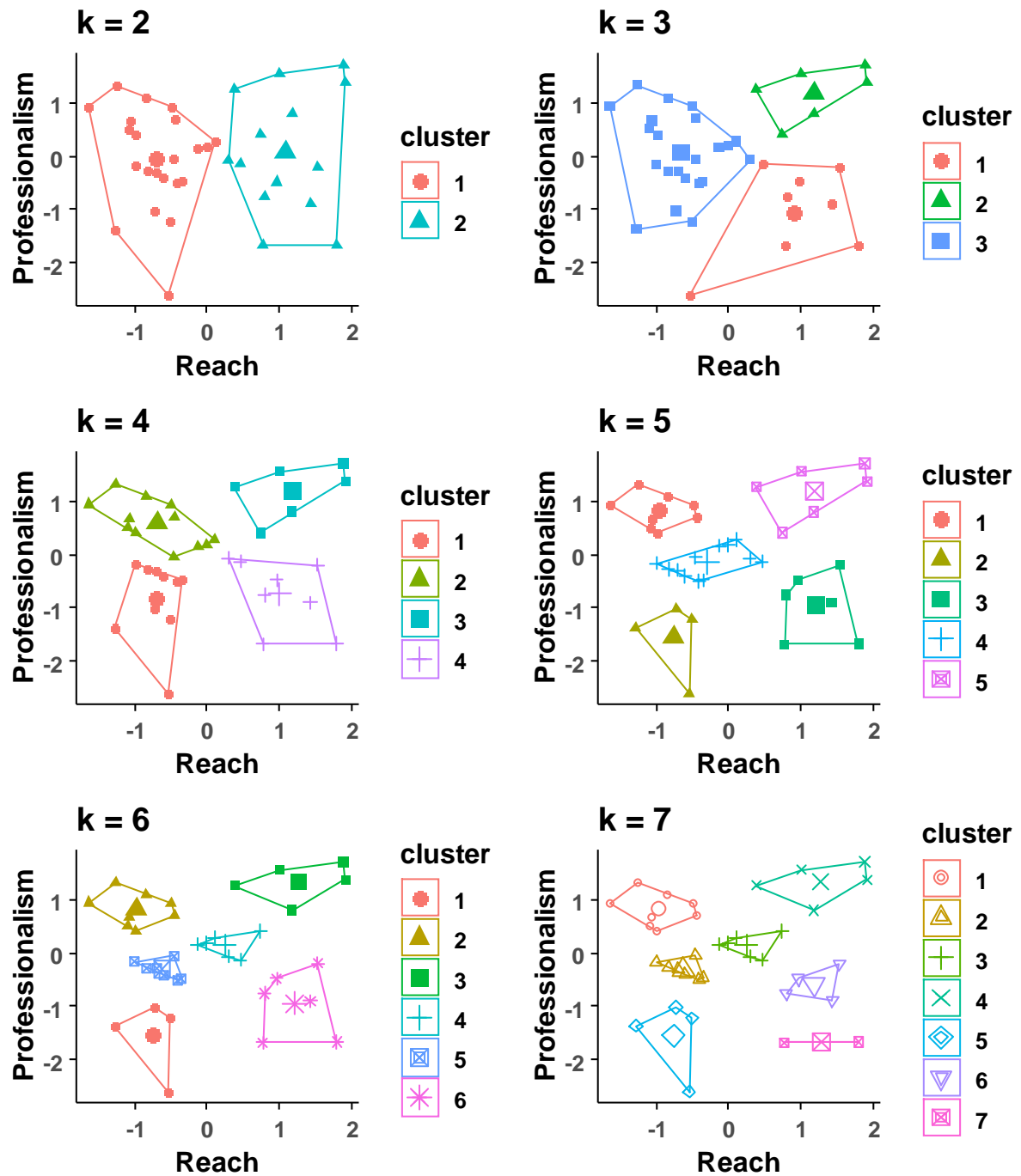




Figure B.2: Elbow method

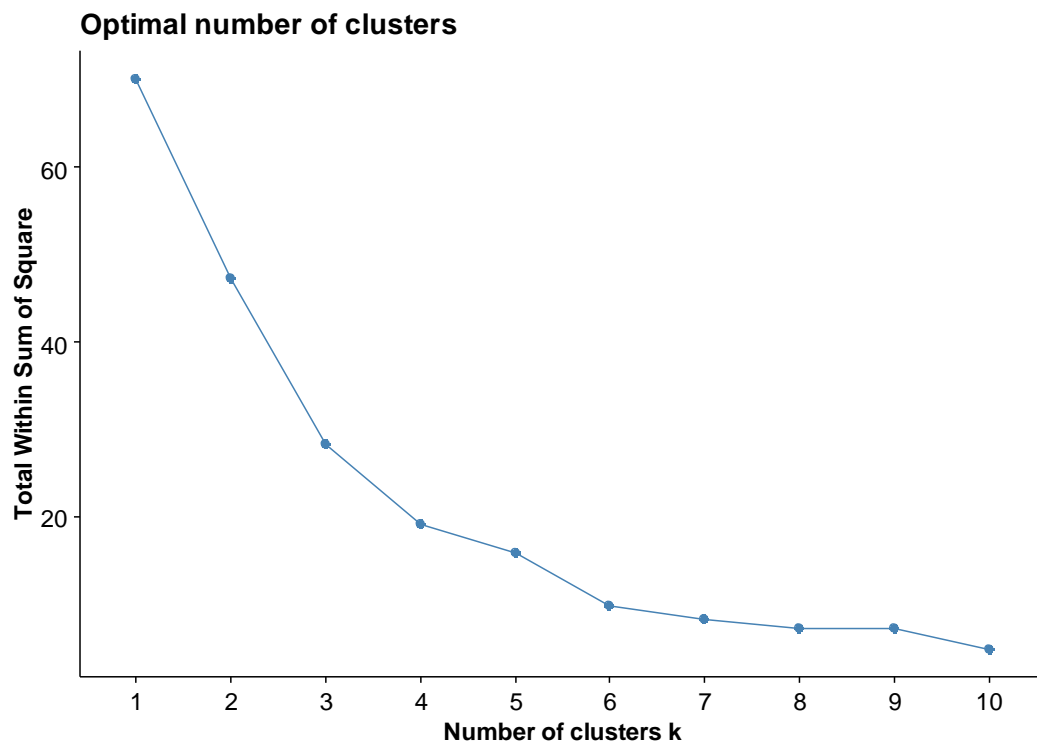
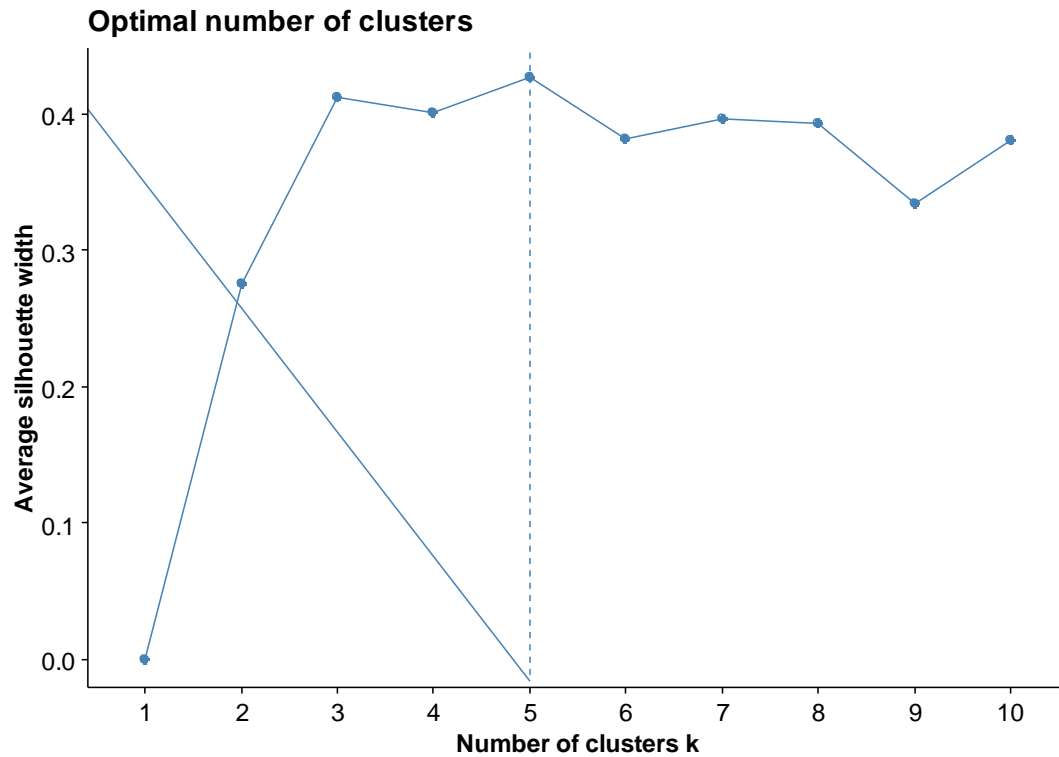


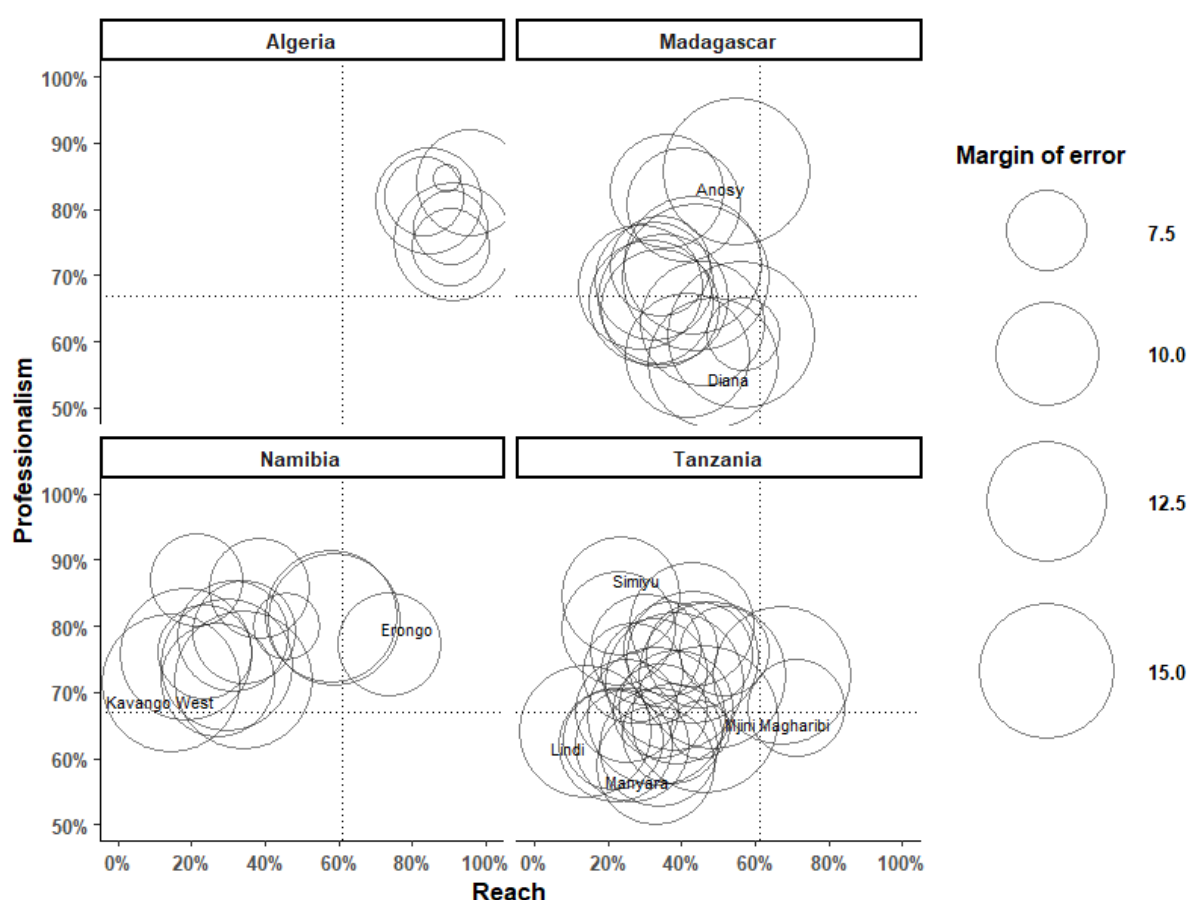
Figure B.3: Average silhouette method



Appendix C: Measurement accuracy at sub-national level

The estimates for state reach and professionalism have larger confidence intervals/margins of error given the smaller sample sizes at the sub-national level when compared to the national-level scores. To illustrate the size of the issue, we reproduce Figure 6 here, replacing the point estimates with the size of the circles representing the confidence interval for each province (Figure C.1). While the Mjini Magharibi (Tanzania) score has a margin of error of ± 9 percentage points with a sample of 112 respondents, Anosy in Madagascar has a larger margin of error (± 17 points, $N=32$).¹⁸ Importantly, however, the broader patterns described in the main text and visualized in Figure 6 can still be identified, despite the larger confidence intervals. Algerian provinces score high on both reach and professionalism, while Namibian provinces vary in terms of reach but not professionalism.

Figure C.1: State reach and professionalism with confidence intervals



Note: The margin of error is calculated using the sample size for each province, applying a 95% confidence level.

There are at least three ways in which we can improve the precision of the analysis at the province level across the continent. First, we can exclude provinces that fall below a certain threshold. For our analysis, we exclude all provinces with fewer than 30 respondents, but other analysts could increase this threshold to, for example, 100 respondents (the margin of error would be 9.8 percentage points).

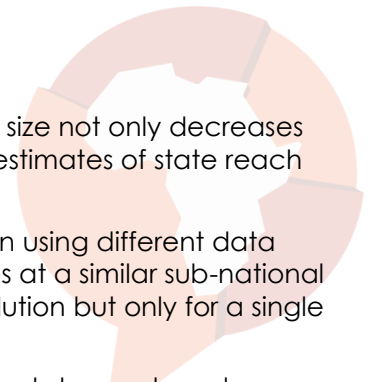
Second, it is possible to increase the sample size in each province by pooling multiple rounds of surveys. The questions we use to construct the indices are available in rounds 5-8 (with the

¹⁸ For comparison, the national-level scores have a margin of error of $\pm 2-3$ percentage points.

exception of a question on electricity in Round 5). The larger sample size not only decreases the margin of error, but also allows researchers to create multi-year estimates of state reach and professionalism (e.g. Iddawela et al., 2021).

Third, researchers can replicate the methodology for each dimension using different data sets. Some available data sets might allow for cross-national analyses at a similar sub-national level, while others could enable the analysis at a higher level of resolution but only for a single country.

In addition to province-level scores, researchers can create separate state reach and professionalism scores for urban and rural areas. This could facilitate new insights into the urban/rural gap across both different dimensions of state capacity and countries. Here, the logic of aggregation remains the same, with the exception that scores are aggregated across all urban or rural sampling units (as labeled by Afrobarometer).

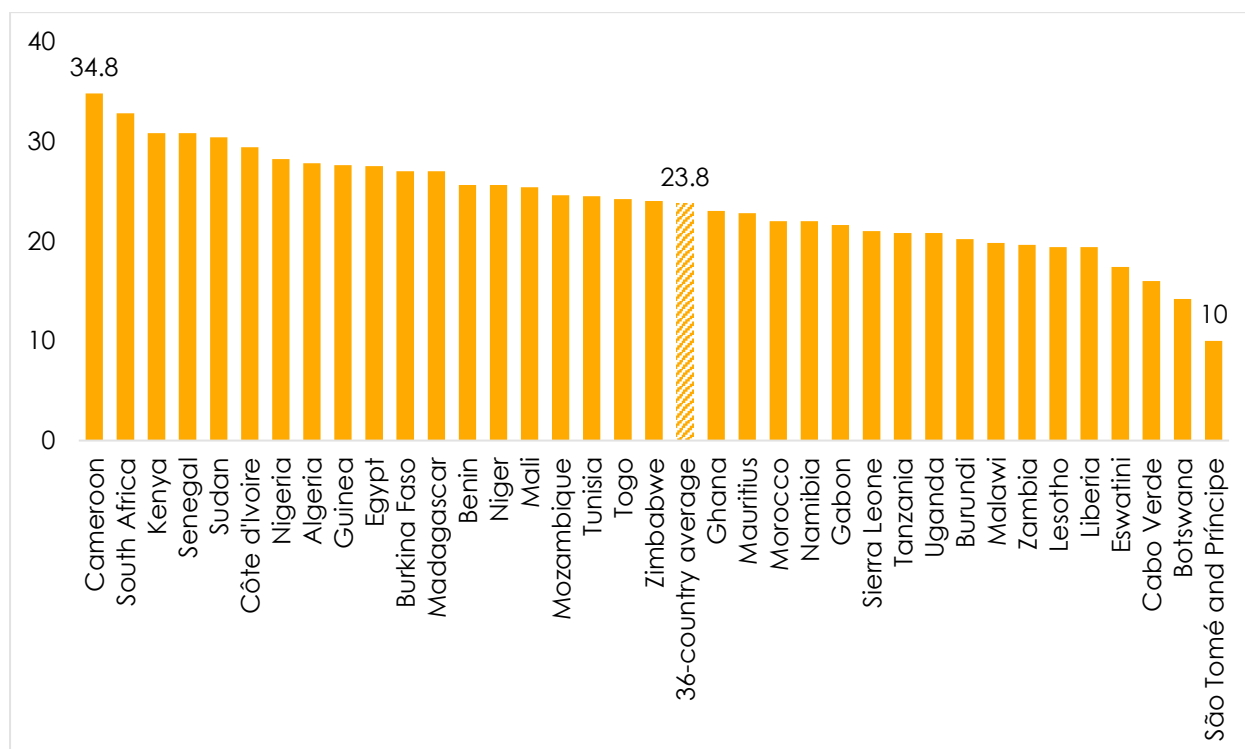


Appendix D: Bloatiness

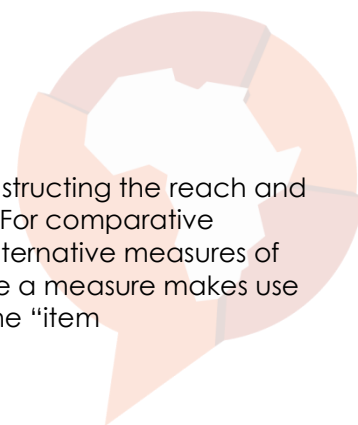
We develop three measures of bloatiness. Like LeVan and Assenov (2016), we count the number of ministries in a given country. To mitigate the potential effect of periodic shifts brought about by elections or *ad hoc* cabinet changes and organizational restructuring, we calculate the average number of ministries in each country for the five-year period (2009-2013) prior to Afrobarometer data collection.

Across 36 countries, the average state had 24 line ministries between 2009 and 2013. But the results also reveal substantial variation across the continent (see Figure D.1). Countries such as Cameroon (35) and South Africa (33) maintain more than twice as many line ministries as Botswana (14) and Cabo Verde (16), and three times as many as Sao Tome and Principe (10). We also collected data on the average number of ministries between 2009 and 2013 for a broader sample of 53 African states to see whether the sub-sample we use is representative of the continent. By comparing measures of central tendency, we can see that the two samples are indeed very similar. For the 53 country-sample both the mean and median are 23.0 ministries per country with a standard deviation of 6. For the 36-country sample, the mean = 23.8, median = 24.1 and standard deviation = 5.2.

Figure D.1: Number of line ministries across 19 functional areas (average number 2009-2013) | 36 countries



Source: Africa South of the Sahara (2010-2014), The Middle East and North Africa (2010-2014). This only refers to line ministries but excludes offices of the president, vice president, and prime minister and other "offices" without ministerial designation, e.g. secretary-general.



Appendix E: Codebook

This codebook contains descriptions of the variables included in constructing the reach and professionalism indices from the Afrobarometer data set (Table E.1). For comparative purposes, it also includes verbatim or lightly edited descriptions for alternative measures of state capacity from other data-collection projects (Table E.2). Where a measure makes use of other indices that are included in this analysis, this is recorded in the “item wording/description” column.

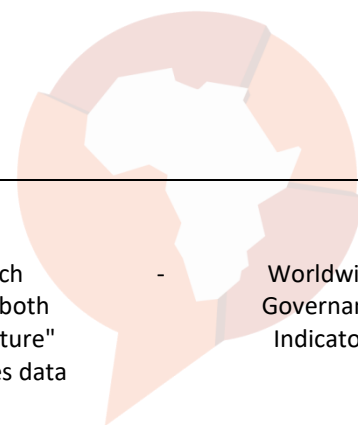
Table E.1: Measures of state capacity

Measure	Type	Item wording/description	Missing data (%)	Source
Reach	Index	<p><u>For EA-level services:</u> Are the following facilities present in the primary sampling unit/enumeration area or within easy walking distance: School? Health clinic? Police station? (EA_FAC_B-D)</p> <p>Please tell me whether each of the following are available inside your house, inside your compound, or outside your compound: Your main source of water for household use? A toilet or latrine? (Q93A-B).</p> <p><i>Recodes:</i> Missing EA classifications were coded as zero prior to aggregation.</p> <p><u>For household-level services:</u> Do you have an electric connection to your home from the mains? (Q94)</p> <p><i>Recodes:</i> For water and sewerage, if available inside the house (1) or compound (2), service infrastructure is coded as present. For electricity, if hook-up to house, service infrastructure is coded as present. Otherwise coded as zero.</p>	-	AB
Professionalism	Index	<p>In the past 12 months have you 1) had contact with a public school; 2) had contact with a public clinic or hospital; 3) tried to get water, sanitation, or electric services from government; 4) requested assistance from the police? [If yes:] How easy or difficult was it to obtain the services you needed? (Q55 A, C, G, L)</p> <p>And how often, if ever, did you have to pay a bribe, give a gift, or do a favour for a 1) teacher or school official in order to get the services you needed from the school; 2) health worker or clinic or hospital staff in order to get the medical care you needed; 3) government official in order to get the document you needed; 4) police officer in order to get the assistance you needed (Q55B, F, H, J)</p> <p><i>Recodes:</i> No contact (7), “Don’t know” (9), and “Refused to answer” (98) were excluded from the aggregation.</p>	-	AB
Bloatedness (ministries/4PA, 2013)	Item	Number of ministries across four policy areas: education, health care, interior, and public infrastructure (2013) divided by 4.	-	MENA; SSA; author calculations
Bloatedness (ministries 2009-2013)	Item	Average number of ministries per country between 2009 and 2013. This refers only to line ministries but excludes offices of the president, vice president, and prime minister and other “offices” without ministerial designation, e.g. 'secretary-general.	-	MENA; SSA; author calculations

Table E.2: Alternative measures of state capacity



Measure	Type	Item wording/description	Missing data (%)	Source
Infrastructure				
Public services	Item	The public services indicator refers to the presence of basic state functions that serve the people. This may include the provision of essential services, such as health, education, water and sanitation, transport infrastructure, electricity and power, and Internet and connectivity. It may also include the state's ability to protect its citizens, such as from terrorism and violence, through perceived effective policing. Further, even where basic state functions and services are provided, the indicator further considers to whom – whether the state narrowly serves the ruling elites, such as security agencies, presidential staff, the central bank, or the diplomatic service, while failing to provide comparable levels of service to the general populace – such as rural vs. urban populations. The indicator also considers the level and maintenance of general infrastructure to the extent that its absence would negatively affect the country's actual or potential development.	0	Fragile State Index/Fund for Peace
Basic administration	Item	This question seeks to examine whether the basic civil functions of a state apparatus are fulfilled in terms of regulation, administration, and implementation. It does not refer to the most basic security functions like keeping the peace or maintaining law and order. It primarily addresses the existence and scope of administrative structures, as well as their operational reach across the territory (differentiation, efficiency, accessibility). Please assess functions such as: the provision of jurisdiction, tax authorities and law enforcement, the administration of communication, transport and basic infrastructure (water, education, health).		Bertelsmann Foundation
Public service				
Professional public administration	Index	The index measures to what extent the public administration is professional rather than politicized. Higher values indicate a more professionalized public administration.	14 (39%)	Quality of Government Expert Survey 2
Impartial public administration	Index	The index measures to what extent government institutions exercise their power impartially. The impartiality norm is defined as: "When implementing laws and policies, government officials shall not take into consideration anything about the citizen/case that is not beforehand stipulated in the policy or the law."	14 (39%)	Quality of Government Expert Survey 2
Rigorous and impartial public administration	Item	Experts are asked: "Are public officials rigorous and impartial in the performance of their duties?" Clarification for experts: This question focuses on the extent to which public officials generally abide by the law and treat like cases alike, or conversely, the extent to which public administration is characterized by arbitrariness and biases (i.e. nepotism, cronyism, or discrimination). The question	-	V-Dem



covers the public officials that handle the cases of ordinary people.

Corruption

WGI control of corruption	Index	The index captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. It includes data from the Bertelsmann Transformation Index and Afrobarometer.	-	Worldwide Governance Indicators
Regime corruption	Index	To what extent do political actors use political office for private or political gain? The index is formed by taking the reversed point estimates (so that higher scores = more regime corruption) from a Bayesian factor analysis model of the indicators for executive embezzlement, executive bribes, legislative corruption, and judicial corruption.	-	V-Dem
Neopatrimonial rule	Index	The index is formed by taking the reversed point estimates (so that higher scores = more neopatrimonialism) from a Bayesian factor analysis model of the indicators for vote buying, particularistic vs. public goods, party linkages, executive respects constitution, executive oversight, legislature controls resources, legislature investigates the executive in practice, high court independence, low court independence, compliance with high court, compliance with judiciary, electoral management body autonomy, executive embezzlement and theft, executive bribes and corrupt exchanges, legislative corruption, and judicial corruption.	-	V-Dem
Corruption perceptions	Index	The index ranks countries by their perceived levels of public sector corruption, drawing on 13 surveys and expert assessments and opinion surveys to measure public sector corruption. The index includes data from the Bertelsmann Transformation Index and V-Dem.	1 (3%)	Transparency International

Overall effectiveness

Government effectiveness	Index	The index captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. It includes data from Afrobarometer and the Bertelsmann Transformation Index.	-	World Governance Indicators
State capacity	Index	The measure is a general-purpose measure of state capacity that relies on existing data sets and develops aggregate estimates of state capacity that cover three distinct dimensions – the extractive, coercive, and administrative capacities of the state.	1 (3%)	Hanson and Sigman



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