Pre-colonial centralization and tax compliance norms in contemporary Uganda

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Abstract: The paper examines the legacy of pre-colonial centralization on tax compliance norms of citizens in contemporary Uganda. By combining geo-referenced anthropological data on pre-colonial ethnic homelands with survey data from several rounds of the Afrobarometer Survey, respondents from the historically centralized homelands are found to exhibit a higher willingness to pay tax compared to respondents from non-centralized areas. The result holds for the whole sample and in the regression discontinuity analysis on individuals who reside close to the borders of neighbouring ethnic homelands with different levels of pre-colonial centralization. The stronger norm for tax compliance in pre-colonial centralized homelands is explained by the legacy of location-specific factors related to the level of capacity that historically centralized states had in upholding authority and not through the legacy of better-quality local institutions.

Key words: tax compliance, pre-colonial centralization, Uganda

JEL classification: H26, N47, O12, O23

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1   Introduction

Domestic revenue mobilization has received huge attention in the development policy debate over the last decade (Besley and Persson 2013; Fjeldstad 2014; ITC 2017; World Bank 2017; Moore et al. 2018). The focus on domestic revenue mobilization has led to intense pressure on governments across Africa to collect more tax revenues from both existing and new tax bases. The International Monetary Fund and World Bank (2016: 1) describe domestic resources as the 'largest untapped source of financing to fund national development plans'. While tax revenues account for more than 30 per cent of gross domestic product (GDP) in most European countries, they only make up between 10 and 20 per cent in most Sub-Saharan countries (ICTD/UNU-WIDER 2019; Ortiz-Ospina and Roser 2020). Improvement of 'domestic capacity for tax and other revenue collection' is Goal 17.1 of the UN's Sustainable Development Goals. Widespread tax evasion is one reason for low domestic revenue mobilization through taxation. Tax literature and policy makers have generally focused on law-based compliance and the role of formal rules and institutions such as audits and penalties to reduce tax evasion. Recently, factors that are not related to these have received more attention from researchers (Besley 2020; Besley et al. 2019). The term 'voluntary compliance' is used to refer to a broad range of informal norms and beliefs motivating taxpayers' compliance, such as intrinsic motivation, reciprocity, and social and cultural factors (Luttmer and Singhal 2014; Prichard et al. 2019).

The literature has identified local institutions as an important driver of citizens' tax compliance norms (see, e.g., Hofmann et al. 2008; Lago-Peñas and Lago-Peñas 2010; Halla 2012; Belmonte et al. 2018). However, most of these studies are based on evidence from developed countries or developing countries outside of Africa. Furthermore, the root causes of differences in individuals' perceptions about institutions are not fully understood. This paper aims to contribute to this line of research by examining the legacy of pre-colonial institutions in shaping the tax compliance norms of citizens in Uganda. We further examine two underlying mechanisms by focusing on the persistent differences in citizens' belief about the need to obey authority (Lowes et al. 2017) and persistence in institutions (Acemoglu et al. 2001).

Before colonization, the political organization in Uganda was generally classified into centralized polities and stateless societies. In centralized polities, the states had a complex system of tax collection based on detailed information about the available taxable resource at the district level (Ssekamwa 1970; Reid 2002; Kjær 2009). Tax collection in the historically centralized polities was undertaken in a hierarchical administrative structure where village chiefs identified who owned what, and the tax collected would be brought back to the king (Reid 2002). The tax collectors (chiefs) worked on behalf of the king and in exchange would get some part of the revenue as well as military and legal protection and access to land (Reid 2002). People could be taxed in just about everything they owned or produced. Common articles of tax included cowrie shells, pots, bark cloth, hoes and other metal implements, shields, fish, and livestock (Reid 2002). People were also required to provide 'free' labour regularly to undertake public works. European colonizers continued to rely on centralized polities and British indirect rule preserved and strengthened the capacity of pre-colonial states by consolidating the position of kings and chiefs (Crowder and Ikime 1970). Although different types of taxes were introduced during colonization (e.g., hut tax and later the poll tax), British colonial rule in Uganda was keen on maintaining the pre-colonial hierarchical structure in administering the locals as well as collecting taxes (Mamdani 1996; Tuck 2006).

We focus on Uganda for several reasons. First, Uganda has a long history of strong ethnic-based institutions before colonization, which continues to play an influential role in the lives of ordinary people (Mamdani 1996; Englebert 2002). Second, there is a huge variance in the levels of pre-colonial centralization across different areas of Uganda. This provides us with a unique opportunity to

implement a regression discontinuity analysis to identify the average effects on individuals who reside close to the border of contiguous ethnic homelands with different levels of pre-colonial centralization. Third, focusing on one country will allow us to exploit the within-country variation in pre-colonial institutions that are not affected by national institutions or the identity of former colonial rule. Forth, the study has policy relevance for Uganda because historical processes of development are not only important for the past but may also have effects that flow across time (Nunn 2020: 7). With a tax-to-GDP ratio of 12.8 per cent, Uganda is performing poorer than its neighbouring countries and the Sub-Saharan average.[1] Although significant improvements have been made in tax administration, low compliance has undermined domestic revenue mobilization efforts in Uganda. Thus, improving tax collection is of first-order importance to the Government of Uganda (GoU 2019). The study provides policy makers with knowledge of the role of deeply rooted pre-colonial institutions as a crucial entry point to the local community in terms of shaping citizen's willingness to contribute to tax revenue.

By combining geo-referenced anthropological data on pre-colonial ethnic homelands with micro-survey data from several rounds of the Afrobarometer Survey (AB), we find that pre-colonial centralization is associated with a higher willingness to pay taxes. The results remain robust when controlling for individual-level characteristics of respondents as well as a large set of geographic features and other confounding factors from pre-colonial, colonial, and current times that are likely to affect local institutions and in turn shape citizens' tax compliance norms.

To account for possible biases that may arise from unobservable local geographic features, we follow the estimation strategies used in Michalopoulos and Papaioannou (2013) and perform a regression discontinuity (RD) analysis on individuals that reside close to the borders of neighbouring ethnic homelands with different levels of pre-colonial centralization. The RD analysis yields the same result; respondents from the historically centralized side of the border exhibit higher tax compliance norms compared to respondents from the non-centralized side of the border. Excluding Buganda, which historically is the most centralized polity with a complex and highly bureaucratic socio-economic organization, delivers similar results, implying that our results are not driven by Buganda.

We test two underlying mechanisms to help understand the positive association between pre-colonial centralization and the tax compliance norms of contemporary citizens. The first one is the persistent difference in citizens' belief about the need to obey authority. African historiography suggests that in centralized polities, the state organized force to uphold its authority and 'can uniformly apply policies throughout a given territory' such as extract labour, enforce the law, and demand tax (Schraeder 2004: 29, 30). We hypothesize that the legacy of such a system of governance may lead people in historically centralized states to become more obedient to political authority, which in turn can shape their compliance norms to general rules, including paying taxes (Tabellini 2010; Gächter and Schulz 2016).

Using the RD analysis on neighbouring ethnic homelands with different levels of centralization, we find a positive and significant correlation between pre-colonial centralization and individuals' belief about the need to obey authority coming from various government bodies. The result holds after including for individuals' ethnic identity fixed effect. This suggests that people's opinions about the need to obey authority is not driven by unobservable ethnic-specific factors, such as cultural norms, but rather by the history of the location they live in. One such location-specific factor could be the level of capacity that pre-colonial states had in upholding authority that could reinforce present attempts to maintain administrative autonomy in a path-dependent way (Tilly 1990; Englebert 2000). Places with a longer history of statehood may also 'support the development of attitudes consistent

with bureaucratic discipline and hierarchical control, making for greater state (and perhaps more broadly, organizational) effectiveness' (Bockstette et al. 2002: 348).

The second mechanism we test is the persistent difference in citizens' perception of the quality of local institutions. Various historical accounts indicate that the political structure in pre-colonial centralized societies helped promote the accountability of local leaders by distributing power, influence, and authority among numerous hierarchies of institutions (Englebert 2000). The power of leaders was also subjected to various socio-religious taboos that helped minimize the rulers' tendency to use their power in excess (Schapera 1940; Ayandele 1970). Centralized states could, therefore, shape the quality of local institutions through their legacy of indigenous bureaucratic capacity that promotes accountability. This, in turn, can affect the contemporary fiscal contract between citizens and local government by strengthening institutional trust (Levi 1988).

As an indicator of citizens' perception about the quality of local institutions, we use respondents' level of trust in local elected officials as well as traditional leaders (chiefs). Using RD analysis on contiguous ethnic homelands with different levels of centralization (and accounting for ethnic identity fixed effects), we find no statistically significant difference in individuals' level of trust in local elected officials on either side of the border. On the other hand, contrary to what we expected, we find that pre-colonial centralization is associated with a low level of trust towards chiefs. The British colonial administration that gave greater autonomy to chiefs in governing the locals may have disrupted the pre-existing mechanism of accountability in pre-colonial times that led to persistent mistrust in the local government (Mamdani 1996; Mulinge and Lesetedi 1998; Ali et al. 2020).

Our paper contributes to studies that empirically examine the role of pre-colonial institutions on current development outcomes in Africa. Gennaioli and Rainer (2007) show that the national population belonging to a more centralized political system has better provision of public goods. Michaelopoulos and Papaiannou (2013) strengthened this finding by providing evidence at the local level. They find a link between pre-colonial centralization and night light density, which is used to indicate development outcomes at the sub-national level. Although these studies present historical legacies on current development, beyond the relatively brief period of colonial rule in Africa, the underlying mechanisms through which pre-colonial institutions affect long-run development remain weakly understood. Moreover, these studies use cross-sectional analysis that inevitably lacks the richness that historical studies can bring to explain the variation within countries (Chanda and Putterman 2005). Our paper contributes to this line of research by systematically examining two possible mechanisms through which pre-colonial centralization can explain the within-country variation in fiscal capacity by shaping citizens' contemporary willingness to pay taxes.

An exception to these cross-sectional studies in Africa is a case study of Uganda by Bandyopadhyay and Green (2016) who, at the sub-county level, show a positive correlation between pre-colonial centralization and well-being (literacy, human development index, and poverty) but no correlation with public goods. Our paper complements their results by suggesting that even though the government might be able to raise more revenue in historically centralized areas because of the legacy of state capacity to enforce rules, the revenue raised may not necessarily translate into the provision of public goods. Instead, our finding that people in the historically centralized areas are less trusting of their local leaders may imply that they lack the necessary fiscal contract that would allow them to demand the local government for better public goods. In general, our finding of the legacy of strong state capacity with a less accountable leader is similar to what Mann (1993) describes as an 'infrastructural state' which, despite being despotic, can 'penetrate its territories and logistically implement decisions' such as collecting taxes (Mann 1993: 59).

Methodologically, the paper relates to the growing literature that uses micro-level data to provide evidence on the role of historical legacies on various contemporary outcomes (see, e.g., Nunn 2008;

La Porta et al. 2008; Feyrer and Sacerdote 2009; Depetris-Chauvin 2016; Michalopoulos and Papaioannou 2016; Cappelen and Sorens 2018).

The rest of the paper is organized as follows: Section 2 presents the historical background of taxation in Uganda. Section 3 introduces the data and provides a descriptive analysis. In Section 4, we report the economic specifications and results. Section 5 concludes.

2   Historical background

In pre-colonial times, Uganda displayed a considerable variety of institutions within its borders characterized by the more organized kingdoms and the fragmented ethnic groupings. The south and the west of the country covered the territory of the pre-colonial kingdoms of Buganda, Bunyoro, Toro, and Ankole (Doornbos 1975; Karugire 1996). Bunyoro was one of the earliest and most powerful kingdoms in Central and East Africa from the 13th century until it was superseded by Buganda in the second half of the 18th century (Uzoigwe 1973; Muhangi 2015). Toro broke away from Bunyoro as a separate kingdom in 1830. In the East, there was centralized Busoga, which was amalgamated by the British from several smaller kingdoms (Nayenga 1981).

In the eastern and northern parts of Uganda, people were organized in a multitude of small and fragmented political entities, often lacking any political integration above the local village (Gennaioli and Rainer 2007). The ways these societies were organized varied. For instance, some ethnic groups in Eastern Uganda, such as Bugisu and Teso, were organized in small village-like polities led by a village head (Muhangi 2015: 106). Among the Karamoja in the East, political and military activity revolved around the age set-system, and political decisions were made by a council of elders. In the north of Uganda, such as in Acholi and Lango, people were organized in small chiefdoms. Generally, in these areas, there was no centralized administrative unit with a functioning tax system in pre-colonial times (Kjær 2009).

In the centralized polities, the states had strong bureaucracy with a hierarchical governance structure starting from the king and going all the way down to the village chief. The power of the king in centralized polities consisted of the following activities: levying taxes, appointing chiefs, judging legal cases, waging war, and controlling the distribution of land (Ray 1991). In this sense, the king exercised almost total control over his kingdom. His word was highly respected and 'almost equated to the word from God' (Muhangi 2015: 105). The king was assisted in administrative matters by the provincial chiefs and a council of notables. He was the commander-in-chief of the army, and each provincial chief was the commander of a military detachment stationed in his province. At the village level, rules were enforced by chiefs who were appointed by the king. The main tasks of the village chiefs were to collect taxes and mobilize the king's subjects for other activities like community service and village courts (Ray 1991).

In the centralized kingdoms, taxes were collected from the locals as well as tributes from the subjects of the tributary states. Generally, women and unmarried men did not pay taxes. The most extensive documentation of taxation in pre-colonial Uganda refers to the Buganda Kingdom. It started in the 15th century as a small kingdom comprising a few counties (Ssekanwa 1970). In the second part of the 18th century, Buganda had become one of the most powerful kingdoms in Central and East Africa (Uzoigwe 1973). Initially, there was not a fixed time for tax payment, and taxes were collected whenever the king or those in charge of the royal treasury deemed it necessary or appropriate (Reid 2002). However, by the 19th century, a more systematic method of tax payment was introduced in Buganda, and taxes were levied twice in a calendar year. Everything paid to the *Kabaka* (the king) by his people was called tax. Ssekamwa (1970: 10) notes that 'the collection of taxes had reached a high

standard of efficiency and that both the people at the top and the collectors were keen on seeing that taxes were collected and that they reached the Kabaka'.

The tax collection was undertaken in a decentralized manner, whereby the village chiefs implemented a census of almost every household to identify who owned what. People could be taxed in just about everything they owned or produced. The kinds of taxes and levies imposed on the people in Buganda can be divided into four (Reid 2002; Ssekanwa 1970). First, there was a compulsory tax collected from each man who owned a homestead and who was married. From the second half of the 18th century, bark-cloths together with cowrie shells became the unit of payment. The second was a kind of excise duty extracted from men on food crops, cattle, goats, venison, intoxicating drinks, and manufactures such as baskets and carpets. A proportion of all of these was paid in tax. The third type was a kind of customs duty levied on goods such as salt and iron tools bartered on the borders between Buganda and Bunyoro. The fourth was a levy paid as an exemption from participating in a war. It had become an obligation—probably from the second half of the 17th century—for all able-bodied men to fight in a war. But those who did not participate could pay a tax instead of military service. The tax revenues were used to support the royal court and to cover the costs of frequent banquets called 'okugabula Obuganda' (Ssekanwa 1970: 5-6). These banquets served several important functions in the administration such as sounding political opinion and spying on would-be traitors, especially the chiefs, testing their popularity among their subjects and seeking to win their goodwill. Particularly from the second half of the 17th century, the *Kabaka* added large, conquered areas to Buganda. Revenues were required to sustain the armies and cover the cost of administration of the conquered areas. In addition to taxes, all able-bodied men in Buganda were obliged to work for the chiefs for a period without pay, referred to as 'luwalo' (Reid 2002). This work, which can be considered as an in-kind tax, was usually directed towards public works such as making new roads and maintaining old ones and building the enclosures and the houses of the chiefs. The chiefs usually paid their men indirectly by holding feasts for them.

In other kingdoms, taxes were collected periodically by the village chiefs. For example, in Ankole, taxes were collected on cattle where the king sent his chiefs to the villages and took from the herds a portion according to the number of cows a man had (Roscoe 1923). The peasants without fixed assets, such as cattle, paid their taxes in the form of beer and grain at intervals as they thought fit to the chief in whose village they lived (Roscoe 1923). In Bunyoro, which was known for its salt production, an in-kind tax was collected on salt purchased (Good 1972).

During colonization, British rule in Uganda was characterized by a strong continuity of pre-colonial institutions of governance (Pratt 1965; Apter 1961). The British colonizers understood the importance of native authorities for implementing their policies and maintained local ethnic identities through their policy of indirect rule (Kjær 2009; Bandyopadhyay and Green 2016; Ali et al. 2019). They relied on traditional chiefs for collecting taxes, building roads, organizing schools, improving sanitation, and many other activities (Pratt 1965).[2] In the traditional centralized areas, such as the kingdoms of Buganda, Bunyoro, Toro, and Ankole, the British maintained the pre-colonial system of government based upon the hierarchy of chiefs (Apter 1961, cited in Gennaioli and Rainer 2007: 188). British keen interest in maintaining the pre-colonial hierarchical structure in local administration in Uganda is demonstrated in what Colonel Colville, the then head of the British mission, said in 1894 in a meeting with Buganda kingdom officials.

> It was not the intention of His Majesty's Government to lessen in any way any person's legitimate power or authority over another person, but to promote and

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[2] This is unlike the Ryotwari system in India where the British government collected taxes directly from the locals (Banerjee and Iyer 2005).

maintain such authority. Anybody who willfully disobeyed the orders of a legitimately constituted ruler or other authority, should be guilty of serious offense (Tuck 2006: 225–226).

The chiefs also maintained their pre-colonial power of control over land resources and were able to retain a certain percentage of the revenue that they collected through tax (Mamdani 1996). In exchange for their collaboration with the British colonial rule, the chiefs gained more autonomy in terms of, for example, distributing rents and allocating land resources (Kjær 2009; Bandyopadhyay and Green 2016; Ali et al. 2019).

Even in traditionally stateless or fragmented areas, such as Lango or Teso, the British maintained the power structure to collect taxes and administer the locals by choosing men of local standing such as village headmen and clan heads as local chiefs (Low 1965). These leaders, like the ones in centralized areas, had more autonomy in exercising their power and were directly subordinate to the colonial administration (Mamdani 1996).

Pre-colonial institutions remained relevant in local administration long after independence (Bandyopadhyay and Green 2016). The cooperation of traditional power holders was crucial to achieving the objectives of Uganda as an independent nation (Mamdani 1996). Herbst (2000) reports that heads of state after independence often had to reach an agreement with traditional authorities as, for instance, demonstrated by the alliance with the Uganda Peoples' Congress led by Obote I where an agreement was sought with the then King of Buganda, Mutesa II (Ramadhan 2015). Even if kingdoms were abolished in Uganda in 1966, the lack of effective control and difficulty to govern in rural areas forced the regime that came to power after independence to invite the kings back a few years later (Mamdani 1996; Herbst 2000; Englebert 2002). Hence, although after independence chiefs no longer collect taxes in Uganda, they continue to mobilize the population towards social development and continue to play an important role as gatekeepers between the central government and the locals.

3   Data and descriptive analysis

The primary data set to measure pre-colonial centralization and a host of other ethnic-specific characteristics is obtained from Murdock's Ethnographic Atlas (Murdock 1967). This data set is combined with geo-referenced data on historical ethnic homelands from Murdock's (1959) ethnolinguistic map. We merge the ethnic data set with rounds 3–6 of the AB survey using village-level geographic data on the residence of respondents.

To measure pre-colonial centralization at the ethnic homeland level, we use Murdock's (1967) 'Jurisdictional Hierarchy Beyond the Local Community Level' index. The index that ranges from 0–3 for Uganda ranks the pre-colonial political complexity of ethnic homelands. A rank of 0 indicates stateless societies and 1 captures politically less complex ethnic homelands, such as those having petty chiefdoms. A rank of 2 and 3 indicate ethnic homelands that are part of paramount chiefdoms and large states, respectively. We do not find a systematic error in Murdock's classification of ethnic homelands, and the rankings are in line with various anthropological and historical accounts. For example, Murdock classified Buganda, Bunyoro, and Ankole in Uganda as ethnic homelands that were part of large states before colonization. On the other hand, groups such as Lango and Teso are given a rank of 0 and 1, respectively, indicating politically less complex societies before colonization.

Figure 1: Ethic homelands with pre-colonial centralized and non-centralized states

Note: the gray ones are ethnic homelands that either had large chiefdoms or were part of a large state. The white ones are ethnic homelands that lacked any political organization beyond the local level.

Source: authors' illustration based on Murdock's Ethnographic Atlas (1967).

Following Gennaioli and Rainer (2006, 2007), we identify pre-colonial centralization at the level of ethnic homelands as a binary indicator with a value of 0 if an ethnic homeland lacks any political organization beyond the local level or is organized as petty chiefdom and a value of 1 if it is either a large chiefdom or was part of a large state. Figure 1 shows the map of the ethnic homelands in Uganda with different levels of centralization in pre-colonial times. The gray ones represent centralized states with a value of 1, and those in white are the less centralized ones with a value of 0. Ethnic homelands shaded in lines are the ones where we do not have data from Murdock's Ethnographic Atlas. The figure depicts that the centralized states in Uganda are clustered in one area, except for Ruanda in southwestern Uganda, which used to be part of the centralized states in the neighbouring country, Rwanda.

Our main dependent variable that measures the respondents' tax compliance norms is obtained from rounds 5 and 6 of the AB survey. Respondents describe their moral views regarding tax evasion by choosing one of the following three ranked statements: Tax evasion is 1) not wrong at all; 2) wrong but understandable; or 3) wrong and punishable. A binary index is constructed for tax compliance norms, which is set equal to 1 if the respondent chooses statement (3) and is set to 0 otherwise. This variable is used as an indicator of the strength of social norms against tax evasion.[3]

The first row of Table 1 reports the moments for the outcome variable, namely the tax compliance norms of respondents. The mean for the whole sample indicates that a large share of the public in Uganda (61 per cent) has a non-compliant norm towards paying taxes. However, respondents residing in historically centralized ethnic homelands are slightly more compliant (40 per cent) than those in the historically non-centralized homelands (37 per cent).

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[3] A tax compliance norm is not the same as tax evasion because we cannot observe actual tax payments by individuals. Our indicator only captures respondents' moral view regarding tax evasion.

Table 1: Descriptive statistics

	Observation		Mean (std dev)		
	Centralized	Non-centralized	Whole sample	Centralized	Non-centralized
Outcome variables:					
Tax compliance norm	2,444	1,598	0.39 (0.48)	0.40 (0.49)	0.37 (0.48)
Individual controls:					
Male	2,444	1,598	0.51 (0.49)	0.51 (0.50)	0.51 (0.49)
Employment	2,444	1,598	0.47 (0.49)	0.60 (0.49)	0.28 (0.44)
Age	2,444	1,598	35.6 (13.5)	35.7 (13.5)	35.4 (13.6)
Education	2,444	1,598	3.22 (1.83)	3.32 (1.87)	3.06 (1.76)
Urban	2,444	1,598	0.18 (0.38)	0.34 (0.47)	0.13 (0.33)
Wealth	2,444	1,598	0.37 (0.23)	0.40 (0.22)	0.30 (0.22)
Geographic controls:					
Distance to the seacoast	2,444	1,598	0.96 (0.10)	0.94 (0.08)	0.99 (0.12)
Distance to the capital city	2,444	1,598	0.18 (0.10)	0.12 (0.08)	0.28 (0.05)
Distance to the national border	2,444	1,598	0.09 (0.06)	0.12 (0.05)	0.07(0.05)
Malaria stability index	2,444	1,598	0.78 (0.15)	0.78 (0.15)	0.77 (0.17)
log (1+ water area)	2,444	1,598	0.67 (0.50)	0.89 (0.41)	0.34 (0.45)
Mean elevation	2,444	1,598	1.19 (0.18)	1.18 (0.13)	0.19 (0.25)
log land area	2,444	1,598	2.73 (0.92)	3.20 (0.67)	2.01 (0.77)
Land (soil) suitability for agriculture	2,444	1,598	0.49 (0.12)	0.46 (0.09)	0.53 (0.14)
Historical controls:					
log (intensity of exposure to slave trade)	2,444	1,598	-6.62 (3.30)	-4.97 (3.23)	-9.13 (1.04)
Agricultural dependence	2,444	1,598	2.45 (0.49)	2.76 (0.42)	2.00 (0.00)
Complex settlement	2,444	1,598	0.38 (0.48)	0.51 (0.49)	0.17 (0.38)
Railway	2,444	1,598	0.01 (0.10)	0.02 (0.13)	0.00 (0.00)
Missionary	2,444	1,598	0.84 (0.36)	1.00 (0.00)	0.61 (0.48)
Ethnic composition controls:					
Own ethnic share	2,444	1,598	0.75 (0.30)	0.82 (0.26)	0.65 (0.32)
Fractionalization	2,444	1,598	0.08 (0.17)	0.07 (0.16)	0.10 (0.18)
Own ethnic group mistreated	2,444	1,598	0.57 (0.49)	0.50 (0.50)	0.68 (0.46)
Sense of nationhood	2,444	1,598	0.25 (0.43)	0.28 (0.44)	0.22 (0.42)
Local level controls:					
Satisfaction with quality of local service provision	2,444	1,598	2.37 (0.64)	2.34 (0.65)	2.42 (0.64)
Night light at the village level	2,444	1,598	0.29 (0.46)	0.39 (0.49)	0.15 (0.35)

Source: authors' calculations based on AB survey data and geographic, historical, and ethnic composition data.

4   Econometric specification and results

The following regression equation is estimated to examine the relationship between pre-colonial centralization and an individual's tax compliance norm.

$$Y_{i,e} = \alpha + \beta I_e + X'\Phi + \varepsilon_{i,e} \qquad (1)$$

$Y_{i,e}$ indicates the dependent variable, which is a dummy indicator variable capturing the tax compliance norm of individual i residing in the historic homeland of ethnic group e. I_e represents a binary index for pre-colonial centralization. Our coefficient of interest is β, which indicates the relationship between pre-colonial centralization and the contemporary tax compliance norms of citizens in Uganda. The vector X denotes the socio-economic characteristics of respondents and set of controls at the ethnic homeland, district, and village level. The controls will be discussed in the result section sequentially as they are introduced in the regressions.

4.1   Benchmark results

Table 2 reports regression results using a linear probability model that depicts the association between pre-colonial centralization and the dummy indicator for tax compliance norms. An advantage of the dummy indicator for tax compliance norms is that the estimated coefficients represent differences in shares of respondents, making the interpretation more straightforward. Otherwise, we find similar results when using the alternative measure of ranked responses that range from 1 to 3, with higher values corresponding to a stronger tax compliance norm. The results using the ranked responses are reported in Appendix Table A1.

The standard errors in Table 2 are reported in parentheses and are clustered at the ethnicity level. All specifications include individual-level controls and a survey-round fixed effect. The individual-level controls that are obtained from the AB survey include age and age squared, an indicator for gender, indicator for whether the respondent resides in an urban centre, employment status (employed or unemployed), nine indicators for education level, three indicators for asset ownership, and fixed effects for the respondent's religion.

In column I, we control for various geographic features at the ethnic homeland level. Geographic features, in general, are shown to matter for local development and can affect the quality of local institutions, which in turn can influence people's willingness to pay taxes (see, e.g., Nunn and Puga 2012; Gallup and Sachs 2001). The geographic features include the mean elevation of ethnic homelands, the area underwater of ethnic homelands, and the land area of the ethnic homelands. We also control for an index for land (soil) suitability for agriculture and malaria stability to capture ecological features at the level of ethnic homelands. We further include the distance of the centroid of each ethnic homeland from the nearest coast, capital city, and national border.

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Table 2: Pre-colonial centralization and tax compliance norms: benchmark results

	I	II	III	IV
Pre-colonial centralization	0.17*	0.22*	0.20*	0.18*
	(0.05)	(0.03)	(0.02)	(0.03)
R-squared	0.026	0.030	0.032	0.047
Observations	4,042	4,042	4,042	4,042
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the dependent variable is a binary indicator for tax compliance norms. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls and a survey-round fixed effect. The individual-level controls include age and age squared, an indicator for gender, an indicator of whether or not the respondent resides in an urban centre, employment status (employed vs. unemployed), years of education, an index for wealth, and fixed effects for the respondents' religion. Column I controls for geographic indicators of ethnic homelands that include mean elevation, area underwater, land area, an index for land suitability for agriculture, an index for malaria stability, the distance of the centroid of each ethnic homeland from the nearest seacoast, the capital city, and the national border. Column II controls for a set of historical ethnic homeland variables that include exposure to the slave trade, an indicator of pre-colonial economic development, pre-colonial social organization, colonial investment in infrastructure, and missionary activity. Column III controls for variables that reflect the respondents' ethnic composition such as ethnic fractionalization, the share of the population in own ethnic group, individuals' perception about the relative treatment of their ethnic group by the state, and the respondents' sense of nationhood. Column IV includes an index for an individual's perception of the quality of local service provision and village-level night light density. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' estimates.

The distance of the centroid of ethnic homelands from the nearest coast is intended to capture the effect of trade, including the slave trade, as well as the penetration of colonization. The distance to the national border can capture the potentially lower level of development in border areas. The distance to the capital city may reflect that national institutions become weaker (Michalopoulos and Papaioannou 2014) and misgovernance and economic inefficiencies increase (Campante et al. 2013) as one moves further away from the capital city. African historiography stresses the incapacity of states to exert power in areas far from the capital (e.g., Bates 1983; Herbst 2000). The distance to the capital city further accounts for within-country variation in state capacity, which favours capital cities in terms of fiscal transfer and service delivery (Brinkerhoff et al. 2017). This is particularly relevant for Buganda, in which the capital city Kampala lies within its territories. Controlling for the geographic features in column I shows that pre-colonial centralization is associated with the higher tax compliance norms of citizens and is significant at 1 per cent.

In column II, we further control for various historical incidences at the level of ethnic homelands from pre-colonial and colonial times that are likely to affect contemporary local institutions and in turn shape compliance norms. The first one is the intensity of exposure to the slave trade, which we calculate, following Nunn and Wantchekon (2011), as the total number of slaves exported from each ethnic homeland divided by the size of the land area of the ethnic homeland. The intensity of exposure to the slave trade is likely to affect an individual's perception about the quality of current institutions by eroding their trust towards leaders both at the national and local levels (Nunn and Wantchekon 2011). We also control for variables that help capture the economic development and level of complexity of social organization in pre-colonial societies. History suggests that settled agriculture, particularly banana cultivation, led to new settlement patterns and the emergence of strong states such

as Buganda (Reid 2002). As an indicator of pre-colonial economic development, we use an index ranging from 0–4 that captures the extent of dependence of each ethnic homeland on agriculture. Pre-colonial social organization is captured by an indicator variable for complex settlement with 0 indicating nomadic and 1 indicating sedentary settlement. These two variables are obtained from Murdock's Ethnographic Atlas (Murdock 1967). We further control for two indicator variables related to the period of colonization. The first variable is an indicator for whether a colonial railway station is available in the ethnic homeland to account for colonial investment in infrastructure (Dell and Olken 2020). The second one is an indicator of whether or not a missionary station is available at the ethnic homeland. The availability of missionary stations may undermine the quality of local institutions by lowering trust (Okoye 2021). The result in column III confirms that the coefficient on pre-colonial centralization increases and remains significant at 1 per cent.

Variables that reflect the respondents' ethnic composition and inter-ethnic relationships that are likely to affect tax compliance norms are controlled in column III. The first two variables that we include are ethnic fractionalization and the share of the population that is of the same ethnicity as the respondent. Both variables are constructed at the district level following Nunn and Wantchekon (2011) and using the sample of individuals in the AB survey. Studies show that ethnic heterogeneity negatively affects tax compliance norms as citizens may not be willing to contribute to public goods if they think that the tax revenues are going to be shared with members of other ethnic groups [see Li (2010) for a comprehensive overview].

We also control for respondents' perception of how the state is treating their ethnic group relative to other ethnic groups. Individuals' perception that the state is treating certain groups preferentially over others may affect the level of trust that citizens have towards their government and hence their tax compliance norms (McKerchar and Evans 2009). To capture this, we use a variable from the AB survey and construct a binary indicator with a value of 1 if individuals perceive that the government treated their ethnic group unfairly *often* or *all the time* and 0 if individuals perceive that their ethnic group is treated unfairly by the government *never* or *sometimes*. We also include a variable that reflects an individual's sense of national (relative to ethnic) identity. For example, the relative advantages that Buganda had both socially and economically during pre-colonial and colonial times made the people of Buganda, according to Karugire (1996), feel more attached to Buganda, with little loyalty to Uganda as a nation. We construe a binary indicator based on a survey question from the AB survey where respondents were asked to describe their sense of national identity by choosing the following: (1) only ethnic; (2) more ethnic than national; (3) equally ethnic and national; (4) more national than ethnic; or (5) only national. The binary indicator equals 1 if the respondent chooses either option (4) or (5) and 0 otherwise. Except for a slight decrease in the coefficient, the result in column III remains significant at a 1 per cent level.

Lastly, in column IV, we control for a local-level variable that captures respondents' level of satisfaction with the government's provision of local services. In the AB survey, individuals were asked to rank their level of satisfaction with basic local services such as health, education, water, and road maintenance ranging from 'very badly' to 'very well'. Based on these responses, we generate an index using factor analysis. The higher the value, the more satisfied an individual is with the government's provision of local services. We further control for light density at night to capture the effect of current development at the village level. Controlling for night light density at a refined geographic unit will help us account for heterogeneity in development as average luminosity at the ethnic homeland level may be driven by few extremely lit areas (Michalopoulos and Papaioannou 2013). The result in column IV remains significant at 1 per cent.

Buganda, which is the home of the largest Ugandan ethnic group and historically the most centralized and bureaucratic polity in Uganda, is believed to have emerged in its modern sense around the 15th century (Reid 2002). Originally a tributary state to Bunyoro, Buganda became a strong state in the 1840s and gained political and military supremacy over Lake Victoria and the surrounding kingdoms. The complex and highly bureaucratic socio-economic organization of Buganda was often admired by various adventurers, missionaries, and colonial administrators, which 'the like of it was frequently suggested, did not exist anywhere else in Eastern Africa' (Reid 2002: 7). Taxation was such an important component of the state structure in pre-colonial Buganda that it became 'the critical components of the relationship between governed and governing' (Reid 2002: 251).

The highly developed and bureaucratic political structure of Buganda in pre-colonial times may have given it an advantage over other kingdoms in its ability to formulate policies and organize people, particularly in relation to taxation both during colonial and post-colonial periods (Torrance and Morrissey 2014). Because of the important role that Buganda had in history and its continued influence both socially and politically in today's Uganda, we do a robustness check by excluding Buganda from our analysis to see that our results are not driven by it. Table 3 shows that the results remain the same, suggesting that the association between tax compliance norms and pre-colonial centralization is not driven by Buganda.[4]

Table 3: Pre-colonial centralization and tax compliance norms: results after excluding Buganda

	I	II	III	IV
Pre-colonial centralization	0.17*	0.22*	0.19*	0.17*
	(0.05)	(0.03)	(0.03)	(0.03)
R-squared	0.025	0.031	0.034	0.048
Observations	2,790	2,790	2,790	2,790
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Quality of local service provision				Yes

Note: the table shows the results after excluding Buganda. The dependent variable is a binary indicator for the tax compliance norm. Pre-colonial centralization is a dummy for whether the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls and a survey-round fixed effect. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' estimates.

4.2 Regression discontinuity analysis on contiguous ethnic homelands

Despite controlling for different variables in the econometric specifications, the relationship between pre-colonial centralization and tax compliance norms of citizens might still be biased if it is driven by unobservable local features. To address this concern, we use the geographic information system (GIS) available in the data and use an RD approach to identify the average effects on individuals that live close to the border of contiguous ethnic homelands with different levels of pre-colonial centralization.

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[4] Using the ranked responses for tax compliance norms deliver similar results.

The RD analysis will further allow us to control for any unobservable factors that individuals, who live within proximity to each other, may share.

We identify adjacent ethnic homelands with varying degrees of pre-colonial centralization using the binary indicator for pre-colonial centralization.[5] The difference in tax compliance norms between contiguous ethnic homelands is then estimated using the following econometric specification.

$$Y_{i,e(j)} = \alpha + \beta I_e + X'\Phi + \varepsilon_{i,e(j)} \tag{2}$$

$Y_{i.e(j)}$ indicates the dependent variable, which is an indicator variable capturing the tax compliance norm of individual i, residing in the historic homeland of ethnic group e that is adjacent to ethnic homeland j, where ethnic homelands e and j differ in their degree of pre-colonial centralization. The coefficient of pre-colonial centralization, (β), now represents differences in tax compliance norms between contiguous ethnic homelands with different levels of pre-colonial centralization.

Validation

For our identification strategy that compares tax compliance norms of citizens within adjacent ethnic homelands with different levels of historic political centralization to be valid, we need to check that there are no systematic differences in local observable factors across the borders (see Angrist and Pischke 2008). We do that by looking at the association between pre-colonial centralization and location-specific factors (distance to capital, sea, and national border) and geography (land area, elevation, presence of lakes/rivers, soil quality for agriculture, and the malaria stability index) among adjacent ethnicities. Because we only have few adjacent ethnic homelands, we do the analysis at a pixel level to get more observation. The unit of analysis is a pixel of 0.125x0.125 decimal degree, which is around 12x12 kilometres (km). Table 4 shows the results where there is no statistically significant difference in location and geographic attributes, suggesting that by focusing on adjacent ethnic homelands we minimize biases that may arise from local observable factors.

Table 4: Pre-colonial centralization and geographic characteristics within adjacent ethnicities

	Dependent variables							
	Land area	Distance to the capital city	Distance to the sea	Distance to the national border	Malaria stability index	Soil quality for agriculture	Elevation	Presence of water
Pre-colonial centralization	-0.00	-2.52	-0.08	0.02	-0.02	0.01	27.08	-0.06
	(0.03)	(1.55)	(0.05)	(0.46)	(0.16)	(0.07)	(136.30)	(1.96)
R-squared	-0.004	0.286	0.151	-0.004	-0.004	-0.004	-0.002	-0.004
N	232	232	232	232	232	231	232	232

Note: the table reports ordinary least square (OLS) estimates associating various geographic and location characteristics with pre-colonial centralization within pairs of adjacent ethnicities. The unit of analysis is a pixel of 0.125x0.125 decimal degrees. The standard errors are in parentheses and are clustered at the ethnic homeland level.

Source: authors' estimates.

In addition to geographic factors, we check that there are no systematic differences in observable characteristics of individuals who reside close to the borders of adjacent ethnic homelands with different levels of centralization. We do that by looking at the association between pre-colonial

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[5] If an ethnic homeland is a neighbour to more than one ethnic homeland, then it is compared with all pairs of neighbouring ethnic homelands that have a different degree of political centralization.

centralization and observable characteristics of individuals (gender, age, education, employment status, resides in an urban centre or not, and indicator of wealth status). Table 5 reports the results from an OLS regression on individuals residing within 75 km of the borders.[6] We control for ethnicity fixed effect in all the regressions. The results show that there is no statistically significant difference in observable characteristics of individuals that reside close to the borders of adjacent ethnic homelands with different levels of historic political centralization.

Table 5: Pre-colonial centralization and individual-level characteristics within adjacent ethnicities

	Dependent variables					
	Male	Age	Job	Education	Wealth	Urban
Pre-colonial centralization	-0.01	2.69	0.06	-0.02	-0.07	-0.04
	(0.02)	(1.84)	(0.07)	(0.02)	(0.05)	(0.08)
R-squared	-0.015	0.021	0.191	0.045	0.054	0.222
N	2,089	2,089	2,089	2,089	2,089	2,089

Note: the table reports OLS estimates associating various characteristics of individuals with pre-colonial centralization within pairs of adjacent ethnicities. The analysis is done for individuals residing within 75 km of the borders. All columns include ethnicity fixed effect, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders. The standard errors are in parentheses and are clustered at the ethnic homeland level.

Sources: authors' estimates.

Results

After providing evidence that there are no systematic differences in observable factors (both geographic and individual) around the borders of adjacent ethnic homelands, we proceed to reporting the results from our RD analysis.

Table 6 presents results on contiguous ethnic homelands with different levels of pre-colonial centralization by focusing on respondents that reside close to the ethnic borders. Panel (a) shows the results for respondents residing within 100 km of the border. Because some of the ethnic homelands are geographically smaller, we perform the analysis for respondents within 75 km (panel b) and 50 km (panel c) of the borders. We include individual-level controls, round fixed effects, border fixed effects of the contiguous ethnic homelands, and the linear distance from the borders in all the specifications. The standard errors are in parentheses and are clustered at the ethnic homeland level. Despite the decline in the number of observations as we reduce the radius on which we do the RD analysis, the results in Table 6 remain positive and significant, and the coefficients do not vary much in all the specifications.[7] Using the ranked response for the tax compliance norms delivers similar results. The results are reported in Appendix Table A2.

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[6] We did the analysis on 50 and 100 km of the borders and obtained similar results.

[7] The results remain the same after excluding Buganda and the neighbouring ethnic homelands from the RD analysis.

Table 6: Pre-colonial centralization and tax compliance norms: results from observations near the borders of the contiguous ethnic homelands

	I	II	III	IV
(a) 100 km				
Pre-colonial centralization	0.25*	0.23*	0.25*	0.22*
	(0.03)	(0.04)	(0.03)	(0.04)
R-squared	0.043	0.044	0.047	0.062
Observations	2,382	2,382	2,382	2,382
(b) 75 km				
Pre-colonial centralization	0.25*	0.23*	0.25*	0.21*
	(0.03)	(0.04)	(0.04)	(0.04)
R-squared	0.040	0.040	0.043	0.061
Observations	2,089	2,089	2,089	2,089
(c) 50 km				
Pre-colonial centralization	0.21*	0.23*	0.24*	0.22*
	(0.02)	(0.06)	(0.06)	(0.05)
R-squared	0.042	0.042	0.045	0.063
Observations	1,795	1,795	1,795	1,795
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: panels (a), (b), and (c) show results for individuals residing within 100 km, 75 km, and 50 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable is a binary indicator for tax compliance norms. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' estimates.

Figure 2: Tax compliance norms by distance to centralized–non-centralized borders
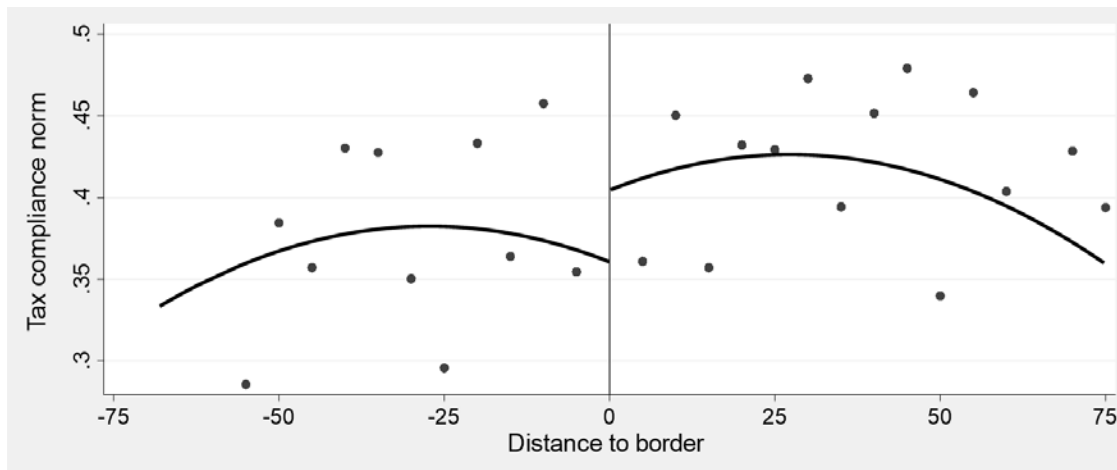
Note: the figure shows the share of respondents with tax compliant norms by distance (in km) to the border. The distance from the centralized–non-centralized border increases as one moves away from the centre point (0) on the x-axis. Negative (resp. positive) values represent distance from the border into decentralized (resp. centralized) territories.

Source: based on authors' estimates.

Figure 2 presents a visual display of the level of tax compliance norms as one crosses the historically centralized and non-centralized borders in our sample. The dots mark local averages (in 5-km bins) of the outcome variable (tax compliance norm) for respondents residing within 75 km of the borders of contiguous ethnic homelands. The fitted line represents the correlation between distance to the borders of the contiguous ethnic homelands and tax compliance norms and is obtained from the regression of the dependent variable on a second-degree polynomial function of distance to the borders. The patterns in the figure mimic the findings in Table 6. The share of respondents who consider tax evasion as wrong and punishable increases markedly on the historically centralized side of the border (to the right of the x-axis centre point).

4.3   Mechanisms

We intend to examine two possible mechanisms through which pre-colonial centralization can shape citizens' contemporary tax compliance norms. The first one is the persistence difference in citizens' belief about the need to obey authority (Lowes et al. 2017) and persistence in institutions (Acemoglu et al. 2001).

Belief in obedience to authority

African historiography suggests that in centralized polities, the state had organized force to uphold its authority and 'can uniformly apply policies throughout a given territory' such as extract labour, enforce the law, and demand taxes (Schraeder 2004: 29, 30). European colonizers continued to rely on centralized polities, and British indirect rule particularly preserved and strengthened the capacity of pre-colonial states by consolidating the position of kings and chiefs (Mamdani 1996; Cappelen and Sorens 2018). We hypothesize that the legacy of such a system of governance may lead people in historically centralized states to become more obedient to authority, which in turn can shape their compliance norms to general rules, including paying taxes. The difference in tax compliance norms between historically centralized and non-centralized states in contemporary Uganda may, therefore, be the result of the persistence difference in citizens' beliefs in how to respond to demand from authority.

To test this mechanism, we use the following questions from the AB survey that captures the respondents' belief in the need to follow rules and decisions from various government bodies, namely the tax authority, the court, and the police. Respondents were asked regarding their agreement with the following statements: 'The tax authority always has the right to make people pay taxes', 'The courts have the right to make decisions that people always have to abide by', and 'The police always have the right to make people obey the law'. Individuals can respond to each of these statements by choosing: strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. The question is obtained from rounds 4, 5, and 6 of the AB surveys. We construct a binary indicator with a value of 1 if respondents either agree or strongly agree with the authority of at least two of the government bodies (the tax authority, the court, or the police) and 0 otherwise. We use this variable as our outcome variable and test its correlation with pre-colonial centralization.

In Table 7, we report the RD results using the linear probability model for individuals residing within 75 km of the borders of contiguous ethnic homelands with different levels of centralization. We include individual-level controls, round fixed effects, border dummies, and the linear distance from the borders of contiguous ethnic homelands in all the specifications. The relationship between pre-colonial centralization and belief in the need to obey authority is positive and significant in column I, where we control for various geographic features of ethnic homelands, implying that respondents residing in the historically centralized side of the border are more likely to have a strong belief in the need to obey authority compared to respondents in the non-centralized side of the border. Controlling for historical factors at the level of ethnic homelands in column II increases the coefficient, and it remains significant. The results remain the same in the subsequent columns where we control for respondents' ethnic composition (column III) and indicators for citizens' perception about the quality of local services and local development (column IV).[8]

Table 7: Pre-colonial centralization and belief in obedience to authority

	I	II	III	IV
Pre-colonial centralization	0.08*	0.18*	0.18*	0.17*
	(0.02)	(0.02)	(0.03)	(0.03)
R-squared	0.023	0.022	0.028	0.033
Observations	3,215	3,215	3,215	3,215
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the table shows the results for individuals residing within 75 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable is a binary indicator for an individual's belief in the importance of obedience to various government bodies that include the tax authority, the court, and the police. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' estimates.

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[8] We find similar results for distances within 100 and 50 km of contiguous ethnic homelands.

Figure 3: Belief in the need to obey authority by distance to centralized–non-centralized borders
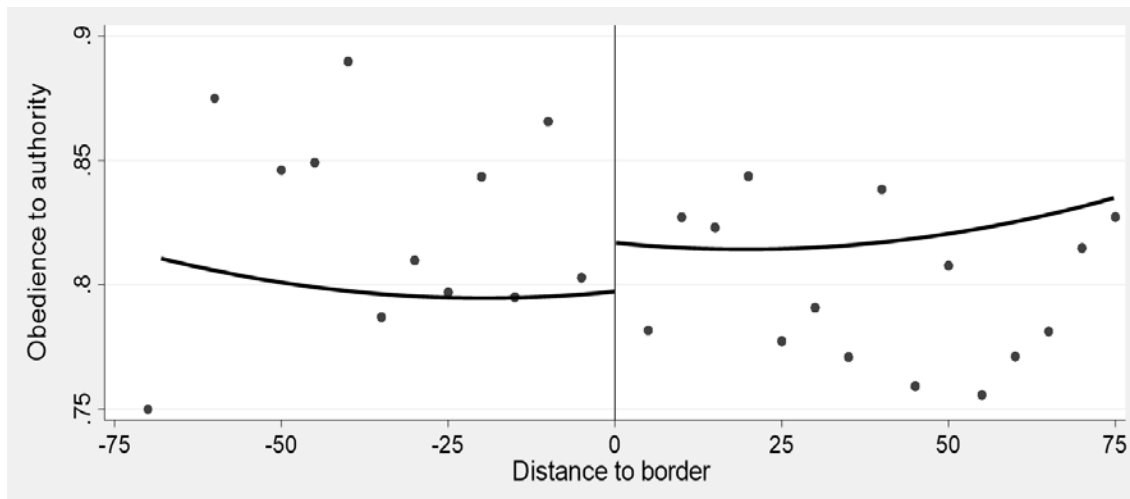
Note: the figure shows the share of respondents who believe in the need to obey authority by distance (in km) to non-centralized and centralized borders. The distance from the border increases as we move away from the centre point (0) on the x-axis. Negative (resp. positive) values represent the distance from the border into decentralized (resp. centralized) territories.

Source: based on authors' estimates.

Figure 3 shows an increase in the share of individuals who believe in the need to obey authority as one moves from the historically non-centralized (the left of the x-axis centre point) to the centralized side of the border (the right of the x-axis centre point).

In addition to respondents' belief about the need to obey specific authorities, we checked their belief about the need to obey the government in power. The AB survey asks respondents about their general belief regarding the importance of obeying the government in power, even if they did not necessarily vote for it. They were asked about their agreement to either of the following statements: (1) *It is important to obey the government in power, no matter who you voted for*, and (2) *It is not necessary to obey the laws of a government that you did not vote for*. This question is obtained from rounds 5 and 6 of the AB survey. We construct a binary indicator with a value of 1 if respondents agree with statement (1) and 0 if they agree with statement (2). We then checked the correlation between pre-colonial centralization and the belief in the need to obey the government in power. Table 8 reports the results for respondents within 75 km of contiguous ethnic homelands with different levels of centralization. We include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homelands, and linear distance to the borders in all the specifications. Columns I–IV include a set of geographic, historic, ethnic, and quality of service provision controls, respectively. The results in Table 8 mimic the ones in Table 7. In all the specifications, there is a statistically significant relationship between pre-colonial centralization and belief about the need to obey the government in power.

Figure 4 further depicts that the share of respondents who believe in the need to obey the government in power increases as one moves from the historically non-centralized side of the border to the historically centralized side of the border.

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Table 8: Pre-colonial centralization and belief in obedience to government in power

	I	II	III	IV
Pre-colonial centralization	0.10*	0.22*	0.18*	0.19*
	(0.02)	(0.05)	(0.05)	(0.05)
R-squared	0.238	0.237	0.244	0.245
Observations	1,801	1,801	1,801	1,801
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the table shows the results for individuals residing within 75 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable is a binary indicator for an individual's belief regarding the importance of obeying the government in power. Pre-colonial centralization is a dummy for whether the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' estimates.

Figure 4: Belief in the need to obey the government in power by distance to centralized–non-centralized borders
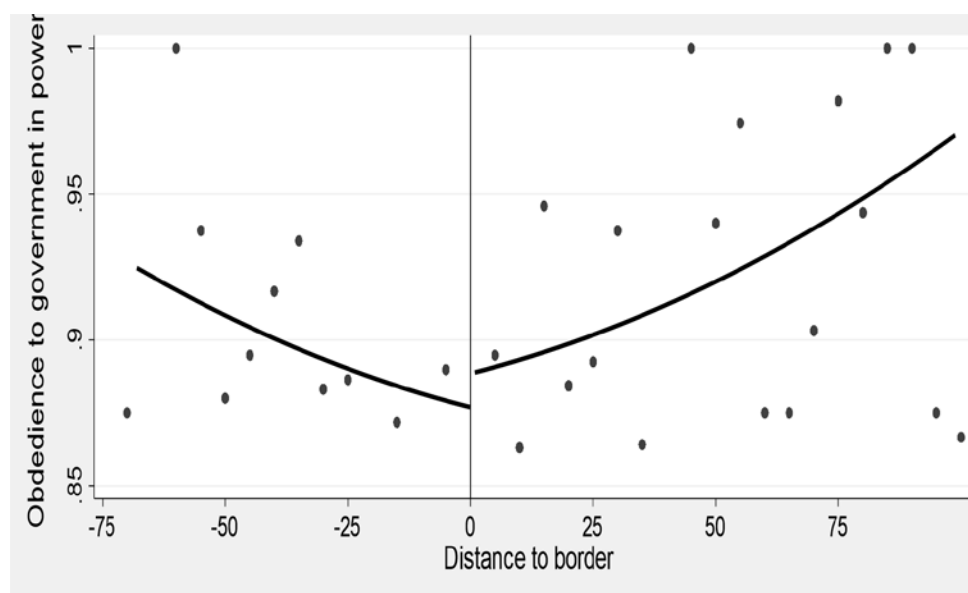
Note: the figure shows the share of respondents who believe in the need to obey the government in power by distance (in km) to non-centralized and centralized borders. The distance from the border increases as we move away from the centre point (0) on the x-axis. Negative (resp. positive) values represent distance from the border into decentralized (resp. centralized) territories.

Source: based on authors' estimates.

Estimates using ethnic fixed effect

While the results in the previous sections depict a strong correlation between pre-colonial centralization and belief in the need to obey authority, we cannot be certain if this is because of the persistence of cultural norms or the legacy of location-specific factors where people live. To check whether or not our results are driven by location-specific factors, we include ethnic identity fixed effects in our regression specification. Including an ethnic fixed effect will help capture for ethnic-specific factors, such as cultural norms, that may affect individuals' belief about the need to obey authority. Hence, the coefficient of pre-colonial centralization after including the ethnic fixed effect indicates the average effect coming from the legacy of the location.

Table 9 reports the result for the RD analysis on contiguous ethnic homelands within 75 km of the borders after including ethnic fixed effects. Panel (a) shows results for individuals' belief about the need to obey authority, and panel (b) shows results for belief in the need to obey the government in power. The coefficients for pre-colonial centralization in Table 9 are significant and bigger in all the specifications compared to those in Tables 7 and 8 when we did not include ethnic fixed effects. The fact that the coefficients increase after controlling for ethnic fixed effects suggests that individuals' belief about the need to obey authority is largely driven by the history of the location that they live in rather than the cultural norm of their ancestors. We are able to identify a statistically significant result even after including for ethnic fixed effect because enough share of respondents who are located closer to the borders of the neighbouring ethnic homelands reside outside of their ancestral homelands. For example, while in general 18 per cent of Ugandans live outside of their ancestral homelands, the share increases to 30 per cent for those within 50 km of contiguous ethnic homelands with different levels of centralization.[9] Historical accounts also confirm this pattern. For example, immigrants were coming into the southern-central Kingdom of Buganda from neighbouring areas that had been developed as the main cash-crop-growing region (Mamdani 1976; Brett 1973). By 1948, as much as 34 per cent of the population living within the borders of Buganda Kingdom were immigrants (Peterson 2012: 79).

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[9] We identify individuals who reside in their ancestral homelands by matching the name of the main ethnic group of the historical homeland from Murdock's anthropological data with the ethnic identity of respondents from the AB survey.

Table 9: Pre-colonial centralization and the belief in obedience to authority and the government in power using ethnicity fixed effects

	I	II	III	IV
(a) Belief in obedience to authority				
Pre-colonial centralization	0.29**	0.48*	0.49*	0.49*
	(0.13)	(0.09)	(0.09)	(0.08)
R-squared	0.025	0.025	0.031	0.035
Observations	3,215	3,215	3,215	3,215
(b) Belief in obedience to government in power				
Pre-colonial centralization	0.39*	0.52*	0.45*	0.43*
	(0.12)	(0.13)	(0.11)	(0.11)
R-squared	0.236	0.236	0.243	0.244
Observations	1,801	1,801	1,801	1,801
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the table shows the results for individuals residing within 75 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable in panel (a) is a binary indicator for an individual's belief in the importance of obedience to various government bodies that include the tax authority, the court, and the police. The dependent variable in panel (b) is a binary indicator for an individual's belief in the importance of obedience to the government in power. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders and ethnicity fixed effects. Columns I–IV include a set of geographic, historic, ethnic, and local services and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * and ** indicate statistical significance at the 1 per cent and 5 per cent level, respectively.

Source: authors' calculations.

Results from Table 9 suggest that location-specific factors are likely to be more important in explaining the legacy of individuals' belief about the need to obey authority rather than cultural norms. One possible location-specific factor that can explain such legacy is the level of capacity that pre-colonial centralized states had in upholding authority that could reinforce present attempts to maintain administrative autonomy in a path dependence way (Tilly 1990; Englebert 2000). Places with a long history of statehood may use their experience with large-scale administration to create a more effective government (Chanda and Putterman 2005, 2007). This can further 'support the development of attitudes consistent with bureaucratic discipline and hierarchical control, making for greater state (and perhaps more broadly, organizational) effectiveness' (Bockstette et al. 2002: 348). Thus, the legacy of highly developed and bureaucratic political structures in pre-colonial Uganda may have given areas that had a history of centralized states an enforcement capacity that makes people more compliant to pay taxes.

4.4 Quality of local institutions

The second possible mechanism that we will test is the legacy of the quality of local institutions. Historical accounts suggest that the political structure in pre-colonial centralized societies helped promote the accountability of local leaders in various ways. The political administration was distributed and shared among numerous hierarchies of institutions such as council of chiefs, age-graded sets, and aristocratic societies (Lloyd 1960; Akintoye 1970; Atanda 1970; Englebert 2000). Such a hierarchy of institutions enabled administrative levels to check, challenge, and nullify the actions of each other (Kiwanuka 1971; Wilks 1975). Because most centralized states in pre-colonial Africa are formed through the gradual unification of once autonomous clans, succession to power was based on royal matrilineality, which is done to preserve the unity of the various clans (Akintoye 1970; Kiwanuka 1971). Such an arrangement created intense political competition for power among chiefs and provided a strong incentive for the leaders to rule in the interest of the community (Kiwanuka 1971; Wilks 1975). Moreover, the main sources of income for chiefs were the gifts and fees that they received from their people in return for their leadership services to their community (see Section 2 above). Such independent income served as an additional mechanism to promote accountability in pre-colonial societies (Palagashvili 2018). In cases of intense discontent towards the leadership of chiefs, the people had the option to join other chiefdoms. This exit option created additional incentive for chiefs to provide better governance and remain accountable to their people (Palagashvili 2018; Ayittey 1991). Various socio-religious taboos were used to minimize the rulers' tendency to use their power in excess (Schapera 1940; Ayandele 1970). Therefore, pre-colonial centralized political institutions may have promoted tax compliance norms of citizens through the persistence of accountability of local leaders. This, in turn, can affect the contemporary fiscal contract between citizens and the local government by strengthening institutional trust (Levi 1988).

As an indicator of the quality of local institutions, we use individuals' trust in local government officials as well as traditional chiefs. In the AB survey, individuals were asked to indicate how much they trust local elected officials, such as their district council and traditional chiefs, by choosing one of the following: *Not at all, Just a little, Somewhat,* or *A lot.* The question about local elected officials is obtained from rounds 3, 4, 5, and 6 of the AB surveys, while the question about chiefs is obtained from rounds 4 and 6 of the AB survey.[10] Based on the responses of individuals, we construct a binary indicator for trust in local elected officials with a value of 1 if respondents choose that they trust their local leaders *Somewhat* or *A lot* and a value of 0 if they choose *Not at all* or *Just a little.* We use a similar method to construct a binary indicator for trust in chiefs. We then use RD analysis to estimate the relationship between pre-colonial centralization and the level of trust that individuals have in local leaders for neighbouring ethnic homelands with different levels of pre-colonial centralization.

In Table 10 we report results using the linear probability model for respondents who reside within 75 km of the borders of contiguous ethnic homelands. The results are reported after accounting for ethnic-specific factors using ethnic fixed effects. All specifications in Table 10 further include individual-level controls, round fixed effects, distance from the borders of contiguous ethnic homelands, and border fixed effects.

Panel (a) reports the results for trust in local elected officials. In the first column where we include geographic controls, there is no statistically significant relationship between pre-colonial centralization and trust in local government officials. Although the relationship becomes significant in column II after including for historical factors, it becomes insignificant again in column III when we account for ethnic composition controls. The result becomes negative and statistically insignificant in the last

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[10] Unlike the responses on trust in local government officials, the AB survey does not have questions regarding individuals' trust in chiefs for rounds 3 and 5.

column that accounts for individual satisfaction about local service provision and the local development indicator using night light density at the village level.

Table 10: Pre-colonial centralization and trust in local government officials and chiefs

	I	II	III	IV
(a) Trust in local government officials				
Pre-colonial centralization	-0.00	-0.20**	0.02	-0.01
	(0.03)	(0.07)	(0.07)	(0.08)
R-squared	0.041	0.041	0.041	0.044
Observations	3,296	3,296	3,296	3,296
(b) Trust in chiefs				
Pre-colonial centralization	-0.10**	-0.26*	-0.26*	-0.27*
	(0.04)	(0.06)	(0.06)	(0.07)
R-squared	0.091	0.091	0.091	0.090
Observations	2,069	2,069	2,069	2,069
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the table shows the results for individuals residing within 75 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable in panels (a) and (b) are binary indicators for individuals' trust in local government officials and traditional chiefs, respectively. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, linear distance to the borders, and ethnicity fixed effects. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * and ** indicate statistical significance at the 1 per cent and 5 per cent level, respectively.

Source: authors' calculations.

In panel (b), we report results on trust in chiefs. There is a statistically significant relationship between pre-colonial centralization and trust in chiefs in all the specifications of columns I–IV. However, contrary to what we expected, the relationship is negative, which implies that respondents in the historically centralized side of the border are less trusting of traditional leaders compared to respondents in the historically non-centralized side of the border.[11]

Figure 5 depicts similar patterns as the regression results. In Figure 5(a), there is almost no difference in the share of respondents that trust their local elected officials in either side of the border. In Figure 5(b), we see that the share of respondents who trust chiefs decreases in the historically centralized part of the border.

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[11] The results do not change when using 100-km and 50-km radius for both trust in local government officials and trust in chiefs.

Figure 5: Trust in local leaders by distance to centralized–non-centralized borders

a. Trust in local elected officials

b. Trust in chiefs
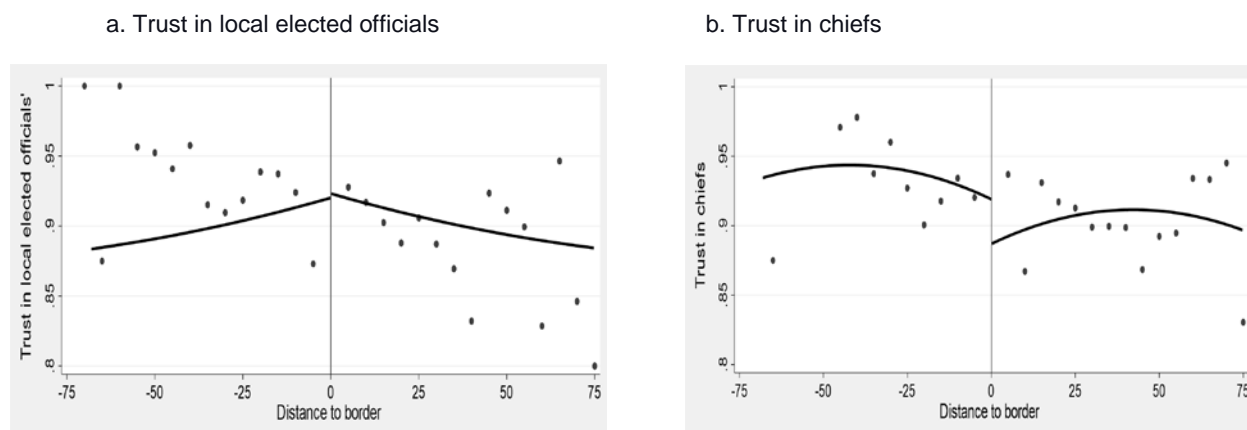
Note: the figures show the share of respondents who trust local elected officials (a) and trust chiefs (b) by distance (in km) to non-centralized and centralized borders. The distance from the border increases as we move away from the centre point (0) on the x-axis. Negative (resp. positive) values represent distance from the border into decentralized (resp. centralized) territories.

Source: based on authors' calculations.

The negative association between pre-colonial centralization and trust in traditional chiefs that we find in Table 10 may have to do with the British colonial native administration that strengthened the power of chiefs and gave them more autonomy than what they had in pre-colonial times (Mamdani 1996; Mulinge and Lesetedi 1998). African colonial history suggests that the greater autonomy enjoyed by chiefs shifted their accountability to the European officers, away from their people, which allowed them to exercise a great deal of unsupervised power (Low 1965; Mulinge and Lesetedi 1998). In explaining the unchecked power of chiefs in ruling the locals, Burke (1964) reported that 'a system of effective but completely autocratic chieftainship' arose during colonization (p 37). While British indirect rule may have preserved the authority and capacity of centralized polities, such autonomy given to chiefs, on the other hand, undermined and weakened the pre-existing formal and informal mechanisms of accountability that could curb abuse of power (Mamdani 1996). This may further lead to persistent mistrust in local leaders (Ali et al. 2020).

Tax compliance norms and pre-colonial centralization: results using ethnic fixed effect

The mechanism analysis in the previous section suggests that location-specific factors may matter more for contemporary tax compliance norms through their effects in shaping individuals' belief in the need to obey authority. If this is the case, then we should see the correlation between pre-colonial centralization and tax compliance norms to increase in magnitude when we include ethnic fixed effects in our econometric specification. Table 11 reports the results using RD analysis on the correlation between pre-colonial centralization and tax compliance norms for those individuals residing within 75 km of the borders after including ethnic fixed effects. The coefficients on pre-colonial centralization increase substantially in all the specifications, compared to the ones reported in Table 6 when we did not control for ethnic fixed effects.[12] This confirms that tax compliance norms are likely driven by location-specific factors such as the legacy of capacity of the states.

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[12] We find similar results when using the radius of 50 and 100 km. Excluding Buganda from our econometric specification does not change the result.

Table 11: Pre-colonial centralization and tax compliance norms using ethnic fixed effects

	I	II	III	IV
Pre-colonial centralization	0.63*	0.41**	0.49*	0.57*
	(0.18)	(0.16)	(0.16)	(0.16)
R-squared	0.040	0.040	0.043	0.061
Observations	2,089	2,089	2,089	2,089
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the table reports results for individuals residing within 100 km and 75 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization, respectively. The dependent variable is a binary indicator for tax compliance norms. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, linear distance to the borders, and ethnic fixed effects. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * and ** indicates statistical significance at the 1 per cent and 5 per cent level, respectively.

Source: authors' calculations.

5   Conclusion

The paper has empirically examined the role of pre-colonial institutions on current development outcomes in Uganda. Before colonization, the political organization in Uganda was generally classified into centralized polities ('kingdoms') and stateless societies. In centralized polities, the states had a complex system of tax collection based on detailed information about the available taxable resource at the district level. The British colonial power preserved and strengthened the capacity of pre-colonial states by consolidating the position of kings and chiefs. It also maintained the autonomy of chiefs in administering the locals, including collecting taxes.

By combining geo-referenced anthropological data on pre-colonial ethnic homelands with micro-survey data from several rounds of the Afrobarometer Survey, respondents from the historically centralized homelands were found to exhibit a higher willingness to pay tax compared to respondents from the non-centralized areas. This result remained robust when controlling for individual-level characteristics of the respondents as well as geographic features and other factors from pre-colonial, colonial, and current times that are likely to affect local institutions and in turn shape citizens' tax compliance norms.

RD analysis on neighbouring ethnic homelands with different levels of centralization was used to examine the underlying mechanism behind the positive association between pre-colonial centralization and tax compliance norms of contemporary citizens. The higher tax compliance norms in pre-colonial centralized homelands were found to be because of the legacy of location-specific factors related to the level of capacity that historically centralized states had in upholding authority and not through the legacy of better-quality local institutions. People in the historically centralized states were more obedient to political authority, which in turn shaped their compliance norms to general rules, including paying taxes. This result suggests that people's opinion about the need to obey authority was not driven by unobservable ethnic-specific factors, such as cultural norms but rather by the history of the location that they live in. Such knowledge of the role of deeply rooted pre-colonial

institutions is relevant for policymakers as a crucial entry point in terms of influencing citizens' willingness to contribute to tax revenue.

Historically, a substantial degree of coercion has been used to force people to pay local taxes in Uganda (Fjeldstad and Therkildsen 2008; Livingstone and Charlton 2001). Local tax collection has been facilitated through extortive and abusive approaches that were mainly advocated and implemented by council administrators (Kjær 2004). A study conducted by Uganda Participatory Poverty Assessment reports that many people complain about 'coercion, threats, and confiscation by collectors'. Bribes then had to be paid to recover confiscated items (UPPA 2000: 111−2). Thus, tax collection in some local authorities in Uganda has turned into a license for collectors on-the-ground to more or less freely augment the local treasury and supplement their own salaries through extortion from local residents. In accordance with Mamdani's (1996: 59) notion of 'decentralized despotism', financial autonomy provided the framework in which lower-level officials could resort to extra-legal enforcement and violence to extort money from the population. Thus, how governments tax matters. We cannot assume that, because they are dependent on taxation for revenues, governments will be capable, accountable, or responsive (Moore 2008). They may levy taxes coercively and thereby damage state-society relations and nurture distrust in local institutions.

The results presented in this paper emphasize the importance of knowing how local government institutions work as a prerequisite for good policy decisions. A recent assessment finds that local government revenue performance in Uganda remains below 50 per cent of the potential (SEATINI 2017: 1). Without increased local government revenue it will be difficult to realize sufficient revenue for local service delivery and sufficient local autonomy for local governments to realize their governance potential (ODI 2017). Knowledge on how taxpayers' compliance can be improved is essential for the design of policies aimed at enhancing sub-national revenues in Uganda. Our paper points to the importance of exploring the historical roots of norms and beliefs motivating taxpayers' behaviour and the role of local institutions as possible drivers of citizen's tax compliance norms. As argued by Nunn (2020: 7), it is not possible 'to fully understand the current state of the world, and how to move forward, without understanding the past and the dynamic processes that got us where we are today'.

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Appendix

Table A1: Pre-colonial centralization and tax compliance norms using the ranked response for tax compliance norms

	I	II	III	IV
Pre-colonial centralization	0.32*	0.39*	0.36*	0.34*
	(0.07)	(0.05)	(0.06)	(0.07)
R-squared	0.035	0.039	0.041	0.054
Observations	4,042	4,042	4,042	4,042
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: the dependent variable assumes values ranging from 1 to 3, with higher values corresponding to stronger tax compliance norms. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls and a survey-round fixed effect. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' calculations.

Table A2: Pre-colonial centralization and tax compliance norms: results from observations near the borders of contiguous ethnic homelands using ranked responses for tax compliance norms

	I	II	III	IV
(a) 100 km				
Pre-colonial centralization	0.52*	0.45*	0.48*	0.43*
	(0.04)	(0.06)	(0.05)	(0.05)
R-squared	0.049	0.049	0.054	0.066
Observations	2,382	2,382	2,382	2,382
(b) 75 km				
Pre-colonial centralization	0.52*	0.44*	0.47*	0.42*
	(0.05)	(0.07)	(0.06)	(0.06)
R-squared	0.049	0.049	0.054	0.067
Observations	2,089	2,089	2,089	2,089
(c) 50 km				
Pre-colonial centralization	0.45*	0.43*	0.46*	0.42*
	(0.05)	(0.10)	(0.09)	(0.09)
R-squared	0.052	0.052	0.057	0.073
Observations	1,795	1,795	1,795	1,795
Geographic controls	Yes	Yes	Yes	Yes
Historical controls		Yes	Yes	Yes
Ethnic composition controls			Yes	Yes
Local service provision and development indicators				Yes

Note: panels (a), (b), and (c) show results for individuals residing within 100 km, 75 km, and 50 km of the borders of adjacent ethnic homelands with different levels of pre-colonial centralization. The dependent variable assumes values ranging from 1 to 3, with higher values corresponding to stronger tax compliance norms. Pre-colonial centralization is a dummy for whether or not the respondent resides in an ethnic homeland that either had a large chiefdom or was part of a large state in pre-colonial times. All columns include individual-level controls, a survey-round fixed effect, border dummies of the adjacent ethnic homeland, and linear distance to the borders. Columns I–IV include a set of geographic, historic, ethnic, and local service and development indicators, respectively. See Table 2 for a detailed description of the set of variables in each column. The standard errors are reported in parentheses and are clustered at the ethnicity level. * indicates statistical significance at the 1 per cent level.

Source: authors' calculations.