Social Origins of Militias:
The Extraordinary Rise of "Outraged Citizens"

Gauthier Marchais,
Christian Mastaki Mugaruka,
Raúl Sánchez de la Sierra,
David Qihang Wu*

November 10, 2024

Abstract

We use a sharp withdrawal of the state that precipitated a rise in insecurity in the Democratic Republic of the Congo to analyze the role of community in the rise of militias. Through a range of data collection techniques, we find that the withdrawal led to a spectacular rise and growth in militia village chapters that were supported by the communities to fight the instigators of that insecurity. While some of this growth can be attributed to the release of pent-up revenge motivations among previously victimized households, the extraordinary expansion is driven by communities facing a sharp new increase in insecurity as a result of the withdrawal, highlighting the perceived value of community security. In these villages, community members were propelled to join the newly formed militia chapters by both intrinsic and extrinsic social motivations, including the desire to protect their community and concerns about social status. Moreover, this rise is accentuated in villages where the local elite mobilizes informal community mechanisms in response to the heightened insecurity, upholding informal norms and amplifying intrinsic social motivations to join among community members. These findings offer a new perspective on militia emergence, emphasizing the role of social motivations and of community, and nuancing the distinction between economic and noneconomic incentives, consistent with an extensive literature using qualitative methods.

Keywords: protests, militias, political movements, social motivations.
JEL Codes: D74, H56, H71

1 Introduction

We know very little about how non-state violent actors get formed, like militias, because, as non-states, they leave less evidence. A growing literature has analyzed their behavior through the lens of economic trade-offs. In the prevailing explanations, militias' behavior reflects economic choices made by rational actors who are purportedly unitary, and who are presumed to already exist as armed actors (Sánchez de la Sierra, 2020b). This explanation contrasts a rich literature that has documented the role of society, and of community, in governing human life beyond states, through social institutions and social emotions (Greif, 1993; Ostrom, 1999; Bowles and Gintis, 2011).

The extraordinary emergence of the Raia Mutomboki ("Outraged Citizens," in Kirega) in 2011 in the Democratic Republic of the Congo (henceforth, DRC) offers a "critical juncture" (Callen et al., 2023) illustrating the role of social emotions and of communities in the rise of militias. In 2011, Marcellin Chishambo, the governor of South Kivu province, travelled to Shabunda district to address mounting concerns that the recent sudden withdrawal of state forces from the area led to insecurity created by the Front de Libération du Rwanda (FDLR), a Rwandan armed group that has prayed upon civilians in DRC since the nineties. Instead of offering security guarantees, the governor told the population to take their security into their own hands. Shortly after, a large militia, the Raia Mutomboki (henceforth, $Raia$), emerged through popular mobilization and achieved what the state security forces had been unable to achieve for decades: chasing the FDLR.

In this paper, we analyze the rise of the Outraged Citizens in 2011 to interrogate the role of society and community in their success. After empirically examining whether they are comparable to other militias in the conflict, especially with regards to their relationship to the community, we answer the following research questions, leveraging their rise to establish a "proof of concept." Alongside the now well-understood individual economic motivations, can the rise of militias reflect *social* motivations? What are those social motivations, and what are their origins? What role do informal community institutions play in social motivations and, ultimately, in militias' rise?

The key input into our analysis, which allows us to tackle this challenge, is a unique panel dataset on armed groups, institutions, and households dating back to 1990, reconstituting historical events in 239 villages in North and South Kivu, two of the most conflict-affected provinces of the DRC. The dataset contains 707 episodes of armed groups' governance in 239 villages and details on each of 874 violent events and recruitment campaigns. It also contains histories of 7,454

individuals, obtained through interviews carried out with 2,964 households, with details on armed group participation by 640 combatants. In addition, we also gathered *anonymized* village-year-level number of participants into armed groups, that we reconstructed with local history experts across the villages and towns of South Kivu. The data about the Raia were gathered at the time of its creation, allowing to reduce survivor bias. To obtain this information, we obtained the approval of the relevant authorities to ask questions in surveys across their district. Individual reports of participation almost exactly match village participation numbers. This is consistent with our qualitative data, which suggested that participating in the Raia is a local recent phenomenon and is not taboo. This corroboration is the starting point of our analysis.

We begin our analysis by presenting three descriptive facts about the militias in the conflict and the Raia in particular. These facts underscore that, rather than being an anomaly in the conflict, the Raia are a paradigmatic case of a militia with regards to the intimate ties between community and militias. This motivates our focus on the shock that led to the rise of the Raia in the rest of the paper. *Fact 1.* Militias predominate the conflict and the Raia is a major militia. Of 76 armed groups for which we have data, 63% were a militia (and one of these was the Raia). While militias account for 31% of estimated attacks against villages in the sample, they account for 96% of the combatants in our sample. Similarly, while the Raia only account for 15% of the militias' attacks (a significant number given they are only one of 48 militias), half of the militiamen in the sample were Raia. *Fact 2.* The militias' stated objectives were to protect their communities against violence by foreign-led armed groups, and their chapters were supported by the communities they emerged from. The villagers tended to perceive the security they provided as effective; they tended to support them and, in a significant share of cases, they even encouraged fellow community members to join the militia village chapter. They reported to have joined them for various distinct social motivations: in order to protect the community against violence by foreign-led armed groups, for revenge, but also as a result of social pressure in the community as well as status concerns. These facts are also true for the Raia. *Fact 3.* Rather than what would be implied if they were just a source of income for the economically deprived, the militias were not filled by poorer community members, nor joining was associated with any increase in asset growth. Instead, community members who joined the militia chapters were only distinguishable from the rest in their village and region in that that they originated from households that had previously been victimized by foreign-led armed actors. These facts are also true for the Raia.

We then turn to analyzing the extraordinary rise of the Raia in 2011. We do so in three steps: we first document that the state withdrawal is the *proximate* cause for the rise and analyze the motivations of those who joined it; we then zoom in on the role that responding to insecurity played in its rise; finally, we analyze the role of community institutions in this response to insecurity.

First, we document that the removal of the state army is the *proximate* cause for the rise and growth of the Raia, fueled by a range of social motivations to join it. We establish this result by exploiting the sharp shock induced by the Congolese Army's Regimentation policy of 2011, which created a state vacuum in some areas, but not in others. The policy, described by qualitative researchers (Stearns, 2013; Vogel, 2014), consisted in relocating the Congolese army battalions from one district, Shabunda, into urban centers—where they waited to be streamlined into regiments for more than a year. In our sample, there are 46 villages in Shabunda affected by the policy, across a wide and diverse area. Our analysis reveals that in response, Raia militia village chapters emerged, filled by participants who joined for intrinsic social motivations such as revenge and community protection, but also for extrinsic social motivations such as status and social pressure and to a lesser extent, for private motivations such as for money or private protection. Even compared to a previous state vacuum in the same district in 2004, we find that the rise of 2011 is extraordinary. This contrast motivates the next step in our analysis.

Second, we provide evidence for two *ultimate* causes for the Raia's rise: the state vacuum provided an opportunity for populations to act upon revenge motivations arising from past foreign-led victimization; it *also* created a sharp rise in insecurity in certain areas and therefore in the value of providing security in those areas. Starting with the role of victimization-related revenge, we find that, for both the state vacuum we analyze and its predecessor, the rise in participation is larger among former victims of violence by foreign-led armed groups, and that those are motivated by revenge, consistent with victimization seeding social emotions of revenge that were expressed during the vacuum. To quantify the economic significance of this social motivation, we provide suggestive evidence on the associated willingness to pay to join caused by past victimization. Exploiting US mineral price changes that affect the income of community members in the period outside of a militia, we find that past victimization is associated with an increase in the willingness to pay to join a militia equal in magnitude to the effect of an 8-fold increase in the yearly p.c. income. Yet, despite its significance, victimization-related revenge only plays a minor role in the rise of the Raia in 2011. Turning to the role of community insecurity rather than victimization, we

find that the state vacuum of 2011 led to a drastic rise in insecurity driven by foreign-led armed actors' presence in the affected communities; its predecessor in 2004 did not. Consistent with this rise in insecurity being central in the rise of the Raia, we find that the Raia's emergence is *entirely* concentrated in the villages in which the state vacuum caused a rise in insecurity, but not at all in the rest. Accounting for the rise in insecurity caused by the state vacuum explains entirely the difference in the magnitude between the rise of 2011 and of its predecessor; furthermore, this relationship is not explained by having previously participated in the predecessor, nor by prior victimization. More than 57% of the differential rise in Raia participation in towns affected by insecurity as a result of the 2011 state vacuum is driven by intrinsic social motivations to protect the community, yet interestingly the rest also includes extrinsic motivations such as social status and social pressure. Why? This motivates the last step in our analysis.

Third, we provide suggestive evidence that this response to insecurity is in part due to the activation of community informal institutions in response to the rise in insecurity in 2011. Using time and spatial variation in the presence of public and chief-initiated recruitment campaigns into village militia chapters, we find that, in response to the insecurity created by the vacuum of 2011, traditional village chiefs organize more militia recruitment campaigns. Furthermore, the rise in participation into the Raia is concentrated in the villages where the village leaders organized public militia recruitment campaigns during that period, providing suggestive evidence that elite-driven community responses were partly accountable for the rise. Most notably, the differential rise in these communities is entirely driven by individuals who join motivated by social status or social pressure—which are virtually absent in the rest of communities—or to protect their community—which are three times more present than in the rest. This suggests that community institutions increase militia participation by upholding community norms that create extrinsic social motivations and by amplifying intrinsic social motivations among community members.

These findings suggest militias are a central actor of the conflict and can be thought of as successful violent collective action sparked by community elite-driven responses and bottom-up intrinsic social emotions. The results paint a picture of external threats to the community and of community mechanisms to override individual self-interest as central in the emergence and growth of armed actors. Their success resembles revolutionary movements. Yet, the role played by revenge and violence, and their xenophobic discourses towards the populations they violently target, liken them to ethno-nationalist far-right movements (e.g., Fryer and Levitt (2012)). Their

success at solving a major collective action problem taunts prevailing ideas that violent conflict weakens capacity for collective action (Humphreys et al., 2013; Gáfaro et al., 2022).

These findings contribute to the literature on protests in economics. Much of that literature has focused on solutions to the free rider problem based on selfish private motivations. Our study complements this literature by introducing the notion that mobilization can be achieved by the by-product of bottom-up extrinsic and intrinsic social emotions and communities' responses using community institutions to override self-interest, including upholding norms and status but also amplifying intrinsic social emotions. Our results do not contradict the relevance of strategic considerations in individuals' decision to protest (González, 2020; Cantoni et al., 2019), but they extend the set of existing explanations introducing the possibility that community rationality and not just individual rationality might be an important driver, by amplifying and creating a variety of social sentiments. Such rationality might reflect noneconomic community common interest public goods, such as avenging the community, but it also reflects economic common interest public goods, such as the protection of the assets of its members. Including the broad range of social motivations and providing an explanation for how they come about and how community influences them, this study extends a seminal study of political protests (Cantoni et al., 2022), which showed that *pro-social* motives are important. This also nuances a literature that has generally opposed economic and non-economic motivations for collective action, by showing that informal institutions engineer individual extrinsic incentives to solve the collective action problem of providing security. The idea that non-private motivations are important for violence is not new to a vast literature outside of economics (see Section 2.2. for an overview of that literature). Our contribution to the latter is to provide evidence based on large-scale-disaggregated data, and to document the top-down elite-driven and bottom-up moral sentiments channels of militia rise.

The findings also complement a growing literature in economics on the performing of state functions. Indeed, reflecting a former militia member's say that they "took the state into their own hands" (Marchais, 2016), the militias we document collect taxes, provide protection, and hold a monopoly of violence. This literature has tended to focus on the idea that state functions emerge when an armed elite aims to extract resources from the population (Mayshar et al., 2011; Sánchez de la Sierra, 2020b; Carneiro, 1970). Interestingly, a vast literature in other disciplines (Wittfogel, 1953), and one notable exception in economics Heldring (2020), has documented that collective demands for public goods might also explain the emergence of such functions (Wittfogel, 1953).

2 Bringing Community Back In to Economics of Violence

2.1 What we know about Communities and Violence

While the role of communities in the rise of militias is largely unexplored in economics, a vast literature in other disciplines provides us with rich knowledge about some aspects of this relationship, even as the existing evidence is predominantly qualitative.

The prominence of community militias in many African countries is a manifestation of the persistence of longstanding modes of decentralized security provision (Heald, 2006; Pratten and Sen, 2007). "Bottom up" forms of collective defense, organized around villages and communities, have long existed alongside—or been incorporated into—defense and security organised at a larger scale. In pre-colonial equatorial Africa, collective defence was one of the key tenets of social and political organization, which revolved around households, villages and clans, who could be called upon by kingdoms for defense or war-related purposes (Vansina, 1990; Lwigulira, 1993). During the colonial era, local chiefs were incorporated into the state apparatus in order to mobilise labour among their communities, including for security and war-related purposes (Northrup, 1988).[1] In contemporary Africa as in many parts of the world, the lines between community level security provision and the subcontracting of state security functions to non state actors are often blurred.[2] Communities can mediate both "bottom-up" and "top down" mobilisations for security or violence, and play an important role in the "armed orders" that emerge (Staniland, 2012b, 2021).[3]

We also know that social and communal mechanisms exist alongside private factors to drive participation in violence. Considerable attention has been paid to the role of economic factors in explaining participation in violence: Poverty, inequality and relative deprivation on one hand (Gurr, 1970), and economic opportunism of leaders and recruits on the other (Collier and Hoeffler, 2004; Weinstein, 2007).[4] Empirical studies have found mixed evidence for these (Cerina et al., 2023),

---

[1] The Congolese state has a long history of subcontracting security and other functions to nonstate actors, from private concessionary companies during the Congo Free State (Lowes and Montero, 2020), to mercenaries, private armies, and militias in the post-Independence era (Kisangani, 2012).

[2] In Burkina Faso, local self-defense groups which have emerged to protect civilian populations from armed insurgents have been incorporated into the state counterinsurgency apparatus (Frowd, 2022).

[3] Recently, particular attention has been paid to governance by armed actors and rebel groups (Mampilly, 2011; Arjona et al., 2014; Arjona, 2017), and the range of actors and organisations involved in "multi-layered governance" (Kasfir et al., 2017) and hybrid security provision (Bagayoko et al., 2016): from religious and customary authorities, to private companies, to grassroots organisations and youth leaders.

[4] Joining rebel groups can constitute an exit strategy for youth stifled by constraining economic prospects, as has been shown in Sierra Leone (Richards, 1996), and DRC (Jourdan, 2011; Vlassenroot and Raeymaekers, 2004).

and a consensus has emerged that no single factor explains participation in violence (Humphreys and Weinstein, 2008; Viterna, 2006; Scacco, 2016). A vast literature has documented the central role of social and community networks in revolutionary and insurgent mobilisation (Gould, 1991, 1993, 1995b; Petersen, 2001; Parkinson, 2013; Viterna, 2006, 2013; Staniland, 2012a, 2014; McDoom, 2013), including in the DRC (Stys et al., 2020). Communities mediate mechanisms of collective pressure and coercion as well as moral beliefs on justice (Gurr, 1970), ideology (Sanín and Wood, 2014), the "pleasure of agency" to enact history and express a shared identity (Wood, 2003), collective grievances and desires for revenge (Balcells, 2017, 2012) and collective identities (Gould, 1995a; Østby, 2013; Shesterinina, 2021). Community defense groups can also evolve into predatory organisations as they are absorbed into violent political economies, often eroding their communal logic in the process (Stearns and Botiveau, 2013b; Marchais, 2016).[5]

This overview presents two opportunities. First, it underscores the value of organizing these motivations and mechanisms in a simple decision-theoretic framework that reconciles individual self-interest and group interest. Second, it underscores the value of answering these questions using dis-aggregated quantitative data. We now articulate the organizing question and then describe the strategy to collect data.

2.2 Organizing Question

Historically, human groups were regularly threatened by external (or internal) actors aiming to expropriate or violate their physical safety, stifling incentives to invest. The most obvious way to mitigate such threats is for the groups to produce credible threats of violence against those actors—deterrence—or even destroying their capacity for nuisance. A problem, however, is that producing credible threats of violence is privately costly (it is often risky), while the benefits to an individual are dispersed and sometimes zero, as producing large enough threats is labor intensive. Thus, individuals' contributions are often not pivotal, and the collective benefit is dispersed among its members, i.e., it creates a group collective action problem (Olson, 1971).

When hiring a third-party to provide security is too costly, groups have often organized it themselves, which requires *community mechanisms*: mechanisms that allow the group's interest

---

[5]In the 1990s in Medellin, the paramilitary movement emerged as a result of a strong demand for protection by communities and garnered substantial popular support by enacting swift justice and punishment against criminals, and by articulating community desires for a restoration of the social order; yet, over time, the paramilitaries started preying upon the population and attracting opportunist members (Gutiérrez-Sanín et al., 2015).

to override self-interest to provide (risky and a priori individually irrational) effort-based contributions to security, such as joining the group's self-defense organization; we, somewhat arbitrarily, refer to a community as a group with such mechanisms.[6] Consider first the motivations of their members. They might contribute effort if they derive private economic gain, and sometimes they do (henceforth, private motivations); but as members of a social group, they may also hold a range of social motivations leading the group's interest to override private motivations. Some social motivations, such as status concerns or social pressure could be denoted as *extrinsic* social motivations insofar as a significant share of the value to the individual of taking the action is instrumental, as a significant share of the benefits to the individual (not necessarily all) accrue as a consequence of taking the action. Another type of social motivation, such as *social emotions* (Bowles, 2006) can be denoted *intrinsic* social motivations insofar as a significant share of the value to the individual (not necessarily all) accrues irrespective of the material consequence of taking the action and resides in the pleasure derived from taking the action itself. Social emotions such as the desire to avenge group members who were previously victimized are frequent in personal accounts of this life decision, but so is the desire to *take part* in a contribution to a group's goal, such as ensuring its survival through its safety (which is intrinsic if it is not pivotal).

The group's members might autonomously develop some of those motivations, such as the desire to protect their group, if the group possesses a group membership identity; similarly, victimization of one member by a third-party might autonomously induce the social emotion of revenge as a reciprocal preference between emotionally connected members. It is easier to imagine intrinsic social emotions autonomously generated to benefit the group than extrinsic ones. But, beyond the autonomous generation of social emotions, a second type of community mechanisms are informal community institutions that can *align* extrinsic social motivations such as status and social pressures. In the political traditions of eastern DRC, chiefs have played a important role at upholding social norms, notably community members' rights and responsibilities, social status, and the implied threats of social and economic losses, through which they are able to generate "social pressure," but also potentially persuade members to internalize intrinsic social motivations.

We now describe how the Outraged Citizens' rise offers an opportunity to empirically empirically examine the role of social motivations, and of community institutions, in their emergence.

---

[6]One common solution to this problem is for the group to impose contributions by their members in order to hire an organization to perform such threats such as a state or mercenaries (such as in the example portrayed in Seventh Samurai (1954), by Akira Kurosawa). However, this solution is often not feasible.

2.3 The Critical Juncture of the Rise of the "Outraged Citizens"

The Raia provide a paradigmatic example of the role of communities in the rise and military success of a militia. At the end of the Second Congo War (1998–2003), the rebel groups who had been fighting during the war were incorporated into the newly formed national army, the *Forces Armées de la République Démocratique du Congo* (FARDC), causing a state vacuum in rural eastern DRC. Over the same period, the FARDC launched military operations against the *Front de Liberation du Rwanda* (FDLR), a Rwandan rebel group who has its origins in the Rwandan Civil War. Several armed factions re-mobilised in 2003–04, including some Mayi-Mayi armed groups.[7] As the FDLR engaged in retaliatory violence against the predominantly Rega populations in the territory of Shabunda, South Kivu, a religious (Kimbanguist) minister, Jean Musumba, created a new armed movement, the Raia Mutomboki (standing for "outraged citizens," in Kirega), who successfully drove the FDLR out of Southern Shabunda in 2005–07 (Stearns, 2013; Vogel, 2014). The Raia re-emerged in 2011 at a time of heightened insecurity caused by the Congolese Army's policy of "regimentation", whereby troops positioned in rural areas were moved to larger cities in order to create regiments (Stearns, 2013). The FDLR took advantage of the resulting state vacuum to expand their presence in Shabunda, but they remained under pressure from military operations by the Congolese and Rwanda military (operations Umoja Wetu, Kimia II, and Amani Leo). Increased insecurity in Shabunda sparked a considerably larger mobilization of the Raia than in 2005–07, which spread to Northern Shabunda and neighbouring provinces, expelling the FDLR from a vast region, an exceptional military feat which successive national military operations had been unable to achieve. Figure B.1 shows a photo of some of its members.

Studies have shown that community mechanisms played a key role in the movement's initial popularity and success (Stearns, 2013; Vogel, 2014). The mobilisation was largely decentralized, allowing 'franchise like' local chapters to emerge in villages and towns, often with the support of local chiefs (Stearns, 2013, p.29).[89] Interviews carried out with Raia members repeatedly stressed that community protection and the commitment to bring justice following attacks on their en-

---

[7]The Mayi-Mayi emerged during the First Congo War (1997–98) as a popular armed resistance movement against the perceived invasion of the country by foreign forces.

[8]Consistent with the literature, we refer to the group of militiamen stationed in a village as a chapter. In some cases, they emerge from a village as the village's militia. In others, they arrive by expansion of another militia.

[9]The movement's control over its members was also less coercive than other groups, with participants free to enter and leave (Stearns, 2013, p.29). Another factor was the movement's simple message, which articulated longstanding grievances of the Rega populations against historical neglect by the Congolese state with a clear call to action to rid the area of the predatory presence of the FDLR, often tainted by xenophobic rhetoric.

tourage motivated their decision to join the movement. They also pointed to the movement's use of traditional religious beliefs and myths and its use of protective amulets known as *Dawa,* a strategy also deployed by the Mayi-Mayi militia (Hoffmann, 2015). Collective values and sentiments, rather than individual economic motivations, were said to be key drivers of mobilisation, as argued by (Vogel, 2014). Later, as the movement expanded into mineral rich areas, Raia factions started taxing mineral resources. The Raia eventually splintered into various competing factions, who displayed a more predatory behaviour.

The *rise* of the Raia is thus a critical juncture in the history of security and state capacity in Eastern DRC, which provides a unique opportunity to explore the role of social emotions and of community in response to threats against the community in the emergence of militias.

3   Measuring Community and Violent Collective Action

We developed a comprehensive database of rural membership in, and relationship with, all types of armed groups in South and North Kivu, two of the most conflict-affected provinces of DRC. The core sample comprises interviews conduced in 1,041 households, in 133 villages, in South Kivu.[10]

Research teams spent approximately one week in each village, during which they reconstructed village histories with village history experts,[11] and implemented eight household surveys. In each household, we randomly sampled one available male adult to work with a researcher during one full day, with appropriate breaks, compensation and food. The survey reconstructed the household's and respondent's history back to at least 1995,[12] in particular yearly participation in armed groups,[13] the dates of all violent attacks experienced by the household, occupational choices,

---

[10]These data were collected between June 2012 and September 2013. Before, the research team spent weeks in the districts' (Chiefdoms) capitals and in the lower-level districts (Groupements) to draw lists of all villages by consulting state and customary authorities. In the lists, we identified villages with a natural resource as well as a matched sample of villages with no resources, matched using the Mahalanobis metric using the vector of all available geographic characteristics. Then, we randomly sampled 133 villages.

[11]Village history experts have in depth knowledge of a particular village or entity's history. These could be local chiefs, notables, teachers, or any person who was recommended by local populations.

[12]To identify the households to be interviewed, in each village, researchers first drew a village list with the the help of the village chief, and implemented random selection using pre-selected random numbers. We randomly sampled eight households in each village of South Kivu, and six households per village in North Kivu.

[13]Our design reflects our care to mitigate risks arising from the fact that the information we collect is sensitive. Participation in armed groups, and especially in militias, is commonplace in eastern DRC, and discussing participation is feasible with appropriate measures to minimise risks to participants and researchers. Moreover, several members of the research team were from the regions where the data collection took place, which meant that they spoke the languages and helped to build trust with participants.

migration, and the households' economic history. Section A.2 in Webpage Appendix provides additional details. At the end of the week, the researchers held a day-long meeting with the history experts and triangulated their data with that of these experts. This allowed researchers to detect and correct reporting errors about village outcomes. Table A.1 explains the classification of armed groups in our sample. Complementing this procedure, the researchers conducted qualitative interviews aimed at gaining a deeper understanding of the militias and armed groups, their relationship with the population and their recruitment practices. The qualitative interviews were carried out with the village experts, local authorities, ex or current militia members or leaders, and security forces. The qualitative reports were then used to cross-validate participation data from the household survey. The authors also conducted dozens of in-depth interviews with combatants and ex-combatants. We refer to this as our "qualitative data."[14] Our design aims to address measurement error in the events' dates. Building on established methods in recall studies, we developed a set of time cues—a first set related to regional history, and a second set related to individuals history (date of birth, marriage, migration)—which were used to date events.

We define participation as the active involvement in the security-related activities of an armed group.[15] Our design tackled two concerns with the use of self-reported data to measure participation in armed groups. First, respondents may be averse to revealing their participation. Second, we interviewed respondents in the year of the survey, which means that survivor bias could affect whether our sample is representative. Anticipating these concerns, we gathered, in the separate village data gathering exercise led by the village experts, the anonymized aggregate number of villagers who joined each armed group, each year. Since villages rarely disappear, these are not subject to survivor bias. And since these data are collected without revealing participants' identity, they are less vulnerable to respondent social desirability bias. The anonymized data and the individual reports are almost identical, providing confidence in the individual reports data.[16]

---

[14]To gather this data, we obtained authorizations from provincial, territory, and village authorities. Ethical guidelines were followed to ensure that respondents did not feel obliged to participate.

[15]Our measure does *not* include involvement as informants, covert supporters, tax collectors, business partners, or any other role (see Petersen (2001)'s classification). We henceforth refer to this involvement as participation, and its start as enrollment or joining. To build this measure, we asked each household survey respondent to list all the armed groups that have been present in the survey village, whether they had participated in these, and the start and end dates. Respondents were also asked to describe participation episodes in any other group.

[16]Figure B.2 compares the household reports to the aggregate data. For comparison, for this figure, we exclude enrollment outside village armed group episodes. To construct the village level estimates based on the household reports, we first obtain the share of respondents who report to have participated in a group during a group governance episode. Then, we use the village size we recorded in the village survey, and the number of surveyed villages in South Kivu (n=133) to construct a village-level estimate of the number of participants. The mean

In a household attack history module, each respondent was asked to report up to nine attacks by armed actors that happened in the village where they live. Each respondent on average reports 2.08 attack events; the 99th percentile is seven events. Thus, reporting limit did not lead to loss of data. For each event, we observe the perpetrators' group, the perceived intention, whether the household was targeted, the number of fatalities in the village, the number of persons who suffered sexual violence in the village. In addition, for each household member, each respondent reported up to three events in which armed actors targeted the household member being discussed. For each of those events, we identify the year in which they took place. In the analysis that follows, we focus on whether any household member other than the respondent was victimized (henceforth, household victimization), to exclude confounds arising from the direct effect of violence. Specifically, we use the attack information on each household member from both attack modules to construct an indicator for whether a nonrespondent household member was attacked. The information on victimization was gathered prior to that about participation. This helped prevent against motivated recounting of attacks. Section A.1 in Webpage Appendix provides additional details.

Our design tackled possible measurement error arising from relying on individual self-reported data to measure attacks against the household and the village, by cross-validating the attacks reported by participants in a same entity, and by triangulated these with the data compiled by the village experts. Figure B.3 conducts this triangulation exercise for attacks. We code one attack as verified by other households if at least one other household reports an attack by the same perpetrator taking place in the village in the same year. The same criterion is used for whether an attack is verified by the village chief survey. The vast majority of attacks reported by

village size in South Kivu in our sample is 203 households. The estimated number of militia participants based on the anonymized aggregate reports is 55.7 (dark blue bar with solid outline), against 50.2 from the household reports (light blue bar with dashed outline). The third, gray blue bar with dotted contour, excludes individual-year observations for which the respondent was living outside the village. The number remains almost identical. The data reported by Figure B.2 provide support to our data collection and reassures that participation in village militia chapters, the focus of this study, is not subject to social desirability or survivor biases that may confound our conclusions. Since combating is a hazardous occupation, with truthful reporting and in the absence of recall bias one would expect that the representative household level survey should be missing those killed in action, while the village level survey would not. Our quantitative and qualitative data provide reassurance by providing context to why the household reports are so similar to the village aggregate reports. First, the largest share of participation is driven by the Raia, which started one year before our data collection. This reduces the scope for survivor bias. Second, village militia chapter participation is a local phenomenon, and most of the time participants are working part-time as a militia members. This fact, which we gathered from our qualitative interviews, is also supported by the data: Table A.2 shows that while participating in a village militia chapter, 71% of the participants are also employed in other occupations, including agriculture, mining, and civil service. Providing additional support to the irrelevance of migration of village militia chapter participation, Section C analyzes the role played by migration in this context and its relation to state vacuum, victimization, and participation in village militia chapters.

the household can be verified this way, ruling out that households are under-reporting attacks.[17]

The sample collected through this procedure constitutes the core sample for which we designed this study. In addition to this dedicated data collection in South Kivu, we implemented four additional data collections, which we used to assess the robustness of our result. First, we interviewed an additional random sample of 32 households in each sampled village of Shabunda, restricting these to the participation module. Second, we took advantage of a study conducted in North Kivu in 2015 (Sánchez de la Sierra, 2020b) to implement the participation module with additional 591 households in 106 villages, increasing the sample to 239 villages. This yields participation histories of 4,336 household members. Finally, in 2016, we gathered minimal details on the respondent's participation history in 10 additional households in each of the 106 villages.

Taken together, our samples constitute participation information of 7,454 individuals, collected in 2,964 households of 239 villages, covering the period 1995–2013 and including data on 640 individuals who, at some point, participated in armed groups. In the analysis that follows, we use the core data to provide a picture of armed groups in the region and to analyze individual motivations. Figure B.4 presents the samples.
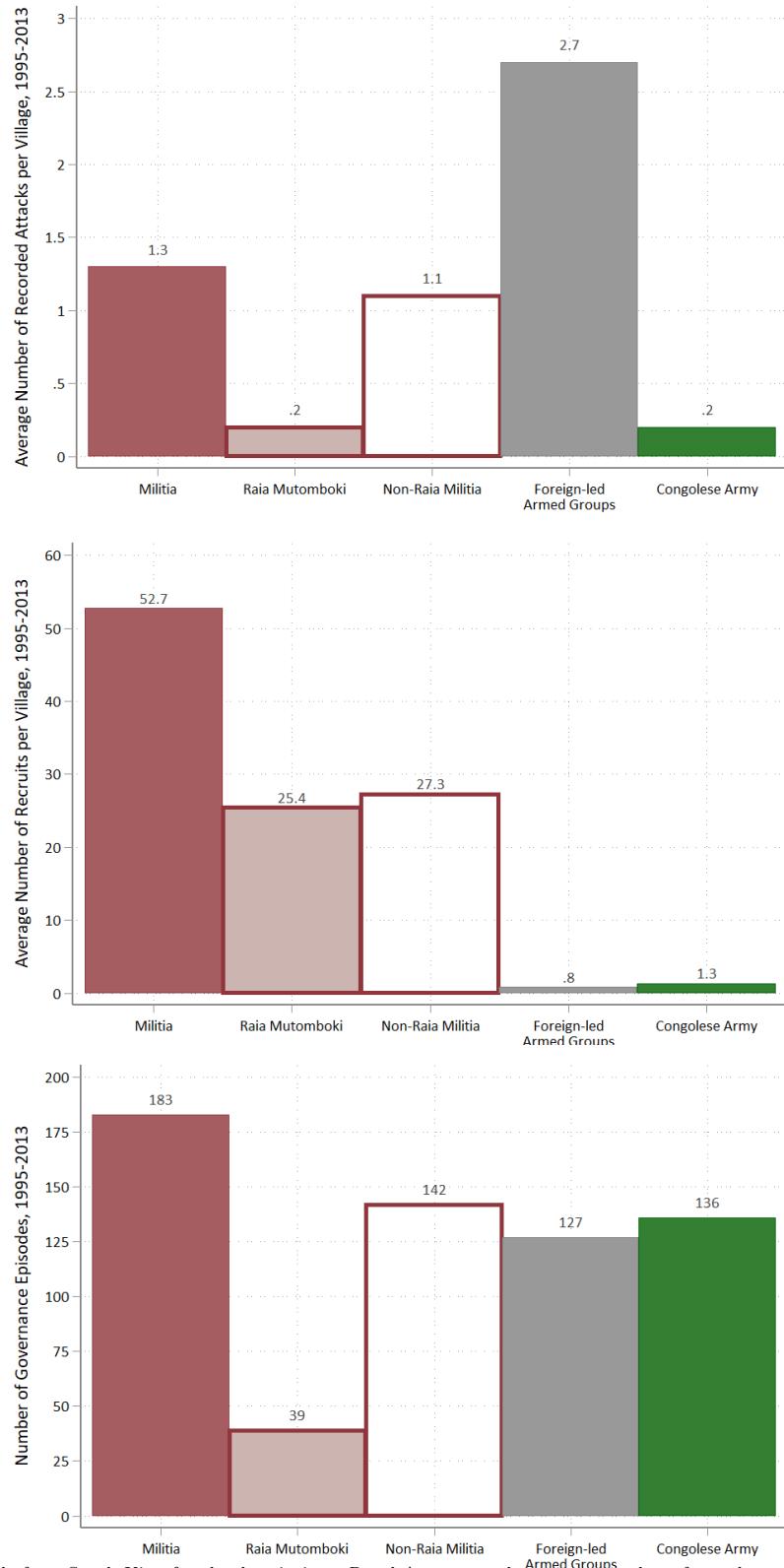
4   The Relevance of Community in the Raia, and in Militias

In this section, we present three descriptive facts about the role of community in the militias and, in particular, in the Raia. We define *militia* as Congolese armed groups other than the national army, in contrast to those that clearly represent foreign interests (henceforth, *foreign-led*).

The qualitative literature about the Raia suggests that, like many militias, they enjoyed large popular support and succeeded in pushing the FDLR out, thus that the Raia represent a paradigmatic case of a militia (Stearns, 2013; Vogel, 2014). In the sections that follow, we use the data we have collected to examine whether the anecdotal evidence about the role of communities in the rise and spread of militia, and the Raia in particular, is supported by empirical evidence.

---

[17]Since the data construction also includes victimization of household members, some of those can have taken place outside the village, hence some of those attacks that are not reported in the village data. When the data excludes those, both sources produce comparable means.

Figure 1: Militias Predominate in the Conflict, and the Raia is a Militia Recruiter (Fact 1)

Notes. We use the core sample from South Kivu for the descriptives. Panel A presents the average number of attacks per village by each type of armed group. Panel B presents the number of participants per village in each type of armed group. We first obtain the share of respondents who report to have participated in a group during an episode where an armed group controlled the village. Then, we use the village size we recorded in the village survey, and the number of surveyed villages (n=133) to construct a village-level estimate of the number of participants. The mean village size in the core sample is 203 households. Figure B.2 shows that the patterns cannot be explained by measurement bias from household survey. Panel C presents the number of village governance episodes. Figure B.5 replicates the figure by including extra village sample from North Kivu.

14

Fact 1: Militias Predominate the Conflict, and the Raia is a Major Militia Recruiter

The militias are one of the main actors in the Congolese conflict. Of 76 armed groups on which we gathered information, 48 (63%) correspond to the definition of militias (see Table A.1).

Figure 1, Panel A, shows that, over the period of the Congolese conflicts up to the data collection, the average village in the core sample received 2.7 attacks by foreign armed groups, against 1.3 attacks by a militia and 0.2 by the Congolese army. This means that militias represent 31% of the violence recorded against the villages in the sample for the period, thus a significant share of the violence as measured by the number of violent attacks on the villages. The Raia, which are only one among hundreds of militias, naturally only represents 15% of militia attacks.

However, violent events are a poor indicator of their relevance in the conflict: our measure of attacks is about attacks against the Congolese rural communities, which are their own people. We thus turn to other metrics than violent events. First, Panel B shows recruitment of combatants from those communities. Over the twenty years of the conflict leading up to our data collection, the average village in the core sample had 53 village members who joined a militia. This far exceeds the number of those who joined a foreign-led armed group (0.8) or even the Congolese army (1.3). Overall, militias recruit 96% of the fighters that come from the rural villages and towns in our sample. Underscoring the significance of the Raia in the world of militias, around half of the fighters who ever joined a militia in the period actually joined the Raia, despite the fact that its rise was concentrated in the last few years of the sample. Second, Panel C shows that, of 444 armed group village governance episodes recorded in our data in the core sample, 308 were run by non-state armed groups, the rest were episodes of the Congolese army stationing in a village. Of the non-state armed groups' governance episodes, 183 (59%) were by militias. Of the 183 militia village governance episodes by militia chapters from the village, 21% were by the Raia. Thus, the Raia also represent a large share of the militia governance episodes.

In sum, far from being a marginal anecdote in the conflict, the militias predominate the conflict by various metrics including violent attacks against the villages, recruitment, and governance. Of particular significance, the Raia represent almost half of the recorded recruitment into militias in the entire period and 21% of the militia village governance episodes. Thus, the Raia represent a large share of the militias in the conflict as measured by those metrics and are thus well-suited as a case-study to isolate key drivers of militia rise and growth.

Fact 2: Like for Militias, Communities Supported the Protection Goals of the Raia

The militias' stated and realized goals in large part reflect the desire to protect the community, an objective which enjoys high support from the community. This is especially true for the Raia. First, most of the militias' stated goals that are publicly available (documented in Verweijen (2016)) relate to public goods for the community, in particular security. For example, the stated political objectives of the militia Mai Mai Charles and those of the NDC-R are about protecting against foreign armed groups such as the FDLR (United Nations Group of Experts, 2016), and those of the militia Mayi-Mayi Kapopo ("cahier des charges" in French) stated, in January 2011:

> "defend the territorial integrity and inviolability of the DR Congo against foreign forces;
> protect the Congolese peoples and their goods." Source: Verweijen (2016).

As described in Section 2.1, the Raia emerged to chase the FDLR out of Shabunda in order to restore security in the district. Many of their factions claimed to defend local communities against the abuses of FDLR and such claims appeared to have traction among the local population (Stearns, 2013). The Raia's stated objectives are thus aligned with the typical objectives of militia.

Second, these goals appear to be perceived as genuine by the population, or at least, to have been realized. Panel A shows that, in 73% of village chapter militia governance episodes, the chapter was perceived by the average villager to be effective at providing security. This rises to 95% in the case of Raia chapters. In contrast, militias from ouside the village and foreign-led armed groups were perceived to be effective only in 20% and 38% of episodes, respectively. The fact that the Congolese army was perceived to be effective only in 84% of episodes provides evidence that the Raia's success at chasing the FDLR was exceptional in the history of the Congo conflicts and that, in that regard, they were more effective than the state itself.[18]

Third, the stated goals and outcomes of the militias, and especially for the Raia, had high level of villagers' support. Table 1, Panel B, shows that the population tended to show high levels of support for the militias and especially the Raia. In 16% of the village militia governance episodes, there was opposition from the community; this compares to 45% for foreign-led armed groups.

---

[18]Table A.3 presents the estimated coefficients of a regression of various indicators of violence by any armed group against the household on various forms of militia chapter presence. We separately analyze exposure to violent events, and to sexual violence perpetrated by armed actors. This suggests that the presence of militia chapters formed in the village and, in addition, participating in them, drastically reduces the propensity that a household member is the victim of sexual violence.

Table 1: Like for Militias, the Communities Supported the Goals of the Raia (Fact 2)

	Militia from Village			Militia from		
	All	Raia	Non Raia	Outside	Foreign	Army
A. Protection of the Community: # Episodes	129	39	90	50	127	136
Population Perceived Chapter's Security as Effective	0.73	0.95	0.63***	0.20***	0.38***	0.84*
A Chapter Member Attacked Villagers	0.29	0.13	0.36**	0.73***	0.70***	0.11
B. Support from the Community: # Episodes	129	39	90	50	127	136
Some Villagers Opposed the Chapter	0.16	0.05	0.20**	0.41***	0.45***	0.06
Parents Encouraged Their Children to Join the Chapter	0.42	0.63	0.37**	0.16***	0.18***	0.20***
Chief Encouraged the Youth to Join the Chapter	0.47	0.64	0.43**	0.14***	0.19***	0.23***
Chief or Relative Was the Chapter's Leader	0.41	0.62	0.32***	0.00***	0.01***	0.01***
Chief was Forced to Support the Chapter	0.26	0.08	0.33***	0.55***	0.72***	0.10
C. Members' Motivations: # Participants	245	134	112	30	4	7
Social Motivations, Intrinsic (Social Emotions)	*0.71*	*0.71*	*0.72*	*0.43****	*0.33*	*0.00*
For Revenge	0.11	0.12	0.10	0.07	0.00	0.00
For Community Protection	0.60	0.58	0.63	0.36**	0.33	0.00
Social Motivations, Extrinsic (Social Incentives)	*0.15*	*0.16*	*0.15*	*0.21*	*0.67***	*0.00*
For Status	0.04	0.06	0.01**	0.00	0.33*	0.00
Social Pressure	0.09	0.09	0.08	0.07	0.33	0.00
Social Coercion	0.03	0.00	0.07***	0.14***	0.00	0.00
Private Motivations	*0.13*	*0.14*	*0.12*	*0.36****	*0.00*	*1.00***
For Money	0.05	0.07	0.03	0.29***	0.00	1.00***
For Private Protection	0.08	0.07	0.10	0.07	0.00	0.00

Notes: We use the core sample from South Kivu for the descriptives. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. *Foreign* reports the sample of individuals who joined a foreign armed group. *Army* reports the sample of individuals who joined Congolese national army. For motives, we classify all the answers into the seven groups: Revenge (to avenge; following an incident with family or community), to protect the community, status (to become a military; to be feared), social pressure (social pressure; convinced by family, villager, or other civilian; everybody participated), social coercion, for money (for financial advantage; there is no other opportunities), private protection (private protection; to find refuge; to protect own goods). Units for the number of observations are reported in the panel headers. We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively). Table A.8 replicates the descriptives by including extra village sample from North Kivu.

This number was even down to 5% for the Raia village chapter governance episodes. In 42% of village chapter militia episodes, the parents encouraged their children to join; this compares to 18% in the case of foreign-led armed groups. For the Raia, parental encouragement was present in 63% of governance episodes. The village chief also tended to encourage the youth to join: he did so in 47% of village chapter militia governance episodes, up to 64% for the case of the Raia; this compares to 19% in the case of foreign-led armed groups and 23% in the case of the Congolese

army. The village chief or a relative was the leader of the chapter in 41% of village militia chapter episodes, up to 62% in the case of the Raia; this contrasts to 1% for all other types of armed groups. Similarly, while chiefs were rarely forced to support the chapter in the case of militia village chapters or for the Raia (26% and 8%, respectively), they were forced to do so most of the time for foreign-led armed groups (72% of episodes).

Finally, the people who became fighters in the militias were predominantly motivated by the protection of the community, in line with the militias' stated goals; this was especially true for the Raia. Panel C shows that intrinsic social motivations (social emotions, including revenge and the desire to contribute to protect the community) predominate the purported motives of combatants who joined militia village chapters (71%) and played a decreasing role in militias from outside the village, foreign-led groups, or the army (43%, 33% and 0%, respectively reported to have such motivations in these cases). Of those, the largest share is to protect the community, reported by 60% of combatants who join militia village chapters; the rest are for revenge (11%). In contrast, while extrinsic social motivations (social incentives, such as to achieve social status, experiencing various forms of community pressures amounting to social pressure, or social coercion) as well as private motivations (such as money or private protection) motivated only a minor share of combatants who joined militia village chapters, they motivated predominated the motivations of those who joined foreign-led armed groups.[19]

In sum, the militias' goals are about community protection, they have high popular support, and those who join them are motivated by the stated goals of the militia, predominantly to protect the community and for revenge; the Raia stood out as a paradigmatic case of a successful militia.

Fact 3: Among other Motives, Victimization and Revenge Fuel Militias and the Raia

The militias, and especially the Raias, disproportionately attracted joiners whose household members had previously been victimized (henceforth, *victims*), and who reported to have joined for revenge. First, we have seen that 11% of those who join militia village chapters join for revenge. Revenge for what? Table 2, Panel A, shows that, among the militia participants, those with family

---

[19]Social pressure includes various forms of pressures by community members, the fear of being ostracized by the community, or even direct instructions from village powerholders, including the parents. 37% of those who were pressured said they were convinced by another villager, 23% mentioned social pressure, 14% said they were convinced by family or someone else, and 3% said they joined because everyone else participated. The remaining 23% provided no further details. Social coercion is a more severe form of social pressure where the individual said they had no choice.

members who were previously victimized by foreign-led armed groups (henceforth, *victims*) are much more likely to have joined a militia village chapter for revenge (24% against 7%). This difference does not reflect spatially correlated victimization: Figures B.7, B.8, show participation episodes and attacks in a map; the difference in victimization by foreign-led groups is driven by attacks by the FDLR, whose attacks tend to be gruesome: Figure B.9 shows the perpetrators and targeted persons. Overall, this paints a picture of participants having been exposed to particularly gruesome violence against their family members, perpetrated predominantly by the FDLR, which is precisely the group that many militias, and in particular the Raia, have as mission to fight against, suggesting revenge against past FDLR violence may play a role.

Second, Table 2, Panel B, shows that, irrespective of the motives for joining, the militias are disproportionately staffed by victims. This is also true for the Raia. Does past victimization capture other variables that explain participation? Table A.4, Panels B, C, and D show that, contrary to what would be predicted by economic incentives, the members of militias are not the disadvantaged. On the contrary, they are just as likely to be unemployed, and in fact have more wealth, and own more plots, than non-members. Furthermore, joining the militia is associated with a smaller increas in assets compared to those who do not join. The significance levels reported in Table 2, Panel B, are from regressions that include controls for these other demographic variables, suggesting that other observable characteristics cannot account for why participants are disproportionately victimized. This suggests that it is unlikely that economic motivations are the central force explaining why victims converge to militias, and to the Raia. Rather, the evidence is consistent with revenge for violence against family being relevant.[20]

---

[20]To dig deeper into the dynamic of past victimization and present participation, we estimate:

$$Part_{ijt} = \sum_{h=-10}^{h=10} (\gamma_h \mathbf{1}[K_{it} = h]) + \gamma_{h+}\mathbf{1}[K_{it} > 10] + \alpha_i + \alpha_j + \alpha_t + \alpha_a + \epsilon_{ijt} \qquad (1)$$

where i, j, t index, individuals, villages, years, respectively. $\mathbf{1}[K_{it} = h]$ is an indicator variable that equals 1 if other members in the household of individual i are attacked at period $t' = t + h$, and zero otherwise. Parameters α_i, α_j, α_t, α_a are fixed effects for individual, village, year, and age, respectively. All villages contain individuals who are observed in another village in some year. $Part_{ijt}$ is an indicator variable taking value 1 if respondent i in village j participates in a militia chapter formed in the village in year t. To account for serial correlation and village-year shocks, standard errors are two-way clustered at the individual and at the village*year (respectively, 1,041 and 4,963 clusters). Since exposure to household victimization is staggered, in what follows, we implement Borusyak et al. (2020) estimator. Figure B.10 reports the coefficients for the leads and lags of the attack indicator. To gauge the significance of this difference, we use variations in the world price of gold to quantify the economic significance of victimization. Table A.5 and Table A.6 present the results from this quantification exercise. It shows that it would take a *permanent* increase in 8 times the yearly per capita income to undo the magnitude of the effect of *one* foreign-led armed group attack.

Table 2: Along other Motives, Victimization and Revenge Fuel Militias and the Raia (Fact 3)

Panel A. Militia Village Chapter Combatants Who are Victims are More Often Motivated by Revenge

	Victimized Participants				Non-Victimized Participants			
	Militia from Village			Militia from	Militia from Village			Militia from
	All	Raia	Non-Raia	Outside	All	Raia	Non-Raia	Outside
Members' Motivations: # Participants	59	33	26	2	186	101	85	28
Social Motivations, Intrinsic (Social Emotions)	*0.64*	*0.70*	*0.58*	*0.00***	*0.74*	*0.71*	*0.77*	*0.46**
For Revenge	0.24	0.24	0.23	0.00	0.07***	0.08**	0.05***	0.08*
For Community Protection	0.41	0.45	0.35	0.00	0.67**	0.63*	0.72***	0.38
Social Motivations, Extrinsic (Social Incentives)	*0.22*	*0.18*	*0.27*	*0.00*	*0.13*	*0.15*	*0.11*	*0.23*
For Status	0.02	0.00	0.04	0.00	0.05	0.08*	0.00	0.00
Social Pressure	0.14	0.18	0.08	0.00	0.07**	0.06**	0.08	0.08
Social Coercion	0.07	0.00	0.15**	0.00	0.02	0.00	0.04	0.15**
Private Motivations	*0.14*	*0.12*	*0.15*	*1.00****	*0.13*	*0.15*	*0.11*	*0.31**
For Money	0.02	0.03	0.00	1.00***	0.06	0.08	0.04	0.23**
For Private Protection	0.12	0.09	0.15	0.00	0.07	0.06	0.08	0.08

Notes: We use the core sample from South Kivu for the descriptives. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. Panel A reports separately for respondents who experienced an attack by an external group in the past ("victimized participants", Column 1–4) and those who did not (Column 5–8). We are not able to replicate Panel A with extra sample because only the core sample has both the motive information and the attack history for each participant.

Panel B. The Victims are Much more Likely to Join Militia Village Chapters

	Participants				Non-participants		
	Militia from Village			Militia from	Living in the Same:		
	All	Raia	Non-Raia	Outside	Village	Chiefdom	Territory
# Participants/Indiv-Year Obs	245	134	111	30	899	13824	14947
Past Victimization	*0.25*	*0.26*	*0.23*	*0.07***	*0.11**	*0.09*	*0.09*
By Foreign Armed Group	0.24	0.25	0.23	0.07**	0.09**	0.07***	0.07***
By Congolese Militia	0.03	0.03	0.03*	0.03	0.03	0.02**	0.02*
Past Participation	*0.20*	*0.30*	*0.07****	*0.10****	*0.11****	*0.06****	*0.06****
In Militia Village Chapter	0.14	0.26	0.00***	0.03***	0.07***	0.04***	0.04***
In Raia Mutomboki or Mayi-Mayi	0.13	0.24	0.00***	0.00***	0.04***	0.01***	0.01***
In Militia Formed Outside Village	0.02	0.03	0.01	0.03	0.01	0.01	0.01

Notes: We use the core sample from South Kivu for the descriptives. Panel B compares participants in militia chapters versus those where respondents do not participate in any militia chapter contemporarily (living in the same village, same chiefdom, or the same territory), regarding conflict background and participation history. We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively). For Panel B, when calculating differences, we include year fixed effects, control for all variables in Table A.4, Panels B–D, and cluster at two-way at the individual respondent and the village*year level. Table A.9 replicates Panel B by including extra village sample from North Kivu.

In sum, this section allows us to characterize the significance of the Raia among militias with regards to their community-oriented goals. First, the Raia village chapters stood out among militia village chapters as among the most successful in providing security. Second, they stood out as enjoying particularly high levels of community popular support. Third, those who joined the Raia had the same distribution of intrinsic motivations to protect the community or for revenge as those who joined any other militia village chapter. The Raia add a slightly larger share of combatants who reported to have joined out of status motivations (6% against 1% for other militia village chapters); consistent with our qualitative evidence, this suggests that communities may be able to engineer status motivations to induce more members to join the chapter when the chapter aims to solve a community need such as security, creating a collective action problem, a fact to which we return when analyzing the community responses to insecurity. Interestingly, a distinctive feature of the Raia is that 24% of the participants are also individuals who had previously participated in the 2004 militia in the same district, amounting to a predecessor of the Raia. We take advantage of this predecessor in the analysis that follows to separately identify factors that explain the extraordinary rise of the Raia in 2011 and not in its predecessor.

In what follows, we leverage a sharp shock to the absence of the state in 2011 to examine the causes of the Raia's emergence and its mechanisms, interrogating the role of victimization and revenge, as well as of individuals and communities desire to contribute to security.[21]
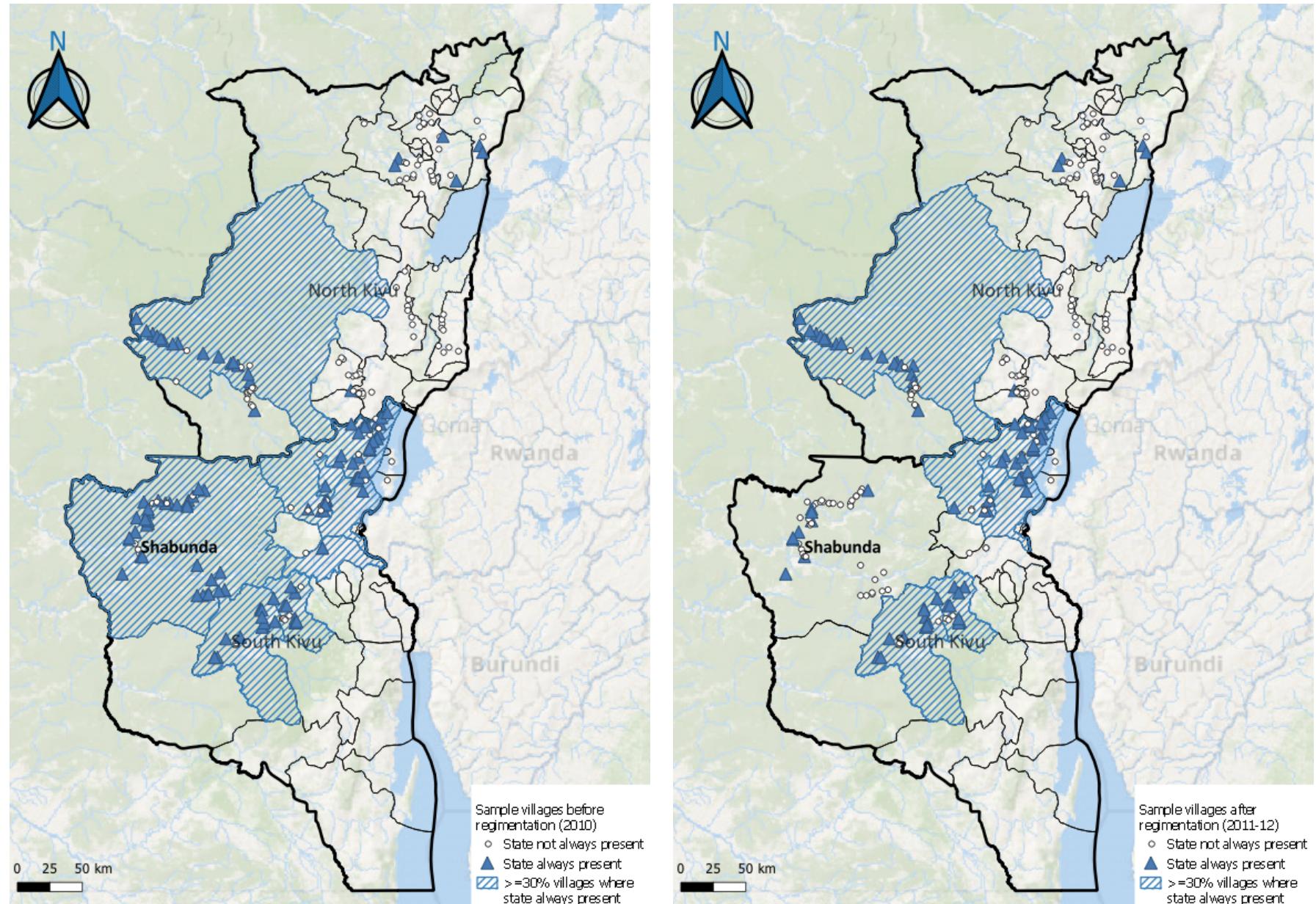
5 Proximate Cause for the Raia's Rise: State Withdrawal

In this section, we examine the effect of a sharp withdrawal of state forces on the emergence and growth of the Raia, and document the type of motivations that it unleashed among the affected villagers that led them to join the Raia at that critical juncture.

We take advantage of a historical event—the state vacuum created by the Regimentation Policy in 2011, henceforth *Vacuum 2*—to explore the role of state withdrawal on the rise of the Raia. Studies of the Raia have argued that the Regimentation Policy was a key trigger in its emergence (Stearns, 2013; Vogel, 2014). Engineered by the central government to streamline the structures of command inside the army and break parallel structures of command, the policy caused the

---

[21]Throughout the analysis we use the core sample in South Kivu, and replicate the results using the extra sample villages and households in North Kivu. Table A.7 shows a summary of the replication tables.

Figure 2: The Regimentation as a State Vacuum: Presence of the Congolese Army Around the Regimentation

Notes: This figure shows the presence of the Congolese army around the time of the Regimentation (2011). Since the Regimentation took place in 2011, our indicator of Congolese army presence in 2011 captures the presence of the Congolese army in the months of 2011 leading up to their removal. Thus, in the post-regimentation map on the right, a blue triangle is a village where the Congolese army is present for both 2011 and 2012, and a white dot is a village where Congolese army is not always present in both years. The blue areas are chiefdoms where at least 30% are controlled by Congolese army; the cutoff 30% is selected because among cheifdoms where the Congolese army is present, on average, roughly 30% villages are controlled by the Congolese army.

departure of all Congolese army units based in Shabunda territory in May 2011. The battalions that were withdrawn from Shabunda to be merged as regiments were not simultaneously redeployed to other areas. Instead, they were taken into training centers in urban areas (Stearns, 2013). This ensures that the policy did not increase military presence outside Shabunda, and creates a sharp vacuum in Shabunda. Studies of the Raia have documented that its rise was preceded by a smaller precursor in 2004, after the Sun City peace agreement of 2003 left various areas of eastern Congo without state force presence, in particular Shabunda, henceforth *Vacuum 1* (Stearns and Botiveau, 2013a). The main cause for this state vacuum was that, at the end of the second Congo War, the main rebel groups were incorporated into the newly formed national army, the FARDC. This policy, known as Brassage, entailed that the large armed groups (the RCD, which had taken the eastern half of the country, and the Mayi Mayi Padiri in particular), withdrew their forces from the regions they occupied to incorporate them in the national army. The predecessor of the Raia emerged in response to this state vacuum, although it acquired a smaller scale.
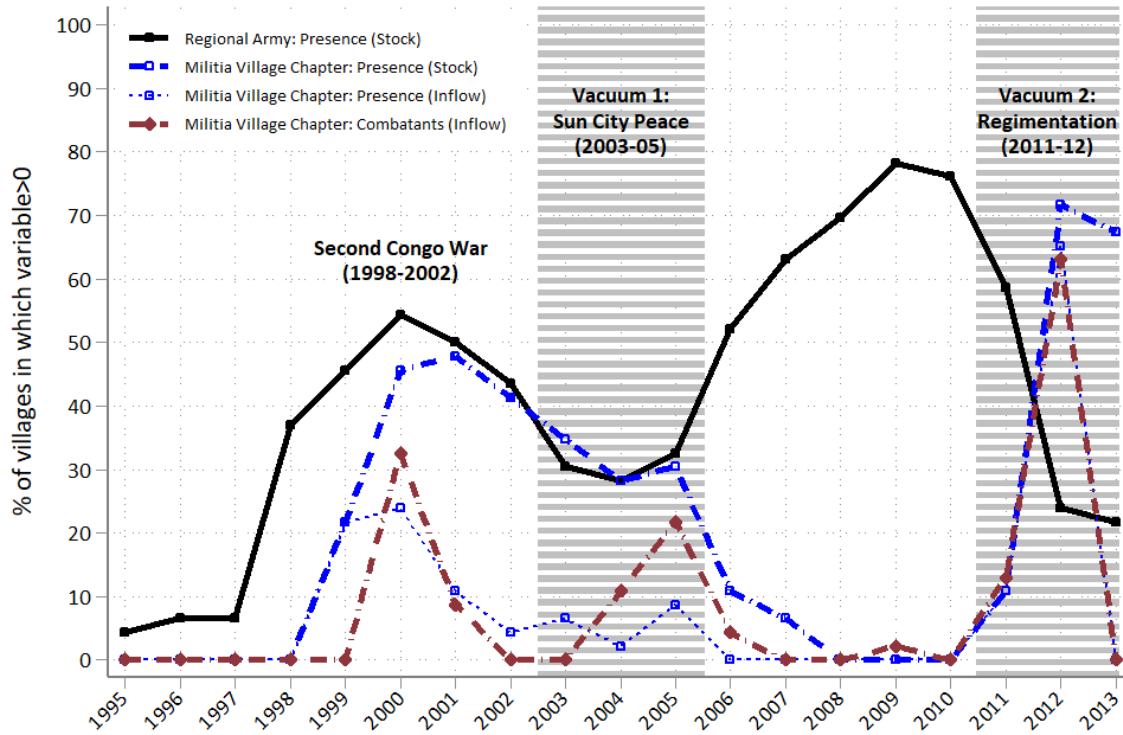
Before analyzing the effect of the Regimentation, we first verify that it consisted in a sharp state vacuum in Shabunda. The map in Figure 2 shows that the Regimentation was associated to a state vacuum concentrated in Shabunda, not elsewhere. In our study, 46 villages of Shabunda are directly affected by the Regimentation policy. While the Regimentation left only one battalion of the Congolese army in charge for all of Shabunda, the state vacuum it created affected most of the villages of Shabunda, and most of the villages in our sample.[22]

What do villagers do in response? Figure 3, Panel A, shows that, right as the state forces withdraw in 2011 from Shabunda, militia village chapters (all Raia) begin to emerge and literally skyrocket, with its share across villages jumping from 0% of villages in 2010 to 70% by 2012. The figure also presents an indicator taking value one for whether at least one person joined a village militia chapter in the village. It shows that as the chapters emerge, so does the presence of village respondents who reported to join the Raia in that year. The large spike in the flow of new members is in 2012, where 60% of the sample villages in Shabunda observe at least a new member (based on the sample of 8 households alone). Panel B shows that these effects are entirely a Shabunda phenomenon, which is also the only district in the sample in which the Regimentation created a state vacuum. Comparing the evolution of militia chapters during Vacuum 1, Panels A and B show that the vacuum induced by the Sun City peace agreement was associated with

---
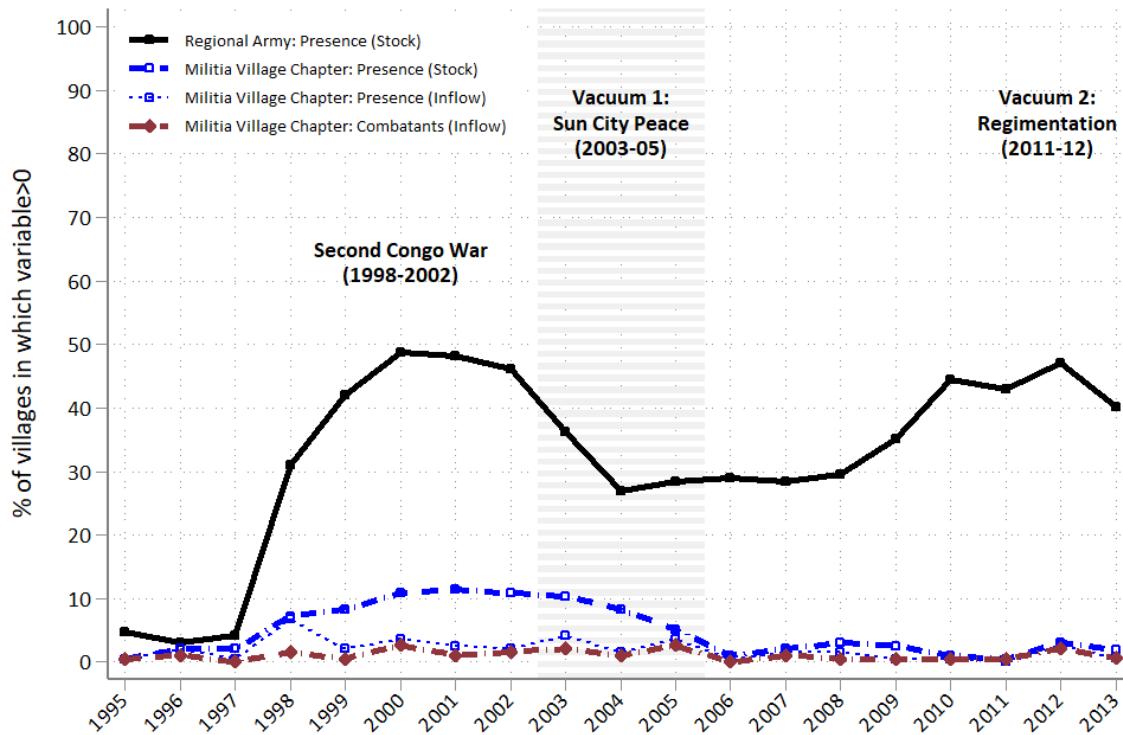
[22]Figure B.11, Panel A, presents the same set of maps for the predecessor.

Figure 3: State Vacuum and the Birth of The Raia

A. Villages in Shabunda

B. All Other Villages

Notes: The thick black solid line shows the fraction of villages where we observe regional army presence. A village is coded as having a regional army present if either the national army or Rassemblement Congolais pour la Democratie (RCD) is present. The inclusion of the RCD in the definition only affects 1998–2004, the years of its existence as it took over the state apparatus and is done for parsimony of presentation. The thick blue dashed line shows the fraction of villages where village militia chapters are present each year. The thin blue dashed line shows the fraction of villages where new village militia chapters emerge each year. The red thick dashed line shows the fraction of villages where the inflow of new village militia chapter combatants is larger than zero. Panel A restricts the sample to Shabunda, the district affected by the military policy-induced state vacuum of 2011. Panel B shows this for the remaining of the sample. We use both the core sample from South Kivu and the extra village sample from North Kivu to present the yearly trends. Left and right grayed areas indicate years in which documented policy-driven state vacuums were associated to the rise of the Raia and to its predecessor. Militia chapter and state presence data is taken from the village module. Number of individuals joining a militia village chapter is taken from the household surveys.

25

a (significantly smaller) rise in the emergence of new militia village chapters and the enrollment in militia. This smaller rise was a predecessor of the later rise of the Raia. In what follows, we exploit the difference in the rises to examine the factors underpinning the rise in 2011.

To formally analyze the relationship between the Regimentation and the rise of the Raia, we estimate the following Equation. Let i, j, t index the individual, village, and year, respectively:

$$y_{ijt} = \theta_1 \mathbf{1}[V1_{jt} = 1] + \theta_2 \mathbf{1}[V2_{jt} = 1] + \alpha_i + \alpha_j + \alpha_t + \alpha_a + \epsilon_{ijt} \tag{2}$$

where y_{ijt} is an indicator for whether the individual joins a village militia chapter, $\mathbf{1}[V2_{it} = 1]$ is an indicator for whether village j in year t belonged to Vacuum 2 (it is the product of an indicator for the year window 2011, 2012, and an indicator for the district being Shabunda), and $\mathbf{1}[V1_{jt} = 1]$ is similarly an indicator for whether the village j in year t belonged to Vacuum 1 (it is the product between an indicator for the year window 2003, 2004, 2005, and an indicator for the district being Shabunda). The baseline standard errors are presented clustering at the level of the village but we present in all regressions the p-values on each coefficient clustering two-way at the village and chiefdom-post vacuum years level, as well as village and chiefdom-year levels.

Table 3, Panel A, presents the estimates of Equation 2, where the dependent variable is: an indicator for whether there is presence of the Congolese national army in the village, for whether there is a militia village chapter (stock), for whether there is a new militia chapter (inflow), for whether there is new militia village chapter combatants in the village (inflow), and for whether the respondent of the household survey was participating in a militia village chapter at that year, in Columns 1–5 respectively. The latter is estimated at the level of the individual respondent * year (n=15,106), while the former are from the village * year dataset (and thus indexed by jt rather than ijt). Vacuum 2, the Regimentation, is associated to a decrease in national army presence from 76% to 45% statistically significant at the 1% level Concomitantly, the fraction of villages with the presence of a militia village chapter (Raia) increases from 0 to 31%, those with the emergence of a new militia village chapter from 0 to 35%, and the fraction of villages with new militia village chapter combatants from 0 to 33%. Analyzing individual level participation data, it shows that Vacuum 2 is associated with a 17 pp. increase (from zero) in village militia participation. All coefficients are significant at the 1% level. Turning to the predecessor, we see a similar rise, albeit of a smaller magnitude: the state vacuum is less than half as intense as that of

Table 3: State Vacuum and the Birth of The Raia—Statistical Analysis

Panel A. The State Vacuums Cause the Rise of the Raia

	(1)	(2)	(3)	(4)	(5)
		Presence in the Village		Active Combatants	
	National Army	Militia Village Chapter		Militia Village Chapter	
	Stock	Stock	Inflow	Inflow	Individual
Vacuum 1 [Sun City Peace]	-10.49**	7.48	-1.35	4.91*	1.68*
	(5.12)	(6.08)	(2.77)	(2.74)	(0.91)
Vacuum 2 [Regimentation]	-31.38***	30.84***	34.53***	33.45***	16.96***
	(6.42)	(4.63)	(3.60)	(4.30)	(2.55)
Observations	2,491	2,491	2,491	2,436	15,106
R-squared	0.51	0.29	0.17	0.22	0.19
Village FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Individual FE					Y
Clustered at Individual-level					Y
Pre-Vacuum 1 Shabunda mean	0.00	41.30	4.35	0.00	0.00
Pre-Vacuum 2 Shabunda mean	76.09	0.00	0.00	0.00	0.00
P-value: Vacuum 1, Clustered at:					
Village	0.04	0.22	0.63	0.08	0.07
Village & Chiefdom-post Vacuum	0.00	0.02	0.31	0.01	0.00
Village & Chiefdom-year	0.09	0.21	0.62	0.21	0.16
P-value: Vacuum 2, Clustered at:					
Village	0.00	0.00	0.00	0.00	0.00
Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00
Village & Chiefdom-year	0.00	0.03	0.00	0.00	0.01

Notes: Panel A presents the estimates of Equation 2 using the core sample, where the dependent variables are (in decimal digits): an indicator for whether there is presence of the Congolese national army in the village, for whether there is a militia village chapter (stock), for whether there is a new militia chapter (inflow), for whether there is new militia village chapter combatants in the village (inflow), and for whether the respondent of the household survey was participating in a militia village chapter at that year, in Columns 1–5 respectively. Column 5 is estimated at the level of the individual respondent * year (n=15,106), while Column 1–4 are from the village * year dataset (and thus indexed by jt rather than ijt). Column 1–4 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 5 controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the village-level and individual-level. Table notes below the regression coefficients report p-values calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. Table A.10 replicates Panel A by including the extra village sample from North Kivu.

Panel B. The Rise of the Raia is Driven by Extrinsic and Intrinsic Social Motivations, not Forced Recruitment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Social Motivations				Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.68*	0.45	-0.14	0.17	0.25	0.38	0.11	0.48
	(0.91)	(0.32)	(0.50)	(0.12)	(0.16)	(0.28)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	16.96***	2.26***	9.75***	0.83*	1.72***	0.01	1.36***	1.23***
	(2.55)	(0.62)	(1.80)	(0.45)	(0.58)	(0.02)	(0.47)	(0.45)
Observations	15,106	15,106	15,106	15,106	15,106	15,106	15,106	15,106
R-squared	0.19	0.08	0.14	0.14	0.09	0.06	0.07	0.07
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Individual FE	Y	Y	Y	Y	Y	Y	Y	Y
Cluster at Individual-level	Y	Y	Y	Y	Y	Y	Y	Y
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 1, Clustered at:								
Resp. & Village	0.07	0.16	0.78	0.17	0.13	0.17	0.38	0.10
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.68	0.00	0.00	0.00	0.05	0.00
Resp. & Village & Chiefdom-year	0.16	0.18	0.80	0.04	0.00	0.06	0.12	0.03
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.06	0.00	0.78	0.00	0.01
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00
Resp. & Village & Chiefdom-year	0.01	0.00	0.02	0.04	0.03	0.01	0.04	0.01

Notes: Panel B presents the estimates of Equation 2 using the core sample, where the dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the level of village-level and individual-level. Table notes below the regression coefficients report p-values calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. Table A.11 replicates Panel B by including the extra household sample from South Kivu.

2011, and the rise in village militia participation is 1.7 pp. in contrast to 17 pp. for Vacuum 2.

What motivations underpin the rise in the Raia? Panel B presents the estimates of Equation 2, where the dependent variable is: an indicator for whether the individual joins a militia village chapter (Column 1), whether they joined it motivated by intrinsic social emotions (Columns 2–3), extrinsic social incentives (Columns 4–6), or by private motivations (Columns 7–8). Vacuum 2's effect on village militia chapter participation comprises various types of social and private motivations, except for social coercion, underscoring the voluntary nature of the Raia. However, by far the largest share of this increase are joiners who joined *because they wanted to protect their community* (accounting for 9.75/16.96=57% of the rise in Vacuum 2). In contrast, the predominant motives underpinning the predecessor rise in Vacuum 1 are private protection (p-value 0.10) and revenge (p-value 0.16); unlike Vacuum 2, the protection of the community is markedly absent.[23]

This analysis poses a series of puzzles. Why was the response to the initial vacuum weaker than to the second vacuum? Why were the motives for participating also different and in particular, what was the role of community protection in the second vacuum? How does that square with the rise in joiners who joined for extrinsic incentives? In the remainder of the paper, we explore the role of two mechanisms in the rise of the Raia: past victimization and revenge, and public goods provision/security protection in stressing individual intrinsic social motivations as well as community pre-existing informal institutions to provide security. As we will see, while victimization and revenge are important in both rises, a sharp increase in insecurity is entirely accountable for why the rise in Vacuum 2 was so spectacular, explaining a range of intrinsic and extrinsic social motivations to join the Raia—some of which were engineered by community institutions.

6 Ultimate Causes: Revenge, and Response to Insecurity

We have documented that the rise of the Raia and of its predecessor reflects a variety of social motives and, to a lesser extend, private economic motives. In this section, we zoom in on two central drivers of those motivations in driving the response to the state withdrawals: the oppor-

---

[23]Using detailed data on migration histories of all respondents, Section C.2 extensively analyzes migration. It documents that migrants are generally comparable to non-migrants, that the coefficients on the state vacuums are entirely unaffected by excluding individuals who ever migrated, and presents a counterfactual exercise allowing to deduce bounds on the coefficients under extreme assumptions about the migrants. Overall, the section provides strong support to the view that migration cannot play a role in explaining these coefficients.

tunity to violently express revenge motivations seeded in prior victimization by foreign-led armed groups, and the creation of insecurity and the subsequent response to that insecurity.

6.1   The Opportunity to Act Upon Victimization-Related Revenge

We now examine the role of revenge and victimization in the rise of the Raia. Fact 3 established that individuals who participated in the militia and who exhibited revenge motivations tended to disproportionately be prior victims. Furthermore, in Section 5, we have found that the state vacuums fueled participation into militias that was, in part, driven by individuals who reported to be motivated by the desire for revenge. In this section, we explore this revenge motive and the type of victimization that seeded the corresponding revenge motives for joining the Raia.

Table 4 presents the estimates of Equation 2, in which we have also added as a control, the following two indicators: $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}$ and $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}$, where F_{ijt} is an indicator taking value one if the household members of individual i in village j in year t have previously been victimized by the FDLR.[24] The coefficients on these two indicators therefore can be interpreted as the differential effect of each vacuum among individuals whose household members were previously victimized by the FDLR (which we have denoted victims). We can therefore examine the differential effect of the vacuums on the propensity of individuals to join the Raia and why.

Column (1) shows that the effect of Vacuum 1 on participation in the Raia's predecessor was entirely driven by individuals from households who had previously been victimized by the FDLR. In contrast, while Vacuum 2's effect is almost twice as large among individuals from households that were previously victimized by the FDLR, a large share of its effect was also among non-victims. Therefore, while prior FDLR victimization is an important predictor of *who* joins the Raia in its rise, the effect of Vacuum 1 is *entirely* driven by the victims.[25]

What are the motives of victimized individuals who join in response to the vacuums? In Vacuum 1, where the entire effect is driven by the victims, victims join mostly for revenge (and also, because they were coerced by the village militia chapter). In Vacuum 2, while non victims

---

[24]The analysis that follows produces qualitatively identical results if the variable is the count of attacks instead of an indicator for strictly positive number of attacks.

[25]Table A.12 provides a suggestive explanation suggesting that victimization explains the entire rise due to Vacuum 1. We estimate Equation 2 and as a control the interaction between the post Sun City years and an indicator for whether the community was previously victimized. The table shows that the location of village militia chapter participation ensuing the state withdrawals of Sun City is *entirely* driven by prior victimization. That underscores that the predecessor of the Raia is explained by prior FDLR victimization.

Table 4: The Role of Victimization and Revenge in the Rise of the Raia

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	0.50	0.11	-0.17	0.06	0.05	0.07	0.10	0.31
	(0.74)	(0.20)	(0.50)	(0.04)	(0.08)	(0.15)	(0.14)	(0.30)
Vacuum 1 X Victimization	15.26***	4.40*	0.41	1.54	2.55	4.08**	0.04	2.28
	(3.73)	(2.37)	(1.32)	(1.35)	(1.83)	(2.03)	(0.22)	(1.96)
Vacuum 2 [Regimentation]	15.05***	1.61***	9.20***	0.96*	1.06**	0.02	1.40***	0.95**
	(2.41)	(0.55)	(1.84)	(0.52)	(0.44)	(0.03)	(0.45)	(0.40)
Vacuum 2 X Victimization	14.08***	4.80	4.04	-0.97*	4.85**	-0.12	-0.28	2.12
	(4.02)	(2.94)	(3.11)	(0.52)	(2.32)	(0.17)	(1.11)	(1.68)
Observations	15,106	15,106	15,106	15,106	15,106	15,106	15,106	15,106
R-squared	0.20	0.09	0.14	0.15	0.10	0.08	0.07	0.08
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.07	0.02	0.40	0.00	0.02
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00
Resp. & Village & Chiefdom-year	0.01	0.00	0.02	0.06	0.01	0.29	0.05	0.00
P-value: Vacuum 2 X Victimization, Clustered at:								
Resp. & Village	0.00	0.10	0.20	0.06	0.04	0.47	0.80	0.21
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.01	0.30	0.00
Resp. & Village & Chiefdom-year	0.02	0.01	0.00	0.16	0.11	0.00	0.57	0.19

Notes: This table presents the estimates of Equation 2 using the core sample, in which we have also added as a control, the following two indicators: $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}$ and $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}$, where F_{ijt} is an indicator taking value one if the household members of individual i in village j in year t have previously been victimized by the FDLR. The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions include controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. This estimation cannot be run with the extra samples because only the core sample from South Kivu has both information on the individual-level participation motives and attack history.

join for a variety of private and social motivations (except being coerced by the chapter), victims who join in response to Vacuum 2 are predominantly motivated by social pressure and, while marginally significant, revenge and private protection.
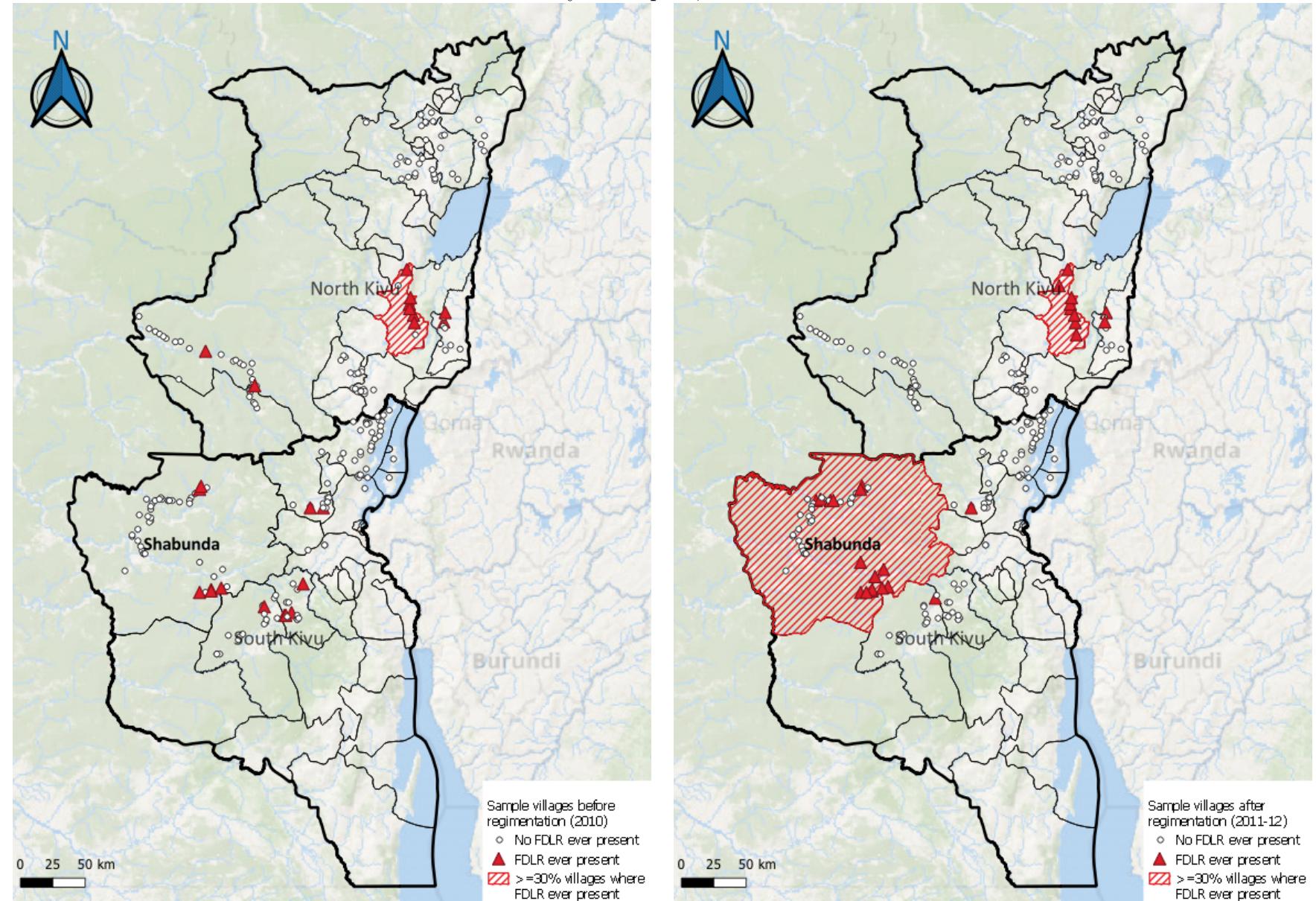
This analysis suggests that prior households victimization produces participation into the village militia chapters motivated, in part, for revenge, but also private protection and other types of social pressures indicating that communities exert pressure on victims to join (this is consistent, for example, with honor motives). To explore whether this reflects intra-village correlation of victimization histories or instead a between-households differentiation of victims and non-victims behavior, Table A.13 replicates Table 4, including $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}^H$ and $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}^H$, but we also include village-year fixed effects; thus the coefficients on $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}^H$ and $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}^H$ indicate the differential effect of the vacuums on previously victimized households compared to non-previously victimized households in the same community. Interestingly, the coefficient on $\mathbf{1}[V1_j t = 1] \times F_{ijt}^H$ for participation as a dependent variable remains positive and significant (and is half in magnitude) but $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}^H$ loses positive sign and significance.

Taken together, this means that, for the predecessor of the Raia, which was of a smaller scale, it was, in large part, an FDLR victims' phenomenon; in contrast, this also means that, during the subsequent extraordinary rise of the Raia in 2011, while participation was twice as large in communities with more victimized households, the victimized households of those communities were just as likely to join the Raia in response to the vacuum of 2011 than their non-victimized neighbors in the village: it was a generalized mobilization, consistent with its extraordinary nature. Therefore, if revenge was indeed central in the rise of the Raia and its predecessor, it was revenge motives held by community members for the victimization of their community and peers, not necessarily their own household, which sparked the spectacular rise of the Raia in 2011.

In sum, revenge is a proximate cause of the rise of the Raia. The vacuums unleashed pre-existing revenge motives towards the FDLR after prior victimization: for the spectacular rise of 2011, the vacuum unleashed revenge among victimized communities in victims and non-victims.
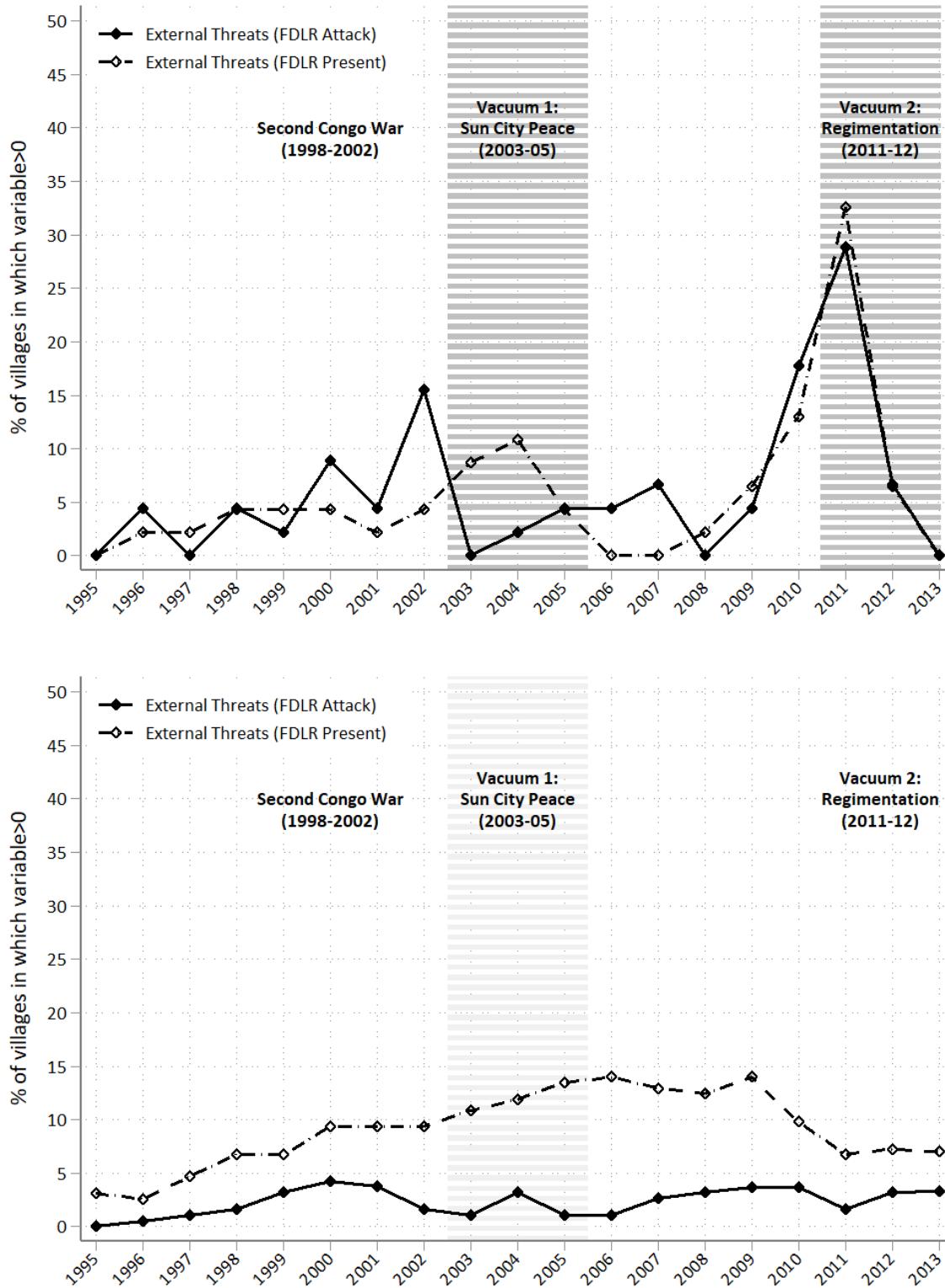
This analysis also leaves a number of unanswered questions, to which we now turn. First, while the predecessor of the Raia was a victimization phenomenon, the rise of 2011 was largely composed of communities, and individuals, who had not been previously victimized by the FDLR. This rise was much larger than its predecessor and, while revenge appeared to be one of its proximate causes, the main motive for participating among previously victimized communities and the rest

Figure 4: The Regimentation's Induced State Vacuum as a *Security* Vacuum: Presence of FDLR Predatory Group

A. Insecurity over Space, Before and After

Notes: Panel A shows the presence of the FDLR, a foreign-led predatory armed group known to be violent against civilians around the time of the Regimentation (2011). In the post-regimentation map on the right, a red triangle is a village where the FDLR is present for either 2011 or 2012, and a white dot is a village where the FDLR is not present in either years. The red areas are chiefdoms where at least 30% are controlled by the FDLR; the cutoff 30% is selected because among cheifdoms where the Congolese army is present, on average, roughly 30% villages are controlled by the Congolese army.

B. Insecurity over Time: Shabunda and the Rest of Villages

Notes: Panel B shows the presence of FDLR and attacks in a times-series format. The upper panel restricts the sample to Shabunda, the district affected by the military policy-induced state vacuum of 2011. The lower panel shows this for the remaining of the sample. Left and right grayed areas indicate years in which documented policy-driven state vacuums were associated to the rise of the Raia and to its predecessor. Both FDLR presence and FDLR attack information are taken from the village module. We use both the core sample from South Kivu and the extra village sample from North Kivu to present the yearly trends. The black solid line with solid dots shows the fraction of villages where FDLR conducts a violent attack. The black dashed line with hollow dots shows the fraction of villages where FDLR is seen present in the village.

alike was the *protection of the community.* Can security provision explain the extraordinary scale of the Raia's emergence in 2011? Second, we have seen that social pressure motivations were central in the Raia's rise: how is social pressure related to the provision of community security? In the next sub-section, we examine the role of insecurity in the rise of the Raia and, in the last section, we explore the mechanisms through which communities' responses to insecurity created social pressure to join the Raia and amplified intrinsic motivations to protect the community.

6.2 A Sharp Increase in the Value of Providing Security

In the previous sections, we have seen that the rise in Raia participation in Shabunda in response to the second vacuum was in part driven by individuals with the motivation to protect the community. We now analyze whether genuine increases in the *value* of providing security, resulting from a rise in insecurity suggested in the qualitative studies (Stearns, 2013), can in part explain why the rise of the Raia acquired such an spectacular scale compared to its predecessor.

6.2.1 The Regimentation Caused an Unprecedeted Rise in Insecurity

The Regimentation exposed the communities in Shabunda to an unprecedented rise in insecurity, but the earlier state vacuum of 2004 did not. The map in Figure 4, Panel A, shows that just as the Regimentation withdrew the national army, the FDLR group, known to be predatory, flooded various areas of Shabunda, thus exposing various villages to extraordinary insecurity. Panel B shows that the fraction of Shabunda villages affected by FDLR neighboring presence or FDLR attacks spikes from 5% in 2009 to 32% for presence and 30% for attacks in 2011, but remains constant outside Shabunda. Importantly, and likely reflecting the effectiveness of the Raia in chasing out the FDLR, FDLR-related insecurity is drastically reduced by 2012 and essentially muted by 2013. This rise in insecurity is absent (and in fact, reversed) during the first vacuum, which marked the end of the Second Congo War, where large rebel groups (except the FDLR) vacated the region as part of a national peace agreement.

To examine whether the rise in insecurity due to Vacuum 2 is statistically significant, Table A.14 presents the estimates of Equation 2 whereby the dependent variables are the corresponding indicators of FDLR-related insecurity in the *initial* years of the vacuum, in order to examine insecurity prior to the countervailing effect of the Raia. The table shows that the increase in

insecurity caused by the Regimentation in Shabunda is significant; in contrast, the first vacuum did not significantly increase FDLR-related insecurity: if anything, FDLR attacks only decreased concomitantly with the 2004 state vacuum, thus only the 2011 vacuum caused insecurity.[26]

Overall, this analysis shows that, unlike the state vacuum of 2004, the 2011 state vacuum induced by the Regimentation *caused* an increase in insecurity, and is therefore a well-suited case study to examine the how the value of providing security may explain the rise of the Raia. However, this analysis is not evidence that the *larger* rise of the Raia after the Regimentation is due to the *larger* rise in insecurity—it might just be coincidental. In what follows, we analyze the spatial patterns of the rise in insecurity of 2011, which, as we have seen, affected only 32% of the Shabunda villages, and ask whether the spatial pattern of insecurity coincides with the rise of the Raia chapters, and isolate the effect of insecurity from other factors such as past victimization in why the rise of the Raia was so much larger than its predecessor of 2004.

6.2.2 Unbundling Insecurity from other Factors in the Raia's Reemergence

We continue our examination of the role of insecurity by breaking down the effect of the second vacuum on participation by whether the community experienced a rise in insecurity at Vacuum 2.

The role of insecurity in the extraordinary rise of the Raia. Table 5 conducts this analysis. Column (1) replicates the main effect of the vacuums as benchmark. The table also reports the p-value for rejecting the null hypothesis that the coefficient on Vacuum 2 is smaller than that on Vacuum 2. The p-value is 0, indicating that the effect of Vacuum 2 on participation is significantly larger than that of Vacuum 1. Column (2) turns to testing the main hypothesis in this section, namely, whether the differential rise of the Raia in Vacuum 2 can be explained by the differential creation of insecurity. The column includes as a control the product between Vacuum 2 and an indicator for FDLR presence in nearby villages in the window 2010–11, *Vacuum 2 X Insecurity (2010-11)*. The coefficient on *Vacuum 2 X Insecurity (2010-11)* is large (20.5%) and significant at the 1% level, and including this coefficient completely destroys the coefficient on *Vacuum 2*. Importantly, the p-value for rejecting the null hypothesis that the coefficient on Vacuum 2 is smaller than that on Vacuum 1, jumps from 0.00 when *Vacuum 2 X Insecurity (2010-11)* is

---

[26]This pattern is consistent with the known facts about the end of the Second Congo War: while other armed groups, such as the RCD and many Mayi-Mayi militias vacated the area, the FDLR remained as they were not part of the agreement, reducing conflict beween present parties.

not included as a control to .86, indicating the entire difference is explained by the places that experience an initial rise in insecurity due to the Regimentation; the rise in the Raia in the other communities is not larger than the predecessor rise of 2004. This is therefore conclusive evidence that the effect of Vacuum 2 on the rise of the Raia was *entirely* driven by the communities that, as a result of the state vacuum, did experience an initial rise in insecurity.

However, the differential rise in the communities that experience a rise in insecurity is not conclusive evidence that the rise is concentrated in those communities *because* of their sudden exposure to insecurity. This strong relationship could mask that Vacuum 2 differs from Vacuum 1 on various dimensions, and those could potentially also be different in the places that see the drastic rise in insecurity due to the Regimentation. We now attempt to unbundle the comparison between the effect of Vacuum 1 and Vacuum 2. We consider the following two important alternative channels. First, the predecessor mobilization might have created a legacy in some places, enabling their later rise (dynamic spillovers from the first mobilization). Second, violence by the FDLR continued, and it is possible that the stock of victims might have been concentrated in the same places that experienced the sudden rise in insecurity.

Separately identifying the role of insecurity from past participation and past victimization. If dynamic spillovers from the first mobilization matter, such as the creation of networks and expertise, then individuals who have previously participated in the predecessor of the Raia might be more likely to participate than the rest in Vacuum 2. Column (3) includes, as a control, the product of Vacuum 2 with an indicator for whether individual i participated in a village militia chapter in Shabunda during the first vacuum *Vacuum 2 X Past participation (2003-05)*. The coefficient on *Vacuum 2 X Past participation (2003-05)* is positive and statistically significant, as one would expect, confirming that participation in the predecessor is positively associated with subsequent participation. However, including *Vacuum 2 X Past participation (2003-05)* as a control leaves the coefficient on Vacuum 2 unaffected and significant. The magnitude drops only from 16.96 in Column (1) to 15.80 and the p-value for whether the coefficient on Vacuum 2 is larger than Vacuum 1 remains 0.00, entirely unaffected at the second digit. This provides evidence that, while past participation is important in explaining the rise of the Raia in 2011, it alone cannot explain away the rise of the Raia. Column (4) includes as a control, the product of Vacuum 2 with the stock of victimization by the FDLR in individual i *Vacuum 2 X Stock of Victimization*. The coefficient on *Vacuum 2 X Stock of Victimization* is positive and statistically significant,

as we know, confirming that past FDLR victimization is positively associated with subsequent participation. However, just as for past participation, its inclusion leaves the role of insecurity unaffected. Indeed, including *Vacuum 2 X Stock of Victimization* as a control leaves the coefficient on Vacuum 2 unaffected and significant. The magnitude drops only from 16.96 in Column (1) to 15.53 and the p-value for whether the coefficient on Vacuum 2 is larger than Vacuum 1 remains 0.00. This provides evidence that, while the stock of victimization is important in explaining the rise of the Raia in 2011, it alone cannot explain away the rise of the Raia. Unlike insecurity, neither past participation nor past victimization can explain away why the rise of the Raia was so spectacular. To unbundle these two proximate causes for the rise of the Raia, Column (5) includes all three *Vacuum 2 X Insecurity (2010-11)*, *Vacuum 2 X Past participation (2003-05)* and *Vacuum 2 X Stock of Victimization* as controls. The result is quite unambiguous: while the coefficients on *Vacuum 2 X Past participation (2003-05)* and *Vacuum 2 X Stock of Victimization* are small and marginally significant, the coefficient on *Vacuum 2 X Insecurity (2010-11)*, is unaffected by their inclusion. Indeed, the coefficient on *Vacuum 2 X Insecurity (2010-11)*, drops from 20.54 in Column (2) (where such additional two controls were not included) to 19.01 in Column (5) (where they are), and remains statistically significant at the 1% level. What is more, the coefficient on Vacuum 2 remains indistinguishable from zero, and the p-value for whether the coefficient on Vacuum 2 is larger than that on Vacuum 1 is .92.

In sum, this analysis shows that, together, dynamic spillovers, cumulative victimization, and insecurity can explain away the extraordinary rise of the Raia in the second vacuum compared to the first, yet, as Column (2) has shown, this difference is *entirely* driven by the location of the rise in insecurity caused by the sharp departure of state forces in Vacuum 2, absent in Vacuum 1.

Yet, what remains to be interrogated is whether the rise in participation motivated by the protection of the community in Vacuum 2 is entirely channeled through the communities that, as a result of Vacuum 2, *do* experience in rise in actual insecurity. To examine this question, Panel B, estimates Equation 2 on individual participation and participation by motives, but includes *Vacuum 2 X Insecurity (2010-11)* as a regressor. Column (1) replicates the result that Vacuum 2's effect on participation is entirely channeled through communities that did experience a rise in insecurity in 2010-2011 as benchmark. In Columns (2)–(8), the dependent variables are indicators for individual participation for each participation motive. The analysis in Panel B allows us to conclude that the effect of Vacuum 2 on participation motivated by protection of the community

Table 5: Unbundling the Extraordinary Rise of the Raia: the Role of Community Insecurity

Panel A. Community Insecurity Explains Entirely the Extraordinary Rise of the Raia in Vacuum 2

	(1) Participate	(2) Participate	(3) Participate	(4) Participate	(5) Participate
Vacuum 1 [Sun City Peace]	1.68*	1.86**	1.70*	1.66*	1.86**
	(0.91)	(0.91)	(0.92)	(0.91)	(0.91)
Vacuum 2 [Regimentation]	16.96***	0.46	15.80***	15.53***	0.09
	(2.55)	(0.99)	(2.58)	(2.48)	(1.07)
Vacuum 2 X Insecurity (2010-11)		20.54***			19.01***
		(2.71)			(2.74)
Vacuum 2 X Past Participation (2003-05)			10.91**		6.63
			(4.48)		(4.64)
Vacuum 2 X Stock of Victimization				7.43***	4.82*
				(2.63)	(2.70)
Observations	15,106	13,982	15,106	15,106	13,982
R-squared	0.19	0.21	0.19	0.19	0.21
Pre-Vacuum 1 Shabunda	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:					
Resp. & Village	0.00	0.64	0.00	0.00	0.94
Resp. & Village & Chiefdom-post Vacuum	0.00	0.38	0.00	0.00	0.87
Resp. & Village & Chiefdom-year	0.01	0.92	0.01	0.01	0.99
P-value: Vacuum 2 < Vacuum 1	0.00	0.86	0.00	0.00	0.92

Notes: Panel A presents the estimates of Equation 2 using the core sample, in which we have added controls $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}$, where F_{ijt} is one of the following: (i) an indicator whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village (Insecurity, indexed by j), (ii) an indicator whether the respondent participated a militia village chapter during the first state vacuum induced by Sun-city peace agreement (Past participation, indexed by ij), and (iii) number of household-level FDLR attacks in the past (indexed by ijt). Column 5 includes all three controls in the same regression. The dependent variable is (in decimal digits) an indicator for whether the respondent of the household survey was participating in a militia village chapter in that year. All regressions control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the village-level and individual-level. Table notes below the regression coefficients report the p-values for the coefficients of Vacuum 2, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. In the last row, we compute p-values of rejecting the null hypothesis that the coefficient of Vacuum 2 is smaller than that of Vacuum 1. Table A.15 replicates Panel A by including the extra village sample from North Kivu and the extra household sample from South Kivu.

Panel B. Community Insecurity Also Entirely Explains the Rise in Raia Participation Motivations to Protect the Community

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.86**	0.45	0.01	0.16	0.23	0.45*	0.11	0.48
	(0.91)	(0.32)	(0.49)	(0.12)	(0.17)	(0.27)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	0.46	-0.06	-0.25	0.03	0.10**	0.09*	0.77	-0.01
	(0.99)	(0.14)	(0.35)	(0.02)	(0.04)	(0.05)	(0.82)	(0.12)
Vacuum 2 X Insecurity (2010-11)	20.54***	2.83***	12.39***	0.98*	1.96***	-0.10	0.72	1.51***
	(2.71)	(0.75)	(1.96)	(0.53)	(0.69)	(0.06)	(0.98)	(0.54)
Observations	13,982	13,982	13,982	13,982	13,982	13,982	13,982	13,982
R-squared	0.21	0.09	0.15	0.15	0.09	0.07	0.07	0.08
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.64	0.68	0.48	0.20	0.01	0.06	0.35	0.94
Resp. & Village & Chiefdom-post Vacuum	0.38	0.68	0.34	0.00	0.00	0.00	0.02	0.83
Resp. & Village & Chiefdom-year	0.92	0.90	0.93	0.93	0.85	0.13	0.07	0.98
P-value: Vacuum 2 X Insecurity, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.07	0.01	0.10	0.46	0.01
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Resp. & Village & Chiefdom-year	0.10	0.02	0.12	0.19	0.17	0.09	0.19	0.09

Notes: Panel B presents the estimates of Equation 2 using the core sample, in which we have also added as a control, the following indicator: $\mathbf{1}[V2_{jt} = 1] \times F_j$, where F_j is an indicator taking value one if FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j. The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions include controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. Table A.16 replicates Panel B by including extra household sample from South Kivu.

is also *entirely* driven by the communities that experience a rise in insecurity.

Panel B also presents the last puzzle to provide a coherent explanation for the social origins of the Raia. Intriguingly, the communities that, as a result of the Regimentation, experience a sudden rise in insecurity also see a disproportionate increase in Raia participation due to *status concerns* and *social pressure*, and the rise in participation due to these motives is almost entirely driven by communities that experience a rise in insecurity. How is social pressure and status, extrinsic social motivations, at all related to the desire to protect the community? As the following section suggest, this differential rise reflects the activation of community institutions in response to the collective action problem of providing security when the value of providing security has skyrocketed.[27]

7 Community Mechanisms for the Response to Insecurity

The previous section has presented evidence that the spectacular rise of the Raia in 2011 can be explained only by the spatial pattern of insecurity created by the Regimentation policy. At the same time, when examining the motivations of the villagers who joined its rise, alongside private motivations and intrinsic social motivations to protect the community, a significant share responded to the insecurity by joining because they were socially pressured or for status. In this section we examine the role of community institutions in inducing pressure and status concerns, but also other social motivations, to solve the collective action problem of providing security.

To empirically analyze the activation of community institutions in the rise of the Raia, we focus on community "sensitization" campaigns. Campaigns can be of two types. On the one hand, public sensitization campaigns are regular communal gatherings where the customary leaders communicate with the community, often to bring the attention to challenges, or to uphold community norms to navigate particular collective action problems, commonly referred to as mobilization sensitization campaigns.[28] Mobilization sensitization campaigns are sometimes initiated by militia themselves and are announced as such, and sometimes are the initiative of the chief and are also announced and known to be as such, but both generally rely on the community's

---

[27]Columns (2) and (8) show that the communities experiencing a rise in insecurity as a result of the Regimentation also experience a deferentially larger rise in participation motivated by revenge and private protection. Yet, Table A.17 further shows that this rise cannot be explained by the higher concentration of victimized communities among those that experience a rise in insecurity.

[28]Figure B.12 presents an example of a public recruitment campaign by a militia in eastern DRC, taken in 2013.

existing mechanisms and leadership. On the other hand, private sensitization through networks is also a common way for armed groups, especially foreign-led and thus who lack the legitimacy to organize public meetings to call for people to join them, to obtain recruits. Enrollment into militias in the rural communities is channeled through either public or private campaigns, where public campaigns are the activation of community institutions.

We gathered information, for each militia chapter episode and for each year, on whether there were recruitment related sensitization campaigns, whether those were public and/or private, and whether those were directly *initiated* by the chief. While the actual initiator might sometimes be hard to ascertain with certainty (it could be that in some cases the group asks the chief to pretend that the chief initiated the campaign), the data collection techniques we have developed, based on one week of building trust, allow us to be confident whether the chief really voluntarily initiated a recruitment related sensitization campaign. Table A.18 shows that militia chapters, especially those that are formed in the village, draw on recruitment campaigns during their governance episode. Militia chapters formed in the village are the only type of armed group chapter whose recruitment campaigns are directly initiated by the chief himself. They are also more likely to rely on public meetings. Militia chapters formed in the village rely on public or chief-initiated campaigns in 40% of their years. This contrasts with chapters formed outside, who do so only in 10%. Figures B.13 shows the distribution of public and chief-initiated campaigns in the sample, as well as over time across communities. There are 142 public and 25 chief-initiated campaigns. In what follows, we focus on public campaigns because, as shown in Figure B.13, there are only 25 chief-initiated campaigns, and public campaigns are a proxy, as just discussed, for community initiative (as opposed to recruitment by foreign-led groups which tends to be carried out secretly).

Using these data, we now examine the role of sensitization campaigns in the rise of the Raia and in the type of motivations that the vacuum unleashed. Our analysis proceeds in three steps: we first analyze whether the state vacuum and in particular the insecurity it created, caused a rise in sensitization campaigns, which would be implied by these campaigns being a response to the collective action problem of providing security. We then, examine whether the rise in the Raia participation is in part channeled through the communities that do have those campaigns. And, finally, we analyze what types of motivations are channeled through those campaigns in response to the Regimentation-induced vacuum.

First, we analyze whether Vacuum 2 caused a rise in recruitment-related sensitization cam-

paigns. Table 6 presents the analysis.[29] In Column (1), we estimate Equation 2 where the dependent variable is an indicator for whether there is a public campaign. The coefficient on Vacuum 2 is large (8.8%) and significant; for Vacuum 1 it is zero and not significant at any conventional level.[30] Column (2) shows that this rise is entirely concentrated in places that have insecurity, consistent with those campaigns being a response to community insecurity. Thus, consistent with Vacuum 2 creating a public goods problem, it led to a rise in sensitization campaigns; consistent with Vacuum 1 not creating a public goods problem, it did not cause that rise.

Second, we analyze whether the rise in individual participation in the Raia in response to Vacuum 2 is channeled through places that hold such campaigns. Column (3) replicates Equation 2 as benchmark at the level of the individual respondent, and Column (4) includes as a regressor the product of the Vacuum 2 indicator and an indicator for whether there was a recruitment-related public campaign in that year and village, *Vacuum 2 X Campaign*. The coefficient on Vacuum 2 itself in Column (4) is about 69% the magnitude in Column (3), and the coefficient on *Vacuum 2 X Campaign* is large and statistically significant at the 1% level. Therefore, a significant share of the effect of Vacuum 2 on militia village chapter participation (about 31%) is channeled through communities that hold a recruitment-related sensitization meeting, where the participation response is much larger, consistent with community institutions playing at least some role in the Raia's emergence.

Third, we analyze the type of motivations held by the participants who join the rise in the places that do have campaigns vs. those that do not in response to the vacuum. Columns (5)–(11) replicate the analysis in Column (3) but the dependent variables are now, respectively, an indicator for participation for each purported motivation. The coefficient on *Vacuum 2 X Campaign* is positive and statistically significant for status and social pressure, and is also positive and significant for community-protection motivated participation. Regarding community protection, the coefficient on Vacuum 2 remains large (it is about a third of the benchmark coefficient of Column (3) and statistically significant). In contrast, for status and social pressure, the coefficients on Vacuum 2 are either zero and insignificant, or marginally significant and quite small relative to the baseline. Taken together, this provides suggestive evidence that the community institutions are

---

[29]We replicate the following analysis using the 25 chief-initiated campaigns in Table A.20 in the Appendix and the results are similar and somewhat weaker.

[30]Figure B.14 in the Appendix shows the corresponding time series. Both campaigns spike in Shabunda after Vacuum 2, but are unaffected in Vacuum 1, consistent with the paper's thesis that Vacuum 2 engendered community mechanisms for security provision.

Table 6: The Extraordinary Rise of the Raia is in Part Channeled by Communities Responses to Insecurity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
							Social Motivations			Private Motivations	
	Campaign		Participation		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
						Community		Social	Social		Private
	Public	Public	General	General	Revenge	Protection	Status	Pressure	Coercion	Money	Protection
Vacuum 1 [Sun City Peace]	0.51	0.68	1.68*	1.64*	0.45	-0.16	0.17	0.25	0.38	0.11	0.48
	(3.77)	(3.84)	(0.91)	(0.91)	(0.32)	(0.50)	(0.12)	(0.16)	(0.28)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	8.75**	2.07	16.96***	11.62***	1.95***	6.79***	0.05	0.74*	0.02	1.33***	0.90**
	(3.56)	(7.03)	(2.55)	(2.42)	(0.69)	(1.73)	(0.12)	(0.39)	(0.03)	(0.45)	(0.41)
Vacuum 2 X Insecurity		8.26									
		(7.83)									
Vacuum 2 X Public Campaign				31.62***	1.89	17.48**	4.65*	5.79**	-0.07	0.21	2.00
				(10.35)	(1.76)	(7.25)	(2.65)	(2.67)	(0.10)	(1.72)	(1.99)
Observations	2,454	2,284	15,106	14,855	14,855	14,855	14,855	14,855	14,855	14,855	14,855
R-squared	0.26	0.26	0.19	0.23	0.09	0.16	0.17	0.10	0.06	0.07	0.08
Pre-Vacuum 1 Shabunda	23.91	23.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda	2.17	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:											
Resp. & Village	0.02	0.77	0.00	0.00	0.01	0.00	0.70	0.06	0.55	0.00	0.03
Resp. & Village & Chiefdom-post Vacuum	0.00	0.63	0.00	0.00	0.00	0.00	0.02	0.00	0.14	0.00	0.00
Resp. & Village & Chiefdom-year	0.11	0.64	0.01	0.02	0.00	0.03	0.61	0.03	0.44	0.07	0.00
P-value: Vacuum 2 X Insecurity/Campaign, Clustered at:											
Resp. & Village		0.29		0.00	0.28	0.02	0.08	0.03	0.47	0.90	0.32
Resp. & Village & Chiefdom-post Vacuum		0.09		0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00
Resp. & Village & Chiefdom-year		0.16		0.00	0.01	0.00	0.00	0.00	0.29	0.78	0.02

Notes: This table presents the estimates of Equation 2 using the core sample. In Column 2 and Column 4–11, we have also added as a control, the following indicator: $\mathbf{1}[V2_{jt} = 1] \times F_{jt}$, where F_{jt} is one of the following indicators: (i) whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j (Column 2, Insecurity, indexed by j), and (ii) whether village j in year t has a public campaign (Column 4–11, Campaign, indexed by jt). The dependent variables are (in decimal digits): an indicator for whether the village has a public campaign (Column 1–2), for whether the individual joins a militia village chapter (Column 3–4), for whether they joined it motivated by intrinsic social emotions (Columns 5–6), by extrinsic social incentives (Columns 7–9), or by private motivations (Column 10–11). Column 1–2 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 3–11 control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. Table A.19 replicates the table by including extra village sample from North Kivu (Column 1–2) and extra household sample from South Kivu (Column 3–11). Table A.20 replicates the table by replacing public campaigns with 25 chief-initiated campaigns.

important in channeling the effect of Vacuum 2 by upholding community norms that: a. simply engineer extrinsic social incentives for participating (creating status considerations and inducing social pressure for participating); b. amplify intrinsic social motivations to participate for the protection of the community. Some villagers already feel the desire to protect the community, but the sensitization campaigns amplify/validate those intrinsic social emotions, and also uphold norms creating status and social pressure concerns to participate.

Campaigns are, of course, endogenous too. This is important, because the latter relationship could reflect leaders' priming and inducing social desirability bias in the survey responses, and public meetings are endogenous, hence this analysis could also simply indicate that the public campaigns occur precisely in places with the strongest extrinsic and intrinsic motivations to participate. While this is possible, it would however be more natural to expect these public meetings to be called precisely in the places that have a collective action problem to solve in the first place, that is, where individual motivations are the weakest to begin with, not the largest.[31]

Overall, this suggests that, by upholding norms and hierarchies of the community, community institutions were able to respond to the public goods problem of insecurity created by the Regimentation, and engineered the creation of extrinsic motives of status and social pressure to enhance participation into the village militia chapters, complementing the already-existing motivations. While previous sections had shown that the rise in insecurity caused by the Regimentation explains away entirely why the rise of the Raia was so extraordinarily large in 2011 compared to 2004, such extraordinary response to insecurity is only in part (31%) explained by community institutions while the rest are existing individual motivations that align individual incentives with the community public good.

8   Conclusion

Analyzing the critical juncture of the Outraged Citizens in 2011 in the Democratic Republic of the Congo in "real time" (Callen et al., 2023) as a proof of concept, we provide evidence for the role of community rationality in the emergence and growth of nonstate armed actors. Using both

---

[31]Complementing this analysis, Table A.21 breaks down the effect of the campaigns by whether the household was victimized. It shows that public campaigns channel the rise in participation among victims that is associated to social pressure, while campaigns channel the rise in participation among non victims associated with status, consistent with community institutions inducing social pressure on the victimized to increase participation.

self-reported motivations and a revealed preference approach, we documented that community-oriented social motivations are the most prevalent explanation for the rise of militia chapters. Using data on the type of recruitment campaigns and self-reported motivations, we documented that village leaders play an important role in engineering extrinsic social motivations such as status and social pressure and in amplifying pre-existing bottom-up intrinsic motivations such as the desire to protect the community.

Joining a militia constitutes an important life decision for individuals who experience the extreme violence of civil war. We show that, while individual gain to joining a militia is limited, membership in those organizations is motivated by community-oriented motivations similar to those that scholars typically attribute to social movements, protests, and political movements. This is consistent with the qualitative empirical literature on the eastern Congolese recent history, which has documented the importance of community for armed mobilisation (including for the case of the Raia (Vogel, 2014)), as well as accounts of the lives of Congolese ex-combatants (Stearns, 2011; Brabant, 2016; Dunia Butinda, 2021). It is also consistent with a large body of literature in the social sciences that has explored political, social and emotional motivations for armed mobilisation, as well as novels that describe the personal process that leads to taking up arms (Hemingway, 1995; Guevara and Ortiz, 1969; Barea, 1984; Malraux, 1938; Kourouma, 2000).

Community militias are not unique to this historical episode. This event mirrors a phenomenon observed across the contemporary world: The proliferation of vigilante groups and community militias who effectively replace the state and, often, resolve security issues more effectively than state security forces. In 2012–13, a self-defense movement led by Jose Manuel Mireles Valverde was similarly able to chase the Knights Templar Cartel from large parts of the state of *Michoacán*, in Mexico. In a documentary, the late Dr. José Manuel Mireles Valverde, one of the leaders of the Autodefensas movement in Michoacán, Mexico, explained that every single one of the members of his armed self-defence militia has lost a relative or close friend to the drug cartels. That experience, he explains, was the foundation of their commitment (Heineman, 2015). In a documentary on Afghanistan (Knappenberger, 2021), Hilaludin, the son of Malik Jalaludin, a tribal elder of North Waziristan in Pakistan, confesses *"I had lots of friends in the village. I have seen many of them getting amputated because of the [US drone] bombing. Their bodies would be covered in blood, they had no hands nor feet […] I will not forget this suffering even if I live 100 years. We will take our revenge, God willing."* His father then explains: *"You see how their mind*

is full of hatred now. You create terrorists [...] They say that 'If death is our only fate, we would rather die fighting back.' So, they join the Taliban." The unfolding violent conflicts around the world today involving militias make it urgent to make progress on this question.

References

Arjona, Ana, *Rebelocracy : social order in the Colombian civil war* 2017.

__ , **Nelson Kasfir, and Zachariah Cherian Mampilly**, *Rebel governance in civil war*, Cambridge University Press, 2014.

Bagayoko, Niagale, Eboe Hutchful, and Robin Luckham, "Hybrid security governance in Africa: rethinking the foundations of security, justice and legitimate public authority," *Conflict, Security & Development*, 2016, *16* (1), 1–32.

Balcells, Laia, "The Consequences of Victimization on Political Identities: Evidence from Spain," *Politics & Society*, 2012, *40* (3), 311–347.

__ , *Rivalry and Revenge The Politics of Violence during Civil War*, Cambridge: Cambridge University Press, 4 2017.

Barea, Arturo, *The Forging of a Rebel*, London : Fontana, 1984.

Borusyak, Kirill, Xavier Jaravel, and Jann Spiess, "Revisiting Event Study Designs: Robust and Efficient Estimation," *Working paper*, 2020, *146*, 102518.

Bowles, Samuel, "Group competition, reproductive leveling, and the evolution of human altruism," *science*, 2006, *314* (5805), 1569–1572.

__ **and Herbert Gintis**, *A Cooperative Species: Human Reciprocity and Its Evolution*, Princeton University Press, 2011.

Brabant, Justine, *" Qu'on nous laisse combattre, et la guerre finira": avec les combattants du Kivu*, La Découverte, 2016.

Callen, Michael, Jonathan L Weigel, and Noam Yuchtman, "Experiments about Institutions," Working Paper 31964, National Bureau of Economic Research December 2023.

Cantoni, Davide, David Y Yang, Noam Yuchtman, and Y Jane Zhang, "Protests as Strategic Games: Experimental Evidence from Hong Kong's Antiauthoritarian Movement*," *The Quarterly Journal of Economics*, 01 2019, *134* (2), 1021–1077.

_ , **Louis-Jonas Heizlsperger, David Y. Yang, Noam Yuchtman, and Y. Jane Zhang**, "The fundamental determinants of protest participation: Evidence from Hong Kong's antiauthoritarian movement," *Journal of Public Economics*, 2022, *211*, 104667.

Carneiro, Robert L., "A Theory of the Origin of the State," *Science*, August 1970, *169* (3947), 733–738.

Cerina, Roberto, Christopher Barrie, Neil Ketchley, and Aaron Y Zelin, "Explaining Recruitment to Extremism: A Bayesian Hierarchical Case–Control Approach," *Political Analysis*, 2023, pp. 1–19.

Collier, Paul and Anke Hoeffler, "Greed and grievance in civil war," *Oxford Economic Papers*, 2004, *56* (4), 563–595.

de la Sierra, Raul Sanchez, "On the origins of the state: Stationary bandits and taxation in Eastern Congo," *Journal of Political Economy*, 1 2020, *128* (1), 32–74.

Dunia Butinda, Lewis, *D'Enfant de Walikale a la Prise de l'Arme: Un Voyage Aller-Retour*, Unpublished Autobiography, 2021.

Frowd, Philippe M, "The Politics of Non-State Security Provision in Burkina Faso: Koglweogo Self-Defence Groups' Ambiguous Pursuit of Recognition," *African Affairs*, 2022, *121* (482), 109–130.

Fryer, Roland and Steven Levitt, "Hatred and Profits: Under the Hood of the Ku Klux Klan," *Quarterly Journal of Economics*, 2012, *127* (4), 1883–1925.

Gáfaro, Margarita, Ana María Ibáñez, and Patricia Justino, "Community organization and armed group behaviour: Evidence from Colombia," Technical Report, WIDER Working Paper 2022.

Geenen, Sara, "Who Seeks, Finds: How Artisanal Miners and Traders Benefit from Gold in the Eastern Democratic Republic of Congo," *European Journal of Development Research*, June 2013, *25*, 197 – 212.

González, Felipe, "Collective action in networks: Evidence from the Chilean student movement," *Journal of Public Economics*, 2020, *188*, 104220.

Gould, Roger V., "Multiple Networks and Mobilization in the Paris Commune, 1871," *American Sociological Review*, 1991, *56* (6), 716–729.

— , "Collective Action and Network Structure," *American Sociological Review*, 1993, *58* (2), 182–96.

— , *Insurgent identities : class, community, and protest in Paris from 1848 to the Commune*, University of Chicago Press, 1995.

Gould, Roger V, *Insurgent identities: Class, community, and protest in Paris from 1848 to the Commune*, University of Chicago Press, 1995.

Greif, Avner, "Contract Enforceability and Economic Institutions in Early Trade: the Maghribi Traders' Coalition," *American Economic Review*, June 1993, *83* (3), 525–48.

Guevara, Che and Victoria Ortiz, *Reminiscences of the Cuban Revolutionary War: Translated by Victoria Ortiz*, Penguin, 1969.

Gurr, Ted Robert, *Why Men Rebel* 1970.

Gutiérrez-Sanín, Francisco, Ana Arjona, Nelson Kasfir, and Zachariah Mampilly, "Organization and governance: The evolution of urban militias in Medellín, Colombia," *Rebel governance in civil war*, 2015, pp. 246–264.

Heald, Suzette, "State, law, and vigilantism in northern Tanzania," *African Affairs*, 2006, *105* (419), 265–283.

Heineman, Matthew, "Cartel Land, Documentary," 2015.

Heldring, Leander, "The Origins of Violence in Rwanda," *The Review of Economic Studies*, 06 2020, *88* (2), 730–763.

Hemingway, Ernest, "For Whom the Bell Tolls. 1940," *New York: Scribner's*, 1995.

Hoffmann, Kasper, "Myths set in motion: The moral economy of mai mai governance," in Ana Arjona, ed., *Rebel Governance in Civil War*, Cambridge: Cambridge University Press, 2015.

Humphreys, Macartan and Jeremy M. Weinstein, "Who Fights? The Determinants of Participation in Civil War," *American Journal of Political Science*, 4 2008, *52* (2), 436–455.

_ , **Raúl Sánchez de la Sierra, and Peter Van der Windt**, "Fishing, Commitment, and Communication: A Proposal for Comprehensive Nonbinding Research Registration," *Political Analysis*, 2013, *21* (1), 1–20.

Jourdan, Luca, "Mayi-Mayi: young rebels in Kivu, DRC," *Africa Development*, 2011, *36* (3-4), 89–112.

Kasfir, Nelson, Georg Frerks, and Niels Terpstra, "Introduction: Armed Groups and Multi-layered Governance," *Civil Wars*, 7 2017, *19* (3), 257–278.

Kisangani, Emizet F., *Civil wars in the Democratic Republic of Congo, 1960-2010*, Boulder, Colorado: Lynne Rienner Publishers, 2012.

Knappenberger, Brian, "Turning Point: 9/11 and the War on Terror, Documentary," 2021.

Kourouma, Ahmadou, "Allah n'est pas obligé," *Paris: Éditions du Seuil*, 2000.

Lowes, Sara and Eduardo Montero, "Concessions, violence, and indirect rule: Evidence from the congo free state," Technical Report, National Bureau of Economic Research 2020.

Lwigulira, Burume Louis, *Histoire et culture des Bashi au Zäire:" six derniers règnes" antérieurs à 1980*, Centre Protestant d'editions et diffusion, 1993.

Malraux, André, *Man's hope*, New Yor: Random Hous, 1938.

Mampilly, Zachariah Cherian, *Rebel rulers insurgent governance and civilian life during war*, Cornell University Press, 2011.

Marchais, Gauthier, "He who touches the weapon becomes other: a study of participation in armed groups in South Kivu, Democratic Republic of the Congo," *PhD thesis*, 2016.

Mayshar, Joram, Omer Moav, and Zvika Neeman, "Transparency, Appropriability and the Early State," *CEPR Discussion Paper*, 2011, *8548*.

McDoom, Omar Shahabudin, "Who killed in Rwanda's genocide? Micro-space, social influence and individual participation in intergroup violence," *Journal of Peace Research*, 2013, *50* (4), 453–467.

Northrup, David, "Beyond the bend in the river: African labor in eastern Zaire, 1865-1940," 1988.

Olson, Mancur, *The Logic of Collective Action: Public Goods and the Theory of Groups, Second Printing with a New Preface and Appendix*, Harvard University Press, 1971.

Østby, Gudrun, "Inequality and political violence: A review of the literature," *International Area Studies Review*, 2013, *16* (2), 206–231.

Ostrom, Elinor, "COPING WITH TRAGEDIES OF THE COMMONS," *Annual Review of Political Science*, 1999, *2* (1), 493–535.

Parkinson, Sarah Elizabeth, "Organizing Rebellion: Rethinking High-Risk Mobilization and Social Networks in War," *American Political Science Review*, 2013, *107* (3), 418–432.

Petersen, Roger Dale, *Resistance and rebellion : lessons from Eastern Europe*, New York: Cambridge University Press, 2001.

Pratten, David and Atreyee Sen, *Introduction: Global vigilantes: perspectives on justice and violence*, Hurst Publishers, 2007.

Richards, Paul, *Fighting for the rain forest : war, youth & resources in Sierra Leone*, Heinemann, 1996.

Sánchez de la Sierra, Raúl, "On the Origins of the State: Stationary Bandits and Taxation in Eastern Congo," *Journal of Political Economy*, 2020, *128* (1), 32–74.

Sanín, Francisco Gutiérrez and Elisabeth Jean Wood, "Ideology in civil war: Instrumental adoption and beyond," *Journal of Peace Research*, 2014, *51* (2), 213–226.

Scacco, Alexandra, *Anatomy of a Riot Participation in Ethnic Violence in Nigeria* 2016.

Shesterinina, Anastasia, *Mobilizing in uncertainty: collective identities and war in Abkhazia*, Cornell University Press, 2021.

Staniland, Paul, "Organizing insurgency: Networks, resources, and rebellion in South Asia," *International Security*, 2012, *37* (1), 142–177.

_ , "States, insurgents, and wartime political orders," *Perspectives on politics*, 2012, *10* (2), 243–264.

_ , *Networks of rebellion : explaining insurgent cohesion and collapse*, Ithaca and London: Cornell University Press, 2014.

_ , *Ordering violence: Explaining armed group-state relations from conflict to cooperation*, Cornell University Press, 2021.

Stearns, J, "Dancing in the glory of monsters: The collapse of the Congo and the Great War of Africa (Reprint ed.)," *New York, NY: PublicAffairs*, 2011.

Stearns, Jason and Raphael Botiveau, "Repenser la crise au Kivu: Mobilisation armee et logique du gouvernement de transition," *Politique Africaine*, 2013, *1* (129), 204.

_ **and Raphaël Botiveau**, "Repenser la crise au Kivu : mobilisation armée et logique du gouvernement de transition," *Politique africaine*, 01 2013, *129*, 23.

Stearns, Jason K, "Raia Mutomboki: The Flawed Peace Process and the Birth of an Armed Franchise," Technical Report, The Usalama Project, Understanding armed groups. The Rift Valley Institute, London 2013.

Stys, Patrycja, Judith Verweijen, Papy Muzuri, Samuel Muhindo, Christoph Vogel, and Johan H Koskinen, "Brokering between (not so) overt and (not so) covert networks in conflict zones," *Global Crime*, 2020, *21* (1), 74–110.

United Nations Group of Experts, "Final report of the Group of Experts on the Democratic Republic of the Congo," Technical Report, United Nations May 2016.

Vansina, Jan, *Paths in the Rainforests Toward a History of Political Tradition in Equatorial Africa*, Madison, Wisconsin: University of Wisconsin Press, 1990.

Verweijen, Judith, "Stable Instability: Political Settlements and Armed Groups in the Congo," *Rift Valley Institute (RVI)*, 2016.

Viterna, Jocelyn, *Women in War: The Micro-processes of Mobilization in El Salvador*, Oxford University Press, 11 2013.

Viterna, Jocelyn S., "Pulled, pushed, and persuaded: Explaining women's mobilization into the Salvadoran guerrilla army," *American Journal of Sociology*, 7 2006, *112* (1), 1–45.

Vlassenroot, Koen and Timothy Raeymaekers, *Conflict and social transformation in Eastern DR Congo*, Academia Press, 2004.

Vogel, Christoph, "Contested statehood, security dilemmas and militia politics: the rise and transformation of Raïa Mutomboki in eastern DRC," in S; Verpoorten M Reyntjens, Filip; Vandeginste, ed., *L'Afrique des Grands Lacs. Annuaire.*, Paris: L'Harmattan, 2014.

__ **and Jason K Stearns**, "Kivu's Intractable Security Conundrum, Revisited," *African Affairs*, 08 2018, *117* (469), 695–707.

__ **, Giovanni Salvaggio, Pierre Boisselet, and Jason K Stearns**, "The Landscape of Armed Groups in Eastern Congo: Missed Opportunities, P-rotracted Insecurity and Self-Fulfilling prophecies," Technical Report, Kivu Security Tracker - Congo Research Group - NYU Center on International Cooperation, New York 2021.

Weinstein, Jeremy, *Inside Rebellion*, Cambridge University Press, 2007.

Wittfogel, Karl A., "Oriental Despotism," *Sociologus*, 1953, *3* (2), 96–108.

Wood, Elisabeth Jean, *Insurgent collective action and civil war in El Salvador*, Cambridge University Press, 2003.

Online Appendix

A   Appendix Tables

Table A.1: Classification of Armed Organizations in the Sample

Name in Dataset	Classification	Comments
Alliance des Forces Démocratiques pour la Libération du Congo (AFDL)	Foreign	The AFDL was a a politico-military coalition supported by Rwanda, Uganda Burundi and Congolese dissidents, widely perceived as a foreign led
Alliance of Democratic Forces (ADF) - Nalu	Foreign	An armed group that originated in Uganda and operates in Congolese territory
Batiri	Popular Militia	Mayi-Mayi militia from Masisi driven by the Hunde
Bwende	Popular Militia	Mayi-Mayi militia
Combattants	Popular Militia	Militia from the Congolese Hutu communities
Congolese Army (Before 1996: Forces Armées Zairoises. After 2004: Forces Armées de la République Démocratique du Congo)	Congolese state	These are the Congolese Armed forces
Congolese State Agencies: Police, Intelligence Agency (Agence Nationale des Renseignement, ANR)	Congolese state	By definition
Congres National Pour la Defense du Peuple (CNDP)	Foreign	Armed group supported by Rwanda
Desertors	Ambiguous	Armed actors who deserted the Congolese army. This is recorded only in one episode of village control, in the district of Beni in 1998. We coded it as foreign-led, but this has no impact on any result.
Force vive	Popular Militia	Civil Society group
Foreigners	Foreign	This was only reported in one episode of village control, in one village of the district of Rutshuru between 2012 and 2013, and one attack in the same district in 2012. While the origin is ambiguous, given the historical context, this is likely to be the M23 (See M23).
Front de Libération du Rwanda	Foreign	The FDLR was created in 2000 bringing together multiple Rwandan Hutu militias, including the Interahamwe
Front de Libération du Rwanda - Tanganyika	Foreign	The FDLR split into various factions, Tanganyika is one of them
Hunde combattants	Popular Militia	Mayi-Mayi militia, recorded attacking two villages in 1993 in the district of Masisi. The Hunde is an "ethnic" group originating from North Kivu
Hutu combattants	Foreign	Hutu fighters, most likely FDLR otherwise would be Nyatura or Magrivi
Hutu or Magrivi	Popular Militia	Congolese Hutu militia
Hutus	Ambiguous	These are only recorded in three attack episodes, taking place in three villages of the district of Masisi in 1993 and 1996. It is likely that those in 1993 are a Congolese militia called Magrivi and that that in 1996 may be the Interahamwe (See Interahamwe)
Interahamwe	Foreign	The Interahamwe were Rwandan Hutu militia who took part in the Rwandan genocide
Katanguese	Popular Militia	Combatants from Katanga
Katanguese military	Congolese state	By definition
Katuku	Popular Militia	The Katuku are a local self-defense militia created in the 1990's in Walikale
Local defense	Popular Militia	These are decentralized, village-level militia during the Second Congo War, initiated by the RCD
M23	Foreign	Tutsi-led group armed group reportedly supported by Rwanda (March 23 mouvement)
Magrivi	Popular Militia	Congolese Hutu militia
Maimai sirimukoko d'isangi	Popular Militia	Mayi-Mayi militia
Mayi-Mayi	Popular Militia	Mayi-Mayi is a term broadly used to indicate community based popular militia
Mayi-Mayi Geremie	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Janvier (Alliance patriotique pour un Congo libre et souverain, APCLS)	Popular Militia	Mayi-Mayi militia called APCLS led by Janvier Karairi
Mayi-Mayi kabuchibuchi	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Kachigumka	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Kaganga	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Kasindiens	Popular Militia	Mayi-Mayi militia led by Vita Kambala
Mayi-Mayi Katuko	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Kifuafua	Popular Militia	Mayi-Mayi militia from Masisi
Mayi-Mayi Kirikichwa	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Lafontaine	Popular Militia	Mayi-Mayi militia from Lubero
Mayi-Mayi Lulwako	Popular Militia	Mayi-Mayi militia from Ituri
Mayi-Mayi Mudohu	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Mze	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Ngilima	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Nyakiliba	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Padiri	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Sam	Popular Militia	Mayi-Mayi militia
Mayi-Mayi Simba	Popular Militia	Mayi-Mayi militia from ituri, under General Morgan
Mayi-Mayi Sirimukogo	Popular Militia	Mayi-Mayi militia from Isangi
Mayi-Mayi Surambaya	Popular Militia	Mayi-Mayi militia
Mayi-Mayi-KAG	Popular Militia	Mayi-Mayi militia
Mayi-Mayi-WEM	Popular Militia	Mayi-Mayi militia
Mbairwe	Popular Militia	Mayi-Mayi militia
Mbwaire	Popular Militia	Mayi-Mayi militia
Mercenaries of the AFDL which we call Banyamulenge	Foreign	See AFDL
Mongore	Popular Militia	Other name for Local Defense, encouraged by the Rassemblement Congolais Pour la Democratie but village initiated mobilization (RCD)
MONUC/MONUSCO	Congolese state	UN Mission in the DR Congo
Mouvement de Libération du Congo (MLC) - Jean Pierre Bemba	Foreign	Large armed group led by JP Bemba and supported by foreign powers
Mudundu 40	Popular Militia	Armed group formed in Bukavu and Walungu
Nduma Defense of Congo (NDC) - Sheka	Popular Militia	Armed group born in Walikale
Nyatura	Popular Militia	A local militia of Congolese Hutu
Patriotes Resistants Congolais (PARECO)	Popular Militia	Comprised of a mixture of Mai Mai and Hutu (Congolese and Rwandan)
Police d'intervention rapide	Congolese state	Rapid Intervention Police
Raia Mutomboki	Popular Militia	The Raia Mutomboki emerged in Shabunda among lega populations
Raia Mutomboki - Eyadema	Popular Militia	Largest faction of the Raia Mutomboki in 2013
Rassemblement Congolais Pour la Democratie (RCD)	Foreign	Large rebel group during the second Congo war, supported by Rwanda and Uganda
Rassemblement Congolais Pour la Democratie (RCD) - Goma	Foreign	The RCD split into a Ugandan-supported (Kisangani) and a Rwandan-supported faction (Goma)
Rassemblement Congolais Pour la Democratie (RCD) - Kisangani	Foreign	The RCD split into a Ugandan-led (Kisangani) and a Rwandan-led faction (Goma)
Rassemblement Congolais Pour la Democratie (RCD) - Mon	Foreign	The RCD split into a Ugandan-supported (Kisangani) and a Rwandan-supported faction (Goma)
Rassemblement congolais pour la Democratie-Kisangani-Mouvement de liberation (RCD-K-ML)	Foreign	Rebel movement backed by Uganda
Rondo	Popular Militia	Term used for neighborhood autodefense groups
Rwandan Army (Rwandan Patriotic Front)	Foreign	The Rwandan national army
Rwandese	Foreign	Unidentified Rwandese armed men
Thief	Other	By definition
Ugandan military	Foreign	By definition
Unidentified Congolese armed group	Popular Militia	By definition
Unidentified Rwandan armed group	Foreign	By definition
Unknown people	Unknown	By definition
Village autodefense group with no other name	Popular Militia	By definition
Villagers	Popular Militia	Term used for neighborhood autodefense groups

Notes: The sources used in consolidating this list of names are the module of attacks experienced by the household, organizations to which the individual has participated, and organizations that ever controlled the village. The classification follows the existing qualitative research on the DRC (Marchais, 2016; Sánchez de la Sierra, 2020b; Vogel, 2014; Vogel et al., 2021; Stearns, 2013; Vogel and Stearns, 2018). The two exceptions are: a. the Nyatura, a Congolese popular militia that merged in Masisi, a land predominantly inhabited by Congolese Hutu (which we classify as militia) and b. the "local defense," which are Congolese village militias that were nonetheless encouraged through the foreign-led armed group Rassemblements Congolais pour la Democratie (which we also classify as militia).

Table A.2: Descriptives of Participants' Concurrent Occupations

	Participants			
	Militia from Village			Militia from
	All	Raia	Non-Raia	Outside
# Participants	245	134	111	30
One year before joining (t − 1)				
Employed	0.69	0.71	0.68	0.47
In Mining Sector	0.16	0.18	0.12	0.13
In Agricultural Sector	0.42	0.38	0.47	0.30***
As a Civil Servant	0.12	0.15	0.08	0.03***
The year when joining (t)				
Employed	0.71	0.70	0.72	0.38
In Mining Sector	0.17	0.22	0.10	0.10
In Agricultural Sector	0.41	0.34	0.50	0.24
As a Civil Servant	0.13	0.14	0.12	0.03
One year after joining (t + 1)				
Employed	0.72	0.72	0.73***	0.32***
In Mining Sector	0.16	0.22	0.09	0.08
In Agricultural Sector	0.41	0.34	0.51	0.20
As a Civil Servant	0.14	0.15	0.13	0.04***
Two years after joining (t + 2)				
Employed	0.75	0.89	0.74	0.43
In Mining Sector	0.11	0.56	0.07	0.07***
In Agricultural Sector	0.53	0.22	0.56***	0.32
As a Civil Servant	0.11	0.11	0.11***	0.04***

Notes: We report the occupations for participants around the time of participating in the militia village chapter, using the core sample from South Kivu. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. We indicate the difference compared to Column 2 (P-value: *** 0.01, ** 0.05, * 0.10), computed after including year FE, and clustered two-way at the individual respondent and the village*year level.

Table A.3: Quantifying the Security Provided by Militias

	(1)	(2)	(3)	(4)	(5)	(6)
			Violent attack on		Sexual violence on	
	Village	Village	Household	Household	Household	Household
Presence of Militia Village Chapter	0.01		-0.07		-0.26**	
	(0.03)		(0.65)		(0.12)	
Participation in Militia Village Chapter		-0.00		-5.73**		-1.39**
		(0.00)		(2.26)		(0.64)
Observations	53,136	53,124	54,534	70,052	54,534	70,052
R-squared	0.16	1.00	0.12	0.28	0.10	0.19
Control mean	0.09	0.09	2.46	2.39	0.24	0.24

Notes: We estimate:

$$V_{ijt} = \alpha + \gamma I_{ijt}^{Militia} + \alpha_i + \alpha_j + \alpha_t + +\mathbf{X}'_{ijt}\Gamma + \epsilon_{ijt}, \tag{3}$$

where $I_j^{Militia}$ is one of the following indicators: (i) whether there is a militia village chapter present in the village j in year t (Column 1, 3, 5), and (ii) whether individual i participates in militia village chapter in village j in year t (Column 2, 4, 6). We use both the core sample from South Kivu and extra village sample from North Kivu for estimation. The dependent variables are (in decimal digits): Column 1–2, whether the village experienced a violent attack; Column 3–4, whether a household member was violently attacked; Column 5–6, whether a household member experienced sexual violence. Columns 1, 3, and 5 control for individual fixed effects, village fixed effects, year fixed effects, and whether an armed group is stationed in the village. Columns 2, 4, and 6 control for individual fixed effects, village-year fixed effects, and whether the respondent participates in any armed group in general. All regressions include respondent, village, and year fixed effects (P-value: *** 0.01, ** 0.05, * 0.10).

Table A.4: Descriptives of Participants Compared to Non-Participants

	Participants				Non-participants		
	Militia from Village			Militia from	Living in the Same:		
	All	Raia	Non-Raia	Outside	Village	Chiefdom	Territory
# Participants/Individual-Year Obs.	245	134	111	30	899	13824	14947
A: Conflict Background							
Past Victimization by Foreign Armed Group	0.24	0.25	0.23***	0.07	0.09***	0.07***	0.07***
By Congolese Militia	0.03	0.03	0.03*	0.03	0.03	0.02	0.02
Past participation in Militia Village Chapter	0.14	0.26	0.00***	0.03***	0.07***	0.04***	0.04***
In Raia Mutomboki or Mayi-Mayi	0.13	0.24	0.00***	0.00***	0.04***	0.01***	0.01***
In Militia Formed Outside village	0.02	0.03	0.01*	0.03	0.01	0.01	0.01
B: Demographic Characteristics							
In the Family of the Village Chief	0.11	0.10	0.11	0.23***	0.11	0.10	0.10
Age in year t	31.19	33.75	28.10	21.00***	27.04	26.49	26.48
Married in year t	0.14	0.02	0.29***	0.23	0.20**	0.34***	0.35***
C: Productive Capacity in Nonviolent Sector							
Employed in year t-1	0.69	0.71	0.68	0.47	0.56	0.55	0.55
In Mining Sector in year t-1	0.16	0.18	0.12	0.13	0.11	0.10	0.11
In Agricultural Sector in year t-1	0.42	0.38	0.47	0.30***	0.36	0.40*	0.39
As a Civil Servant in year t-1	0.12	0.15	0.08	0.03***	0.09	0.05**	0.06**
Father's Wealth Index	0.16	0.14	0.19	-0.34***	-0.11***	-0.19***	-0.20***
# Plots Owned in year t-1	0.89	0.94	0.82	0.40***	0.55	0.46	0.46*
Farm Animal Index in year t-1	0.27	0.32	0.22	-0.07***	0.02	0.04**	0.04*
Primary Education Complete	0.58	0.58	0.57***	0.63***	0.53	0.50	0.50
Secondary Education Complete	0.20	0.25	0.15	0.13***	0.16	0.14	0.14
D: Average Increase in Future Assets							
# Plots Owned	0.14	0.01	0.30	0.38	0.19*	0.19	0.19
Farm Animal Index	0.15	0.01	0.31	0.40	0.22	0.24	0.23

Notes: We report the descriptives of participants using the core sample from South Kivu. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. We compare participants in militia chapters versus those where respondents do not participate in any militia chapter contemporarily (living in the same village, same chiefdom, or the same territory). We indicate the difference compared to Column 2 (P-value: *** 0.01, ** 0.05, * 0.10), computed after including year FE, and clustered two-way at the individual respondent and the village*year level. For father's wealth index, we use whether respondents reported their fathers are rich, stock of plots at birth, and number of father's wives. For the farm animal index, we use stock of cows, goats, and pigs. In Panel D, we calculate the mean of asset stock after year t and subtract from the asset stock in current year t.

Table A.5: Economic Incentives as Benchmark Using Price Shocks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				Participation					Occupation	
	Militia Village	Militia Village	Militia Village	Militia Outside	Foreign g.	Army	Ag	Mining	Govt	Unemployed
Victimization by foreign g.	3.15**		6.20***	0.71	-0.76	-0.12	-1.86	0.27	4.96*	1.97
	(1.31)		(1.87)	(0.72)	(0.59)	(0.22)	(3.07)	(2.70)	(2.80)	(2.62)
Gold_j x Local Price_t		-0.30***	-0.30***	0.04*	-0.01	0.03	-0.17	0.40***	-0.07	0.06
		(0.10)	(0.10)	(0.03)	(0.01)	(0.03)	(0.13)	(0.13)	(0.07)	(0.13)
Observations	17,576	15,034	15,034	15,034	15,034	15,034	13,829	13,829	13,829	13,829
R-squared	0.59	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Individual FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Village FE	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Village-Year FE	Y	N	N	N	N	N	N	N	N	N
Cluster at Individual	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster at Village-Year	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Control mean	2.33	3.71	3.18	0.90	0.10	0.17	45.10	9.45	5.42	26.01

Notes: We estimate:

$$Part_{ijt} = \alpha + \gamma I_{it}^{Victim} + \gamma^E I_j^m \times P_t^m + \alpha_i + \alpha_j + \alpha_t + \alpha_a + \mathbf{X}'_{it}\Gamma + \epsilon_{ijt}, \tag{4}$$

where I_j^m is an indicator taking value 1 for all years if village j has mineral m deposits and P_t^m is the local price of gold m in year t. We use the core sample for the estimation. I_{it}^{Victim} is an indicator taking value 1 if respondent i reports an attack on the household before year t. We instrument local gold price with world gold price. We include individual, village, year, and age fixed effects and standard errors are clustered two-ways at the individual and the village-year level. Column 1 includes village-year fixed effects. The dependent variables are (in decimal digits): (a) indicators for whether the respondent participates in any armed group, a militia formed in the village, militia formed outside the village, a foreign-led armed group, or Congolese army, respectively, in a given year, and (b) indicators for whether the respondent works in agriculture, mining sector, government office, or unemployed. P-value: *** 0.01, ** 0.05, * 0.10.

Table A.6: Benchmarking Exercise: The Price of Victimization Motives

	Participation in Militia Formed in the Village (%)
Control mean:	
Never experienced an attack on household by foreign group	2.33
Effect of experienced shock:	
An attack on household by foreign group before year t	3.15** (1.31)
Local gold price increased in year t by \$1 per g.	
(Use world gold price as an IV)	-0.30** (0.10)
$\Rightarrow$ One past attack on household by foreign group has	
an equivalent effect of an decrease in local gold price by:	\$10.5 per g.
Daily production of gold miner (Geenen 2013)	1 g
Total number of work days per year (Assumed)	300 d
Tax by local authority (Own data)	45%
$\Rightarrow$ Decrease in yearly income by:	\$1,733
GDP per capita in 2005 in DRC (World Bank)	\$218
$\Rightarrow$ Decrease in yearly income as in GDP per capita:	7.9 times

Notes: We compare the effect of past foreign-led armed group attack on household (Table, A.5, Column 1) to the effect of gold price shock on participation in a militia form in the village (Table A.5, Column 2). Control mean is computed among observations where respondents never experienced an attack by foreign armed groups on household before year t. P-value: *** 0.01, ** 0.05, * 0.10. Figure B.6 presents the world and the local price of gold. One foreign-led armed group attack on the household requires an increase in US\$10.5 in the local price per gram of gold to be undone, in gold villages, equivalent to 1.27 standard deviations, and an increase in 45% of the local price of gold. Second, we estimate the equivalent rise in per capita income outside the armed groups that would be necessary to undo the effect of household victimization by foreign armed groups. We use information on the daily production of gold by a gold miner (Geenen, 2013), our data on gold taxation by local authorities, the GDP per capita of the DRC in that period (in year 2005), and assume miners work 300 days a year. We find that it would take a *permanent* increase in 8 times the yearly per capita income to undo the magnitude of the effect of *one* foreign-led armed group attack. This estimate is based on the assumption that a miner works 300 days a year, and is naturally sensitive to this assumption. To provide further confidence in the economic significance of the role of past victimization, we also calculate a lower bound of this effect, based on a miner working 50 days per year, a generally unlikely low number of years for a miner. In that case, the impact of one foreign-led violent attack on a household member induces an increase in the probability of participation that would require an increase in 1.3 the yearly GDP per capita to undo. The share of gold value that armed groups can tax is small (Sánchez de la Sierra, 2020b), thus, in gold mining villages, the world price of gold passes through down to miners' net income, but has a weak effect on the revenues armed groups can hope to tax. There is also coltan. Coltan is bulky, and thus prone to taxation by armed groups. As a result, the price of coltan does not offer a useful benchmark.

Table A.7: Summary of replication exercise

Main results	Unit of obs.	Replication	Extra NK villages	Extra SK households
Figure 1	Village	Figure B.5	✓	
Table 1, Panel A, B	Village	Table A.8, Panel A, B	✓	
Table 1, Panel C	Household	Table A.8, Panel C	(No motive data)	✓
Table 2, Panel A	Household	N/A	(No motive data)	(No attack data)
Table 2, Panel B	Household	Table A.9	✓	(No attack data)
Table 3, Panel A	Village	Table A.10	✓	
Table 3, Panel B	Household	Table A.11	(No motive data)	✓
Table 4	Household	N/A	(No motive data)	(No attack data)
Table 5, Panel A	Household	Table A.15, Panel A	✓	
		Table A.15, Panel B	✓	✓ (No attack data)
Table 5, Panel B	Household	Table A.16	(No motive data)	✓
Table 6, Column 1–2	Village	Table A.19, Column 1–2	✓	
Table 6, Column 3–11	Household	Table A.19, Column 3–11	(No motive data)	✓

Notes: This table lists the tables in which we conduct replication of the results using all available samples, and indicates what extra samples where included and which ones were missing for each variable.

Table A.8: Communities Supported the Militias (Replication using extra samples)

	Militia from Village			Militia from		
	All	Raia	Non Raia	Outside	Foreign	Army
A. Protection of the Community: # Episodes	134	39	95	134	248	189
Population Perceived Chapter's Security as Effective	0.72	0.95	0.63***	0.29***	0.40***	0.83*
A Chapter Member Attacked Villagers	0.31	0.13	0.39***	0.71***	0.74***	0.13
B. Support from the Community: # Episodes	134	39	95	134	248	189
Some Villagers Opposed the Chapter	0.17	0.05	0.21**	0.24***	0.29***	0.06
Parents Encouraged Their Children to Join the Chapter	0.42	0.63	0.37**	0.16***	0.18***	0.20***
Chief Encouraged the Youth to Join the Chapter	0.47	0.64	0.43**	0.14***	0.19***	0.23***
Chief or Relative is the Chapter's Leader	0.41	0.62	0.32***	0.00***	0.01***	0.01***
Chief was Forced to Support the Chapter	0.26	0.08	0.33***	0.55***	0.72***	0.10
C. Members' Motivations: # Participants	364	243	121	51	39	17
Social Motivations, Intrinsic (Social Emotions)	*0.66*	*0.64*	*0.70*	*0.43****	*0.25*	*0.00*
For Revenge	0.13	0.14	0.10	0.07	0.00	0.00
For Community Protection	0.54	0.50	0.61**	0.36	0.25	0.00
Social Motivations, Extrinsic (Social Incentives)	*0.20*	*0.21*	*0.17*	*0.21*	*0.75****	*0.00*
For Status	0.04	0.06	0.01**	0.04	0.50***	0.00
Social Pressure	0.13	0.15	0.09*	0.07	0.25	0.00
Social Coercion	0.02	0.00	0.07***	0.14***	0.00	0.00
Private Motivations	*0.14*	*0.14*	*0.13*	*0.36****	*0.00*	*1.00***
For Money	0.03	0.04	0.03	0.29***	0.00	1.00***
For Private Protection	0.10	0.11	0.10	0.07	0.00	0.00

Notes: This table replicates Table 1 by including extra village sample from North Kivu. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. *Foreign* reports the sample of individuals who joined a foreign armed group. *Army* reports the sample of individuals who joined Congolese national army. For motives, we classify all the answers into the seven groups: Revenge (to avenge; following an incident with family or community), to protect the community, status (to become a military; to be feared), social pressure (social pressure; convinced by family, villager, or other civilian; everybody participated), social coercion, for money (for financial advantage; there is no other opportunities), private protection (private protection; to find refuge; to protect own goods). Units for the number of observations are reported in the panel headers. We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively).

Table A.9: The Victims are more Likely to Join Militia Village Chapters (Replication using extra samples)

	Participants				Non-participants		
	Militia from Village			Militia from	Living in the Same:		
	All	Raia	Non-Raia	Outside	Village	Chiefdom	Territory
# **Participants/Indiv-Year Obs.**	364	243	121	51	7351	49927	58207
Past Victimization	*0.25*	*0.26*	*0.23*	*0.04***	*0.04**	*0.05*	*0.05*
By Foreign armed group	0.24	0.25	0.23	0.04**	0.03**	0.04***	0.03***
By Congolese Militia	0.03	0.03	0.03*	0.02	0.01	0.01**	0.01*
Past Participation	*0.16*	*0.20*	*0.08****	*0.10****	*0.03****	*0.03****	*0.03****
In Militia Village Chapter	0.10	0.15	0.00***	0.02***	0.01***	0.01***	0.01***
In Raia Mutomboki or Mayi-Mayi	0.09	0.14	0.00***	0.00***	0.01***	0.00***	0.00***
In Militia Formed Outside Village	0.01	0.02	0.01	0.04	0.00	0.00	0.00

Notes: This table replicates Table 2, Panel B, by including extra village sample from North Kivu. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. We compare participants in militia chapters versus those where respondents do not participate in any militia chapter contemporarily (living in the same village, same chiefdom, or the same territory). We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively). When calculating differences, we include year fixed effects, control for all variables in Table A.4, Panels B–D, and cluster at two-way at the individual respondent and the village*year level.

Table A.10: The State Vacuum Caused the Rise and Growth of the Militia (Replication using extra samples)

	(1)	(2)	(3)	(4)	(5)
	National Army	Militia Village Chapter		Militia Village Chapter	
	Stock	Stock	Inflow	Inflow	Individual
Vacuum 1 [Sun City Peace]	-10.28**	10.88**	0.19	6.40**	2.19***
	(4.67)	(5.41)	(2.22)	(2.47)	(0.81)
Vacuum 2 [Regimentation]	-15.59***	27.15***	34.25***	34.20***	16.42***
	(5.71)	(4.21)	(3.37)	(4.02)	(2.53)
Observations	4,505	4,505	4,505	4,398	54,558
R-squared	0.48	0.29	0.16	0.21	0.17
Village FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Individual FE					Y
Clustered at Individual-level					Y
Pre-Vacuum 1 Shabunda mean	0.00	41.30	4.35	0.00	0.00
Pre-Vacuum 2 Shabunda mean	76.09	0.00	0.00	0.00	0.00
P-value: Vacuum 1, Clustered at:					
Village	0.03	0.05	0.93	0.01	0.01
Village & Chiefdom-post Vacuum	0.01	0.00	0.86	0.00	0.00
Village & Chiefdom-year	0.08	0.08	0.93	0.14	0.12
P-value: Vacuum 2, Clustered at:					
Village	0.01	0.00	0.00	0.00	0.00
Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00
Village & Chiefdom-year	0.23	0.11	0.02	0.01	0.07

The columns under "Presence in the Village" are (1) National Army, (2)–(3) Militia Village Chapter; the columns under "Active Combatants" are (4)–(5) Militia Village Chapter.

Notes: This table replicates Table 3 by including extra village sample from North Kivu. It presents the estimates of Equation 2, where the dependent variables are (in decimal digits): an indicator for whether there is presence of the Congolese national army in the village, for whether there is a militia village chapter (stock), for whether there is a new militia chapter (inflow), for whether there is new militia village chapter combatants in the village (inflow), and for whether the respondent of the household survey was participating in a militia village chapter at that year, in Columns 1–5 respectively. The latter is estimated at the level of the individual respondent * year (n=15,106), while the former are from the village * year dataset (and thus indexed by jt rather than ijt). Column 1–4 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 5 controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the village-level and individual-level. Table notes below the regression coefficients report p-values calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.11: The State Vacuum Caused the Rise and Growth of the Militia (Replication using extra samples)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Social Motivations				Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	0.52	0.16	-0.23	0.06	0.17*	0.10	0.05	0.23*
	(0.42)	(0.11)	(0.26)	(0.04)	(0.09)	(0.11)	(0.04)	(0.13)
Vacuum 2 [Regimentation]	12.74***	1.91***	6.25***	0.67***	2.09***	-0.00	0.53***	1.38***
	(2.03)	(0.36)	(1.14)	(0.19)	(0.63)	(0.01)	(0.18)	(0.34)
Observations	29,035	29,035	29,035	29,035	29,035	29,035	29,035	29,035
R-squared	0.18	0.08	0.13	0.11	0.08	0.06	0.06	0.07
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Individual FE	Y	Y	Y	Y	Y	Y	Y	Y
Cluster at Individual-level	Y	Y	Y	Y	Y	Y	Y	Y
Pre-Vacuum 1 Shabunda mean	0.25	0.12	0.00	0.00	0.00	0.12	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 1, Clustered at:								
Resp. & Village	0.22	0.18	0.38	0.16	0.06	0.35	0.29	0.09
Resp. & Village & Chiefdom-post Vacuum	0.09	0.00	0.28	0.00	0.01	0.09	0.02	0.00
Resp. & Village & Chiefdom-year	0.20	0.11	0.42	0.01	0.00	0.21	0.03	0.02
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00
Resp. & Village & Chiefdom-year	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00

Notes: This table replicates Table 3, Panel B, by including extra household sample from South Kivu. It presents the estimates of Equation 2, where the dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the level of village-level and individual-level. Table notes below the regression coefficients report p-values calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.12: Why the Predecessor Vacuum Caused the Raia Predecessor Only in Shabunda

	(1)	(2)	(3)	(4)	(5)
	Presence in the Village			Active Combatants	
	National Army	Militia Village Chapter		Militia Village Chapter	
	Stock	Stock	Inflow	Inflow	Individual
Vacuum 1 [Sun City Peace]	-9.50*	1.79	-3.35	-1.36	0.75
	(5.11)	(6.23)	(2.72)	(2.37)	(0.80)
Vacuum 1 X Stock of victimization	0.10	8.11**	2.64	8.67***	9.28***
	(3.02)	(3.56)	(1.84)	(1.72)	(2.58)
Vacuum 2 [Regimentation]	-31.56***	30.59***	34.25***	33.43***	16.96***
	(6.49)	(4.69)	(3.63)	(4.31)	(2.65)
Observations	2,411	2,411	2,411	2,411	15,106
R-squared	0.53	0.31	0.18	0.23	0.19
Village FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Individual FE					Y
Clustered at Individual-level					Y
Pre-Vacuum 1 Shabunda mean	0.00	41.30	4.35	0.00	0.00
Pre-Vacuum 2 Shabunda mean	76.09	0.00	0.00	0.00	0.00
P-value: Vacuum 1, Clustered at:					
Village	0.07	0.77	0.22	0.57	0.34
Village & Chiefdom-post Vacuum	0.00	0.51	0.03	0.46	0.16
Village & Chiefdom-year	0.09	0.77	0.23	0.68	0.41
P-value: Vacuum 1 X Victimization, Clustered at:					
Village	0.97	0.02	0.15	0.00	0.00
Village & Chiefdom-post Vacuum	0.89	0.00	0.00	0.02	0.00
Village & Chiefdom-year	0.97	0.05	0.00	0.09	0.09

Notes: This table presents the estimates of Equation 2 with the core sample, with an additional interaction between Vacuum 1 and the aggregate number of reported violent attacks on households by FDLR up to year t. Column 1–4 aggregate the total number of attacks at the village level; Column 5 aggregates at the household level. The dependent variables are (in decimal digits): an indicator for whether there is presence of the Congolese national army in the village, for whether there is a militia village chapter (stock), for whether there is a new militia chapter (inflow), for whether there is new militia village chapter combatants in the village (inflow), and for whether the respondent of the household survey was participating in a militia village chapter at that year, in Columns 1–5 respectively. Column 5 is estimated at the level of the individual respondent * year (n=15,106), while Column 1–4 are from the village * year dataset (and thus indexed by jt rather than ijt). Column 1–4 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 5 controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the village-level and individual-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.13: The Role of Victimization and Revenge in the Rise of the Raia—Within-Village Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations				Private Motivations
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 X Victimization	8.85*	1.69	-1.11	1.04	2.45	2.67	-0.73	3.31
	(4.82)	(2.25)	(2.50)	(1.04)	(1.86)	(2.03)	(0.71)	(2.30)
Vacuum 2 X Victimization	-1.16	4.26	-7.52*	-2.67*	4.31*	-0.12	0.49	0.78
	(3.85)	(3.14)	(3.93)	(1.51)	(2.45)	(0.17)	(1.08)	(1.69)
Observations	14,991	14,991	14,991	14,991	14,991	14,991	14,991	14,991
R-squared	0.53	0.25	0.41	0.34	0.27	0.29	0.23	0.24
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 1 X Victimization, Clustered at:								
Resp. & Village	0.07	0.45	0.66	0.32	0.19	0.19	0.31	0.15
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
Resp. & Village & Chiefdom-year	0.25	0.45	0.70	0.26	0.06	0.01	0.22	0.24
P-value: Vacuum 2 X Victimization, Clustered at:								
Resp. & Village	0.76	0.18	0.06	0.08	0.08	0.50	0.65	0.64
Resp. & Village & Chiefdom-post Vacuum	0.40	0.00	0.00	0.00	0.00	0.00	0.04	0.15
Resp. & Village & Chiefdom-year	0.67	0.03	0.25	0.13	0.11	0.00	0.22	0.27

Notes: This table presents the estimates of Equation 2 using the core sample, in which the main independent variables are replaced with the following two indicators: $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}$ and $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}$, where F_{ijt} is an indicator taking value one if the household members of individual i in village j in year t have previously been victimized by the FDLR. The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions include controls for village-year fixed effects and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.14: The Regimentation Caused an Unprecedented Rise in Insecurity—Statistical Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		External Threats: Attacked				External Threats: FDLR Present		
	in Village	in Groupement	in Chiefdom	in Territory	in Village	in Groupement	in Chiefdom	in Territory
Vacuum 1 [Sun City Peace, initial]	-9.78**	-8.49***	-9.53***	-9.52***	-0.44	-0.55	-0.42	-0.21
	(3.94)	(1.94)	(1.35)	(0.41)	(4.60)	(1.81)	(0.60)	(0.48)
Vacuum 2 [Regimentation, initial]	21.60***	22.23***	22.13***	21.51***	37.27***	37.39***	37.51***	37.49***
	(8.12)	(2.52)	(1.34)	(0.52)	(7.35)	(5.22)	(1.86)	(1.42)
Observations	2,192	2,338	2,360	2,360	2,491	2,491	2,491	2,491
R-squared	0.11	0.19	0.41	0.68	0.45	0.51	0.57	0.65
Pre-Vacuum 1 Shabunda mean	15.56	15.76	15.56	15.56	4.35	4.35	4.35	4.35
Pre-Vacuum 2 Shabunda mean	17.78	17.47	17.78	17.78	13.04	13.04	13.04	13.04
P-value: Vacuum 1, Clustered at:								
Village	0.01	0.00	0.00	0.00	0.92	0.76	0.48	0.65
Village & Chiefdom-post Vacuum	0.02	0.02	0.02	0.00	0.79	0.72	0.84	0.90
Village & Chiefdom-year	0.01	0.01	0.01	0.00	0.89	0.85	0.90	0.94
P-value: Vacuum 2, Clustered at:								
Village	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Village & Chiefdom-year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: This table presents the estimates of Equation 2 using the core sample. The dependent variables are (in decimal digits): an indicator for whether the village is attacked by FDLR (Column 1) or whether the FDLR is present in the village (Column 5), percentage of villages in the same groupment, chiefdom, or territory that are attacked by FDLR (Columns 2–4) or see the presence of FDLR (Columns 6–8). The independent variables are defined as whether a village j in year t belongs to the initial years of the vacuums. All regressions control for village fixed effects and year fixed effects; standard errors are estimated at the village level. Table notes below the regression coefficients report the p-values for the coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.15: Unbundling the Extraordinary Rise of the Raia (Replication Using Extra Samples)

Panel A. Including extra village sample from North Kivu

	(1) Participate	(2) Participate	(3) Participate	(4) Participate	(5) Participate
Vacuum 1 [Sun City Peace]	2.19***	2.25***	2.22***	2.18***	2.25***
	(0.81)	(0.81)	(0.81)	(0.81)	(0.81)
Vacuum 2 [Regimentation]	16.42***	0.50	15.25***	14.93***	0.17
	(2.53)	(0.69)	(2.53)	(2.43)	(0.81)
Vacuum 2 X Insecurity (2010-11)		20.29***			18.63***
		(2.68)			(2.71)
Vacuum 2 X Past Participation (2003-05)			11.70***		6.68
			(4.49)		(4.63)
Vacuum 2 X Stock of Victimization				8.21***	5.27*
				(2.69)	(2.72)
Observations	54,558	47,702	54,558	54,558	47,702
R-squared	0.17	0.19	0.17	0.17	0.20
Pre-Vacuum 1 Shabunda	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:					
Resp. & Village	0.00	0.47	0.00	0.00	0.83
Resp. & Village & Chiefdom-post Vacuum	0.00	0.16	0.00	0.00	0.64
Resp. & Village & Chiefdom-year	0.07	0.64	0.05	0.06	0.90
P-value: Vacuum 2 < Vacuum 1	0.00	0.96	0.00	0.00	0.98

Panel B. Including extra village sample from North Kivu and extra households from South Kivu

	(1) Participate	(2) Participate	(3) Participate	(4) Participate
Vacuum 1 [Sun City Peace]	0.86***	0.91***	0.87***	0.91***
	(0.32)	(0.32)	(0.33)	(0.33)
Vacuum 2 [Regimentation]	12.65***	0.29	12.10***	-0.02
	(1.97)	(0.69)	(2.01)	(0.82)
Vacuum 2 X Insecurity (2010-11)		13.55***		13.30***
		(2.18)		(2.24)
Vacuum 2 X Past Participation (2003-05)			11.69***	11.21***
			(4.14)	(4.05)
Observations	68,487	60,788	68,487	60,788
R-squared	0.16	0.17	0.17	0.18
Pre-Vacuum 1 Shabunda	0.24	0.24	0.24	0.24
Pre-Vacuum 2 Shabunda	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:				
Resp. & Village	0.00	0.68	0.00	0.98
Resp. & Village & Chiefdom-post Vacuum	0.00	0.40	0.00	0.96
Resp. & Village & Chiefdom-year	0.04	0.86	0.03	0.99
P-value: Vacuum 2 < Vacuum 1	0.00	0.79	0.00	0.86

Notes: This table replicates Table 5, Panel A, by (i) including extra village sample from North Kivu in Panel A, and (ii) including both extra village sample from North Kivu and extra household sample from South Kivu in Panel B. We do not have information of past victimization in the extra household sample from South Kivu. We present the estimates of Equation 2 in which we have added controls $\mathbf{1}[V1_{jt} = 1] \times F_{ijt}$, where F_{ijt} is one of the following: (i) an indicator whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village (Insecurity, indexed by j), (ii) an indicator whether the respondent participated a militia village chapter during the first state vacuum induced by Sun-city peace agreement (Past participation, indexed by ij), and (iii) number of household-level FDLR attacks in the past (only in Panel A, indexed by ijt). Column 5, Panel A and Column 4, Panel B include all available controls in the same regression. The dependent variable is (in decimal digits) an indicator for whether the respondent of the household survey was participating in a militia village chapter in that year. All regressions control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the village-level and individual-level. Table notes below the regression coefficients report the p-values for the coefficients of Vacuum 2, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level. In the last row, we compute p-values of rejecting the null hypothesis that the coefficient of Vacuum 2 is smaller than that of Vacuum 1.

Table A.16: Explaining Individual's Motivations to Join the Militia with Community Insecurity (Replication Using Extra Samples)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	0.66	0.16	-0.13	0.06	0.16	0.15	0.05	0.23
	(0.43)	(0.11)	(0.27)	(0.04)	(0.10)	(0.10)	(0.04)	(0.14)
Vacuum 2 [Regimentation]	0.28	-0.11	-0.24	0.01	0.07**	0.04*	0.76	-0.03
	(0.93)	(0.12)	(0.27)	(0.01)	(0.03)	(0.02)	(0.82)	(0.08)
Vacuum 2 X Insecurity (2010-11)	13.63***	2.17***	7.08***	0.71***	2.17***	-0.04*	-0.25	1.50***
	(2.26)	(0.40)	(1.18)	(0.20)	(0.67)	(0.02)	(0.84)	(0.35)
Observations	27,068	27,068	27,068	27,068	27,068	27,068	27,068	27,068
R-squared	0.19	0.08	0.13	0.11	0.08	0.06	0.06	0.07
Pre-Vacuum 1 Shabunda mean	0.25	0.12	0.00	0.00	0.00	0.12	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.76	0.37	0.38	0.39	0.02	0.07	0.36	0.70
Resp. & Village & Chiefdom-post Vacuum	0.56	0.41	0.31	0.16	0.00	0.00	0.02	0.46
Resp. & Village & Chiefdom-year	0.95	0.86	0.93	0.98	0.93	0.11	0.12	0.96
P-value: Vacuum 2 X Insecurity, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.00	0.00	0.05	0.77	0.00
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00
Resp. & Village & Chiefdom-year	0.09	0.05	0.11	0.16	0.11	0.03	0.49	0.13

Notes: This table replicates Table 5, Panel B, by including extra household sample from South Kivu. It presents the estimates of Equation 2, in which we have also added as a control, the following indicator: $\mathbf{1}[V2_{jt} = 1] \times F_j$, where F_j is an indicator taking value one if FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j. The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions include controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.17: Individuals Motivation to Join the Militia Channeled Through Community Insecurity and Victimization

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.85**	0.45	0.01	0.16	0.23	0.45*	0.11	0.48
	(0.91)	(0.32)	(0.49)	(0.12)	(0.17)	(0.27)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	0.46	-0.06	-0.25	0.03	0.10**	0.09*	0.77	-0.01
	(0.99)	(0.14)	(0.35)	(0.02)	(0.04)	(0.05)	(0.82)	(0.12)
Vacuum 2 X Insecurity (2010-11)	18.84***	2.15***	12.00***	1.19*	1.22**	-0.02	0.77	1.22**
	(2.67)	(0.69)	(2.09)	(0.64)	(0.55)	(0.02)	(0.97)	(0.49)
Vacuum 2 X Insecurity (2010-11) X Victimization	10.74**	4.30	2.44	-1.32**	4.69*	-0.49	-0.28	1.84
	(4.15)	(3.10)	(3.31)	(0.64)	(2.44)	(0.31)	(1.14)	(1.80)
Observations	13,982	13,982	13,982	13,982	13,982	13,982	13,982	13,982
R-squared	0.21	0.09	0.15	0.15	0.10	0.07	0.07	0.08
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:								
Resp. & Village	0.64	0.67	0.48	0.20	0.01	0.06	0.35	0.94
Resp. & Village & Chiefdom-post Vacuum	0.38	0.67	0.34	0.00	0.00	0.00	0.02	0.83
Resp. & Village & Chiefdom-year	0.92	0.90	0.93	0.93	0.85	0.15	0.07	0.98
P-value: Vacuum 2 X Insecurity, Clustered at:								
Resp. & Village	0.00	0.00	0.00	0.07	0.03	0.25	0.43	0.01
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.00	0.24	0.03	0.00
Resp. & Village & Chiefdom-year	0.10	0.02	0.13	0.18	0.16	0.12	0.19	0.04
P-value: Vacuum 2 X Insecurity X Victimization, Clustered at:								
Resp. & Village	0.01	0.17	0.46	0.04	0.06	0.11	0.81	0.31
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.01	0.00	0.00	0.00	0.29	0.00
Resp. & Village & Chiefdom-year	0.07	0.04	0.00	0.12	0.15	0.06	0.58	0.29

Notes: This table presents the estimates of Equation 2 using the core sample, in which we have also added as controls, the following indicators: $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}$, where F_{ijt} is one of the following indicators: (i) whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j (indexed by j), and (ii) whether the previous indicator equals one and the household members of individual i in village j in year t have previously been victimized by the FDLR (indexed by ijt). The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). All regressions include controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.18: Types of Recruitment Campaigns in the Village: The Role of Village Chiefs

| | Militia from Village | | | Militia from | | |
	All	Raia	Non Raia	Outside	Foreign	Army
	(1)	(2)	(3)	(4)	(5)	(6)
Sensitization: # Episodes	129	39	90	52	127	136
Number of Recruitment Campaigns	1.48	1.46	1.49	1.48	0.62***	0.22***
% Private	0.12	0.23	0.07***	0.12	0.02***	0.01***
% Circumventing Chief	0.15	0.13	0.16	0.38***	0.14	0.04**
% Coercing Chief	0.08	0.00	0.11**	0.02	0.06	0.00
% Public Village Meetings	0.34	0.41	0.31	0.10***	0.08***	0.05***
% Initiated by Chief	0.09	0.23	0.02***	0.00***	0.02***	0.02***
% Village Assembly	0.40	0.56	0.32**	0.10***	0.09***	0.07***

Notes: WE use the core sample from South Kivu for the descriptives. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. *Foreign* reports the sample of individuals who joined a foreign armed group. *Army* reports the sample of individuals who joined Congolese national army. Units for the number of observations are reported in the panel headers. The numbers reported after the first row are the fractions of chapter episodes in which at least one recruitment campaign of each corresponding type takes place. We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively).

Table A.19: The Extraordinary Rise of the Raia is in Part Channeled by
Communities Institutions Responses to Insecurity (Replication Using Extra Samples)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
							Social Motivations			Private Motivations	
	Campaign		Participation		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	Public	Public	General	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.37	1.42	0.52	0.52	0.16	-0.24	0.06	0.17*	0.10	0.05	0.23*
	(3.47)	(3.49)	(0.42)	(0.43)	(0.11)	(0.27)	(0.04)	(0.09)	(0.11)	(0.04)	(0.13)
Vacuum 2 [Regimentation]	7.69**	0.96	12.74***	7.68***	1.34***	3.93***	0.30*	0.56**	-0.00	0.62***	1.04***
	(3.36)	(6.90)	(2.03)	(1.66)	(0.35)	(0.97)	(0.17)	(0.24)	(0.02)	(0.22)	(0.39)
Vacuum 2 X Insecurity		8.26									
		(7.80)									
Vacuum 2 X Public Campaign				19.42***	2.24*	8.87**	1.42**	5.86***	0.00	-0.38	1.31
				(6.72)	(1.14)	(3.71)	(0.67)	(2.04)	(0.03)	(0.49)	(1.06)
Observations	4,392	3,899	29,035	28,784	28,784	28,784	28,784	28,784	28,784	28,784	28,784
R-squared	0.26	0.26	0.18	0.21	0.08	0.14	0.11	0.10	0.06	0.06	0.07
Pre-Vacuum 1 Shabunda mean	23.91	23.91	0.25	0.25	0.12	0.00	0.00	0.00	0.12	0.00	0.00
Pre-Vacuum 2 Shabunda mean	2.17	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:											
Resp. & Village	0.02	0.89	0.00	0.00	0.00	0.00	0.07	0.02	0.81	0.01	0.01
Resp. & Village & Chiefdom-post Vacuum	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00
Resp. & Village & Chiefdom-year	0.25	0.83	0.00	0.01	0.00	0.02	0.03	0.01	0.50	0.05	0.01
P-value: Vacuum 2 X Insecurity/Campaign, Clustered at:											
Resp. & Village		0.29		0.00	0.05	0.02	0.04	0.00	0.92	0.44	0.22
Resp. & Village & Chiefdom-post Vacuum		0.07		0.00	0.00	0.00	0.00	0.00	0.86	0.10	0.00
Resp. & Village & Chiefdom-year		0.15		0.00	0.00	0.00	0.00	0.00	0.81	0.33	0.00

Notes: This table replicates Table 6. Column 1–2 includes extra village samples from North Kivu. Column 3–11 includes extra household samples from South Kivu. The table presents the estimates of Equation 2. In Column 2 and Column 4–11, we have also added as a control, the following indicator: $\mathbf{1}[V2_{jt} = 1] \times F_{jt}$, where F_{jt} is one of the following indicators: (i) whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j (Column 2, Insecurity, indexed by j), and (ii) whether village j in year t has a public campaign (Column 4–11, Campaign, indexed by jt). The dependent variables are (in decimal digits): an indicator for whether the village has a public campaign (Column 1–2), for whether the individual joins a militia village chapter (Column 3–4), for whether they joined it motivated by intrinsic social emotions (Columns 5–6), by extrinsic social incentives (Columns 7–9), or by private motivations (Column 10–11). Column 1–2 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 3–11 control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.20: Chief-Initiated Campaigns Channel the Effect of Vacuum 2 on the Rise of the Raia

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
								Social Motivations			Private Motivations
	Campaign		Participation		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
						Community		Social	Social		Private
	Public	Public	General	General	Revenge	Protection	Status	Pressure	Coercion	Money	Protection
Vacuum 1 [Sun City Peace]	-1.24	-1.24	1.68*	1.63*	0.45	-0.17	0.17	0.25	0.38	0.11	0.48
	(0.92)	(0.94)	(0.91)	(0.92)	(0.32)	(0.50)	(0.12)	(0.16)	(0.28)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	6.54**	5.73	16.96***	14.75***	2.17***	8.36***	0.79	1.34**	0.02	1.19**	1.07**
	(2.60)	(5.92)	(2.55)	(2.57)	(0.65)	(1.76)	(0.49)	(0.58)	(0.02)	(0.47)	(0.46)
Vacuum 2 X Insecurity		0.95									
		(6.58)									
Vacuum 2 X Chief-initiated Campaign				26.53**	1.19	16.64*	0.51	4.54	-0.18	2.02	1.99
				(12.12)	(2.38)	(8.66)	(1.48)	(3.04)	(0.17)	(2.48)	(1.97)
Observations	2,454	2,284	15,106	14,855	14,855	14,855	14,855	14,855	14,855	14,855	14,855
R-squared	0.23	0.23	0.19	0.20	0.08	0.15	0.14	0.09	0.06	0.07	0.08
Pre-Vacuum 1 Shabunda	2.17	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda	2.17	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:											
Resp. & Village	0.01	0.33	0.00	0.00	0.00	0.00	0.11	0.02	0.27	0.01	0.02
Resp. & Village & Chiefdom-post Vacuum	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
Resp. & Village & Chiefdom-year	0.03	0.07	0.01	0.02	0.00	0.02	0.07	0.04	0.00	0.05	0.00
P-value: Vacuum 2 X Insecurity/Campaign, Clustered at:											
Resp. & Village		0.89		0.03	0.62	0.06	0.73	0.14	0.29	0.42	0.31
Resp. & Village & Chiefdom-post Vacuum		0.70		0.00	0.05	0.00	0.06	0.00	0.00	0.00	0.00
Resp. & Village & Chiefdom-year		0.64		0.00	0.28	0.00	0.62	0.00	0.11	0.07	0.00

Notes: This table replicates Table 6 by replacing public campaign with chief-initiated campaign. It presents the estimates of Equation 2. In Column 2 and Column 4–11, we have also added as a control, the following indicator: $\mathbf{1}[V2_{jt} = 1] \times F_{jt}$, where F_{jt} is one of the following indicators: (i) whether FDLR is present in nearby villages in the same Groupement during 2010–11, but not in own village j (Column 2, Insecurity, indexed by j), and (ii) whether village j in year t has a chief-initiated campaign (Column 4–11, Campaign, indexed by jt). The dependent variables are (in decimal digits): an indicator for whether the village has a chief-initiated campaign (Column 1–2), for whether the individual joins a militia village chapter (Column 3–4), for whether they joined it motivated by intrinsic social emotions (Columns 5–6), by extrinsic social incentives (Columns 7–9), or by private motivations (Column 10–11). Column 1–2 control for village fixed effects and year fixed effects; standard errors are clustered at the village-level. Column 3–11 control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

Table A.21: The Extraordinary Rise of the Raia is in Part Channeled by Communities Responses to Insecurity—By Victmization

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					Social Motivations			Private Motivations	
			Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.68*	1.64*	0.45	-0.16	0.17	0.25	0.38	0.11	0.48
	(0.91)	(0.91)	(0.32)	(0.50)	(0.12)	(0.16)	(0.28)	(0.12)	(0.29)
Vacuum 2 [Regimentation]	16.96***	11.61***	1.95***	6.79***	0.05	0.73*	0.02	1.32***	0.89**
	(2.55)	(2.42)	(0.69)	(1.73)	(0.12)	(0.39)	(0.03)	(0.45)	(0.41)
Vacuum 2 X Public Campaign		28.22***	0.99	17.56**	5.98*	3.45	0.04	-0.40	0.83
		(10.72)	(1.80)	(8.01)	(3.47)	(2.43)	(0.03)	(1.17)	(1.57)
Vacuum 2 X Public Campaign X Victimization		15.60	4.13	-0.36	-6.11*	10.70**	-0.51	2.76	5.35
		(10.82)	(5.08)	(8.65)	(3.46)	(5.31)	(0.40)	(2.82)	(4.61)
Observations	15,106	14,855	14,855	14,855	14,855	14,855	14,855	14,855	14,855
R-squared	0.19	0.23	0.09	0.16	0.18	0.12	0.06	0.07	0.08
Pre-Vacuum 1 Shabunda	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-value: Vacuum 2, Clustered at:									
Resp. & Village	0.00	0.00	0.01	0.00	0.67	0.06	0.54	0.00	0.03
Resp. & Village & Chiefdom-post Vacuum	0.00	0.00	0.00	0.00	0.09	0.00	0.06	0.00	0.00
Resp. & Village & Chiefdom-year	0.01	0.02	0.00	0.03	0.59	0.03	0.58	0.07	0.00
P-value: Vacuum 2 X Insecurity, Clustered at:									
Resp. & Village		0.01	0.59	0.03	0.09	0.16	0.20	0.73	0.60
Resp. & Village & Chiefdom-post Vacuum		0.00	0.06	0.00	0.00	0.00	0.00	0.31	0.01
Resp. & Village & Chiefdom-year		0.00	0.17	0.00	0.00	0.00	0.09	0.58	0.20
P-value: Vacuum 2 X Insecurity X Victimization, Clustered at:									
Resp. & Village		0.15	0.42	0.97	0.08	0.05	0.20	0.33	0.25
Resp. & Village & Chiefdom-post Vacuum		0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00
Resp. & Village & Chiefdom-year		0.00	0.02	0.93	0.00	0.00	0.10	0.01	0.00

Notes: This table presents the estimates of Equation 2 using the core sample, in which we have also added as controls, the following indicators: $\mathbf{1}[V2_{jt} = 1] \times F_{ijt}$, where F_{ijt} is one of the following indicators: (i) whether village j in year t has a public campaign (indexed by jt), and (ii) whether the previous indicator equals one and the household members of individual i in village j in year t have previously been victimized by the FDLR (indexed by ijt). The dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1–2), for whether they joined it motivated by intrinsic social emotions (Columns 3–4), by extrinsic social incentives (Columns 5–7), or by private motivations (Column 8–9). All regressions include controls for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the individual-level and village-level. Table notes below the regression coefficients report the p-values for the key coefficients, calculated from (i) clustering at village-level, (ii) clustering at village and chiefdom-post vacuums level, and (iii) clustering at village and chiefdom-year level.

# B Appendix Figures
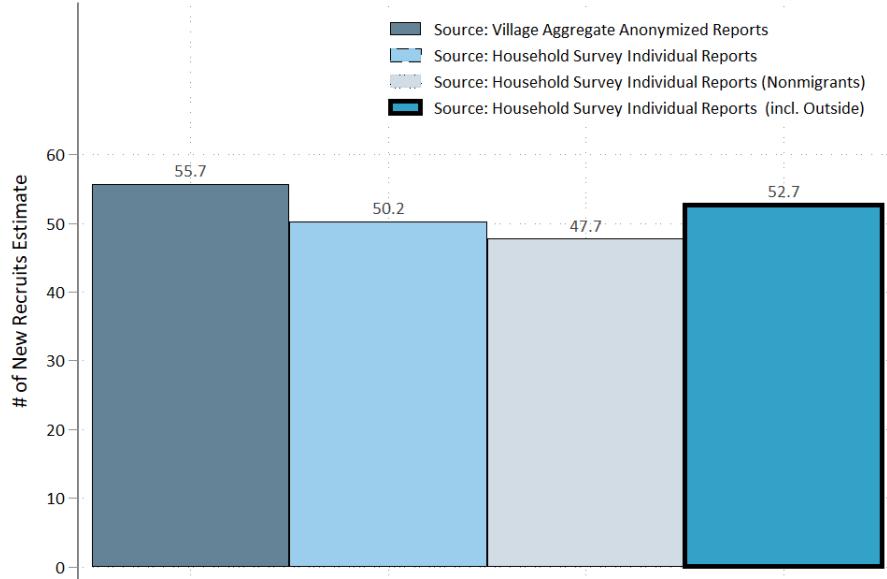
Figure B.1: The Outraged Citizens
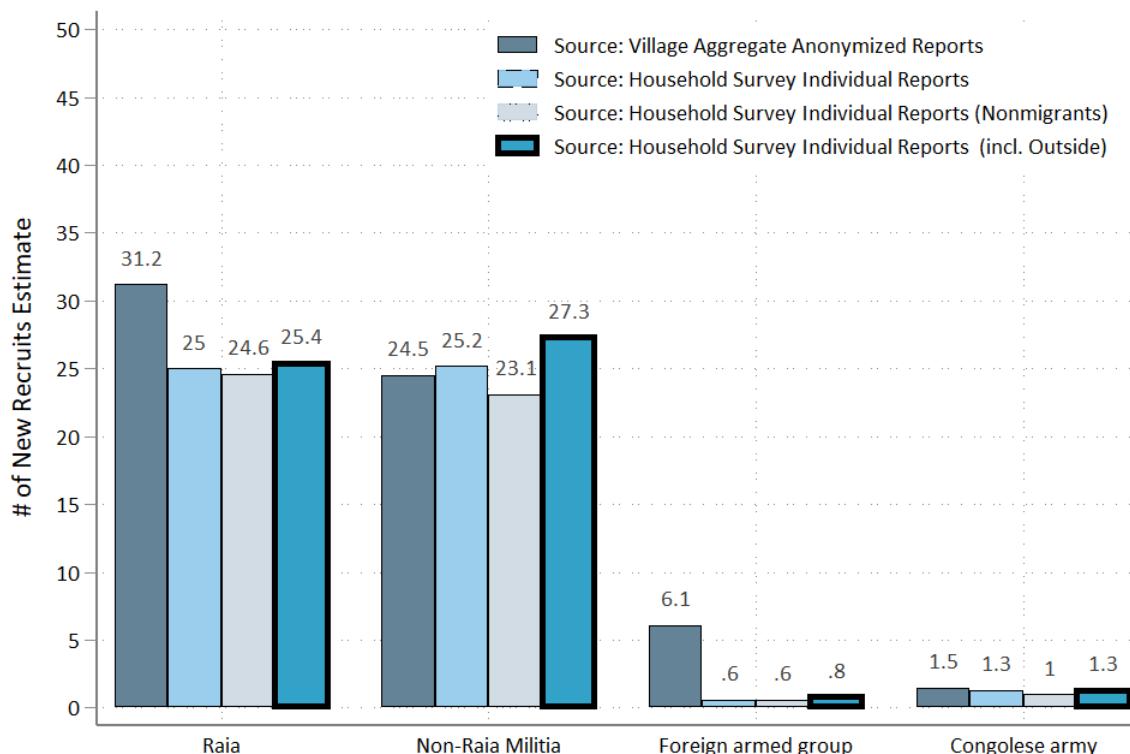
Notes.   Source: Photography taken by Diana Zeyneb Alhindawi, which is publicly available at https://www.dianazeynebalhindawi.com. Zeyneb Alhindawi describes the image as follows: "Raia fighters gather, wearing leaves for camouflage, after going on a patrol through Lulingu's surrounding areas [...] Dec. 27, 2013. Lulingu, South Kivu."

Figure B.2: Cross-validation of Participation Reports in the Data

Panel A. Participation in Militia Chapters
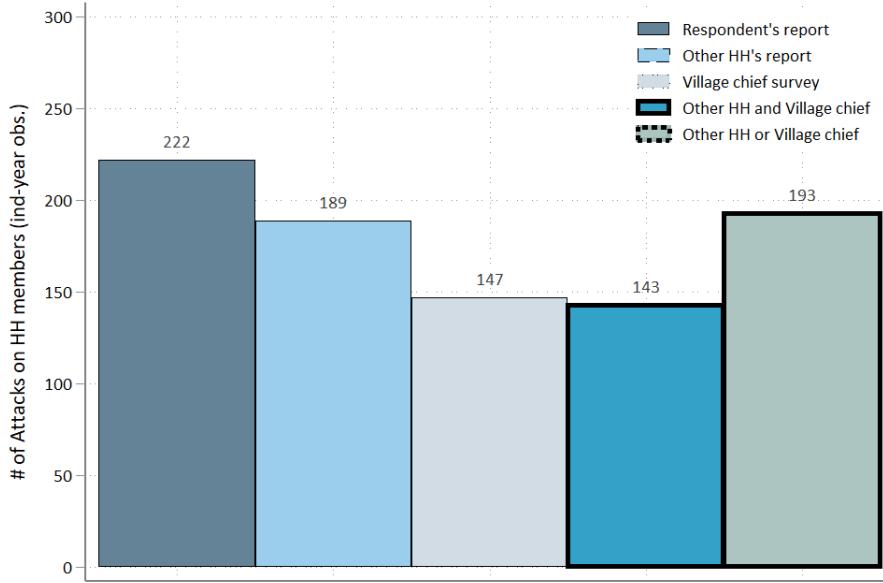
Panel B. Participation in Other Types of Armed Groups
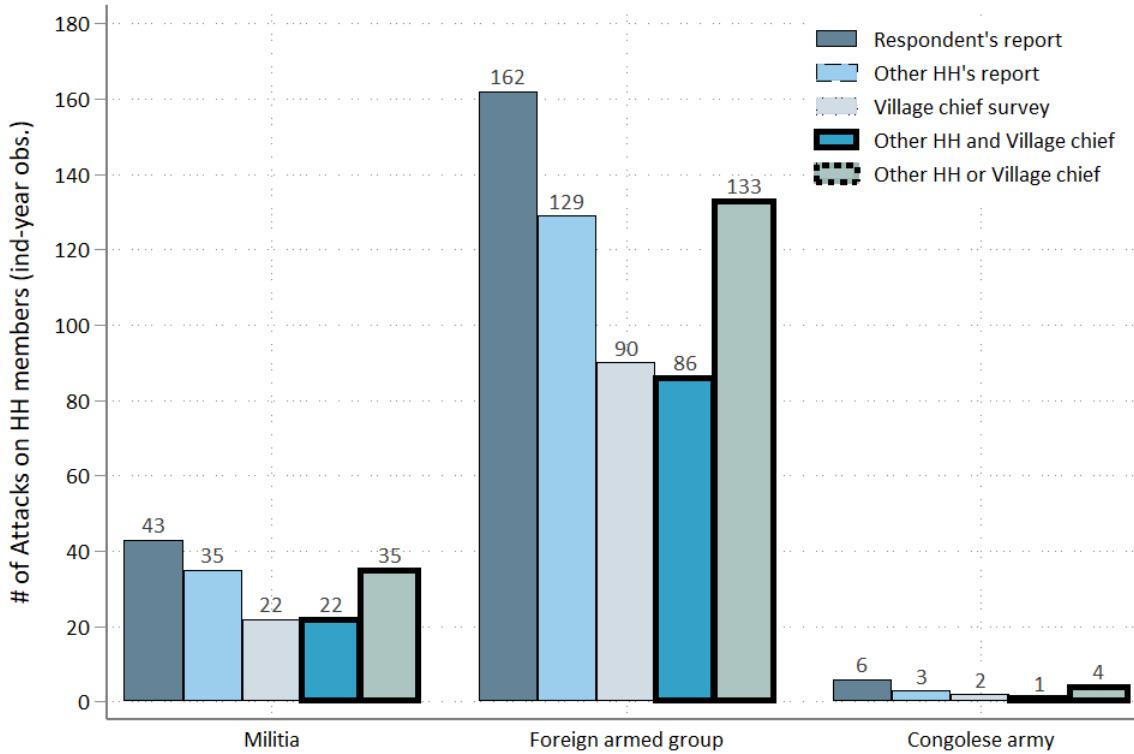
Notes. We use the core sample from South Kivu for the cross-validation exercise. Dark blue bar with solid outline on the left is the estimate obtained from the village aggregate anonymized reports. The aggregate village data report number of individuals who participated in an armed group for each village control episode. The second, light blue bar with dashed outline is the estimate obtained from the household individual report, restricted to enrollment during an episode in which an armed group controls the village. To construct the village level estimates based on the household reports, we first obtain the share of respondents who report to have participated in an armed group during an episode in which an armed group controls the village. Then, we use the village size we recorded in the village survey, and the number of surveyed villages in South Kivu (n=133) to construct a village-level estimate of the number of participants. The mean village size in South Kivu in our sample is 203 households. The third, gray bar with dotted contour, does the same as the previous but excludes from the estimation all respondent-year observations for years in which the respondent did not live in the village. To implement this exclusion, we use information on the history of migration for each respondent. The last, blue bar with solid thick contour, are the household reports, including those for participation events that took place outside of the recruitment obtained from the detailed data gathered separately for each village armed group control episode. The last bar is included to analyze whether restricting the comparison to episodes of enrollment that took place during armed group control episode in the village does not lead to loss of data.

Figure B.3: Cross-validation of Violent Events Reports in the Data

Panel A. All Violent Events on Household Members
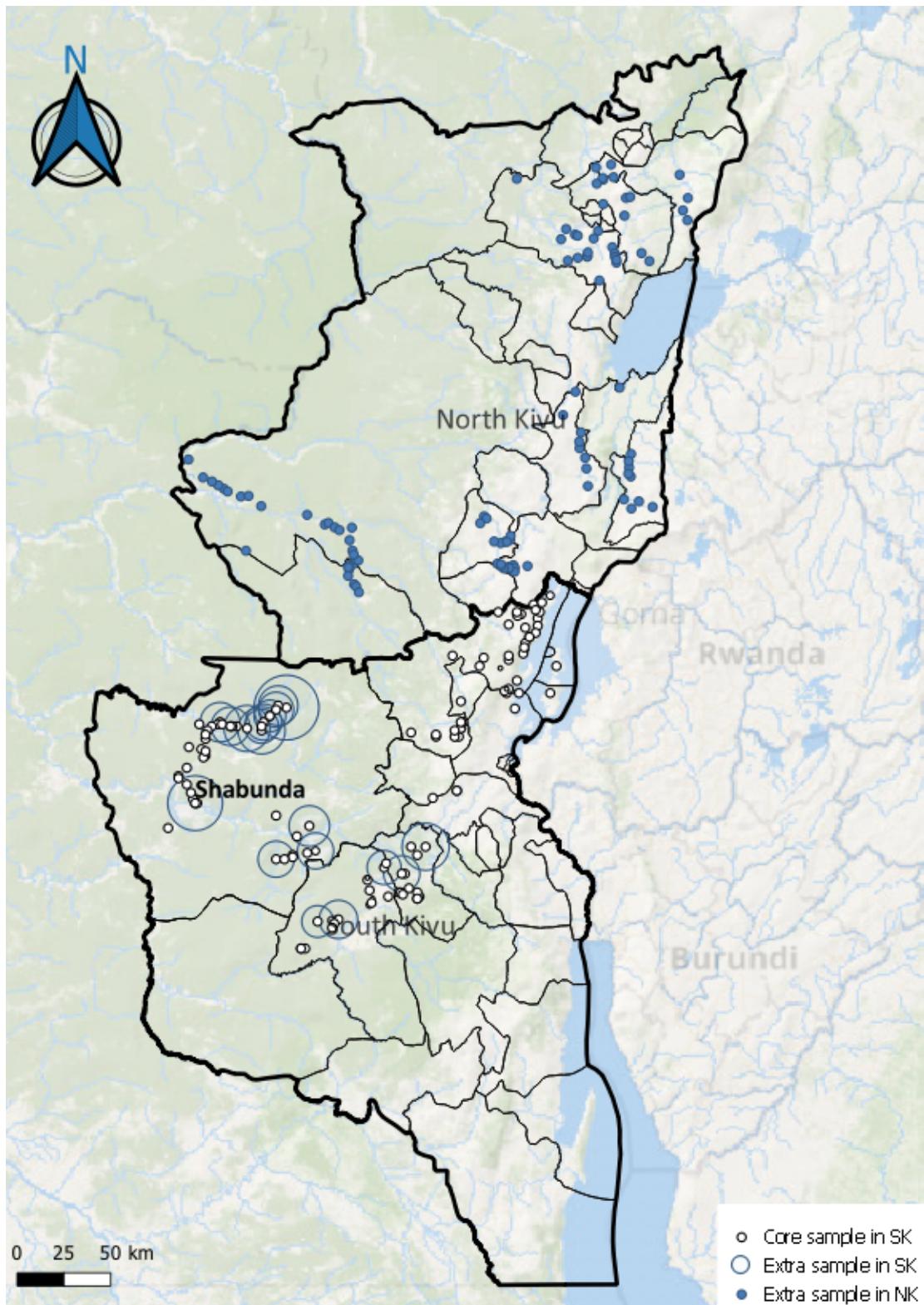
**Panel B.** Violent Events on Household Members by Armed Groups

Notes. We exclude 46 attack events when respondents lived outside of the sample and thus cannot be validated using the village chief survey. The first, dark blue bar with solid outline, is the number of reported attacks on household between year 1995 and 2013 from respondents' report. The second, light blue bar with dashed outline, shows the number of attacks on household that are also reported by at least 1 other respondent observed in the sample who lived in the same village within 1 year ($t-1$, t, $t+1$). The third, gray bar with dotted contour, shows the number of attacks on household that are also reported in village chief survey within 1 year. The fourth, blue bar with thick solid contour, shows the number of attacks on household that are cross-validated by both village chief survey and at least 1 other contemporary respondent. The last, light green bar with thick short-dashed contour, shows the number of attacks on household that are cross-validated by either village chief survey or at least 1 other contemporary respondent.
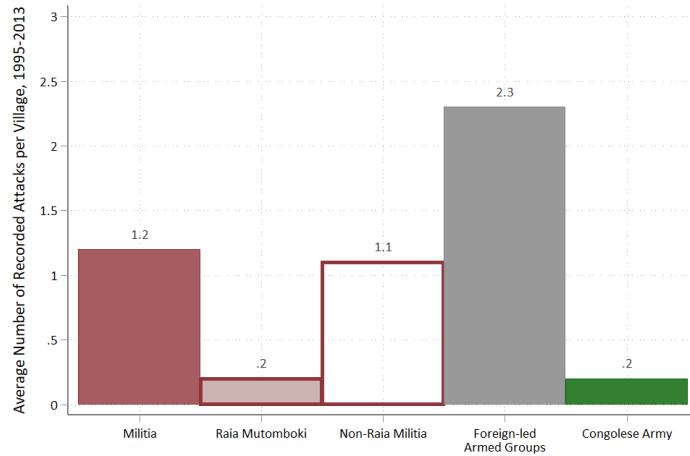
Figure B.4: Study Samples
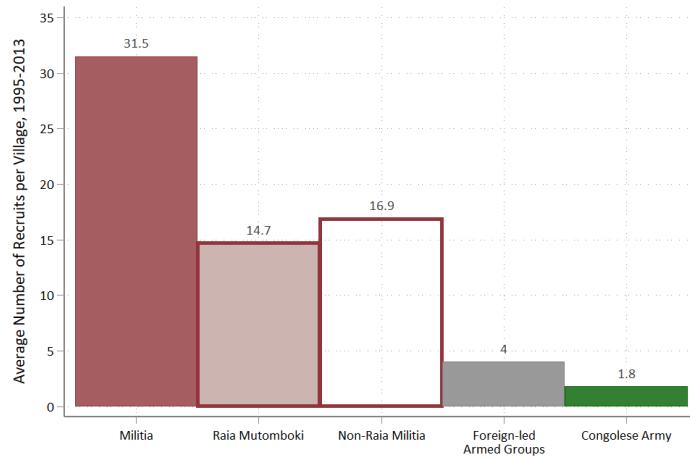
Notes. White dots are the core sample from South Kivu. We sample 8 households from each village in the core sample and collect information about household economic history, attack history, participation history, and the motives to participate in an armed group. For some of the villages in the core sample (white dots with blue circles), we sample extra households to collect information about participation history and motives to participate. Blue dots are the extra village sample from North Kivu; from each village, we sample 6 households and collect information about household economic history, attack history, and participation history.

Figure B.5: Militias Predominate in the Conflict (Replication using Extra Samples)
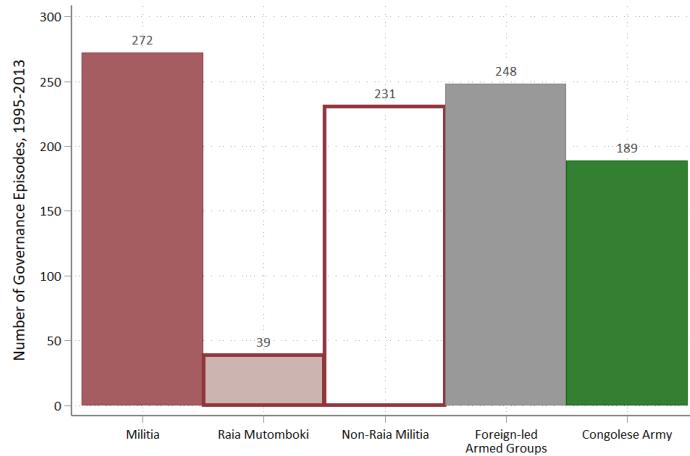
Panel A. Number of Attacks on Villages

Panel B. Number of Recruits

Panel C. Number of Village Governance Episodes
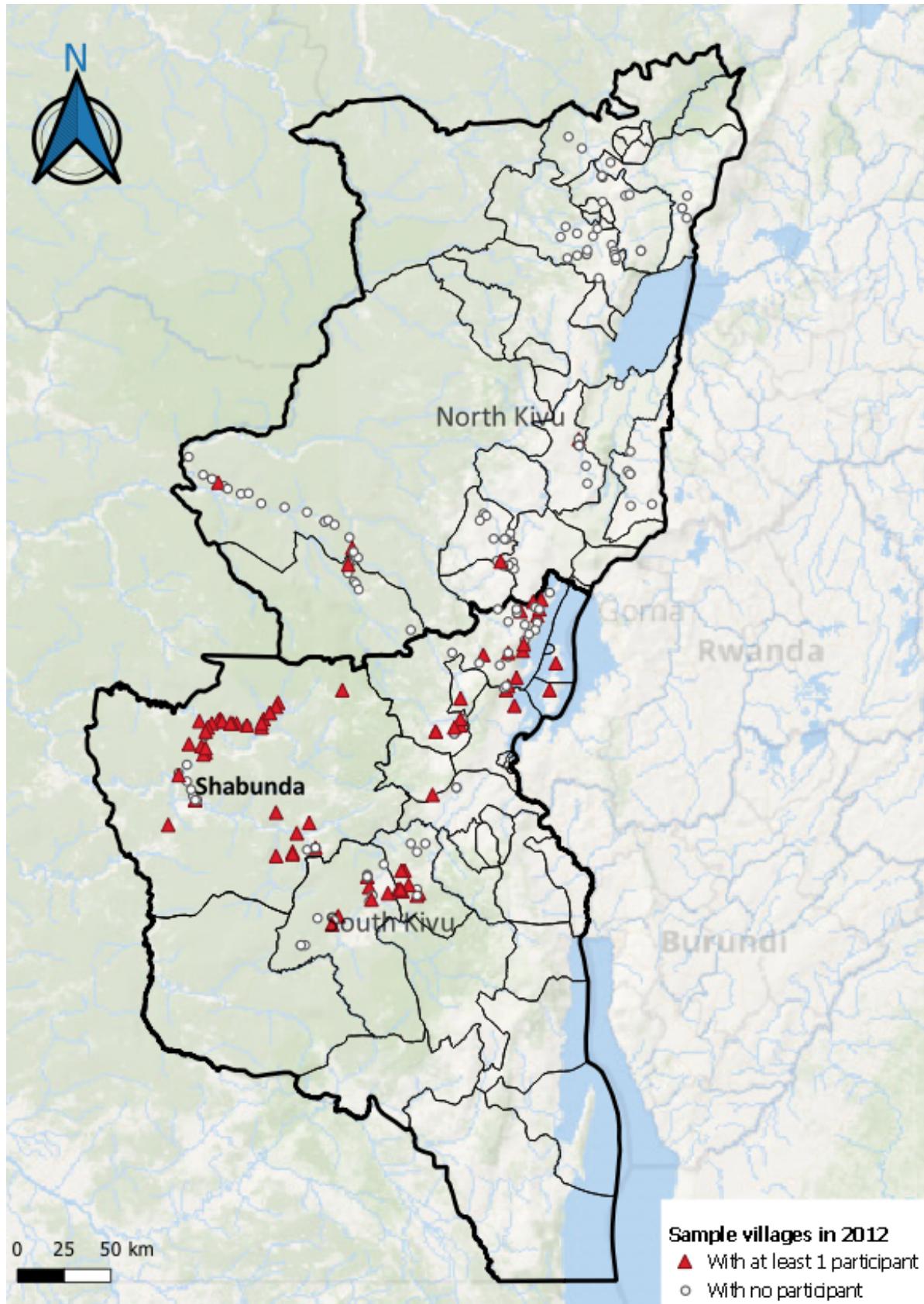
Notes. This figure replicates Figure 1 by including extra village sample from North Kivu. Panel A presents the average number of attacks per village by each type of armed group. Panel B presents the number of participants per village in each type of armed group. We first obtain the share of respondents who report to have participated in a group during an episode where an armed group controlled the village. Then, we use the village size we recorded in the village survey, and the number of surveyed villages (n=133) to construct a village-level estimate of the number of participants. The mean village size in the core sample is 203 households. Panel C presents the number of village governance episodes.

Figure B.6: Times-series of World and Local Gold Prices
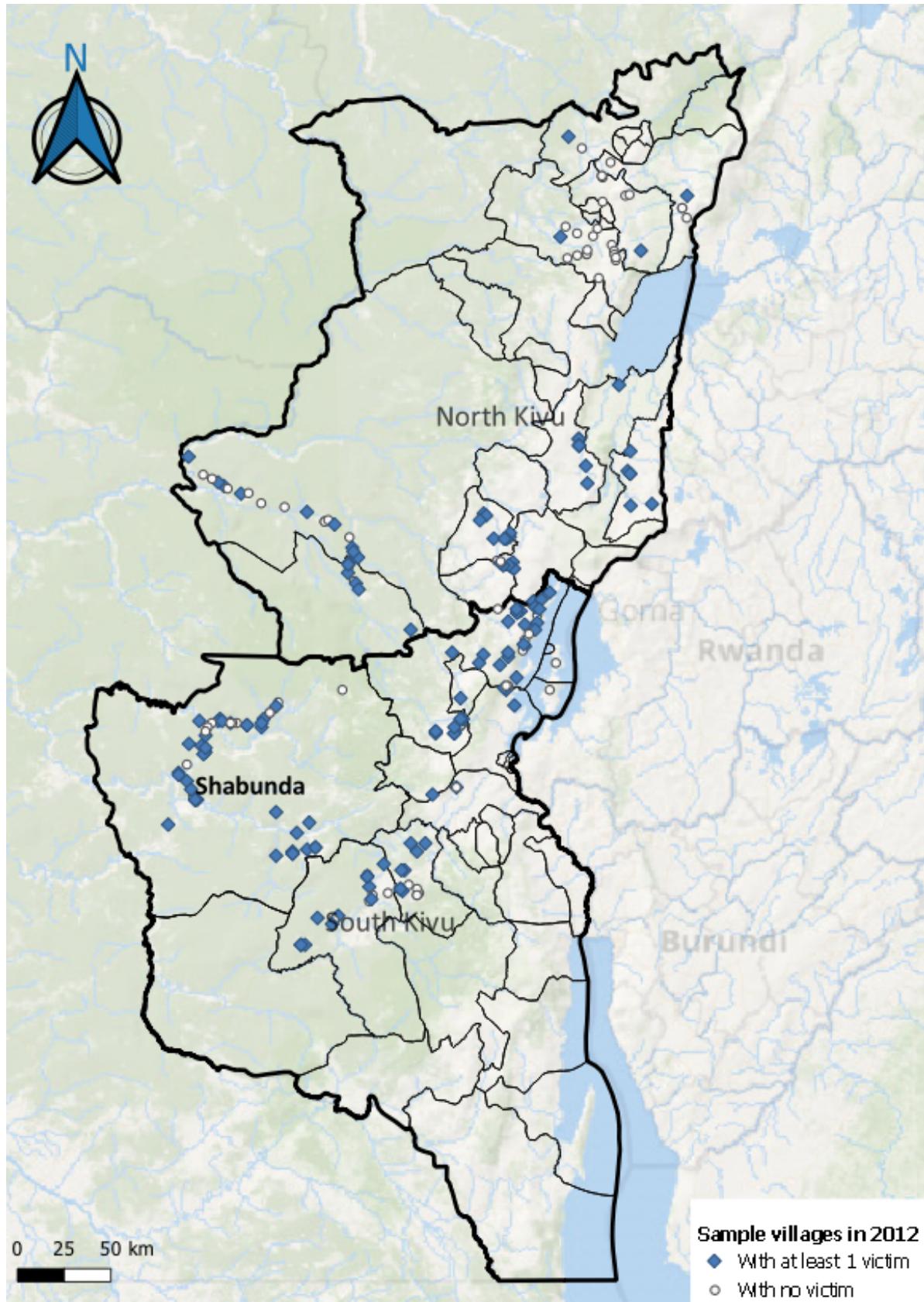
Notes: This figure shows the average yearly world and local gold prices between 1995 and 2013. Local gold prices are collected from the village chief survey, averaged across all 239 sample villages from both South Kivu and North Kivu.

Figure B.7: Spatial Distribution of Participation Episodes in Militias

Notes: Red triangles are villages in 2012 where at least one respondent has participated in any armed group up to 2012.
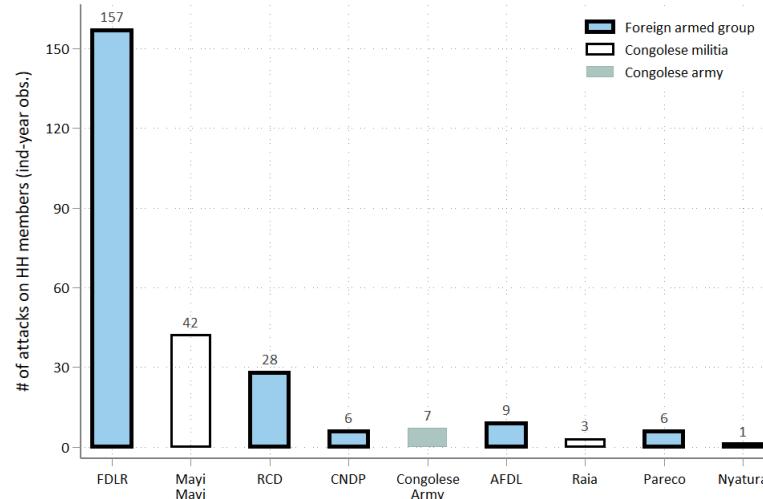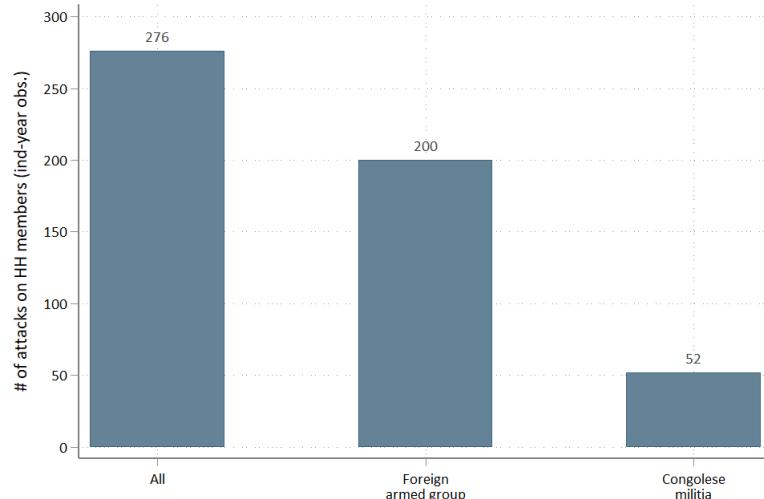
Figure B.8: Spatial Distribution of Attacks against the Sample Households
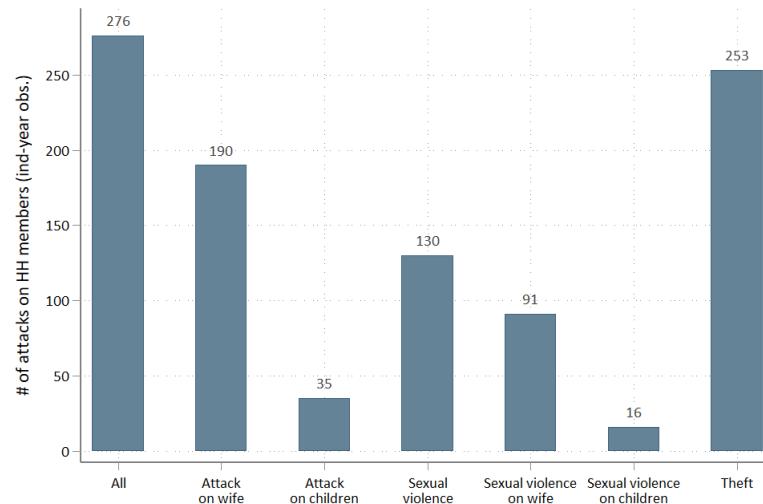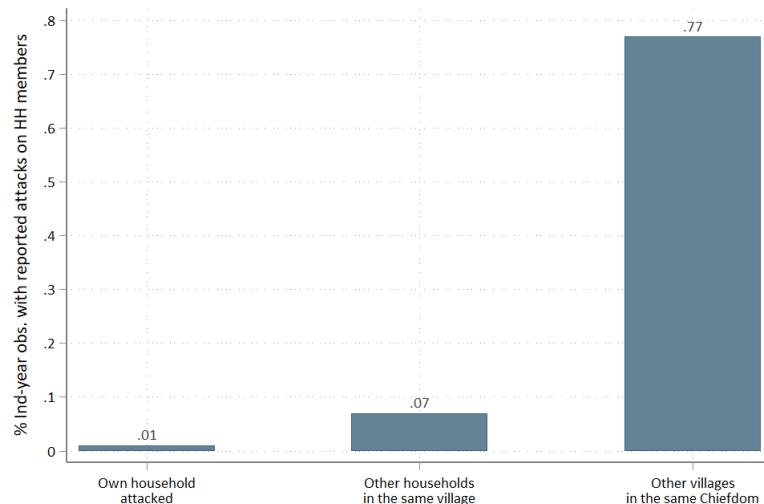
Notes: Blue diamonds are villages in 2012 where at least one respondent has experienced an attack on household up to 2012.

Figure B.9: Perpetrators and Targeted Persons in the Recorded Violent Attacks

A. Perpetrators
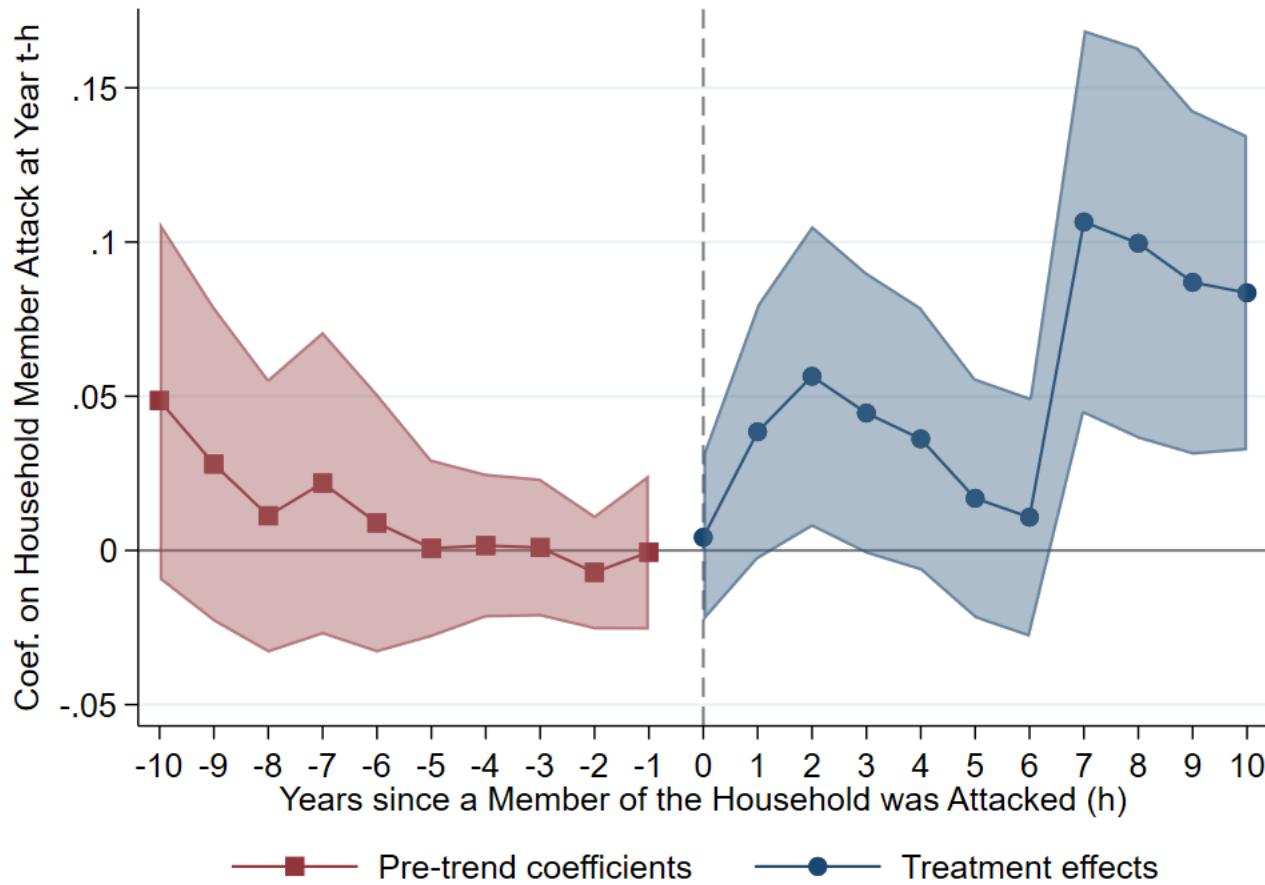
B. Targeted Persons

Notes: Panel A describes the perpetrators of the attacks. It uses the sample of 276 reported attacks that targeted the households of the respondents from South Kivu and shows their distribution by perpetrator. In the right quadrant, blue bars with solid outline refer to foreign-led armed groups; hollow bars refer to militias; green bar refers to Congolese national army. Panel B describes the individuals directly affected in each of these attacks. The left quadrant uses the whole sample of attacks to have happened on the household members of respondents, as well as other households in the same village and in the same Chiefdom. Based on this information, it shows the percentage of individual-year observations in which the own household was attacked, other households in the same village were attacked, or other villages in the same Chiefdom were attacked. The right quadrant decomposes all attacks on the household members by the type of actions that were conducted (not mutually exclusive), respectively: attack on the spouse, attack on children, attack with sexual violence, attack involving sexual violence on respondent's spouse, attack involving sexual violence on respondent's children, attack in which household property was stolen.
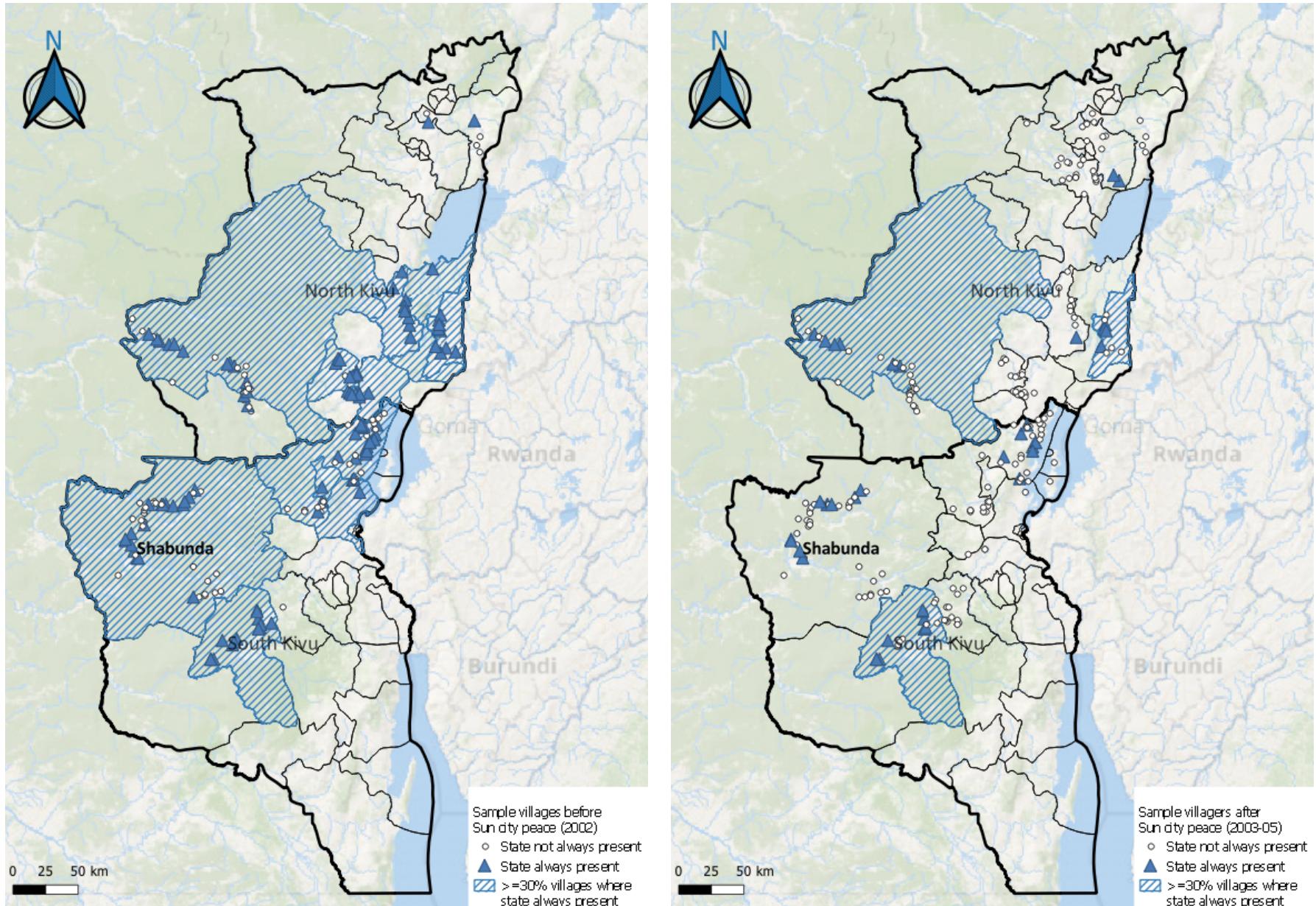
Figure B.10: Past Victims are Over-Represented in Militia Chapters Today—Dynamic Visualization

Notes: This figure shows Borusyak et al. (2020)'s event study estimators of the coefficients in Equation 1, γ_h, for $h \in [-10, 10]$. The dependent variable is an indicator taking value one in years and villages observations in which the respondent participates in a militia chapter formed in the village, and zero otherwise. We include observations between 1995 and 2013. All regressions include individual, village, year, and age fixed effects, and cluster two-way at the individual respondent and the village*year levels. We show 95% confidence intervals.

Figure B.11: The Predecessor Vacuum and its Associated Insecurity
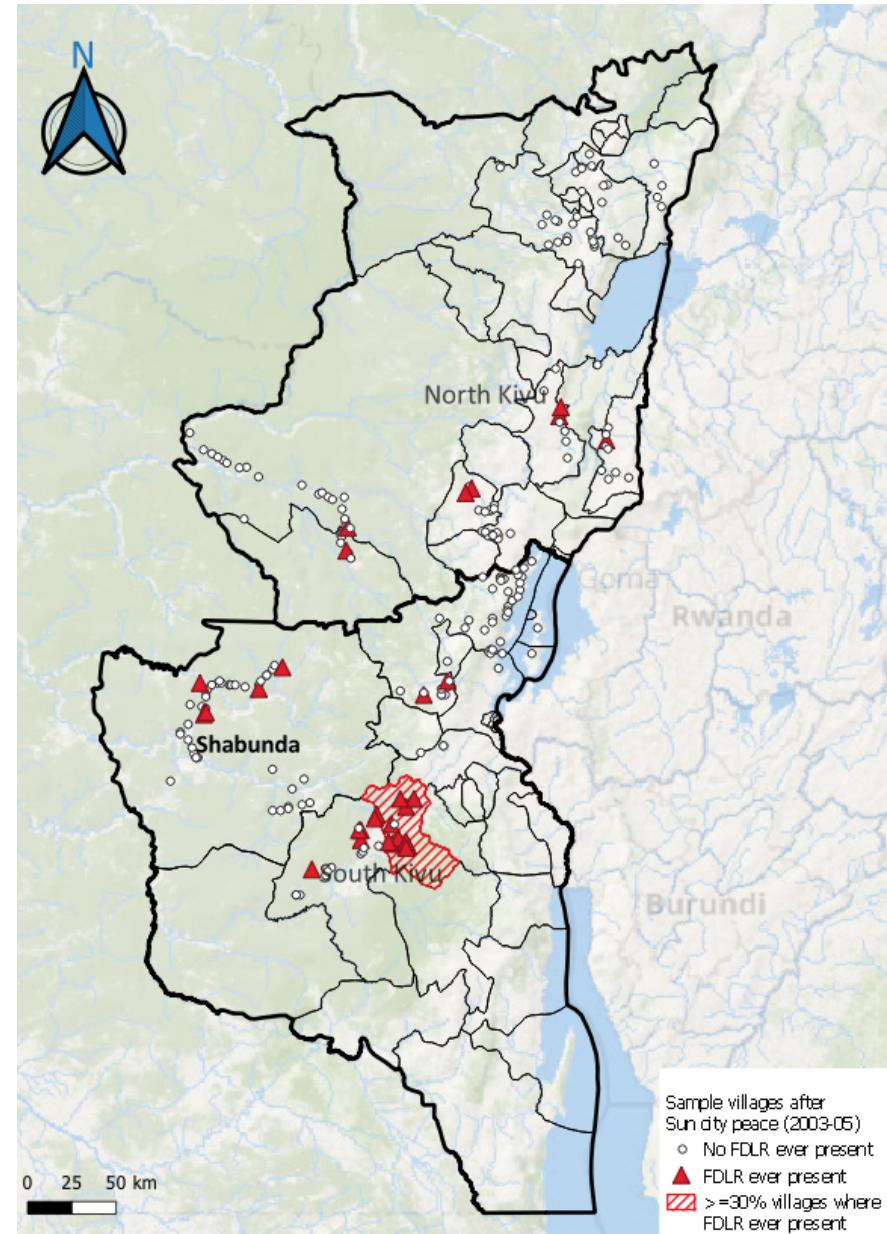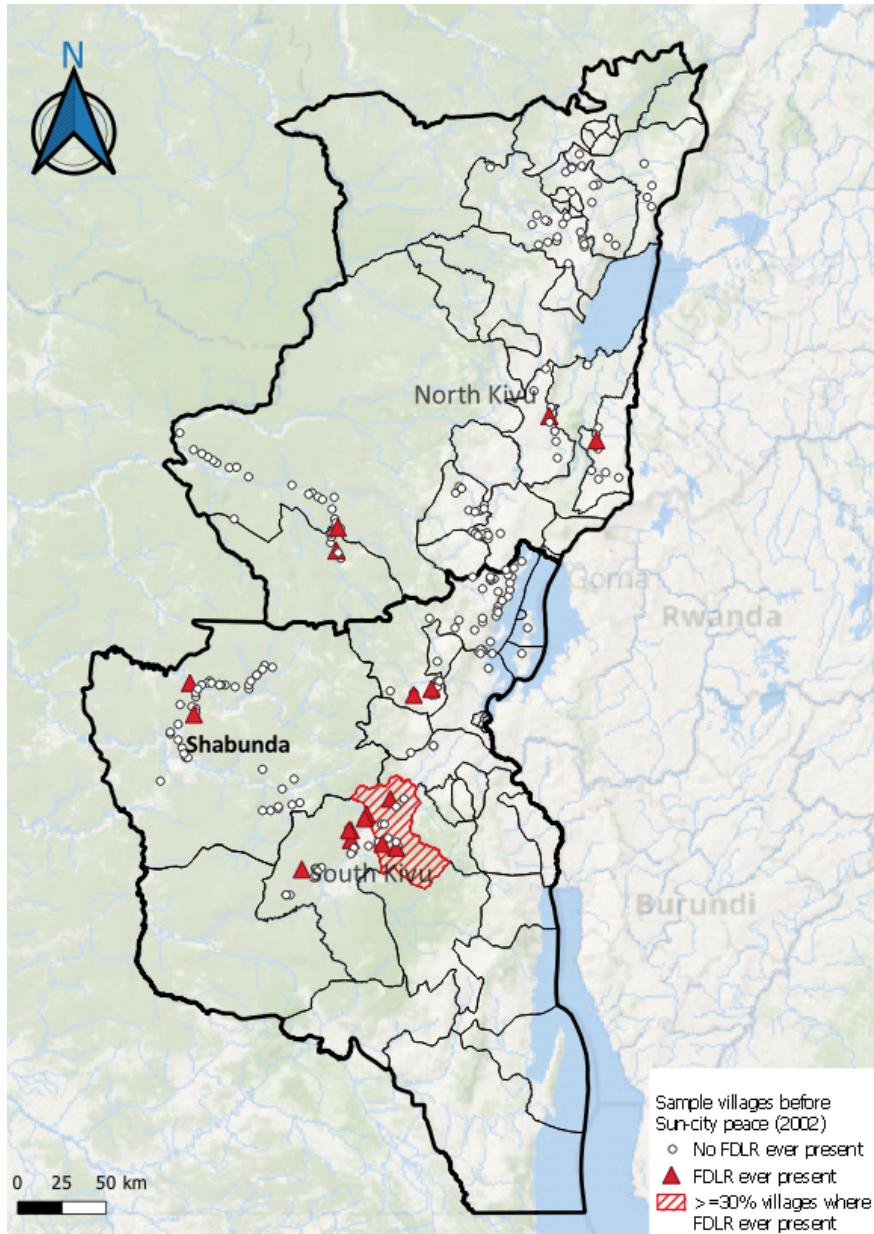
Panel A. The Sun City Peace Agreement as a "State" Vacuum: Presence of the Rebel Army RCD

Notes: Panel A shows the presence of the Congolese army before and after the end of the Second Congo War, i.e. around the Sun-City peace agreement (2003). Since the peace agreement took place in 2003, our indicator of Congolese army presence in 2003 captures the presence of the Congolese army in the months of 2003 leading up to their removal. Thus, in the post-agreement map on the right, a blue triangle is a village where the Congolese army is always present between 2003–05, and a white dot is a village where Congolese army is not always present between 2003–05. The blue areas are chiefdoms where at least 30% are controlled by Congolese army; the cutoff 30% is selected because among cheifdoms where the Congolese army is present, on average, roughly 30% villages are controlled by the Congolese army.

Panel B. The Sun City Peace Agreement Was Not a *Security* Vacuum: Presence of FDLR Predatory Group
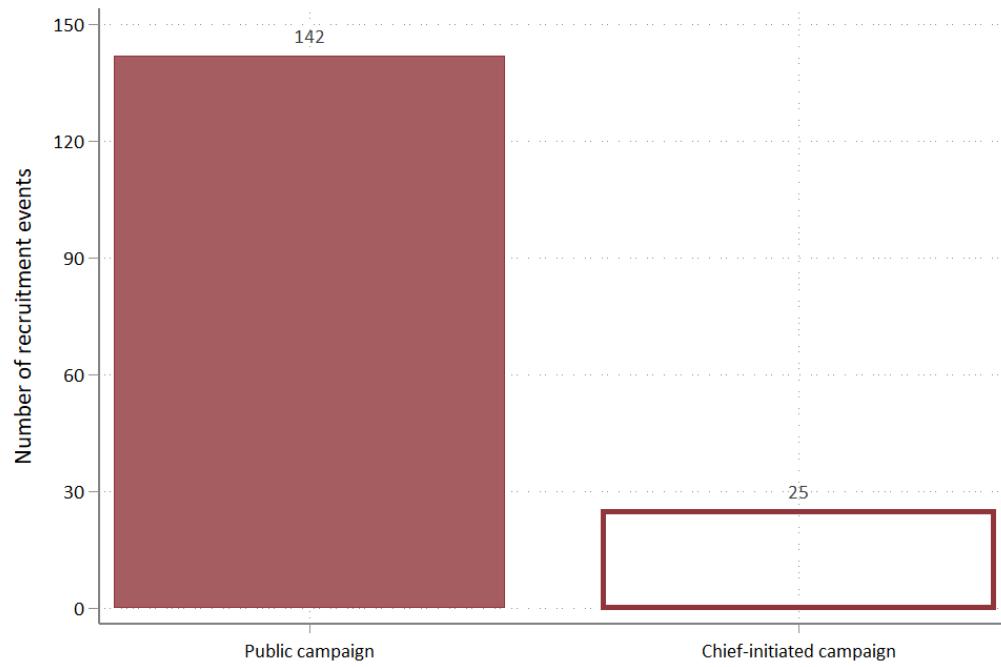
Notes: Panel B shows the presence of the FDLR, a foreign-led predatory armed group known to be violent against civilians around the time of the Sun-City peace agreement (2003). In the post-agreement map on the right, a red triangle is a village where the FDLR is present in any year between 2003–05, and a white dot is a village where the FDLR is not ever present in any year between 2003–05. The red areas are chiefdoms where at least 30% are controlled by the FDLR; the cutoff 30% is selected because among cheifdoms where the Congolese army is present, on average, roughly 30% villages are controlled by the Congolese army.

**Figure B.12:** An NDC Recruitment Campaign Organized by a Village Chief
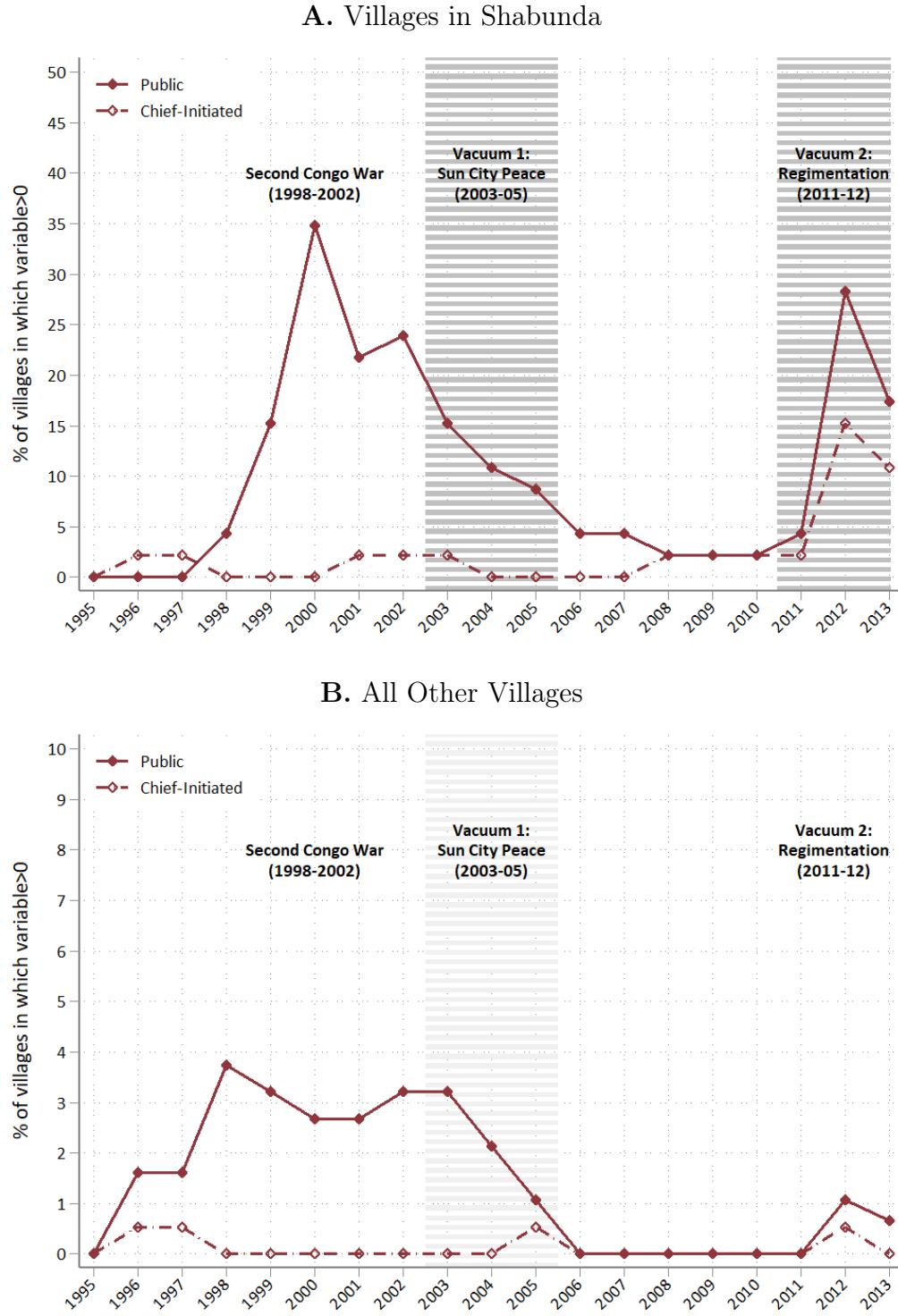
Notes: Sheka, former NDC's General, in a recruitment campaign organized by the village chief. The village chief presides over the campaign and sits at the back. Source: NDC media obtained by one of the authors.

Figure B.13: Campaigns

Notes: This figure shows the frequency of different types of recruitment campaigns in the core sample. The recruitment data are collected from the village chief survey, where for each episode of armed group governance, we ask whether a public campaign or a chief-initiated campaign has taken place.

Figure B.14: The Regimentation Caused a Rise in Campaigns (Times Series)

A. Villages in Shabunda

B. All Other Villages

Notes: We use both the core sample from South Kivu and the extra village sample from North Kivu to present the yearly trend. The red thick solid line shows the fraction of villages in which a public campaign takes place in each year. The red dashed line shows the fraction of villages in which a chief-initiated campaign takes place in each year. Panel A restricts the sample to Shabunda, the district affected by the Regimentation's induced state vacuum of 2011. Panel B shows the yearly trend for the remaining of the sample. Left and right grayed areas indicate years in which documented policy-driven state vacuums were associated to the rise of the first and the second, larger, Raia, respectively.

C   Migration

In what follows, we consider the biases that may ensue if individuals who were previously in the village have left the village, and those that may ensue if individuals who are today in the village come from other areas. These patterns of selection can arise from death, migration, or active involvement in armed groups in other areas. They can threaten the validity of our main coefficient if, for instance, individuals who are more likely to have migrated out of the sample are also more (or less) likely to have been attacked, and also to have participated in armed groups. We refer to all of these sample selection issues as migration in what follows. Migration can affect external validity of our results if the selection of households present today is not representative of those who were present in the past. In that case, we estimate the effect for a population subset. We now formally analyze migration.

C.1   Difference between migrants and stayers

We first analyze whether villagers who migrated are systematically different. Table C.1 compares individual-year observations where villagers moved to a new village in year t versus those where villagers stay in the same village. In total there are 1,389 migration episodes. Notably, migrants are not more likely to have reported a violent attack on household members in the past, suggesting respondents in the core sample do not migrate because of past victimization experience. Migrants are also less likely to have participated in militia village chapter, against the hypothesis that respondents migrate to avoid being targeted as an ex-combatant. Regarding other demographics, migrants tend to be younger, less likely to have married, more likely to be unemployed before moving, and more educated. They do not differ in the father's wealth index, number of plot, or farm animal index, although they invest more in plots and farm animals after they migrate.

Table C.2, Panel A examines the past migration history for participants in militia chapters, compared to other contemporary non-participants living in the same village, the same chiefdom, and the same territory, respectively. On average, 58% participants in militia village chapters have any migration episodes in the past, slightly higher than that of non-participants living in the same village, albeit not significantly. Participants in militia village chapters are also more likely to have migrated to out-of-sample villages in the past. This potentially constitutes a selection bias when estimating the treatment effects of state vacuums because we are not able to observe

the state vacuums in out-of-sample villages. In the following sections, we formalize this type of selection bias, and provide several tests to address this concern. Reassuringly, we do not find that participants in militia chapters are more likely to migrate in the same year compared to non-participants, suggesting the decision to participate would not induce selection bias due to migration.

Table C.1: Characteristics of Migrants (1,389 migration episodes)

	Nonmigrant	Migrant
# Individual-Year Obs.	18067	1389
A: Conflict Background		
Past Victimization by Foreign Armed Group	0.07	0.08
By Congolese Militia	0.03	0.03
Past participation in Militia Village Chapter	0.06	0.04**
In Raia Mutomboki or Mayi-Mayi	0.03	0.02**
In Militia Formed Outside Village	0.02	0.02
B: Demographic Characteristics		
In the Family of the Village Chief	0.10	0.11
Age in year t	26.58	26.52*
Married in year t	0.35	0.34
C: Productive Capacity in Nonviolent Sector		
Employed in year t-1	0.57	0.51***
In Mining Sector in year t-1	0.12	0.11
In Agricultural Sector in year t-1	0.39	0.34***
As a Civil Servant in year t-1	0.06	0.06
Father's Wealth Index	-0.20	-0.17
# Plots Owned in year t-1	0.50	0.48
Farm Animal Index in year t-1	0.08	0.04
Primary Education Complete	0.50	0.59***
Secondary Education Complete	0.13	0.19***
D: Average Increase in Future Assets		
# Plots Owned	0.18	0.25***
Farm Animal Index	0.22	0.31***

Notes: We use the core sample from South Kivu to present the descriptives. *Migrant*: Episodes where respondents just move to a new village. *Nonmigrant*: observations where respondents stay in the same village as in the previous year. We indicate the difference between Column 1 and 2 (P-value: *** 0.01, ** 0.05, * 0.10), computed after including year FE, and clustered two-way at the individual respondent and the village-year level.

Table C.2: Past Migration for Participants

	Participants				Non-participants		
	Militia from Village			Militia from	Living in the Same:		
	All	Raia	Non-Raia	Outside	Village	Chiefdom	Territory
# Participants/Individual-Year Obs.	245	134	111	30	753	11092	12152
Past migration	*0.58*	*0.71*	*0.42*	*0.40*******	*0.42*	*0.41*	*0.41*
Within sample villages	0.31	0.40	0.22	0.17*	0.18	0.14**	0.14***
From out-of-sample villages	0.33	0.43	0.21	0.20*	0.21	0.22	0.23
To out-of-sample villages	0.24	0.31	0.14	0.10	0.16**	0.16*	0.16*
Within out-of-sample villages	0.05	0.07	0.03	0.03*	0.04	0.06*	0.06*
Migration in the same year	*0.05*	*0.01*	*0.10*	*0.14*******	*0.09*	*0.07*******	*0.07****
Within sample villages	0.04	0.00	0.08	0.10	0.03	0.02**	0.02**
From out-of-sample villages	0.01	0.01	0.01	0.03***	0.03	0.03	0.03
To out-of-sample villages	0.00	0.00	0.01	0.00	0.03	0.01	0.02
Within out-of-sample villages	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Notes: We use the core sample from South Kivu to present the descriptives. *Militia from Village* reports the sample of individuals who joined a militia chapter formed in the village of survey. *Raia* and *Non-Raia* report the sample of individuals who joined in Raia and other militia chapter formed in the village of survey that is not Raia, respectively. *Militia from Outside* reports the sample of individuals who joined a militia chapter formed outside of the survey village. For non-participants, we include individual-year observations where there is at least one contemporary participant in a militia living in the same village, same chiefdom, same territory, respectively. We indicate the significance of differences compared to Column 2 with stars at 1, 5, or 10% significance levels (*, **, *** respectively). When calculating differences, we include year fixed effects, control for all variables in Table A.4, Panels B–D, and cluster at two-way at the individual respondent and the village-year level. We are not able to provide more descriptives of migration in the future because the data collection of the core sample ended in 2013, while most participation in Raia Mutomboki happened in 2012.

## C.2 Migration as a source of selection bias

Suppose at t_0 we have a representative sample from the villages we interview ("sample villages"), and we want to estimate the treatment effect of past attack on villagers from the sample villages. After a period Δt, however, some villagers emigrate to an out-of-sample village (In-Out migration), and some villagers migrate into a sample village (Out-In migration). A random draw from the sample villages in $t_0 + \Delta t$ will not be representative of villagers from the villages we interview at time t_0. Notice that some villagers migrate within sample villages, but this does not cause the selection bias because they do not alter the composition of villagers from the survey villages. See Figure C.1. We formalize the selection bias due to migration as follows, assuming villagers within or outside of sample villages have the same tendency to migrate :

1. Suppose sample villages (Group A) constitute proportion $a \in [0, 1]$ of the East Congo population;

2. Within sample villages, proportion $1 - \pi$ of the villagers will never migrate outside (stayers, A_s). Proportion π of the villagers will migrate to out-of-sample villages at least once throughout the period (Emigrants, A_m) with probability p;

3. Within out-of-sample villages (Group B), proportion $1 - \pi$ of the villagers will never migrate outside (stayers, B_0). Proportion π of the villagers will migrate to sample villages at least once throughout the period (immigrants, B_m) with probability p.

C.2.1 Selection bias estimating the effect of state vacuum on militia participation

Table C.3, Panel A replicates Table 3, Panel B with only respondents who never migrated outside of the sample villages. Results remain mostly unchanged. Among the stayers, the state vacuum induced by the Regimentation policy seems less likely to lead to forced participation, although the result is only borderline significant and not robust to other specifications. Table C.3, Panel B include the entire core sample, interacting the state vacuum indicators with whether the respondent is an immigrant from outside of the sample villages. Results remain largely unchanged. Notice that because we can only measure state vacuums for the sample villages, our main regressions leave out observations where respondents resided outside of the sample villages, and thus we are not able to include emigrants in the regressions.

Figure C.1: Illustration of Selection Bias
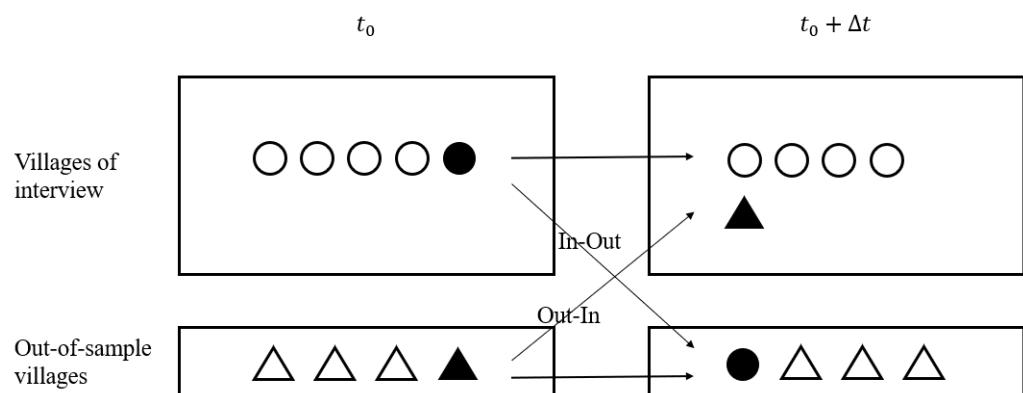
Table C.3: State Vacuum and the Birth of The Raia (Migration Analysis)

Panel A. Only Stayers Included

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.78*	0.40	-0.22	0.18	0.16	0.50	0.18	0.58
	(1.01)	(0.30)	(0.55)	(0.17)	(0.16)	(0.39)	(0.17)	(0.41)
Vacuum 2 [Regimentation]	15.61***	2.11***	9.06***	0.71	1.20**	-0.04*	2.17***	0.72
	(2.61)	(0.74)	(1.87)	(0.51)	(0.60)	(0.02)	(0.70)	(0.55)
Observations	9,308	9,308	9,308	9,308	9,308	9,308	9,308	9,308
R-squared	0.18	0.08	0.13	0.07	0.07	0.07	0.08	0.07
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Panel B. Interacting Vacuums with Immigration Status

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Vacuum 1 [Sun City Peace]	1.76*	0.43	-0.22	0.16	0.20	0.48	0.14	0.58
	(0.96)	(0.31)	(0.50)	(0.15)	(0.16)	(0.33)	(0.15)	(0.36)
Vacuum 2 [Regimentation]	16.99***	1.83***	9.82***	0.62	1.86***	0.00	1.91***	1.11**
	(2.65)	(0.65)	(1.87)	(0.45)	(0.65)	(0.02)	(0.63)	(0.54)
Vacuum 1 X Immigrant	-0.48	0.11	0.46	0.05	0.31	-0.56*	-0.12	-0.54
	(1.18)	(0.65)	(0.59)	(0.19)	(0.61)	(0.34)	(0.15)	(0.41)
Vacuum 2 X Immigrant	-0.13	1.52	-0.25	0.73	-0.48	-0.00	-1.92***	0.42
	(3.17)	(1.28)	(2.75)	(0.83)	(0.86)	(0.03)	(0.64)	(1.12)
Observations	15,074	15,074	15,074	15,074	15,074	15,074	15,074	15,074
R-squared	0.19	0.09	0.14	0.14	0.09	0.07	0.07	0.07
Pre-Vacuum 1 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Vacuum 2 Shabunda mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: This table presents the estimates of Equation 2 using the core sample, where the dependent variables are (in decimal digits): an indicator for whether the individual joins a militia village chapter (Column 1), for whether they joined it motivated by intrinsic social emotions (Columns 2–3), by extrinsic social incentives (Columns 4–6), or by private motivations (Column 7–8). Panel A restricts the core sample to respondents who never left the village throughout 1995–2013. Panel B adds as a control $\mathbf{1}[V1_{jt}] \times F_{ijt}$ and $\mathbf{1}[V2_{jt}] \times F_{ijt}$, where F_{ijt} is an indicator of whether the respondent i in village j in year t recently moved from somewhere outside of our sample villages. All regressions control for village fixed effects, year fixed effects, and individual fixed effects; standard errors are clustered at the level of village-level and individual-level.

We further provide a counterfactual analysis based on the migration framework in Section C.2. Assume the real treatment effect of each group is $T(X)$, and state vacuums do not change the composition of different subgroups (*i.e.*, parameters a and π are unaffected). The average treatment effect on the villagers from the core sample (A) can thus be written as follows:

$$ATE(A) = (1 - \pi)T(A_0) + \pi T(A_m),$$

where A_0 is the subset of stayers, A_m is the subset of emigrants outside of the sample villages. We are not able to observe $T(A_m)$ in the data because we do not observe whether there is a state vacuum induced by policies in villages outside of the sample.

The actual estimate of the treatment effect can be written in the following two ways:

$$\widehat{ATE(A)} = \frac{a(1 - \pi)}{a(1 - \pi) + (1 - a)p\pi}T(A_0) + \frac{(1 - a)p\pi}{a(1 - \pi) + (1 - a)p\pi}T(B_m)$$
$$= \frac{1}{1 + (\frac{1-a}{a}p - 1)\pi}ATE(A) + \frac{(1 - a)p\pi T(B_m) - a\pi T(A_m)}{a(1 - \pi) + (1 - a)p\pi}, \tag{5}$$

where B_m is the subset of immigrants from outside of the sample villages. Assuming that immigrants in our sample are representative of the entire set of immigrants from outside of the sample villages, we are able to observe B_m and provide an unbiased estimate of $T(B_m)$, *i.e.*, the coefficients for the interactions between state vacuum indicators and the immigrant status in Table C.3, Panel B.

We can now describe our counterfactual exercise. With proper assumptions of $T(A_m)$ and calibrations of parameters a, π, and p, we can calculate the counterfactual values $T^{ct}(B_m)$, such that we can generate the same estimate $\widehat{ATE(A)}$ even if the underlying $ATE(A)$ equals zero. Then, we can compare the counterfactual values $T^{ct}(B_m)$ to the actual estimates $\widehat{T(B_M)}$. If the calculated p-value to reject $T^{ct}(B_m) = \widehat{T(B_M)}$ is sufficiently small, it is unlikely for one to generate the same estimate $\widehat{ATE(A)}$ with only assumptions on the migrants and without a real effect on the general population in the sample villages.

We calibrate the key parameters as follows. (1) Migration likelihood for migrants (p): On average, each migrant is observed for 16 years in the sample, and moves on average twice. We calibrate $p = 1/8 = 0.125$. (2) Proportion of villagers in the sample villages (a): According to village chief survey, on average, there are 427 villagers in a sample village in South Kivu. Consider the total population in South Kivu in 2015 to be 5,772,000, and apply the average number of

villagers to all 133 villages in South Kivu, we calibrate $a = 0.98\%$. (3) Proportion of villagers who migrate at least once throughout the observation period (π): Out of 1,041 respondents, 588 have never migrated outside of the sample once. We calibrate $\pi = 1 - 588/1041 = 44\%$.[32] For the treatment effect on emigrants $T(A_m)$, we assume it to be within the range $[-10, 10]$, $[-20, 20]$, and $[-30, 30]$ percentage points, respectively. These are relatively extreme assumptions because the largest magnitude we have seen in the main analysis is no more than 31.6 percentage points (Table 6, Column 4). We report the maximum p-values amongst different assumptions of $T(A_m)$.

Table C.4 presents the counterfactual analysis. Even with extreme assumptions on emigrants, it is unlikely to generate the large effect of the state vacuum during Regimentation on general participation in militia village chapter. The results on participation to protect the community and for private motivations are also unaffected by the extreme assumptions on emigrants, although results on other motives might be somewhat subject to different assumptions of migration.

---

[32]This is not the perfect calibration of π because it does not consider villagers who have emigrated, which is difficult to observe. The closest data we have is how many villagers emigrated from each village every year. On average, a village of interview in South Kivu sees 61 in-migrants and 64 out-migrants every year.

Table C.4: Counterfactual Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Social Motivations			Private Motivations	
		Intrinsic (Social Emotions):		Extrinsic (Social Incentives):				
	General	Revenge	Community Protection	Status	Social Pressure	Social Coercion	Money	Private Protection
Estimated ATE from Table 3:								
Vacuum 1 [Sun City Peace]	1.68*	0.45	-0.14	0.17	0.25	0.38	0.11	0.48
	(0.91)	(0.32)	(0.50)	(0.12)	(0.16)	(0.28)	(0.12)	(0.30)
Vacuum 2 [Regimentation]	16.96***	2.26***	9.75***	0.83*	1.72***	0.01	1.36***	1.23***
	(2.55)	(0.62)	(1.80)	(0.45)	(0.58)	(0.02)	(0.47)	(0.45)
Estimated Treatment Effects on Immigrants from Outside of Sample from Table C.3, Panel B:								
Vacuum 1 X Immigrant $(\widehat{T}_1(B_m))$	-0.48	0.11	0.46	0.05	0.31	-0.56*	-0.12	-0.54
	(1.18)	(0.65)	(0.59)	(0.19)	(0.61)	(0.34)	(0.15)	(0.41)
Vacuum 2 X Immigrant $(\widehat{T}_2(B_m))$	-0.13	1.52	-0.25	0.73	-0.48	-0.00	-1.92***	0.42
	(3.17)	(1.28)	(2.75)	(0.83)	(0.86)	(0.03)	(0.64)	(1.12)
Counterfactual: Actual ATE = 0, Treatment Effects on Emigrates in Out of Sample $\in [-10\%, 10\%]$:								
P-value: $\widehat{T}_1(B_m) = T_1^{ct}(B_m)$	0.20	1.00	1.00	1.00	1.00	0.58	1.00	0.49
P-value: $\widehat{T}_2(B_m) = T_2^{ct}(B_m)$	0.00	0.89	0.00	1.00	0.07	1.00	0.00	0.90
Counterfactual: Actual ATE = 0, Treatment Effects on Emigrates in Out of Sample $\in [-20\%, 20\%]$:								
P-value: $\widehat{T}_1(B_m) = T_1^{ct}(B_m)$	0.54	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P-value: $\widehat{T}_2(B_m) = T_2^{ct}(B_m)$	0.00	1.00	0.00	1.00	0.36	1.00	0.00	1.00
Counterfactual: Actual ATE = 0, Treatment Effects on Emigrates in Out of Sample $\in [-30\%, 30\%]$:								
P-value: $\widehat{T}_1(B_m) = T_1^{ct}(B_m)$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P-value: $\widehat{T}_2(B_m) = T_2^{ct}(B_m)$	0.00	1.00	0.00	1.00	1.00	1.00	0.11	1.00

Notes: This table conducts a counterfactual exercise, using the estimates from Table 3 and Table C.3, Panel B. We assume the actual average treatment effect ATE is zero, and the treatment effects on the unobserved emigrates in out-of-sample villages $(T(A_m))$ are between $[-10, 10]$, $[-20, 20]$, and $[-30, 30]$ percentage points, respectively, to calculate the counterfactual treatment effects on the immigrants $(T^{ct}(B_m))$ following Equation 5. We report the maximum p-values for different assumptions of $T(A_m)$.

Webpage Appendices

A   Data Description and Data Construction

In this section, we describe how the survey was phrased, and we construct the indicators based on the data produced by the survey responses.

A.1   Presence of Armed Groups

During the village chief survey, we ask the village chief and village history experts (i) what armed groups control the villages, and (ii) what armed groups control the nearby mining sites of the villages. When discussing the origin of militias, we emphasize the prevalence of militia governance in the village, less so about how militias extract revenues potentially from the mining sites. Thus, when constructing an indicator of the presence of militia village chapter, we mainly use the armed group information in the village, $i.e.$, whether a militia originated from the village is present in the village j in year t, not accounting for potential militia presence in the nearby mining sites. This variable is used in Figure 3, Table 3, Table A.10, and Table A.12. All main results remain unaffected if we account for the presence of armed groups in mining sites.

In Sanchez de la Sierra (2020a), we used a similar indicator of "village militia" constructed in a similar way. Since then, while working on this paper, we further examined the information about whether the armed group originated from the village by consulting with the field team, adjusted a limited number of values which better aligned with the qualitative evidence collected during the village chief survey, and used this updated variable to construct a new indicator of the presence of militia village chapter as described above. Both measures produce very similar results in the data analysis.

In addition, in Section 6 where we discuss insecurity induced by the withdrawal of state forces, when constructing an indicator of the presence of the national army and FDLR, we account for the presence of armed groups in the mining sites, $i.e.$, whether national army or FDLR is present in the village j and its nearby mining sites in year t. The presence of the national army in mining sites may provide a certain level of security, while the presence of FDLR in mining sites may constitute a credible threat to the village security given its predatory nature. All main results

remain unaffected if we do not account for the presence of armed groups in mining sites.

A.2 Constructing a Household Attacked Indicator

Table A.1 presents the survey questions used for reconstructing whether an individual household was previously victimized.

Table A.1: Description of Survey Questions on Individual Attacks

Variable	Survey question	Code
Module: Respondent attack history (Up to 9 attack events)		
A_{jt}	*Was there any violent event in village j where you lived in year t?*	$= 1$ if resp. reported a violent event in village j in year t
$Perp_{jt}$	*Who was the perpetrator?*	We classify perpetrators into militia, Raia Mutomboki, non-Raia militia, foreign-led armed group, or the Congolese national army
Mot_{jt}	*What was the attack motive?*	$=$ whether resp. reported a violent event where the motive was pillage, sanction, or conquest
A_{ijt}	*Were you physically assaulted during the attack?*	$= 1$ if resp. reported a violent event where resp. was physically assaulted
$Theft_{f(i)jt}$	*Was any property of your household stolen during the attack?*	$= 1$ if resp. reported a violent event where any property of his household was stolen
$Chief_{jt}$	*Was the village chief assaulted during the attack?*	$= 1$ if resp. reported a violent event where the village chief was attacked
Module: Household information		
$A_{f(i)t}$	*For each of your household members, including yourself, list three episodes he/she was assaulted*	$= 1$ if any of the household members (excluding resp. himself) reported being assaulted in year t
$Viol_{f(i)t}$	*For each of your household members, including yourself, list three episodes he/she was sexually victimized*	$= 1$ if any of the household members (excluding resp. himself) reported being sexually victimized in year t

Notes: This table presents the survey questions used in this paper. Subscript j indicates that information comes from respondent attack module where respondents are asked about violent events in contemporary villages. The information can vary across different respondents who live in the same village in the same year, but for concise notation we do not add additional individual subscript. Subscript i indicates the action was imposed on respondent i. Subscript $f(i)$ indicates the action was imposed on respondent i's other household members, excluding respondent himself. In the next subsection, subscript o indicates the action was imposed on other households in the same village in year t.

Table A.2 presents the procedure we apply on the survey data to construct the household attacked indicator. The main definition of attack in this paper focuses on reported violent events with nonconquest motives on other household members, excluding attacks that affect the respondent only. Violent events with conquest motives mainly involve combatants during war, thus they do not capture the type of victimization that our qualitative data suggests is important. We focus on attacks that affect any member of the household.

The main explanatory variable in Equation 1, I_{it}^{Victim}, is constructed as an indicator for whether respondent i reported any attack on his household in the past. Subscript $j(it')$ indicates that reported attacks took place in villages where respondents lived in year t'.

The fact that the main attack variable is constructed by combining information from different modules might complicate the interpretation in at least two scenarios:

- Suppose a respondent reports two violent events in the same year, both with pillage motive. The first event was perpetrated by a foreign-led armed group, the second event was perpetrated by a militia. The respondent also reports an attack on his spouse in the same year, and in reality his spouse was attacked in the second event. Our construction of main attack variable, however, would create a "false" attack on respondent's spouse by a foreign-led armed group. This scenario, however, is infrequent. In total, 873 respondents from South Kivu have reported 2,803 nonconquest violent events, and 70.2% are reported in the year when the respondent does not report any other nonconquest violent events.

- Other household members might live in a different locations than the respondent in year t. This is also infrequent: the majority of the households observed in the data are nuclear family households. Out of 1,038 households from South Kivu that have detailed rosters of current family members that live with the respondent, 71.7% of the households do not include family members other than spouse and children. If the respondent reported that his spouse or children were attacked in year t, we assume that his spouse or children were living with the respondent in the village.

Table A.2: Construction of Household Attacked Indicator

Variable	Construction	Interpretation
$AA_{f(i)jt}$	$= A_{jt} \times (Mot_{jt} \neq c) \times A_{f(i)t}$	Whether resp. i reported an attack in year t in village j with nonconquest motive, and in which year any of the household members, other than the respondent only, reported being assaulted
I_{it}^{Victim}	$= 1\big(\exists t' < t, AA_{f(i)j(it')t'} = 1\big)$	Whether resp. i reported an attack on household before year t (j depends on i's living history)

Notes: This table presents the construction of household victimization indicator from the survey questions.

A.3 Constructing Histories of Assets and Land Ownership

Each respondent in South Kivu is asked to list yearly purchase and sales for farm animals (cows, goats, and pigs) and fields since 1990. For asset stock at birth, we ask how many cows, goats, pigs, and fields the respondent's father had when the respondent was born. We also ask about the farm animals owned at the survey year, but not fields. We adopt the following approach to construct the yearly household asset stock.

If the respondent is not married at year t, for farm animals and lands, we start from respondent's current asset stock and calculate respondent's asset stock in previous year by subtracting respondent's net purchase of asset this year from current asset stock. We calculate respondent's asset stock in each year backward up to year 1995.

If the respondent is married at year t, we calculate the asset stock backward up to the year when he was first married (89.9% of respondents who have hold marriages are only married once). Before the year respondent was first married, we start from respondent's asset stock at birth and calculate the asset stock in following years by adding net purchase of asset up to the year before respondent was first married. The reason is that a respondent that gets married may separate from his original household and start a new household.

For plots, we calculate respondent's stock of plots starting from his stock of plots at birth and adding net purchase of plots in the years that follow. We assume that when the respondent gets married, he acquires one extra plot of land.

The construction of wealth variables above does not take into account the potential effect of attack on asset stocks—they are based on asset acquisition and asset liquidation, but do not

include direct measurement of houeholds' assets lost to theft. To impute the value of assets lost for a household during theft, and update our measure of the capital stock, we use the following method to account for the loss of properties during a violent event. We first calculate the average loss in farm animals across all recorded violent events, and assume that each household would lose the average amount of farm animals if their household suffers from theft. Then, during the years when respondent reports a violent event with theft on the household, we decrease the total asset by the assumed amount of loss of farm animals. We assume that violent events do not affect the stock of fields owned.

We then extract the principal component from the computed asset stock of cows, goats, and pigs, to construct our farm assets variable. The results are unchanged whether the calculation of the asset stocks account for loss of properties. For investment, we compute the principal component from the purchase of cows, goats, pigs.

For the wealth of birth, we compute the principal component from the amount of cows, goats, pigs, and fields the respondent's father had at the respondent's birth, and the number of wives of his father and whether the respondent is a relative of the village chief.

B Additional Details on the Origins of the FDLR

The armed group known as the Front de Liberation du Rwanda (FDLR) is an ethnic Hutu group. In July 1994, a rebel movement took power in Rwanda, ending the genocide that had been perpetrated by government supported Hutu dominated militias, the Interahamwe, and the government forces, against the Tutsi. In response to the change of power, two million Rwandans, mostly Hutus, fled into eastern DRC, specifically North Kivu. Among them were the Interahamwe, but also former Rwandan state bureaucrats and armed forces. They formed the Armée de Libération du Rwanda (AliR), predecessor of the FDLR.

In 1996, the Rwandan government launched a military campaign that started the First Congo War (1996–97). One of the goals was to eliminate the insurgent threat coming from the Kivus. Rwandan rebel activity in eastern DRC was not defeated.

Failed negotiations between the new Congolese government and its Rwandan and Ugandan backers in 1998 plunged the DRC into the Second Congo War (1998–2004). During this war,

Rwanda backed a rebel group, the Rassemblement Congolais pour la Democratie (RCD), that quickly controlled the eastern half of the country, where it took over the state apparatus and controlled the main cities, and sought to impose its authority over rural areas, where there was armed resistance. In the countryside, resistance militias had formed, which the RCD fought through counterinsurgency operations. The state had no control over the east during this period (Verweijen and Vlassenroot, 2015, Clark, 2002, Ngonzola-Ntalaja, 2002).

Instead, the Congolese government supported various armed groups and provided them with funds and ammunition to fight the RCD. Among them were the former Rwandan government forces and militia members, AliR, who in 2000 formed the FDLR. By 2004, all major armed groups, except the FDLR, vacated the east in exchange for benefits precluded in a peace agreement (Sun City peace agreement). The Congolese state struggled to regain control over the eastern provinces and the FDLR expanded their territory. The FDLR became notorious as one of the most violent groups. The Rwandan government continued to support armed groups who fought against the FDLR, while the Congolese state alternatively tolerated or actively supplied the FDLR.

C   Social Desirability Bias in Reporting Participation

The survey protocols were designed to minimise involuntary omissions, but voluntary omissions can occur on a sensitive topic like participation. Indeed, the measurement of participation through self-reports can be subject to bias arising from the respondent's perceived risks in disclosing past, or present, participation to an unknown researcher. Specifically, respondents can choose not to disclose participation in armed groups generally because they fear it might expose them to risks, such as retaliation or arrest. More concerning to our analysis is that respondents may omit participation in *specific* groups. This is a real concern, as our survey protocols encouraged respondents not to disclose participation if they felt it could expose them to such risks, to protect the safety of respondents and researchers and to ensure the study respected research ethics.

Qualitative fieldwork and existing literature suggest that respondents can be less likely to report participation in groups that have behaved violently or badly with the population, as well as less socially accepted group. In our sample, this is likely to be the case for foreign groups, which, as we show in this paper, behave more violently and are less supported.

Given the anonymity inherent to the aggregate measures, we collected information on par-

ticipation in militias and foreign armed groups through an alternative channel for comparison. Specifically, we obtained the total number of individuals, for each village control episode, which participated in the corresponding group. Contrary to the household reports, this measure is anonymized, hence protects the reports against any sort of social desirability bias that may arise from respondents fearing about individual consequences of reporting participation. Its average can thus be expected to be a more unbiased estimator of participation numbers (even as it may have larger classical measurement error due to recall). We can then compare those to the subset of individual reports that arise from participation in armed groups governing the village.

To examine this possibility, Figure B.2 compares, back to back, the individual reports of participation into militia, and into foreign armed group, to the aggregate reports that we collected from the village chief survey. This analysis has three take-aways.

C.1 No Evidence of Under-Reporting on Average

First, the estimated number of participants in any armed group, obtained through village chief survey aggregate reports is comparable to that estimated based on the individual reports in household surveys. Contrary to what individual under-reporting in the household survey would suggest, we find that the estimated numbers are even slightly higher than those estimated through village anonymized aggregates. This provides confidence that households do not under-report participation in armed groups on average.

C.2 Potential Under-Reporting of Participation in Foreign Armed Groups

Second, disaggregating this analysis by type of armed group, we find that the estimated numbers of foreign armed group participation through respondent reports is somewhat smaller than those estimated through village-level aggregates. This is consistent with respondents potentially under-reporting participation in foreign armed groups. It could also indicate, instead, that individuals who have participated in foreign armed groups may be less likely to have returned to their village.

A number of reasons could explain this conjecture: they may fear to be ostracized, they may be more likely to die in combat, or they may be more likely to be actively fighting in other areas — all of which are weaker concerns for militias. Whatever source of bias may explain this lower estimated numbers based on the household survey, it suggests that the estimates of average

participation in foreign armed groups constructed based on individual reports collected through the household survey may be biased downwards.

C.3 No Evidence of Under-Reporting of Participation in Militias

Third, disaggregating the analysis by type of armed group, we find that the estimated number of participants into militia, as estimated using the household survey self-reports, is considerably larger than that estimated using the village aggregates. This provides confidence that respondents do not feel compelled to hide their participation history in the survey (and that survivor bias is unlikely to be a concern for this analysis).

This finding is also consistent with a wealth of qualitative evidence we have amassed, which shows. In many cases in the Congolese war, militia replaced the state, and participating in militia was tagged with the same patriotic connotations as those of participating in the army. In general, participating in militia is a normal occurrence in rural life in this region, and is socially accepted in our experience talking to hundreds of fighters, their friends, their families, their village authorities, many of which themselves proudly belonged to some of these militias.

Individuals spoke to us very openly about having participated in militia, and about who else had participated, and we obtained referrals to other militia members. Even if they at times fight the state, they often collaborated with the state, and were even armed and logistically supported by the government during the First and Second Congo wars.