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Indirect rule: armed groups and customary chiefs in eastern DRC

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Abstract: This paper leverages a novel panel dataset covering the histories of 306 chiefs and 256 episodes of village governance and taxation by armed groups in 106 villages in eastern Democratic Republic of the Congo in order to analyse the relationship between the governance of armed groups and the power of rural chiefs. The paper devises a strategy to measure chiefs' power, as well as the governance and taxation arrangements established by armed groups along several dimensions. We find that, when chiefs are powerful, armed groups are less likely to adopt direct rule and more likely to adopt indirect rule governance arrangements. We also find that the use of direct rule increases with an armed group's tenure.

Key words: violent conflict, elite control, political economy

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1 Introduction

Recently, scholarship on violent conflict has paid particular attention to the governance arrangements and forms of authority that emerge during armed conflict (Arjona, Kasfir and Mampilly 2015; Kasfir, Frerks and Terpstra 2017; Mampilly 2011; Staniland 2012). These governance arrangements have wide ranging consequences, for example, on the patterns of violence against civilians (Kalyvas 2015; Péclard and Mechoulan 2015). A key question concerns why armed factions opt to develop their own administrations to rule over the populations that come under their control – direct rule – or delegate administration to pre-existing authorities – indirect rule. The literature on colonial indirect rule has shown that this mode of governance has shaped the long-term political and economic trajectories of states and societies (Acemoglu *et al.* 2014a; Kohli 2004; Lange 2009; Lowes and Montero 2021; Mahoney 2010; Mamdani 1996), and has played a role in the likelihood of violent conflict in the post-colonial era (Blanton, Mason and Athow 2001; Mukherjee 2021; Naseemullah 2014; Wucherpfennig, Hunziker and Cederman 2016). Configurations of direct and indirect rule established by armed factions in contexts of violent conflict are also likely to have lasting effects, which warrants an analysis of how and why they emerge.

Armed groups who seek to govern populations are constrained by military, logistical and organisational factors, but also by their perceived legitimacy, a key factor for governing populations (Arjona *et al.* 2015). One option that armed groups can adopt is to enlist pre-existing authorities to administrate populations on their behalf, a configuration we refer to as wartime indirect rule. Such a configuration has advantages and limitations. On the one hand, pre-existing authorities usually have better information and resource mobilisation capacity, as well as established legitimacy. Co-opting them can reduce the cost of taxing, administrating and governing populations, and increase the legitimacy of armed groups. On the other hand, pre-existing authorities can foment rebellions or deploy resistance tactics, and, in some cases, be powerful enough to curtail any form of compliance to armed group rule. Other factors can play a role, such as the ideology and political identity of armed movements, as has been shown by Kalyvas in relation to the Greek Civil War, during which communist rebels developed direct modes of administration while non-communist rebels opted to rely on existing authorities (Kalyvas 2015). While these questions have been explored through qualitative and historical methods, there is, to date, limited quantitative empirical evidence on the causes of direct and indirect rule during violent conflict, which provides a motivation for this study.

Among the authorities that can be enlisted by armed groups, some are more powerful and legitimate than others. In societies where religion and spirituality continue to play an important role, this is the case of authorities whose power is vested in religious and cultural traditions. Despite wide ranging political transformation in recent decades, customary chiefs have conserved such power in several parts of the African continent. The power of customary chiefs is multifaceted. In states which haven't experienced in-depth reforms of customary authority, their power derives from their incorporation into the state apparatus, which usually dates back to colonial-era indirect rule, and they continue to exercise administrative power over rural populations and land (Boone 2014; Henn 2023). A recent study showed that when state taxation was delegated to local chiefs, this raised tax compliance and revenue, notably because chiefs had better information on local populations (Balán *et al.* 2022). Yet their power also stems from cultural and religious traditions, customs and beliefs, and has a spiritual and religious dimension, which has often been overlooked (Verweijen and Van Bockhaven 2020). Spiritual and religious authority cannot be easily mimicked or appropriated, and is of significant interest to armed groups seeking to rule because of the legitimacy it confers. As coercive power is often insufficient to rule, armed groups deploy

significant efforts to inscribe their claims to rule in spiritual, mythical and religious traditions, as a way to gain legitimacy (Hoffmann 2015). Enlisting customary authorities can be a way of appropriating this spiritual and religious power, but it is rarely a straightforward process, as chiefs and populations can oppose resistance. Moreover, the legitimacy of customary authorities can erode in indirect rule configurations, because of the 'decentralized despotism' these can enable, as Mamdani (1996) has famously shown. Examining the relationship between armed groups and customary authorities therefore allows us to examine the relationship between coercive power, which armed groups typically wield, and other forms of power – notably customary and religious power – which have rarely been studied using quantitative empirical data.

In this paper, we analyse 20 years of governance arrangements by armed groups and their relationship with chiefs during the eastern Democratic Republic of the Congo's (henceforth DRC) violent conflict, which has lasted for nearly 30 years. Several factors allow us to explore this relationship in eastern DRC. First, customary authority remains an important form of authority in eastern DRC, particularly in rural areas (Hoffmann, Vlassenroot and Mudingga 2020). Second, hundreds of armed groups have operated in the region since the onset of the war and continue to operate today (Vogel *et al.* 2021). Third, there is considerable variation in these armed groups and their relationships with authorities and populations. Some armed groups have emerged from eastern Congolese communities and have deep social roots, while others are tied to regional elite networks and receive direct support from neighbouring countries (Stearns 2022; Stearns and Botiveau 2013). Armed groups who engage in military conquests can find themselves in areas where they are considered as foreigners and illegitimate rulers, and face resistance to their presence, taxation practices, and rule. For this reason among others, some armed groups have sought to set up governance and taxation arrangements involving local chiefs.

We analyse these variations in configurations of armed group rule to explore the relationship between armed group governance and the power of rural chiefs. We ask the following questions: what are the sources of the power of chiefs? What role does chiefs' power play in determining the types of governance arrangements that emerge in rural entities that come under the control of armed groups? When do armed groups establish direct rule over the entities they control, and when do they rely on indirect rule via local chiefs? How do these governance arrangements change over time? These are difficult questions to answer with quantitative empirical data. Indeed, there are challenges in using survey methods to measure concepts such as chiefs' power, and particularly the spiritual or supernatural dimension of their power, which is inherently subjective and can be endogenous to their actions. Moreover, our quantitative approach only allows us to observe a segment of the relationship between armed groups and chiefs, which is inevitably more complex and secretive than what can be captured with survey methods.¹ As a result, our findings are often suggestive rather than conclusive. Nevertheless, our approach allows us to capture trends and patterns in this relationship over a relatively large number of villages, and over time.

The key input into our analysis is a panel dataset on armed groups and chiefs in 106 villages and rural entities of North Kivu, one of the most conflict-affected provinces of the DRC, dating back to 1950. The panel was created using recall methods implemented through several surveys, which allowed us to reconstruct the history of these villages on key variables. The dataset contains 256 episodes of armed group control in the 106 villages, as well as information on each of the 306

¹ Indeed, studying the relationship between chiefs and armed groups compounds the challenges related to research on elites and those of research on violence. Both come with difficulties of access, secrecy, manipulation, and concealment, many of which cannot be overcome with survey methods.

chiefs that exercised authority in these villages since 1950. Additional interviews with key informants have allowed us to consolidate and triangulate these datasets.

Our analysis makes several contributions. First, we document and analyse the power of chiefs, with particular attention to a dimension of their power that has rarely been analysed through survey methods: their spiritual and supernatural power. We devise a way to measure this dimension of their power and show that it has steadily declined since the 1950s. We build an index to capture the overall power of chiefs that encompasses the different dimensions of this power – power over land, power over people, administrative power, and spiritual and supernatural power – in order to operationalize it for our analysis. We show that coethnicity between a chief and the majority of the population of a particular entity is an important predictor of chiefs' overall power, providing further evidence of the persisting political salience of ethnic identities in eastern DRC (Hoffmann 2021).

Second, we describe the governance arrangements that emerge between armed groups and traditional chiefs, and propose a taxonomy to analyse direct and indirect rule which takes into account the specific challenges faced by armed groups. We show that armed groups develop forms of direct rule in a majority of cases, but in a significant percentage of cases, they resort to indirect rule. However, these dichotomies mask an important variation, both across and within armed groups. Armed groups can implement direct rule over certain activities while, at the same time, delegating the administration of other activities to local chiefs.

Third, we analyse the role that the power of chiefs plays in explaining why and when armed groups develop direct or indirect rule. We show that, when armed groups start exercising military control over areas with powerful chiefs, they are less likely to develop direct rule. We also show that, when armed groups are from a different ethnic background than the majority of the population of a particular entity, and when the chief is from the same ethnic background as the population of that entity, armed groups are more likely to set up indirect rule arrangements involving local chiefs. We then examine the temporal dynamics of these configurations, to see whether they change as a result of an armed group's tenure over a village. We show that these arrangements are dynamic and that, with time, there is a convergence towards direct rule. This result is consistent with studies of colonial governance, which show that direct rule tends to prevail over time (Boone 2003).

The results we obtain using our new dataset paint a coherent picture of indirect rule as a temporary solution for governing, in situations where customary chiefs have an advantage over coercion-wielding organisations which stems from their power, which is multifaceted and includes a supernatural dimension. We find this power to be particularly strong in 'ethnic strongholds', where chiefs and populations share the same ethnicity. This relative power advantage, however, seems to erode over time, and armed groups tend to replace chiefs.

The paper is organized in the following way. We start by providing a brief historical background to the study in Section 1, looking in particular at the recent history of indirect rule in eastern DRC, and the history of indirect rule during the eastern Congolese violent conflict. In Section 2, we present the data collection and data consolidation processes, to explain how we obtained the datasets on which the analysis is based. In Section 3, we look at what the empirical data tells us about the nature of chiefs' power, in particular the spiritual and supernatural dimension of their power, and devise a way to operationalize chiefs' power for our analysis. Section 4 is devoted to our analysis of the relationship between chiefs' power and armed group rule. We start by presenting our vectors of direct and indirect rule and the relative prevalence of these modes of rule in our sample. In Section 4.3, we carry out a regression analysis of chiefs' power and direct and indirect rule, and then analyse the temporal dynamics of armed group rule. We conclude in Section 5.

2 Background

2.1 Indirect rule in eastern DRC

Up until the mid-19th century, Eastern Congo's political topography was characterized by small kingdoms connected through trade networks, with limited political centralisation as compared to the neighbouring Kingdom of Rwanda (Chrétien 2000; Newbury 1992, 2009). Political authority was centred on the figure of the chief but was elaborately balanced between lineage groups, and political competition revolved around succession to the thrones (Newbury 1992). From the mid-19th century, the belligerent expansionism of the Rwandan Kingdom forced several kingdoms in the region into vassalage. Concomitantly, the expansion of the East African slave trade into the region increased violent modes of resource mobilisation and labour conscription, as well as governance arrangements akin to indirect rule. Tippu Tip, representative of the Sultanate of Zanzibar, forged a regional empire in which local chiefs were enlisted as intermediaries and charged with mobilizing resources, in particular taxes and labour to serve as soldiers, porters and slaves.

The colonial conquest and colonial rule led to profound changes in the region. In the early days of the Congo Free State, Tippu Tip was appointed governor of the east, spearheading the subcontracting of rule to powerful intermediaries which would become a hallmark of Belgian colonial rule, from local power brokers to large concessionary companies (Lowes and Montero 2021). Colonial rule in eastern Congo was carried out through what Hoffmann has called *ethnogovernmentality*, the organisation of mediated state power through the constitution of ethno-territorial entities (Hoffmann 2014, 2021). The creation of the native authorities, which included an administrative 'gridding' of rural areas and the establishment of administrative chiefs and sub-chiefs, as well as mapping efforts and population censuses, served two main functions. On one hand, the native authorities ensured control over rural populations at a low cost. On the other, they served to mobilize taxes and labour destined for a range of activities, from public works for the colonial state – in particular portage – and the various industries, to the staffing of the *Forces Publiques*, the colonial army (Northrup 1988: 41). In 1891, a royal decree recognized the institution of the chiefdom, enshrining native chiefs into the colonial state's administrative apparatus (Hoffmann 2014: 121). The land over which indigenous chiefs ruled was given a separate legal status as *Terres Indigènes* (Native Land), instituting a separate land tenure regime governed by customary law, which has continued to this day (Mpoyi 2013). The creation of the native homelands and the imposition of indirect rule was a messy and violent process, which gave rise to several resistance movements which the colonial state violently repressed. Chiefs found themselves in a difficult position, as they often tried to protect their subjects from the demanding quotas of the state but nevertheless had to comply or face being deposed, imprisoned or even assassinated. As a result of their collusion with the state, their legitimacy and claims to spiritual power could erode, especially as religious and millenarist movements of spiritual resistance to colonial rule emerged and contested their spiritual power, such as the Kitawala movement (Eggers 2020). From the 1920s, efforts were made to reduce the tax and conscription burden on the populations, but the system nevertheless remained extractive and coercive, leading to several instances of revolts.

After Independence, political turmoil quickly turned into violent conflict with the secession of the provinces of Katanga (1960–1963), Kasai (1960–1962), the rebellions of Kwilu (1964–1965) and the rebellion of the eastern provinces (1964–1966) (Kisangani 2022). Following a *coup d'état*, Mobutu was able to 'restore order' through the establishment of an authoritarian and coercive regime. Measures were taken to centralize and streamline the state apparatus in order to exert full control over Congolese society: the objective – clearly stated by Mobutu – was direct rule, supposedly to steer the country towards modernity and development. Customary authorities, whose power had in several areas been extended during colonial rule, represented a direct obstacle

to Mobutu's power and his project of creating a centralized administrative apparatus and a socialist and pan-African nation (Young and Turner 1985). As a result, Mobutu sought to abolish customary authority through a series of decrees from the late 1960s and early 1970s, only to face widespread resistance which forced him to abandon these reforms. The Congolese state nevertheless maintained a 'bifurcated' system of political organisation. Strategic and economically lucrative regions were brought under direct state administration, while in other regions devolved forms of governance, often involving customary chiefs, prevailed.

2.2 Indirect rule in the Congolese wars

As a result of the political crisis that Zaire underwent in the early 1990s and the two large scale wars of 1996–1997 and 1998–2003, the Congolese state lost its tenuous control over large parts of the country. Despite the peace agreement and the official end to the war in 2003, the armed conflict persisted in the eastern provinces of the country, where to this day hundreds of armed groups operate in rural areas. Recent projects, in particular the Usalama projects I and II and the Insecure Livelihoods Series,² have highlighted the complexity of the governance arrangements that have developed between armed groups and civilian leaders and populations. Many of the armed factions operating in eastern DRC have deep institutional and social roots, having emerged either as political projects formulated and supported by local or regional elite networks, or as 'bottom up' social movements, at times garnering significant popular support (Stearns 2013b; Stearns and Botiveau 2013; Vogel 2014), and exercising multifaceted influence over rural societies in eastern DRC (Hoffmann and Verweijen 2019). However, the institutional and political fragmentation of eastern DRC, a result of the region's history of decentralized sociopolitical organisation, and the fracturing of economic and political spaces induced by the war, entails that the governance arrangements developed by armed groups display significant variation. Armed groups face substantial logistical, organisational and military challenges when they seek to exercise control over territories and populations; their control is often tenuous and limited to the urban centres and main roads (Schouten 2022), and subject to quick change as a result of military challenges by the national army and other armed factions. Moreover, because of the political salience of ethno-regional identities and their close association with authority (Muchukiwa 2006; Verweijen and Vlassenroot 2015), armed groups can find themselves ruling over populations who consider them to be 'foreigners' or illegitimate rulers.

The constraints armed factions face to govern over populations entail that there are benefits in delegating the administration of populations to local intermediaries, and particularly customary chiefs, who continue to enjoy substantial legitimacy in eastern DRC. The enduring authority and legitimacy of customary authority and customary chiefs is the result of several factors, from the power conferred on them by their status as custodians of the land in neo-customary land tenure regimes to the enduring recognition of lineage-based forms of power, to the spiritual dimensions of their power and their mythical role in contexts of acute societal crises resulting from war (Verweijen and Van Bockhaven 2020). Delegating power to customary chiefs, and thereby reinstating forms of indirect rule which have long existed in the region, can therefore increase armed groups' administrative control over territory and population and allow them to co-opt chiefs' resource mobilisation capacity. It can also backfire: powerful chiefs can seek to undermine armed groups through overt peaceful or violent resistance, or through 'passive' resistance against the

² The Rift Valley Institute Usalama Project is a research project aimed at understanding the nature of armed groups in eastern DRC and the political, social and economic dynamics of the eastern Congolese armed conflict. Phase I (2012–2013) was led by Jason Stearns, and phase II (2015–2016) was led by Judith Verweijen. The Insecure Livelihoods Series was led by Christoph Vogel and was part of the Governance in Conflict Network. See <https://www.gicnetwork.be/insecure-livelihoods-series/>

armed group's resource and tax collection requirements. As a result, groups might prefer to replace chiefs that are too powerful or insufficiently compliant, often resorting to violence to do so. They might also seek to develop enhanced control over specific sectors of economic or social activity that are more strategic or lucrative by developing 'direct' forms of control over them, while delegating the administration of other – less strategic or lucrative – sectors.

One of the largest rebel movements to have ruled over eastern DRC was the Rassemblement Congolais pour la Democratie (RCD), who split into two main factions, the RCD Goma and the RCD Kisangani, during the second Congo War. A movement with significant international backing – in particular by Rwanda and Uganda – the RCD was also supported throughout its existence by a network of local, national, and regional elites (Stearns 2012). The RCD's control over the eastern provinces was highly unequal, and mostly focused on the larger urban centres, strategic roads, and the most lucrative sectors of the economy (Stearns 2011; Turner 2007). In the regional capitals of North and South Kivu, the RCD 'seized' the state apparatus and, following purges of political and intellectual opponents, used it as a handle to govern over the provincial capitals and their immediate vicinity without substantially changing existing modes of rule (Tull 2003). However, as it faced challenges and resistance to its power, it sought to co-opt existing elites in order to assert its power over their rural ethno-territorial constituencies, usually by offering them power-sharing agreements. This was the case for the Bashi elite networks in Bukavu and the territory of Walungu, in South Kivu, or the Batembo authorities in Bunyakiri: in order to quell the Mayi-Mayi insurgency in the Batembo heartland, the RCD addressed the longstanding grievances of the Batembo by creating the territory of Bunyakiri (Hoffmann 2021). For the non-Rwandophone populations of eastern DRC, however, the RCD was largely perceived as a foreign invasion, and not considered as legitimate to control territory or rule. In rural areas, chiefs who collaborated with the RCD were often considered as traitors. Mass conscription of youth in the RCD's Local Defence forces relied heavily on local chiefs, and led to widespread resistance and increased support for the Mayi-Mayi insurgency (Hoffmann, Vlassenroot and Marchais 2016; Marchais 2016).

The Mayi-Mayi resistance movement which emerged in July 1997 against the *Alliance of Democratic Forces for the Liberation of Congo* (AFDL) and intensified when the RCD seized the eastern provinces of DRC, was submitted to opposing processes of centralisation and fragmentation, with significant regional variation. Under the command of General Padiri, the Mayi-Mayi centralized military command and resource mobilisation, which required the establishment of a system of administration of civilian populations. Under the Etat-Major Politico-Militaire (Politico-Military Headquarters), an Administration des Forets (Forest Administration) was set up (Hoffmann 2015; Morvan 2005). It combined direct modes of administration and more decentralized forms of administration through intermediaries, in particular administrators, chiefs and religious leaders selected on the basis of their loyalty and subjected to ideological training by the group (Morvan 2005: 57). Deploying soldiers in the various axes (roads) that it controlled, the group set up a system of taxation to finance its war effort, with some sectors of the economy coming under direct control by the movement, while others were left to more decentralized forms of taxation through intermediaries. For example, the regulation and taxation of the mining sector was highly centralized, with Padiri deploying soldiers to each mine under his control to collect taxes which were directly channelled back to his headquarters. On the other hand, the collection of compulsory household taxes – known as *effort de guerre* or ration (war effort) – was usually delegated to local chiefs.

The RCD and the Mayi-Mayi Padiri were among the largest and most organized politico-military movements to have emerged during the Congolese wars and constitute examples of armed movements who were able to set up elaborate administrations in the regions they controlled, which included both direct and indirect forms of rule. After 2003, several other groups displayed significant administrative and governance capacity, in particular the (foreign-backed) National

Congress for the Defence of the People (CNDP) and the March 23 Movement (M23) armed movements (Stearns 2012), but also Congolese armed movements such as the Alliance of Patriots for a Free and Sovereign Congo (Stearns 2013a) or the Nduma Defense of Congo and its offshoot the Nduma Defense of Congo-Rénové (Congo Research Group 2020), all of which emerged in the province of North Kivu. Alongside these larger armed groups, a myriad of smaller armed groups have been operating in the province of North Kivu and engaging in various forms of – often ad-hoc – control and governance over rural communities, engaging in temporary or more durable arrangements with local authorities and particularly chiefs. This variation provides the backdrop for our analysis of the relationship between armed group governance and the power of chiefs.

3 Building a dataset of armed group rule and chiefs' power

This section presents the data collection and consolidation process followed in this study. The data was collected as part of a larger data collection effort, which included several research projects.³ These research projects followed a common data collection approach, based on recall methods, which is detailed in the following subsection.⁴ For the current project, additional data collections were carried out on specific themes, namely the governance arrangements of armed groups and the history and power of rural chiefs, which we present in the following sub-sections.

3.1 Approach to data collection and consolidation

The study focuses on 106 villages or entities in the five largest *territoires* (districts) of the province of North Kivu, in eastern DRC. These are the territories of Masisi, Rutshuru, Walikale, Beni and Lubero. Villages were randomly chosen from all economically important villages⁵ in a territory, conditionally on being safe for the research teams to visit them. Each village was visited for approximately a week by the research teams, who carried out the following activities in each village. Figure A1 in the appendix shows the geographic location of the sample of villages and the province of North Kivu.

First, the research team identified a group of ‘history specialists’ in each of the study villages or entities, usually around five. These are individuals who have advanced knowledge of the political, social and economic history of a given village, town, or entity. Typically, these are local authorities, village elders, or local *notables*, such as schoolteachers. The researchers then worked with the history specialists, who were compensated for their time and work, to reconstitute the history of the entity with regards to the themes of the study, over about a week. In the last day in each village, the researchers held a workshop with the history specialists in order to verify the data compiled during the week, address any errors or mistakes, and triangulate the data provided by different history specialists. The consolidated data from this final meeting with the history specialists, which underwent further rounds of verification, constitutes the main source of data used in this study.

Second, the researchers implemented six household surveys in each study village or entity. With one member of each surveyed household, they reconstructed the household’s history in key aspects through an interview which was held in a private setting, with appropriate compensation, breaks, and adaptations to the schedule of the interviewed household member. An additional round of data collection was carried out in a second phase, where an additional ten households were surveyed

³ These are Henn *et al.* (2023), Marchais (2016), Marchais *et al.* (2021), Sánchez De La Sierra (2020).

⁴ For a detailed discussion of the data collection approach, see Sánchez De La Sierra (2020).

⁵ Villages were considered economically important if they had a mine or cash-crop production.

in each of the study villages. This allowed us to build a separate household dataset of 1,654 individuals, to complement the history specialist dataset. It also allowed us to have the perspectives of individuals on key variables, such as chiefs' legitimacy. Additionally, in each village, the research team drafted a brief report about the history of each village, summarizing the key information regarding armed group presence and the history of chiefs. To draft these reports, researchers relied on the information provided by the history specialists, but also carried out additional short interviews with local authorities and key informants.

The data collection took place in a context marked by ongoing violence and the after-effects of past violence. As a result, special provisions were taken to reduce risks to researchers and research subjects. The project was reviewed and approved by Congolese administrative authorities at the provincial, territory, and village levels. Security and communication protocols were systematically implemented for travel, accommodation, and research.⁶ In addition to direct exposure to risk, interviews which cover sensitive events, and particularly violent events, can trigger traumatic memories in research subjects. Given the nature of trauma, it is impossible to entirely rule out such occurrences. Nevertheless, the project sought to reduce this by systematically explaining the nature and content of the survey to respondents before it was conducted, and in particular providing details on the survey's sensitive sections and questions, and then leaving time to respondents to decide whether they wanted to proceed or not. Moreover, in addition to the procedure of informed consent that preceded all interviews, there were additional consent forms preceding the most sensitive sections, explaining the content of each section and reiterating that respondents were entirely free to not respond to some or all the questions within that section or to end the interview. The research team conducting the interviews had considerable experience in discussing issues related to violence, and their expertise in this regard was crucial to ensure that respondents felt safe to discuss these issues, and supported.

The analysis carried out in this paper relies largely on the accurate dating of key historical events. In order to date these events, the research teams consulted administrative records in the administrative entities where the research was carried out. However, these were often incomplete and lacked data on the variables of interest. As a result, the dating of key events relies largely on the data collected through the surveys, which contained recall methods. Recall methods have been used in the social sciences as well as in history and psychology, particularly in regions where written records and archives are limited and where there are traditions of oral history, as is the case in eastern DRC. Recall is inherent in the methodologies used by historians and anthropologists to reconstitute the history of central African societies (Newbury 1992, 2009; Vansina 1978, 2004). Although different in their approach, quantitative studies have also effectively used recall methods to reconstitute historical data, including studies related to themes of this study (Acemoglu, Reed and Robinson 2014b; Sánchez De La Sierra 2020).

Recall methods are subject to measurement error resulting from recall errors: respondents can make understandable mistakes in their recollection of dates and events, and the likelihood of such mistakes increases with the temporal distance from recollected events (de Nicola and Giné 2014; Tourangeau 2000). In order to reduce measurement error in the dating of events, we used time cues based on common knowledge of regional events,⁷ which were used as temporal reference

⁶ These protocols are detailed in the ethics reviews that were carried out for this project. These were at Columbia University (IRB-AAAK0552), Harvard University (IRB14-4223), and The University of California Berkeley (201606-8849).

⁷ The social psychology literature suggests that time cues can substantially reduce measurement error related to the timing of events (Brown, Shevell and Rips 1986; Conway and Bekerian 1987), although other studies find limited evidence of their effectiveness (de Nicola and Giné 2014).

points by the researchers to date the events reported by the respondents. Drawing on lessons from the literature on recall methods, we ensured that the time cues used were tailored to the regional and local histories of the study areas, as irrelevant time cues can increase measurement error (de Nicola and Giné 2014). For the household survey, we used person-specific time cues. At the start of each survey, the researchers asked about key information that is usually easier to recall: when they were born, when they got married (if applicable), when they migrated (if applicable). These life events provided respondent-specific time cues that researchers used for the remainder of the survey. This made it easier to determine the years of the events discussed in the survey, even when respondents were not sure about the year. We also ensured that questions focused as much as possible on transitions and key events, which are easier to memorize and recollect (de Nicola and Giné 2014).

In order to further reduce measurement error due to recall error, and also biases arising from the positionality of respondents, the study included several layers of triangulation of the reported information. As previously noted, the specialist survey had a built-in triangulation of information, which happened when the data collected by different specialists was compared during a workshop carried out in each village at the end of the study period. For the key variables, we also compared the answers reported in the specialist survey with those reported in the household survey, as well as with the short summary reports prepared by researchers for each village. When necessary, we conducted follow-up interviews (in person or via phone calls) to further confirm events. We believe that these different steps have allowed us to considerably reduce measurement error in the data.

3.2 Reconstituting the history of armed group governance

Using the data collected through the process described above, we reconstituted the recent history of the armed groups who exercised control over the study villages for at least one month, dating back to 1990.

For each group, we collected data on their key characteristics, including their size and capacity, their alleged origins (in particular, whether they originated in the study area), their relationship to the population as well as state and customary authorities, and their (alleged) majority ethnic composition. We also collected data on the administrations that armed groups set up in the study villages, in order to build our indices of direct and indirect rule. This included yearly data on the taxes that armed groups levied in the study villages, including the types of taxes, their amount, their modes of collection – particularly whether collection was carried out by the group or delegated to intermediaries. It also included data on whether and how armed groups enforced taxation, whether they intervened in the administration of justice, and whether they set up economic monopolies (of beer, liquors, and cigarettes in particular). We also collected data on the recruitment of soldiers, porters and assistants, and on how such labour recruitment was carried out (directly by armed groups or delegated to intermediaries). The variables relevant to the analysis are discussed in more detail in the following sections.

Our approaches to minimizing measurement error described above notwithstanding, respondents could have differential recall for different types of rules. For example, direct rule might represent a more salient memory than indirect rule. This possibility is one of the reasons why, in addition to a combined rule measure, we also present the results separately for direct and indirect rule and by dimension of governance.

3.3 Reconstituting the history of chiefs

Using the same strategy, we collected information on all of the chiefs who were present in the study villages since 1990. For each chief, we collected the start and end dates of their tenure, the main

causes of their appointment and departure (when applicable), as well as network data and land ownership data. We also collected data on their perceived sources of power, at the level of households (see next section for more details).

When a chief's tenure coincided with an episode of armed group presence over a study village, we collected data on the types of arrangements that were set up between them and the armed groups. Notably, the deliverables expected by the group (for instance, collection of poll taxes, mobilisation of recruits, gathering of information, spiritual or religious support), the perceived performance of the chiefs on these dimensions, and the threats directed to chiefs, as well as any instance of punitive measures taken against chiefs.

4 The elusive power of chiefs in eastern DRC

Not all chiefs in eastern DRC have the same power. In fact, there is substantial variation in chief power in eastern DRC, for several reasons. First, not all chiefs are *customary* chiefs. As discussed in the context section, the colonial state incorporated chiefs into the state administration in order to rule over rural populations, collect taxes and mobilize labour. When no chiefs existed or when chiefs were reluctant to collaborate, they appointed new chiefs or replaced existing ones. As a result, some administrative chiefs in eastern DRC are not recognized by customary traditions, but have been appointed by the colonial state and have kept their administrative status in the post-colonial era. Moreover, even when chiefs are recognized by customary traditions, they might be unpopular and have lost their legitimacy for a range of reasons, from perceived incompetence or corruption, to collaboration with rulers considered to be illegitimate such as the colonial state or occupying armed movements. Capturing the nature and variations in chiefs' power is therefore an important first step in the analysis of the relationship between chief power and armed group rule.

In this section, we use the specialist and household survey data to analyse the nature and sources of chiefs' power. As previously mentioned, the literature on customary authority has shown that the power of chiefs is multifaceted and spans administrative, political, economic, social, religious and spiritual dimensions (Verweijen and Van Bockhoven 2020). Building on this literature as well as the qualitative fieldwork carried out for this project, we look at several key dimensions of chiefs' power. First, whether chiefs are considered to be recognized by the custom. Customs vary substantially in the fragmented political landscape of eastern DRC, and chiefs' tenures are often contested. Political conflicts over customary authority, which are numerous in eastern DRC (Hoffmann *et al.* 2020), often involve several claimants arguing their customary right to the same position. In addition to data collected through the specialist survey on whether or not chiefs' tenures are sanctioned by customary traditions and rituals, the household data gives us the population's perspective on whether a chief is regarded as customarily legitimate. Second, given that chiefs have an administrative role and can have varying levels of competence in that regard, we look at households' perception of chiefs' skills in relation to management, resource mobilisation, and advocacy. Third, most customs consider chiefs to be the custodians of the land, entitled to levy contributions in exchange for usufruct over land granted to their subjects. Given the incorporation of chiefs into 'neo-customary' land tenure regimes during the colonial era, in which they were used by the colonial state to levy taxes, such rights have been contested by overtaxed populations since the early colonial era (Northrup 1988). Whether the taxes that chiefs levy in relation to land are considered to be legitimate is therefore a good indicator of the legitimacy of these chiefs. A related measure that is used in the analysis is the percentage of the land of a given village or entity over which a given chief exercises customary authority. Given the importance of land in rural societies, customary authority over land remains a significant source of chiefs' power. However, given that, in the colonial and post-colonial era, large tracts of land were put under

'statist' land tenure regimes and/or private ownership (Boone 2014), chiefs' authority over land varies significantly, and can be proxied by this variable. Fourth, we look at chiefs' power to protect and guide the fortune of the population, which has material and spiritual dimensions. Indeed, in eastern Congo's customary traditions, the role of the chief is to protect the population of an entity and guide their fortune. Protection was traditionally achieved by organizing security and mobilizing soldiers in the event of a threat or attack (a power which eroded with the establishment of colonial state armies), but it also had a spiritual dimension, as the chief can intercede with the spiritual world and deploy various forms of spiritual or 'supernatural' protection (Bishikwabo 1980; Burume 1993). There are many differences in the spiritual and religious traditions in which such 'spiritual' power is vested and in the types of powers that exist, as well as in chiefs' capacity to summon and deploy such powers. Given the subjective nature of these beliefs, and the fact that spiritual or supernatural power might in some cases be mixed with actual coercive power, the household data is once again useful to get a sense of whether particular chiefs are believed to have the power to protect. On the basis of the qualitative research and targeted consultations, we look at chiefs' power to protect from theft, help in hunting, help in mining activities, improve agriculture, control rain and thunder, control bridges, and control agricultural harvest, as well as their power to heal.

Table 1 presents summary statistics for the villages (Panel A) and chiefs (Panel B) in our dataset. We covered 106 villages since 1950 and obtained a dataset of 306 chiefs of North Kivu. Panel A gives us the distribution of the number of chiefs recorded in each village since 1950. The median number is three, with some villages having experienced a high turnover of chiefs – up to seven successive chiefs – since 1950. In Panel B, we see that the median length of reign of chiefs is ten years, and ranges between one and 80 years.⁸ In Panel A, we can see that chiefs own on average 28 per cent of the land in their respective villages and that this ranges from 0 to 100, showing significant variation in the customary land tenure rights held by chiefs. The distribution is bimodal, indicating that chiefs often either own all the land, or no land at all. In Panel A, we can also see that 56 per cent of respondents attribute the sources of power of chiefs to spiritual/supernatural powers, providing further evidence of the importance of this dimension of chiefs' power, which is not, as has long been assumed, a manifestation of 'irrational' belief systems.⁹ Panel B shows chief specific averages based on the perception of households. For example, respondents were asked to evaluate the supernatural power of chiefs on a scale from 1 to 10. The chiefs in our dataset have a mean power of 4.9, with some chiefs having no power at all and others high levels of power – up to 9.1.

Table 1: Summary statistics

	Mean	Median	St. dev.	Min	Max
Panel A: Village level	201.91	145.00	154.81	32.00	654.00
Number of households living in village in 2016					

⁸ This number includes the current chiefs that are still in power.

⁹ In order to address some of the stereotypes around the alleged negative relationship between so-called 'rational intelligence' and beliefs in spiritual and supernatural forces, which date back to colonial representations of Congolese society, we administered a Raven's test. Raven's tests are meant to measure 'rational intelligence' and 'abstract thinking', notions that should be taken with ample critical distance (along with the test itself). In Figure A2, we can see that respondents who scored higher on a Raven's test also gave their chiefs higher scores on supernatural power (Panel E), and that respondents scoring higher on a rational-experiential inventory gave lower scores on supernatural power to their chiefs (Panel F). Although we cannot draw conclusions about a question that was not part of our research objectives, and need to remain very cautious with regards to these tests, these results show that the alleged binary opposition between rational intelligence and beliefs in the supernatural is not supported by our data. Additionally, we explored some of the political and social orientations of respondents and their association with respondent's perception of chiefs' supernatural powers. Respondents scoring higher on the right-wing authoritarianism scale gave lower supernatural power scores to their chiefs (Panel G). In contrast, respondents scoring higher on the social dominance scale gave higher supernatural power scores to their chiefs (Panel H).

Number of community meetings attended past year (mean)	10.14	8.78	7.54	1.00	66.00
Years with at least one attack	3.31	3.00	1.75	0.00	7.00
Years when the village was under control of an armed group	10.00	11.00	6.62	0.00	27.00
Indirect rule vector	0.12	0.29	1.83	-3.24	4.08
Direct rule vector	0.67	0.96	3.18	-6.16	9.09
Number of chiefs	3.16	3.00	1.38	1.00	7.00
Supernatural source of power/legitimacy of chiefs (mean)	0.56	0.60	0.37	0.00	1.00
Average supernatural power of chiefs (0–10)	4.78	5.40	2.50	0.00	7.93
Average age of chief	46.09	45.29	11.48	22.50	78.50
Per centage of chiefs with same ethnicity as majority of villagers	0.81	1.00	0.37	0.00	1.00
Number of families related to chief	33.45	20.00	53.17	0.00	387.00
Percentage of land that belongs to chief	28.22	10.00	31.66	0.00	100.00
Observations	106				
Panel B: Chief level					
Birth year (mean)	1953	1954	18.45	1882	1988
Start of reign	1989	1997	24.62	1900	2016
End of reign	2003	2009	17.39	1924	2016
Length of reign	15.21	10.00	14.15	1.00	81.00
Related to previous chief (mode)	0.67	1.00	0.47	0.00	1.00
Related to mwami [king] (mode)	0.03	0.00	0.18	0.00	1.00
How many witches (mode)	3.35	0.00	6.88	0.00	47.00
How many years opposition to armed group (mode)	0.27	0.00	0.96	0.00	6.00
How many years armed group present (mode)	1.89	0.00	5.45	0.00	41.00
How many years submission to armed group (mode)	1.23	0.00	4.32	0.00	41.00
Customary authority (mean)	0.85	1.00	0.30	0.00	1.00
From the ruling family (mean)	0.82	1.00	0.32	0.00	1.00
Enthronement ceremony (mean)	0.88	1.00	0.21	0.10	1.00
Supernatural power (mean)	4.96	5.65	2.70	0.00	9.10
Management skills (mean)	6.82	7.00	1.35	1.00	9.50
Control of rain (mean)	0.56	0.67	0.40	0.00	1.00
Liked at start of reign (mean)	0.90	1.00	0.15	0.00	1.00
Liked at end of reign (mean)	0.82	0.90	0.24	0.00	1.00
Requests per month at start of reign (mean)	2.19	1.89	1.77	0.00	12.00
Requests per month at end of reign (mean)	1.92	1.63	1.46	0.00	6.80
Private conversations per month (mean)	7.08	6.00	5.32	0.00	21.78
Observations	306				

Source: authors' own from collected data.

4.1 Operationalizing chiefs' power

In order to carry out our analysis, we operationalize the power of chiefs and its different dimensions.

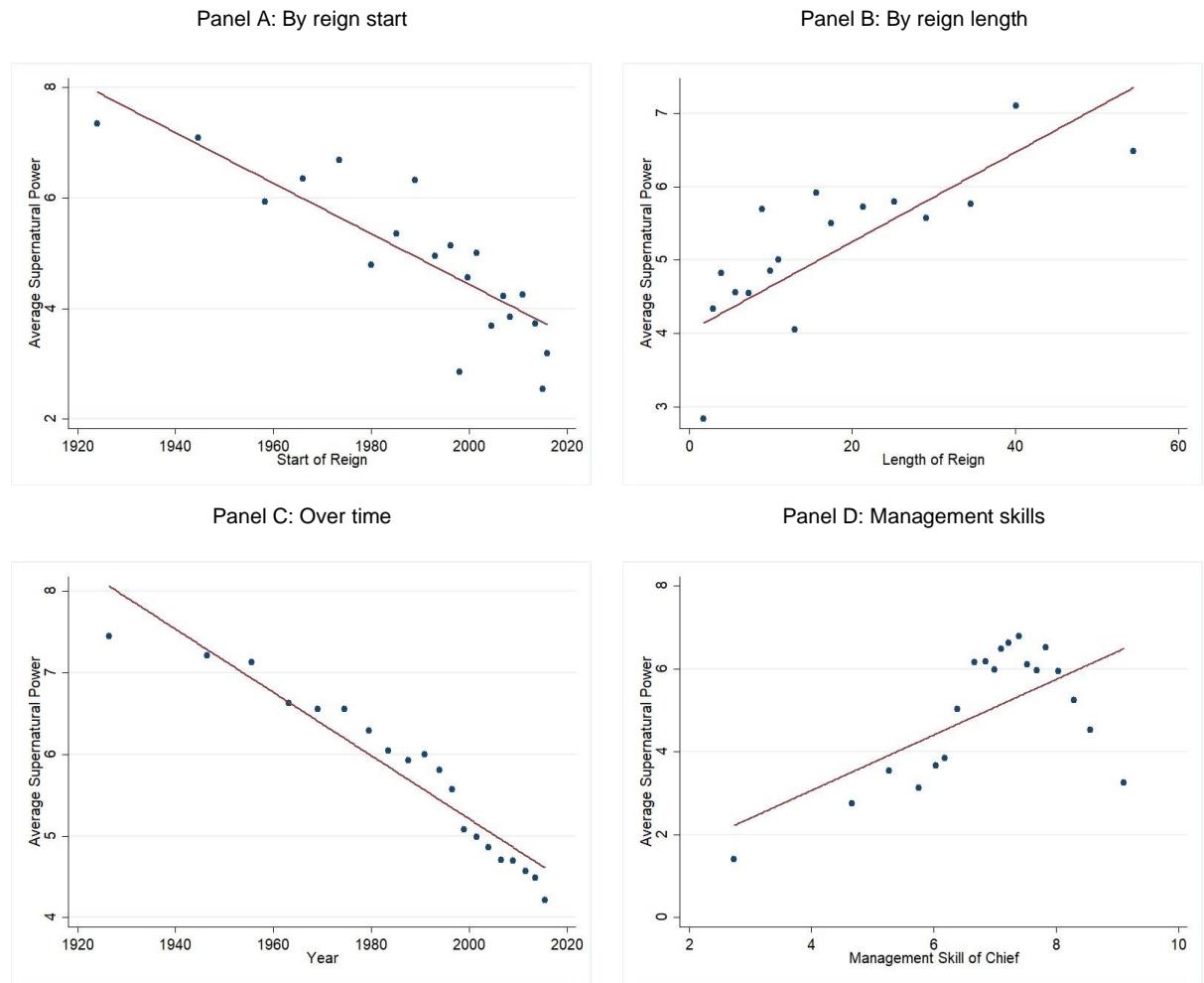
We start by looking at some descriptive statistics on supernatural power and its main correlates. In Figure 1, Panel A shows a steady historical decline in the perceived supernatural power of chiefs: chiefs who started their reign more recently are considered to have less supernatural power than 'historical' chiefs. There are several potential explanations for this. First, it could be due to a form of secularisation, whereby the beliefs on which such supernatural power rests are losing ground in society as a result of the competition of other belief systems, in particular Christianity and atheism, the latter often being associated with the ideologies of modernity and development which have been championed by post-Independence states on the African continent. Second, it could be due to the mythification of past chiefs, which is often observed for popular figures – leaders, politicians, celebrities – who, when they pass away, become mythical figures. Third, it might be due to the fact that respondents have directly observed recent chiefs as opposed to historical chiefs, and have thus been able to directly assess their powers – or lack thereof. In Panel B, we can see that the perceived supernatural power of chiefs increases with the length of their reign. This might be explained by the fact that chiefs whose tenures are longer are able to achieve more for their constituencies, and that these achievements are 'converted' into supernatural power. It might also be that longevity of tenure increases the legitimacy of chiefs and their perceived power, particularly in contexts of crisis. In Panel D, we can see that chiefs' supernatural power is also correlated to their perceived management skills, though interestingly the inverse-U-shape suggests a negative relationship between management skills and supernatural power for those with very high management skills. Together, these descriptive statistics provide evidence that supernatural power is correlated to other dimensions of power.

We devise a strategy to operationalize chiefs' power that allows us to partially address the risk of retroactive bias in the reporting of chiefs' power, as we have seen that a supernatural power is susceptible to temporal change for different reasons. We use 23 variables associated with chiefs' power and conduct a factor analysis, which is reported in Table 2.¹⁰ Panel A shows the factor loading, which can be interpreted as the degree to which the variable is informative compared to the other variables. For instance, all sources of power considered, a chief's perceived power to heal is relatively more predictive of 'overall chief power' (which encompasses all dimensions of power) than whether the chief was liked at the onset of their tenure (which appears to be less correlated to all other variables). Panel B regresses the predicted 'overall power index' using the factor created in the factor analysis exercise of Panel A, and regresses it on variables which are less amenable to subjective reporting than perceptions of chiefs' power: these are variables that relate to facts that can be verified and triangulated with the household and specialist surveys, such as the date of the start of a tenure of a chief, rather than beliefs or perceptions. This panel's objective is to ascertain which 'objective' characteristics are best related to 'chiefs' power', broadly defined. We see that chiefs who are born earlier, start their reign earlier, and are considered to be traditional owners of the land are more powerful. Chiefs who share the same ethnicity as the majority of sampled residents of a given entity are also more powerful. We use the coefficients in models (1) and (2) to create two 'predicted chief power' variables. Together, the factor analysis as well as the predictors

¹⁰ Another central part of chiefs' responsibilities in the DRC is dispute resolution. For each chief we asked respondents who resolved local disputes about land in the community at the start of the chief's reign. Citizens always selected the chief to be in charge of such dispute resolution. Since there was no variation across chiefs, we did not include this variable in the factor analysis for chief power.

of chief power allow us to incorporate chief power into our analysis of armed group rule, to which we now turn.

Figure 1: Correlates of chiefs' supernatural power—chief characteristics



Source: authors' own from collected data.

Table 2: Chief power

	Factor1	Uniqueness
Customary authority (mean)	0.721	0.480
From the ruling family (mean)	0.723	0.478
Enthronement ceremony (mean)	0.658	0.567
Confirmed by spirits (mean)	0.717	0.486
Was the population consulted (mean)	0.469	0.780
Mobilizing ability (mean)	0.625	0.609
Sensibilizing ability (mean)	0.636	0.595
Supernatural power (mean)	0.843	0.290
Management skills (mean)	0.474	0.775
Threat of force (mean)	0.679	0.540
Charisma (mean)	0.590	0.652
Power to control rain (mean)	0.884	0.218
Power to protect from theft (mean)	0.885	0.216
Power to help hunt (mean)	0.880	0.225
Power to help mining (mean)	0.811	0.343
Power to improve cultivation (mean)	0.853	0.272
Power to control thunder (mean)	0.799	0.361
Power to control bridges (mean)	0.644	0.585
Power to control harvest (mean)	0.833	0.305
Power to heal (mean)	0.850	0.278
Liked at start of reign (mean)	0.344	0.882
Requests per month at start of reign (mean)	-0.297	0.912
Private conversations per month (mean)	0.064	0.996
<i>Panel B: Predictors of chief power factor</i>		
	(1)	(2)
	Scores for factor 1	Scores for factor 1
Start of reign	-0.0104*** (0.00258)	-0.0103 (0.00935)
Length of reign	-0.00250 (0.00332)	-0.00484 (0.0104)
Birth year (mean)	-0.00767*** (0.00236)	-0.0127*** (0.00419)
Related to previous chief (mode)	0.521*** (0.169)	0.513*** (0.191)
Related to mwami (mode)	-0.717*** (0.216)	-0.790*** (0.165)
Traditional owner of land? (mode)	1.182*** (0.166)	1.121*** (0.211)
How many witches (mean)	0.000594 (0.00636)	-0.00267 (0.0140)
Ethnicity of chief same as village		0.625* (0.371)
Proportion of village with same ethnicity as chief		-0.644 (0.431)
Number of households		-0.000175 (0.000610)
Numbers of families related to chief		0.00109 (0.00153)
Observations	265	139
R2	0.585	0.635
Fixed effects	No	No
Cluster	Village	Village

Note: standard errors in parentheses * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

5 Chiefs' power and direct vs. indirect rule

5.1 Measuring armed group governance

Armed groups' territorial control

We define an armed group episode as an episode of military control over an entity (village or neighbourhood) by an armed actor that lasts for a period of at least two months.¹¹ We observe 249 armed group episodes in 106 villages by 41 different armed groups, of varying duration. Regarding armed groups, we distinguish between armed groups that originate in a particular entity (village or neighbourhood), and armed groups that have originated outside that entity. Our data shows that the armed groups occupying the study entities of North Kivu almost all originated outside of those entities.¹² Importantly, although we collected data on the presence of state security forces, notably the national army, the police and the intelligence services (Agence Nationale de Renseignements), we exclude these from our analysis, as including them would alter the premises of our analysis which relates to ensuring a degree of ex-ante exogeneity of the armed group.¹³ Our qualitative evidence and historical accounts suggest that conflict in North Kivu was less driven by local factors and more by regional or national events (e.g., the RCD rebellion, M23 mutiny, etc.). Whether an individual village was occupied by an armed group was less driven by local characteristics like chief power. We do, however, run a simple regression where we have whether the village is controlled by an armed group as the outcome variable and chief power as the predicted variable. Results are in Table B7. While the coefficient is negative, that is, villages with more powerful chiefs are less likely to be controlled by armed groups, the effect size is small and not significant at conventional statistical levels. This assuages concerns about reverse causality. Table 3 provides summary statistics for all armed groups with at least five governance episodes in our sample.¹⁴ The average number of years of armed group episodes are four years, ranging from one to 26 years. When looking at the involvement of chiefs in armed group episodes, the variation in their involvement is clearly visible. Columns 6, 7, and 8 respectively show the percentage of episodes where armed groups rely on the village's chief to collect the head tax, administer the village, and give some political power to chiefs. At least two patterns emerge. There is considerable variation within armed groups on how much they involve chiefs. For example, while groups mostly use chiefs to collect head taxes, there are still a sizable proportion of villages for each armed group in which they do not. Second, chiefs can be involved for one governance dimension but not for another. For example, chiefs are

¹¹ This definition was applied during the data collection. However, we also collected data on armed group episodes of shorter duration.

¹² 'Homegrown' armed groups often have different objectives, making it difficult to include these cases within a framework geared toward external armed groups because, as explained in a theoretical paper on wartime indirect rule, indirect rule governance arrangements suppose a degree of exogeneity of the armed group to the entity that is being governed at the onset of the governance episode (Marchais, Sánchez de la Sierra and Henn 2018). Moreover, chiefs are often heavily involved in the organisation of homegrown groups. In our dataset, there are five episodes where the group originates within the study entity. We therefore exclude these cases from the analysis. In related studies in South Kivu where the same variable was used, we found that a higher proportion of the armed groups in South Kivu originated in the villages where the study took place.

¹³ In contexts of violent conflict, state security forces can at times occupy and administer entities in similar ways to armed groups. However, we decided to exclude state security forces from the analysis because these have a longstanding presence in these regions, and their relationship with civilian populations and existing authorities has been forged through a history that includes historical indirect rule arrangements that have been consolidated over the years. Given that our purpose here is the conditions under which relatively new governance arrangements emerge, we decided to exclude the state security forces from the analysis. However, we reproduced the analysis while including the state forces, and the results, which are very similar, are presented in Table B5 of the appendix.

¹⁴ Table B1 shows the summary statistics for all armed groups in the sample.

typically used to collect head taxes, but armed groups rarely let chiefs administer the village. This variation within armed group episodes raises the need to examine the dimensions of rule further, which we do in the next section.

Table 3: Summary of armed group episodes

Armed group	#	Average	Shortest	Longest	Chief tax	Chief admin	Chief power	Earliest	Latest
	episodes	length	control	control				control	control
Mayi-Mayi	62	2.61	1	26	0.81	0.16	0.34	1990	2016
RCD	54	5.35	1	9	0.90	0.09	0.44	1997	2013
Congolese Army	47	6.98	1	26	0.19	0.78	0.90	1990	2016
Rwandan AG	8	4.25	1	11	0.69	0.18	0.50	2000	2015
Natura	7	2.29	1	4	0.82	0.00	0.14	2010	2015
PARECO	5	3.00	2	4	0.90	0.00	0.20	2003	2010
Others	66	3.23	1	9	0.69	0.18	0.22	1993	2015
	249	4.25	1	26	0.68	0.26	0.43	1990	2016

Source: authors' own based on collected data.

Constructing indices of direct and indirect rule based on dimensions of rule

Measuring direct and indirect rule is challenging because there is no natural dichotomy in the governance arrangements established by armed groups in the areas they control. The literature on armed group governance has shown that governance arrangements vary significantly in their characteristics, and usually involve many actors beyond states and armed groups (Kasfir *et al.* 2017). This was also the case during the colonial era, whose governance arrangements cannot be reduced to a clear-cut direct vs. indirect rule dichotomy, as Mukherjee has argued (Mukherjee 2021: 18). The qualitative data collected for this project shows that this is also the case in the DRC, as we have found significant variation in the nature, duration and characteristics of governance arrangements.

In order to capture such empirical variation, we take a systematic approach that constructs vectors on a number of well-defined dimensions of governance. We look at seven dimensions of governance: (1) the extraction of resources (taxation and tribute), (2) the mobilisation of labour, (3) legitimisation/sensibilisation,¹⁵ (4) the administration of the village/entity, (5) the allocation of political power, (6) the provision of public services, and (7) the regulation of economic activity.

We construct two indices, one for direct rule, and one for indirect rule. That is because, empirically, direct and indirect rule are not mutually exclusive. Armed groups can, for example, delegate the collection of some types of taxes to chiefs, while collecting other types of taxes themselves. Using two indices rather than one therefore allows us to paint a more precise picture of the empirical reality of armed group governance. Figures 2 and 3 present the breakdown of the indirect rule and direct rule indicators, respectively. The direct rule index is constructed on the basis of all seven dimensions of governance that we presented above, while the indirect rule index only uses the first five dimensions: extraction of resources, extraction of labour services, legitimisation efforts, administration, and political power.

¹⁵ The term ‘sensibilisation’ is used across eastern DRC to designate the consultations which are carried out to generate popular approval of a particular project or idea. In the case of armed groups, sensibilisation usually means the discursive efforts, public meetings and consultations carried out to convince populations of the objectives, ideologies and legitimacy of armed groups.

For the collection of taxes, we observe whether the group receives a head tax, and whether the head tax is collected by the group directly. We also observe whether the group raises a toll tax, a mill tax, or a market tax, and whether the group creates forced debt, a strategy used by armed groups in eastern DRC to raise revenue. The collection of all or parts of these taxes can be delegated to intermediaries, which is the variation that we exploit for our analysis. The head tax, which is collected at the level of households, is often delegated to chiefs, as it can generate resentment among the population and requires legitimacy. More than 70 per cent of groups raise a head tax, and about half of them collect the head tax directly. Groups organize toll taxes, mill taxes, market taxes, and forced debt in between 10 and 60 per cent of cases, and the toll tax and market tax are raised in more than 50 per cent of cases. The chief is involved in the collection of the poll tax in 65 per cent of the village×year observations.

For the mobilisation of labour services, we observe the recruitment of combatants or support staff (such as porters) for the group. We also record who carried out the recruitment, and whether chiefs directly encouraged the recruitment. The chief is involved in recruitment in approximately 20 per cent of cases, but the group carries out recruitment directly in 55 per cent of village×year observations of episodes of armed group rule. For legitimisation/sensibilisation, we look at whether the group itself, or the chief, carried out awareness raising activities and legitimisation campaigns to justify the group's ideology and military control over a given entity. We can see that, in 40 per cent of village×years, the group organized the campaigns themselves, and that in about 20 per cent of village×years the village chief organized campaigns in support of the group. Armed groups also chase away local witch doctors and witches to replace them with their own witch doctors in 17 per cent of village×year observations, showing that control over the realm of the supernatural is also an important part of ruling over an entity.

With regards to armed groups' administration, we first observe whether an armed group administers the village, and whether there are signs of an institutionalisation of this administration in the form of written documents, which usually indicate a level of formalisation. We thus look at the presence or absence of written documents for administration, the existence of a written code of conduct or a rudimentary 'constitution', whether or not the group provides written contracts as well as written official communications, and whether or not the group has its own seal for official documents. Strikingly, we find that in a majority of cases, armed groups have written official documents as well as an official seal, indicating a level of institutionalisation of their administration. We also observe whether the group administers justice. In 75 per cent of cases, the group administers the village directly and provides justice in the village. Chiefs, in contrast, administer the village and provide justice in 20–25 per cent of cases. We also look at military presence and capacity in the entity and find that the military presence of the group equals approximately ten armed men on average per village×year of armed group rule.

Regarding the allocation of political power, we ask respondents who they perceive to hold political power in a village or entity: in 55 per cent of the cases, political power is perceived to be in the hands of the group, while it is either shared with the chief or entirely delegated to the chief in approximately 42 per cent of cases. Of these, the chief has all the political power in 20 per cent of cases and shares the power with the group in another 22 per cent of cases.

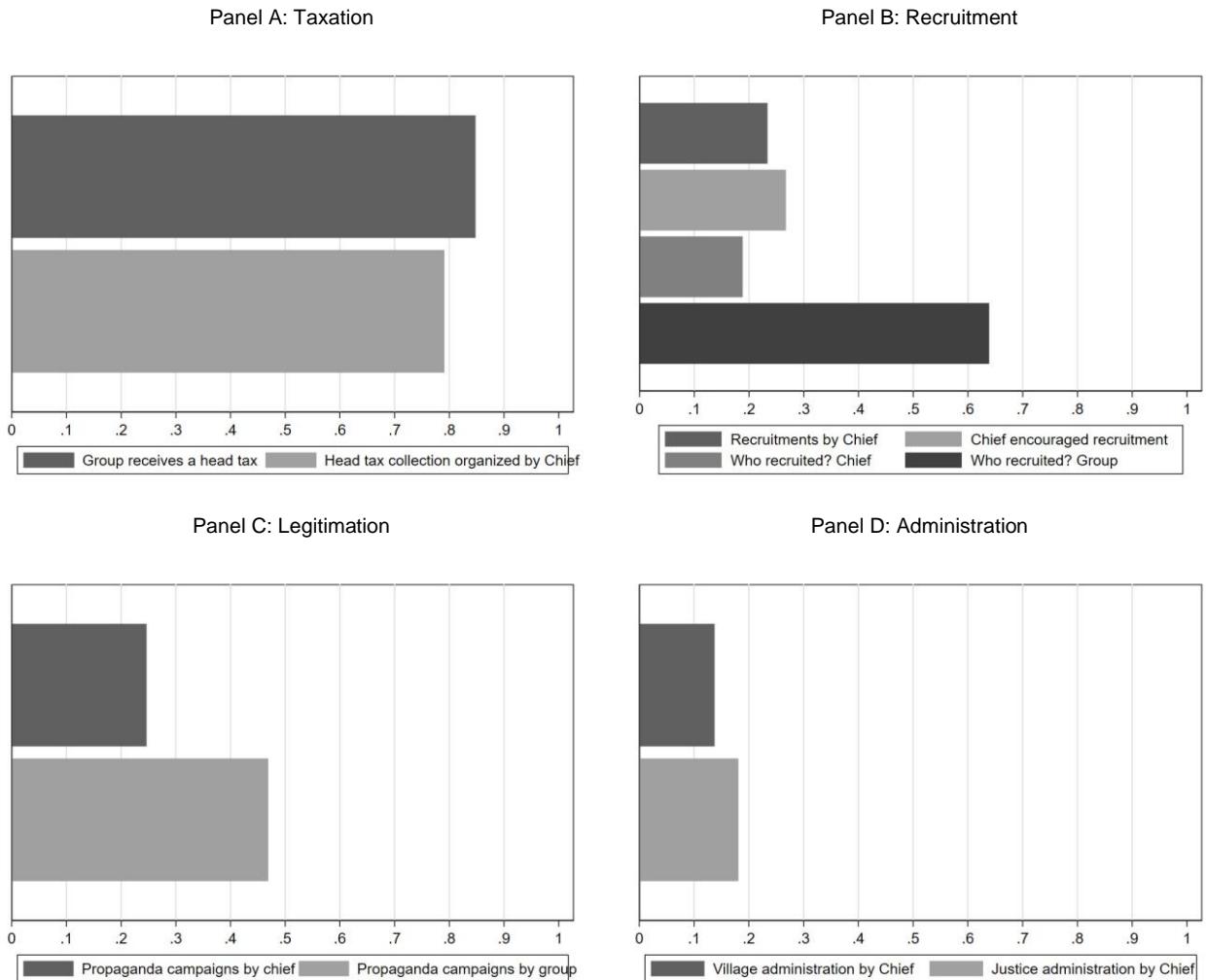
Regarding the provision of public services, armed groups provide security in approximately 50 per cent of the village×year observations, but rarely provide health, education, roads, or other public or private services (approximately 5 per cent of the cases).

Finally, regarding economic regulation, armed groups set up roadblocks to tax trade and population movement in 50 per cent of the village×year observations, create a local market only eight times in

the sample, regulate private firms 7 per cent of the time, and are directly engaged in trade in 10 per cent of cases.

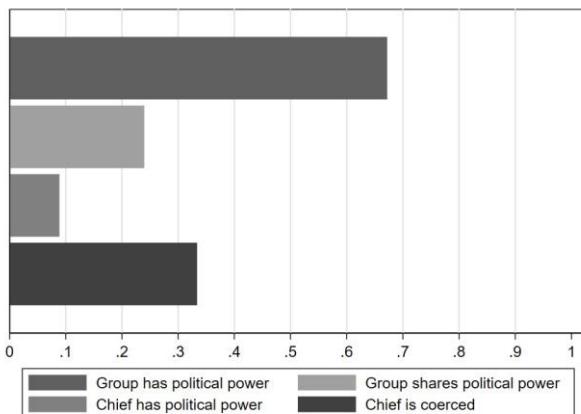
We operationalize this categorisation by first projecting all activities onto their respective dimension, for instance taxation for the taxation variables. We do so by using a principal component analysis. Equipped with one variable for each dimension of direct and indirect rule, we then construct a z-score index for indirect rule, and a second for direct rule.¹⁶ We can thus interpret regression results as increases in one standard deviation of the normalized score. We present the results on each of the indirect and direct rule dimensions, in addition to the standardized scores.

Figure 2: Indirect rule by group episode level



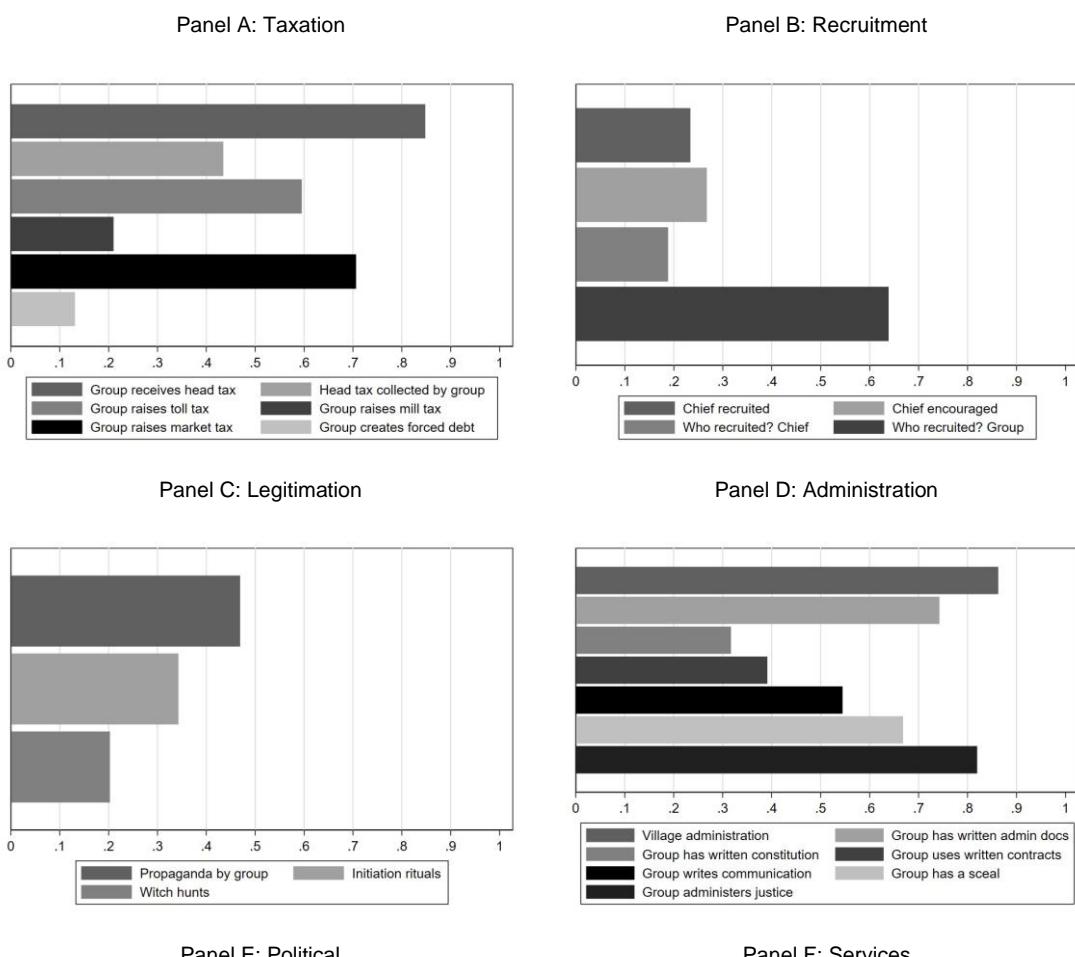
¹⁶ The z-score index normalizes each of the dimensions by subtracting their mean and dividing by their standard deviation, then adds the normalized dimensions, and normalizes the sum again. We end up with one normalized variable for indirect rule, and another for direct rule, whose interpretation in a regression is straightforward, since it has mean zero and standard deviation of one.

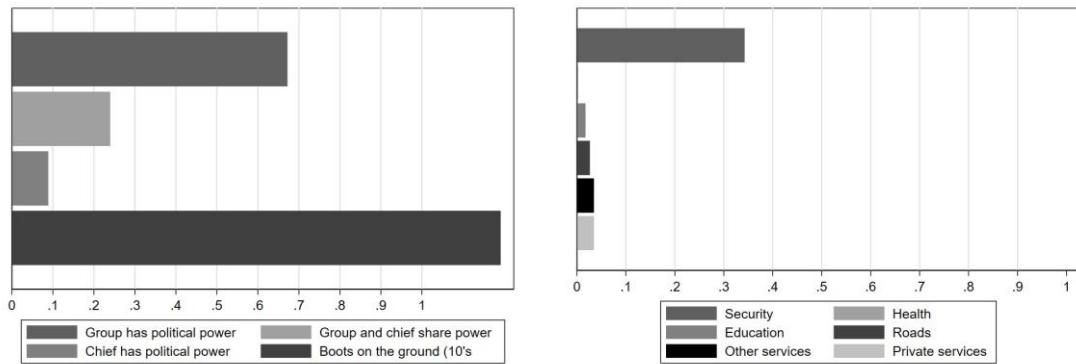
Panel E: Political



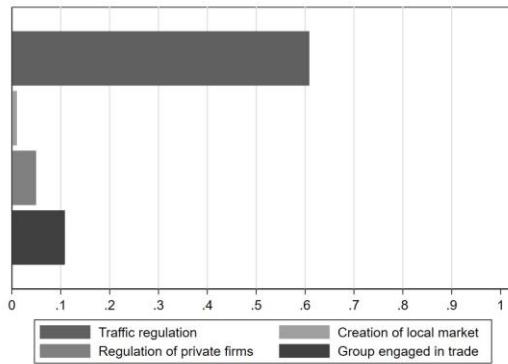
Source: authors' own from collected data.

Figure 3: Direct rule by group episode level





Panel G: Regulations



Source: authors' own from collected data.

5.2 Empirical strategy

The large number of village level arrangements that armed groups develop in rural areas allow us to exploit yearly within group variation to explain the formation of indirect rule institutions, of direct rule, and of armed rule in general. In particular, we examine, within armed groups and across villages, how chiefs' power determines the type of arrangements that armed groups establish. We then look at the relationship between armed group's tenure and the propensity to develop direct or indirect rule.

We first use our two values of predicted chief power, which we estimated using more objective chief characteristics, and implement the following OLS regression:

$$\text{IndirectRule}_i = \alpha + \beta_1 \text{PredictedPower}_i^{C,V} + \theta_{AG} + \eta_t + \epsilon_v \quad (1)$$

The indexes AG , V , C stand respectively for armed group, village, and chief, and $i = 1, \dots, 249$ stands for the armed group's episode. We include armed organisation fixed effects (there are 41), θ_{AG} , to account for the fact that certain organisations have systematically different strategies and objectives for their rule. We also include year fixed effects, η_t , and cluster standard errors at the village level. We restrict observations to the year of arrival of the group in the village since the chief power in subsequent years might be affected by the governance arrangements in the preceding years. We estimate this separately for our two predicted chief power variables. Our outcome variables are the overall DirectRule_i index, the overall IndirectRule_i and the index showing the Difference_i between the two.

As previously noted, ethnicity can play an important political role in rural eastern DRC and constitute a criteria in the perceived legitimacy of chiefs' tenure. We therefore replace our predicted

chief power variables with various indicators of coethnicity. Table 2 has shown that chiefs who share the same ethnic background as the majority of the villagers in their entity are considered to be more powerful. Similarly, armed groups whose membership is majoritarily of the same ethnicity as the majority of the villagers in the entities they control also enjoy more legitimacy. Importantly, measuring chief–village and armed group–village coethnicity allows us to disentangle an important aspect of how chief authority matters, namely whether it is primarily through their own authority or through their comparative advantage vis-a-vis the armed group.

This leads us to the following OLS specification:

$$\text{IndirectRule}_i = \alpha + \beta_1 \text{Coethnic}^{C,V}_i + \beta_2 \text{Coethnic}^{C,AG}_i + \beta_3 \text{Coethnic}^{AG,V}_i + \theta_{AG} + \eta_t + \epsilon_v \quad (2)$$

where $\text{Coethnic}^{C,V}_i$ is a binary indicator if chief C is from the same ethnic background as the majority of the population in village V , $\text{Coethnic}^{C,AG}_i$ is a binary indicator if chief C is from the same ethnic background as the majority of the members of armed group AG , and $\text{Coethnic}^{AG,V}_i$ is a binary indicator if the majority of the members of armed group AG are from the same ethnic background as the majority of the population in village V . We also estimate the effects of each coethnicity indicator without the inclusion of the others, as well as the interaction of $\text{Coethnic}^{C,V}_i$ and $\text{Coethnic}^{C,AG}_i$.

Further, we are interested in how armed groups' governance strategies evolve over time and especially how they evolve during a group's tenure in a village. To investigate this we look beyond the first year of armed group episodes and run the following OLS specification:

$$\text{IndirectRule}_{i,t} = \alpha + \beta_1 \text{GroupTenure}_{i,t} + \psi_{AGE} + \eta_t + \epsilon_v \quad (3)$$

where $\text{GroupTenure}_{i,t}$ measures how many consecutive years the armed group has controlled the village. Our data allows us to estimate this within armed group episode by including armed group episode fixed effects, ψ_{AGE} .

Finally, we disaggregate the direct and indirect rule variables and run specifications 1–3 separately for different dimensions of direct and indirect rule and present the results in the appendix.

5.3 Results

Chiefs' power and armed group rule

In Table 4, Panel A, we use specification 1 to regress the indices of direct rule (1)–(2), indirect rule (3)–(4) and direct rule–indirect rule (relative direct rule, 5–6) on the predicted two indexes of chiefs' power 'broadly defined' obtained in the previous exercise. We find a robust relationship linking the power of the chief to a reduction of direct rule. That is, in villages where chiefs are more powerful, armed groups are less likely to develop direct rule in the initial year. This relationship holds when we include year and armed group fixed effects, and cluster the standard errors at the level of the village, thus indicating that it is not driven by selection of armed groups, nor of years, and that it is robust to serial auto correlation in the type of rule and in the power of chiefs. Columns 3 and 4 show that chiefs' power is negatively correlated to indirect rule, though the coefficients are smaller than the effect on direct rule. The coefficient is only significant when using the first measure of predicted chief power which leverages a larger sample of chiefs for which we have corresponding variables to create the chief power variable. When using the second index of chief power, the coefficient is still negative and sizable on a smaller sample, but is not statistically significant at conventional significance levels ($p=0.101$). This difference in significance and magnitude provides

further justification for our distinction between the direct and indirect rule dimensions of rule. What the results therefore suggest is that, while armed groups are less likely to develop direct rule arrangements in villages when chiefs are powerful, they are not necessarily more likely to develop indirect rule to the same degree. This can be interpreted as armed groups choosing not to override the chief's rule in such cases, without necessarily opting for indirect rule either. As this regression concerns the first year of rule, a more dynamic perspective is required to capture the temporal dynamics in direct rule/indirect rule arrangements.

Table B3 shows the results for the different dimensions of the direct and indirect rule vectors. It reveals a great deal of heterogeneity in the effect of chief power by governance area. Chief power leads to less direct rule in taxation, administration, justice, and political authority. While chief power leads to more indirect rule in administration, justice, and political authority as well, it actually also leads to less indirect rule in taxation, potentially because armed groups are concerned that powerful chiefs can extract too much rent for themselves.

In Panel B of Table 4.2, we use one of the more robust predictors of our chiefs' power factor variable, coethnicity, to see whether more 'objective' measures of chiefs' power yield similar or different results and whether we can disentangle the effect of chiefs' authority over the village from their relative advantage vis-a-vis the armed groups. In the fragmented political landscape of eastern DRC, ethnicity is politically salient as a result of the ethno-territorial organisation of the state and the polarizing effects of the violent conflict. Chiefs can find themselves ruling over populations of a different ethnic background, which can at times generate tensions. Thus, in such contexts, coethnicity is usually a marker of higher social proximity between chiefs and their populations. Table 4.2, Panel B, uses specification 2 to regress the main index of the difference of direct–indirect rule on indicators for coethnicity of the chief and the village, of the group and the chief, and of the group and the villagers. There is a robust negative relationship between whether the chief is coethnic with the villagers and the direct–indirect rule relative index. That is, chiefs who are of the same ethnic group as their population are significantly less likely to be replaced by direct rule, and more likely to develop indirect rule arrangements with armed groups. This relationship holds when controlling for year and armed group fixed effects. Column (2) instead looks at the coethnicity between the armed group and chiefs and finds that armed groups that share the same ethnicity as the chief resort to more direct rule, potentially because the chief does not have an advantage in legitimacy compared to the armed group. Table B2 in the appendix shows that these effects are largely driven by the direct rule index and not indirect rule. Column (3) shows that armed groups are more likely to develop direct rule when they share the ethnicity of the village but the effect is not significant. When including multiple measures of coethnicity, as in columns (4) and (5), the effect remains that chief–village coethnicity reduces direct rule while village–chief coethnicity increases it. When including the interaction of village–chief and chief–group coethnicity, column (6) shows no additional effect of the interaction term, suggesting that the effect of village–chief coethnicity is driven by instances where groups do not have the same ethnicity as well and the chief has a comparative advantage in legitimacy. Table B4 in the appendix looks at other variables that feed into the chief power predictor. Chief supernatural power, the power to make it rain, the percentage of households the chief is related to, and the chief's landownership are all negatively related to relative direct rule, yet only landownership is statistically significant.

In sum, we find that more powerful chiefs are associated with less direct rule and more indirect rule. Our analysis of coethnicity gives us some indication about how the relative advantage of chiefs over armed groups matters. Having a chief that is coethnic with the villagers drastically decreases the likelihood of direct rule compared to indirect rule, and the effect is the largest when the group and the chief are of different ethnic groups (hence when the chief's relative advantage is the largest). This provides further evidence that armed groups are less likely to develop direct rule when chiefs are powerful (or in this case, closer to their populations), and more likely to develop indirect rule.

Table 4: Institutional choice

<i>Panel A: Predicted chief power</i>		<i>Dependent variables:</i>					
		Direct rule		Indirect rule		Difference	
		(1)	(2)	(3)	(4)	(5)	(6)
Predicted chief power 1		-1.605*** (0.465)		1.179** (0.511)		-2.785*** (0.799)	
Predicted chief power 2			-1.970*** (0.661)		1.095 (0.651)		-3.065** (1.177)
Observations		103	63	103	63	103	63
R2		0.424	0.468	0.455	0.353	0.437	0.415
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
AG FE		Yes	Yes	Yes	Yes	Yes	Yes
Cluster		IDV	IDV	IDV	IDV	IDV	IDV

<i>Panel B: Coethnicity</i>		<i>Dependent variables:</i>					
		Difference direct–indirect rule					
		(1)	(2)	(3)	(4)	(5)	(6)
Coethnic Village–Chief			-2.053** (0.918)		-2.546*** (0.945)	-2.527*** (0.909)	-3.213** (1.290)
Coethnic Group–Chief				1.699** (0.813)	2.498*** (0.867)	2.474*** (0.866)	1.107 (1.154)
Coethnic Village–Group					0.837 (1.120)	0.154 (1.125)	
Coethnic Village–Chief × Group–Chief							-0.217 (0.996)
Observations		136	155	155	136	136	136
R2		0.394	0.348	0.329	0.443	0.443	0.449
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
AG FE		Yes	Yes	Yes	Yes	Yes	Yes
Cluster		IDV	IDV	IDV	IDV	IDV	IDV

Note: standard errors in parentheses * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own based on collected data.

Armed groups' tenure and direct vs- indirect rule

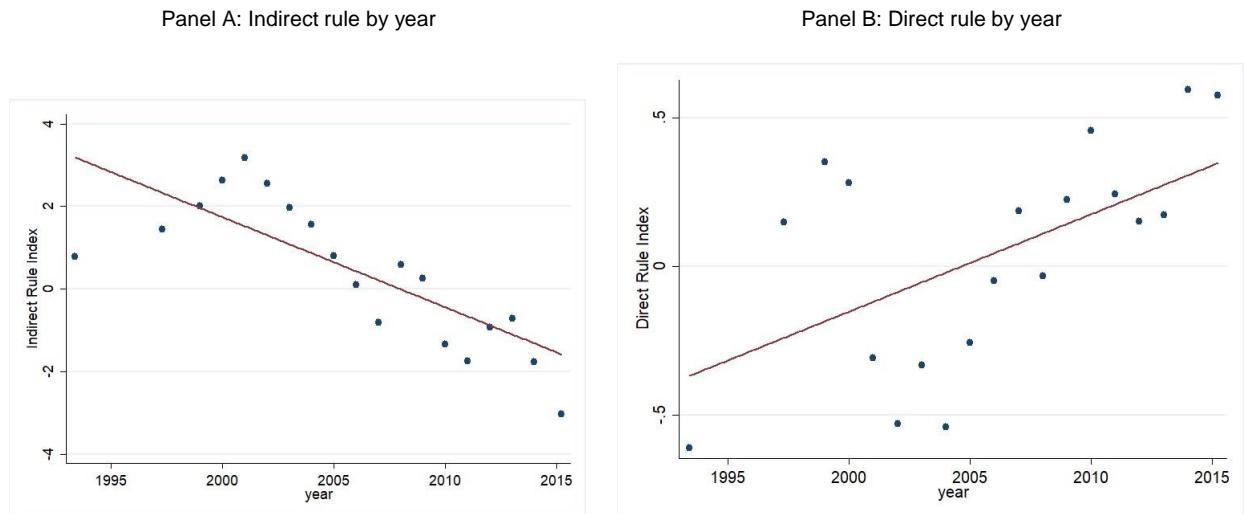
We now pay more attention to the temporal dynamics of the relationship between armed group rule and chiefs, looking at the effect of the time duration of armed groups' control over a given entity on the propensity of armed groups to adopt direct or indirect rule governance arrangements. In order to estimate the effect of armed groups' tenure on the institutions they create, we implement specification 3 which uses the data that contains all years for each armed groups' episode, and the evolution of the institutions over time, within each episode. To account for any unobserved constant heterogeneity at the group level that may correlate with institutional choice, we include armed group episode fixed effects. To account for the fact that more tenure correlates with years, we also include calendar year fixed effects. Since an armed group episode is more disaggregated than an armed organisation, we do not need to include armed organisation fixed effects. We also project the institutional variables on group tenure year effects, controlling for year fixed effects as well as episode fixed effects.

Figure 4.3 shows that indirect rule has been decreasing on average since the start of the violent conflict, while direct rule has been increasing. While this alone could be a compositional effect (more direct rule-prone groups could be active today), it is also consistent with armed groups acquiring a governing advantage over time: as armed groups acquire better information about the population, develop their organisational capacity, and create social ties with the population, their governance constraints reduce, enabling them to govern directly and circumvent the chiefs, with whom relations are often tense.

Figure 4.4 presents this result formally. We regress the indirect rule index, direct rule index, and direct–indirect rule relative index on years of tenure by an armed group, including year and armed group episode fixed effects. The analysis shows that, consistent with the interpretation of Figure 4.3, the longer an armed group governs, the less likely it is to use indirect rule and the more likely it is to use direct rule, and thus the larger the direct–indirect relative index. Panel D shows that the number of armed group episodes with a long tenure is smaller than that with a short tenure. One could thus be concerned that, in the analysis of the effect of tenure, the larger coefficient in longer tenures could reflect a compositional change. However, as we have included armed group governance episode fixed effects in the analysis, the effect is computed using variation within episodes. Table 4.4 shows the results of specification 3 in table format.

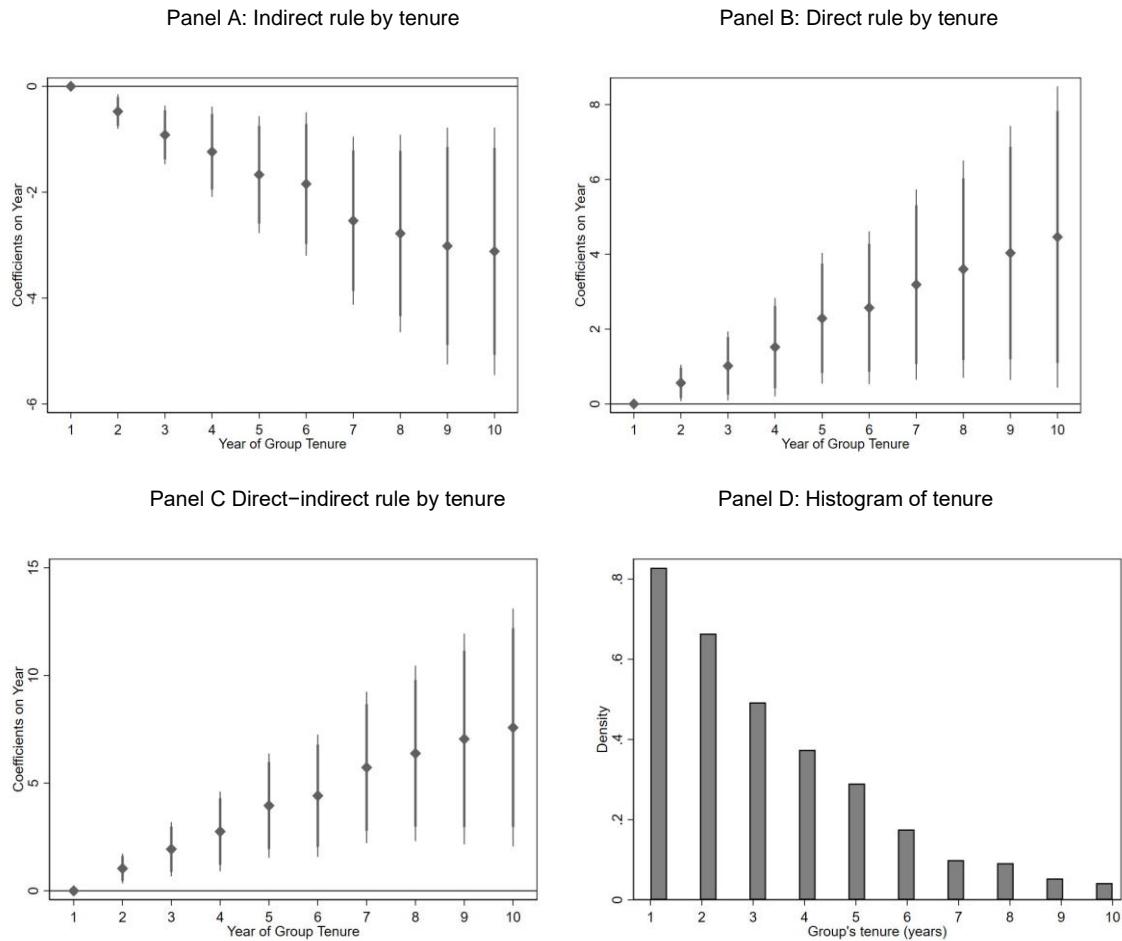
Panel C in Table B3 in the appendix shows the effect of group tenure separately for the different dimensions of direct and indirect rule. While there is no variation within armed group episodes in the distribution of political power and recruitment by armed groups, over time armed groups are more likely to develop their own tax collection and justice provisions while indirect rule on legitimisation and justice provision decreases.

Figure 4: Indirect and direct rule over time



Source: authors' own from collected data.

Figure 5: Indirect and direct rule by group tenure



Source: authors' own from collected data.

Table 5: Institutional choice by predicted chief power and group tenure

	Direct rule (1)	Indirect rule (2)	Difference (3)
Group's tenure (years)	0.439** (0.216)	-0.272* (0.142)	0.710** (0.302)
Observations	641	641	641
<i>R</i> ²	0.891	0.902	0.911
Year FE	Yes	Yes	Yes
AG Episode FE	Yes	Yes	Yes
Cluster	IDV	IDV	IDV

Source: authors' own from collected data.

6 Conclusion

In this paper, we have examined the relationship between armed group governance and the power of chiefs since the 1990s in 106 villages of North Kivu, DRC. The paper pays particular attention to the power of chiefs, which is multidimensional and encompasses a spiritual and supernatural dimension which we measure quantitatively. We also propose an approach to systematically measure armed group's governance along a range of aspects, from their interventions in local economic activity to their recruitment of labour. We find substantial variation in the degrees to which armed groups develop direct or indirect rule over economic, social and political activity in the areas where they exert military control. We show that direct and indirect rule are not mutually exclusive, as groups can develop direct forms of administration over certain sectors while devolving the administration of others to chiefs. We find that, when chiefs are powerful, armed groups are less likely to develop direct rule and more likely to develop indirect rule. Our results suggest that this is due to a comparative advantage in governance and legitimacy that chiefs enjoy vis-a-vis armed groups. However, we find that, with time, armed groups consistently develop direct rule modes of administration, progressively penetrating political, economic and social life in the areas they control as their military control extends in time. The results suggest that indirect rule is a temporary solution for governing, in situations where customary chiefs have an advantage over coercion-wielding organisations in terms of their legitimacy. This relative power advantage, however, seems to erode over time, and armed groups tend to replace chiefs.

The results of this study should be taken with a measure of critical distance because of the nature of the arrangements being studied and the methods used to analyse them. Elite level political and governance arrangements between powerful actors, in this case chiefs and armed groups, are politically highly sensitive and usually concealed. The literature on the eastern Congolese violent conflict has shown that chiefs and armed groups are often part of broader networks of 'power, profit and protection' (Stearns 2022; Vlassenroot and Raeymaekers 2004) who are likely to influence the arrangements between chiefs and armed groups in ways that cannot be fully captured with survey methods. While such limitations are inherent to our approach, it nevertheless allows us to document empirical trends in the relationship between chiefs and armed group governance across a large number of villages and over many years, and to draw some implications of these results.

First, the power of rural chiefs matters, and plays an important role in the types of governance arrangements that emerge in areas held by armed groups. Our empirical analysis has shown us that armed groups are less likely to develop direct forms of rule in the first period of their control over a given area when there are powerful chiefs in those areas – they are reluctant to govern 'past' powerful chiefs. In such cases, they either refrain from governance or enter indirect rule types of governance arrangements. This provides further evidence that, in the areas where they operate in eastern DRC, armed groups often rely on chiefs, a finding that has been documented by several studies of armed group governance in eastern DRC, for example, in relation to the Mayi-Mayi Padiri (Hoffmann 2014; Hoffmann *et al.* 2020; Morvan 2005). This is also consistent with the armed group governance literature which has consistently pointed out that armed groups aiming to govern populations cannot rely on coercion alone and seek to inscribe their authority within legitimate frameworks and forms of authority (Arjona *et al.* 2015). Our findings also resonate with Boone (2003)'s analysis of the political topographies of the state in rural Africa. While our analysis did not look at important components of Boone's analysis, such as the level of political and administrative centralisation, it provides further evidence that it is the relative power of pre-existing polities and authorities, rather than the ideological or administrative traditions of the ruling entities, that determines the type of governance arrangements that emerge, and that direct rule tends to prevail over time.

Second, our study shows that the power of chiefs cannot be reduced to their administrative power, or their power over land. As has long been documented in the fields of anthropology and religious studies among others, but persistently overlooked in political science and development studies, the spiritual and supernatural dimension of chiefs' power is important. Although such power is subjective and changing, we devise a way to measure and analyse it. We show that it is closely correlated – yet irreducible – to other dimensions of power, and that it is waning, as more recent chiefs are less powerful in this regard than historical ones. Our approach shows that, contrarily to what is often thought, such forms of power can also be studied with quantitative approaches.

Third, our study provides further evidence of the historical continuities in the modes of governance in eastern DRC, complementing an argument made in other studies (Hoffmann *et al.* 2016). As discussed in the context section, indirect rule modes of governance have been prevalent in the history of the region since at least the mid-19th century (and possibly earlier), and institutionalized during the colonial era as the colonial state appointed intermediaries to rule in rural areas or granted concessions to private actors (Lowes and Montero 2021). Equally prevalent throughout the contemporary political history of the region has been the use of violence, suggesting that such patterns of rule are part of historical and structural trends, which has important implications for how policy in the region should be approached and conceived.

Fourth, the prevalence of indirect rule in contexts of violent conflict begs the question of its broader institutional, political and economic effects, as well as its long-term impact. The literature on colonial indirect rule has shown that it has shaped the trajectories of states and entities in Africa and beyond (Acemoglu *et al.*, 2014a; Mukherjee 2021). One of the institutional effects that has been highlighted is the erosion of the legitimacy of chiefs and the resulting weakening of the institution. Indeed, indirect rule often pits the chief against the population, thwarting the accountability of chiefs towards their populations and creating animosity and conflict, and thus reducing chiefs' legitimacy and ability to govern, as Mamdani (1996) has famously shown. Given that the eastern Congolese conflict has lasted for close to 30 years, the governance configurations that have emerged are entrenched and likely to have effects beyond the end of the violent conflict, particularly as, as previously noted, these are part of longer structural and historical trends. Although it is difficult to observe such trends as the region is still marked by ongoing violent conflict, a follow-up paper will seek to assess the institutional and economic effects of different configurations of rule.

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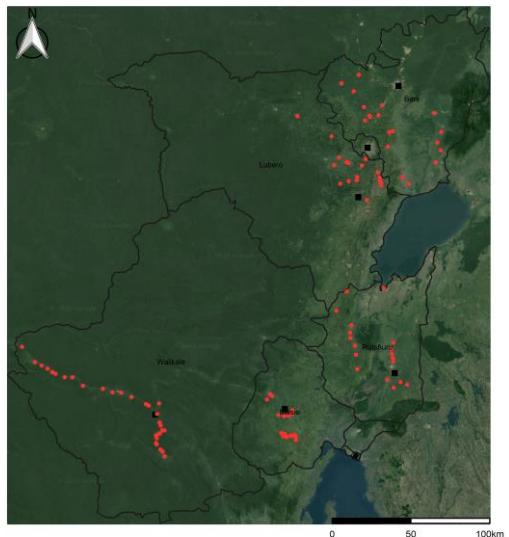
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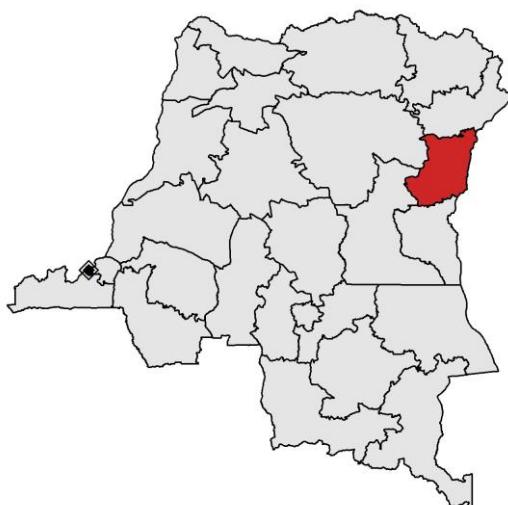
Appendix A: Additional figures

Figure A1 Map of sample and DRC

Panel A: Map of sample villages

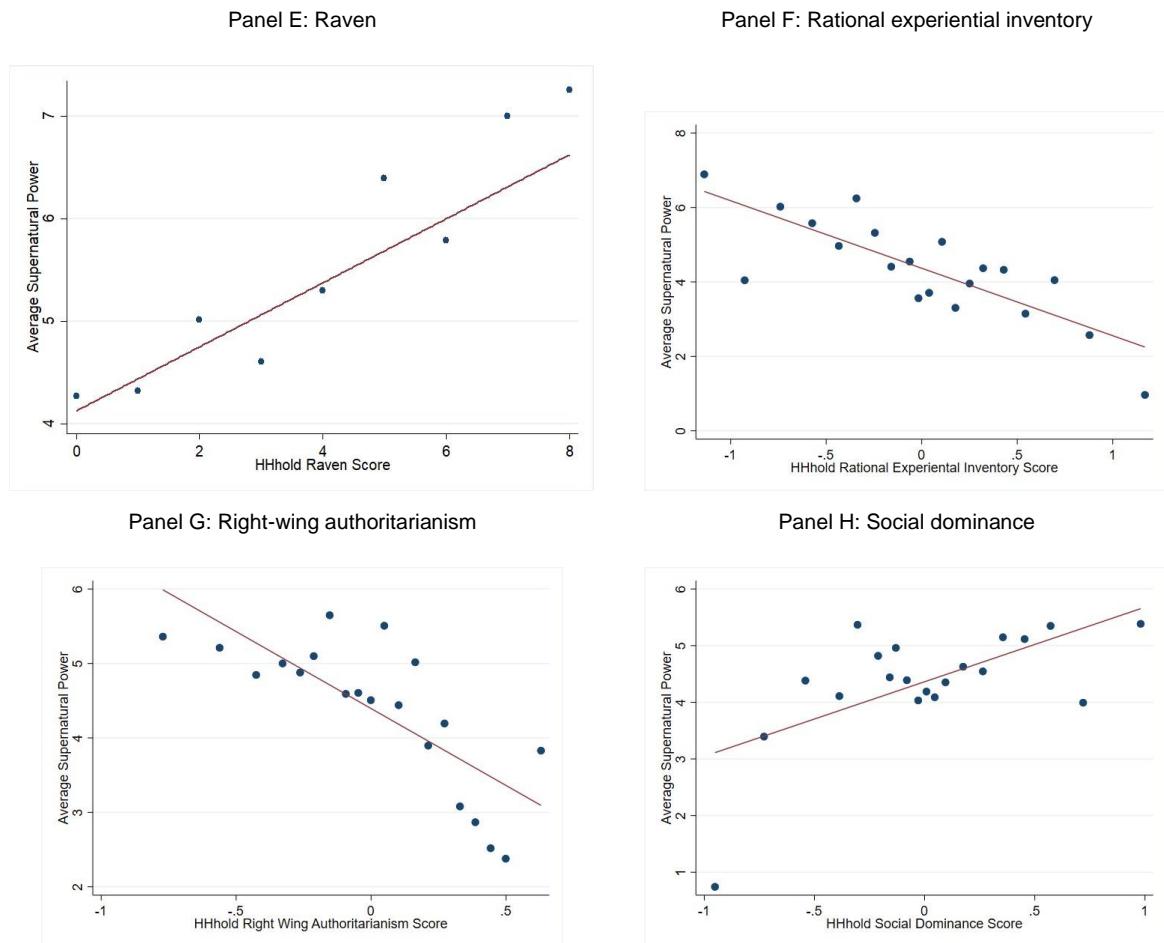


Panel B: Location of North Kivu



Source: authors' own from collected data.

Figure A2 Correlates of chiefs' supernatural power: respondent characteristics



Source: authors' own from collected data.

Appendix B: Additional tables

Table B1 Summary of armed group episodes using detailed group breakdown

Armed group	#	Average	Shortest	Longest	Chief	Chief	Chief	Earliest	Latest
	episodes	length	control	control	tax	admin	power	control	control
RCD Goma	49	5.51	1	9	0.92	0.07	0.45	1998	2013
Congolese Army	32	6.69	1	26	0.25	0.70	0.89	1990	2016
CNDP	25	4.08	2	9	0.85	0.09	0.16	1998	2011
Mayi-Mayi	23	2.26	1	6	0.89	0.30	0.39	1994	2015
Congolese agencies	15	7.60	1	12	0.08	0.93	0.93	1990	2016
Mayi-Mayi Mudohu	12	2.58	1	5	0.79	0.04	0.09	2000	2005
FDLR	9	4.00	2	8	0.89	0.10	0.44	1993	2015
Rwandan group	8	4.25	1	11	0.69	0.18	0.50	2000	2015
Nyatura	7	2.29	1	4	0.82	0.00	0.14	2010	2015
Mayi-Mayi Lulwako	7	5.00	1	26	0.43	0.06	0.43	1990	2016
AFDL	5	2.40	2	4	0.20	0.20	0.50	1996	2000
M23	5	2.80	2	3	0.80	0.00	0.00	2008	2014
PARECO	5	3.00	2	4	0.90	0.00	0.20	2003	2010
ADF	4	1.75	1	4	0.00	0.75	0.00	1997	1999
Mongore	3	1.00	1	1	0.67	0.33	0.00	2003	2005
Mayi-Mayi Kifuafua	3	2.67	1	4	0.67	0.00	0.33	1994	1997
Raia Mutomboki Eyadema	3	2.00	1	4	0.83	0.50	0.33	2001	2013
RCD Kisangani	2	2.00	1	3	0.50	0.50	0.50	1999	2002
RCD-Mongore	2	4.50	4	5	1.00	0.00	0.00	2001	2005
Mayi-Mayi Kaganga	2	1.50	1	2	0.50	0.50	0.50	1996	1997
Mayi-Mayi Kasingie	2	4.00	2	6	1.00	0.00	0.00	1992	1997
Mayi-Mayi Samy-Mze wa meno	2	2.00	2	2	0.50	0.00	0.00	2004	2006
Mayi-Mayi Simba	2	1.50	1	2	1.00	0.00	0.50	1999	2000

Mayi-Mayi Simba-Samy	2	3.50	3	4	1.00	0.00	0.50	1999	2007
Janvier	2	3.50	3	4	0.50	0.00	0.50	2008	2011
Banyamulenge	2	1.00	1	1	0.00	0.50	.	1997	1997
Mayi-Mayi Kabuchibuchi	1	1.00	1	1	1.00	0.00	1.00	2002	2002
Mayi-Mayi La Fontaine	1	1.00	1	1	1.00	0.00	0.00	2011	2011
Mayi-Mayi Werrason Mbusa	1	1.00	1	1	1.00	1.00	1.00	2007	2007
Mayi-Mayi Kifuafua-Padiri	1	2.00	2	2	1.00	0.00	0.00	2001	2002
Mayi-Mayi Surambaya	1	1.00	1	1	1.00	0.00	0.00	2002	2002
Mayi-Mayi Samy-Kabuchibuchi	1	2.00	2	2	1.00	0.00	1.00	2006	2007
Mayi-Mayi Padiri Karendo	1	3.00	3	3	1.00	0.00	1.00	1997	1999
Raia Mutomboki	1	1.00	1	1	1.00	0.00	1.00	2012	2012
Deserters	1	1.00	1	1	0.00	0.00	1.00	1998	1998
Foreigners	1	3.00	3	3	0.00	0.00	0.00	2012	2014
Kasidiens	1	3.00	3	3	1.00	0.00	0.00	1998	2000
Mbairwe	1	4.00	4	4	1.00	0.00	0.00	1993	1996
Batiri	1	5.00	5	5	1.00	0.00	0.00	1993	1997
RCD-KML	1	6.00	6	6	0.50	0.33	1.00	1997	2002
Hutu group	1	5.00	5	5	1.00	0.00	0.00	1993	1997
	249	4.25	1	26	0.68	0.26	0.43	1990	2016

Source: authors' own from collected data.

Table B2 Institutional choice by ethnic match: direct and indirect rule

<i>Panel A: Direct rule</i>						
Direct rule index						
	(1)	(2)	(3)	(4)	(5)	(6)
Coethnic Village–Chief	-1.578*** (0.590)			-1.852*** (0.633)	-1.847*** (0.628)	-2.479*** (0.867)
Coethnic Group–Chief		0.968* (0.495)		1.385** (0.554)	1.379** (0.532)	0.0777 (0.565)
Coethnic Village–Group			0.446 (0.662)		0.0386 (0.629)	
Coethnic Village–Chief × Group–Chief						-0.625 (0.636)
Observations	136	155	155	136	136	136
R2	0.447	0.400	0.386	0.477	0.477	0.488
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV	IDV

<i>Panel B: Indirect rule</i>						
Indirect rule index						
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnicity of chief same as village	0.475 (0.592)			0.694 (0.571)	0.681 (0.559)	0.735 (0.751)
Coethnic Group–Chief		-0.732 (0.474)		-1.113** (0.493)	-1.095** (0.525)	-1.029 (1.051)
Coethnic Village–Group			-0.391 (0.610)		-0.115 (0.675)	
Coethnic Village–Chief × Group–Chief						-0.408 (0.755)
Observations	136	155	155	136	136	136
R2	0.287	0.287	0.274	0.326	0.326	0.326
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

Table B3 Institutional choice for different dimensions of rule

Panel A: Predictor 1

	Taxation		Recruitment		Legitimation		Administration		Justice		Political	
	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Predicted Chief Power 1	-0.203	-0.243	-0.0642	-0.108	-0.114	0.245	-0.118	0.381**	-0.540***	0.540***	-0.455**	0.215
	(0.124)	(0.172)	(0.101)	(0.217)	(0.140)	(0.240)	(0.224)	(0.179)	(0.194)	(0.194)	(0.193)	(0.151)
Observations	116	116	116	116	116	116	116	116	116	116	114	114
R2	0.696	0.548	0.462	0.438	0.691	0.460	0.582	0.454	0.463	0.463	0.463	0.526
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV

Panel B: Predictor 2

	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Predicted Chief Power 2	-0.344**	-0.366**	-0.0213	-0.197	-0.185	0.124	-0.0275	0.468**	-0.501**	0.501**	-0.422**	0.351
	(0.138)	(0.174)	(0.112)	(0.295)	(0.151)	(0.346)	(0.272)	(0.181)	(0.213)	(0.213)	(0.204)	(0.210)
Observations	73	73	73	73	73	73	73	73	73	73	70	70
R2	0.681	0.630	0.406	0.446	0.669	0.481	0.577	0.451	0.512	0.512	0.520	0.587
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV

Panel C: Group Tenure

	Taxation		Recruitment		Legitimation		Administration		Justice		Political	
	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Group's tenure (years)	0.169** (0.0664)	0.0831 (0.0562)	0 (.)	0.00587 (0.0174)	-0.0283 (0.0354)	-0.244*** (0.0915)	0.00524 (0.00627)	-0.0432 (0.0517)	0.187** (0.0796)	0.187** (0.0796)	(0) (.)	(0) (.)
Observations	772	772	772	772	772	772	772	772	772	772	749	749
R2	0.919	0.904	1.000	0.975	0.844	0.750	0.998	0.889	0.845	0.845	1.000	1.000
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

Table B4 Institutional choice by different measure of chief power

	Difference	Direct	Indirect	Rule	
	(1)	(2)	(3)	(4)	(5)
Supernatural power (Mean)	-0.274				
	(0.285)				
Power to control rain (Mean)	-2.537				
	(2.057)				
Management skills (Mean)	0.0161				
	(0.450)				
Related to previous chief (Mode)	-0.767				
	(1.348)				
Traditional owner of land? (Mode)	-4.298				
	(1.878)				
Observations	108	108	108	108	105
R2	0.364	0.372	0.354	0.357	0.413
Year FE	Yes	Yes	Yes	Yes	Yes
AG FE	Yes	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

Table B5 Institutional choice including Congolese Army

	Dependent variables:						
	Panel A: Predicted chief power		Direct rule			Difference	
		(1)	(2)	(3)	(4)	(5)	(6)
Predicted chief power 1		-1.436 (0.446)		0.613 (0.464)		-2.049** (0.799)	
Predicted chief power 2			(-1.475) (0.631)		0.276 (0.651)	-1.751 (1.182)	
Observations		138	85	138	85	138	85
R2		0.608	0.643	0.480	0.452	0.591	0.572
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
AG FE		Yes	Yes	Yes	Yes	Yes	Yes
Cluster		IDV	IDV	IDV	IDV	IDV	IDV

	Dependent variables:					
	Panel B: Coethnicity		Difference Direct–Indirect Rule			
		(1)	(2)	(3)	(4)	(5)
Coethnic Village–Chief		-2.398** (0.971)		-2.724*** (1.013)	-2.814*** (0.996)	-3.291*** (1.295)
Coethnic Group–Chief			0.370 (0.807)	1.669* (0.916)	1.815** (0.891)	0.389 (1.234)
Coethnic Group–Villagers					-0.618 (1.134)	
Coethnic Village–Chief × Group–Chief						-1.221 (1.093)
Observations		170	193	170	170	170
R2		0.570	0.510	0.585	0.586	0.588
Year FE		Yes	Yes	Yes	Yes	Yes
AG FE		Yes	Yes	Yes	Yes	Yes
Cluster		IDV	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

Table B6 Institutional choice by predicted chief power and group tenure including Congolese army

	Difference			
	(1)	(2)	(3)	(4)
Group tenure (years)	0.878*** (0.297)		0.222* (0.119)	0.296** (0.128)
Predicted Chief Power 2		-0.291 (0.750)	-0.590 (0.769)	-0.813 (0.761)
Predicted Chief Power 2 × Group's tenure (years)				0.0778* (0.0444)
Observations	885	475	451	451
R2	0.948	0.948	0.957	0.957
Year FE	Yes	Yes	Yes	Yes
AG Episode FE	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.

Table B7 Armed group control by chief power

	Any (1)	Village Controlled by Armed Group		excluding Army (4)
		excluding Army (2)	Any (3)	
Predicted Chief Power 1	-0.0305 (0.0560)	-0.0575 (0.0421)		
Predicted Chief Power 2			-0.0303 (0.0618)	-0.0628 (0.0486)
Observations	2069	2069	1321	1321
R2	0.153	0.296	0.141	0.339
Year FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Cluster	IDV	IDV	IDV	IDV

Note: standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own from collected data.