Local institutional quality and conflict violence in Africa

Published in Political Geography 53 (2016): 30-42. Please cite accordingly.

This pre-publication version: January 27, 2016

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1 Introduction

While the claim that “all politics is local” will be familiar to any political scientist, most generalizable research looking at the links between political institutions and civil conflict focuses on institutions at the national level. Studies have predominantly emphasized national institutional features such as regime type (e.g., Hegre, Ellingsen, Gates and Gleditsch, 2001), the quality of government (e.g., Hegre and Nygård, 2014), or power-sharing institutions (e.g., Hartzell and Hoddie, 2007). Yet, it is a truism that political institutions are more than the parlaments, constitutions and departments that populate national capitals. Crucially, important political institutions can be found at the local level.

A number of contemporary examples indicate the importance of local institutions for violent conflict. Countries such as Kenya, Nigeria and Iraq have all recently experienced localized rebellions that have emerged in conditions of very poor local governance. Al Shabaab (Kenya), Boko Haram (Nigeria), and the Islamic State (Iraq) have all profited from weak local institutions, and capitalized on the frustrations they engender among citizens. Although a handful of studies have investigated the local institutional correlates of violence (e.g., Voors and Bulte, 2014; Tajima, 2013; Bellows and Miguel, 2009), they are restricted to single-case studies of individual countries and predominantly focused on how violence affects institutions, rather than the causal effect(s) of institutions on violence.

We address this gap by investigating how variation in the quality of formal political institutions at the local level impacts on the location of conflict violence in 20 countries in Africa. We focus on formal local government institutions, understood as “the set of formal institutions legally established to deliver a range of specified services to relatively small geographic jurisdictions” (Bratton, 2012, 517). Formal local government institutions are distinct from the ethno-specific customary institutions that also populate the institutional landscape in Africa and have been shown to matter for a range of outcomes (e.g., Michalopoulos and Papaioannou, 2013).

Our explanatory focus is on the quality of local institutions. High-quality institutions are uncorrupt, law governed, capable, trusted by the public, and efficient in their performance, and instantiate the general concept of “quality of government” (see e.g. Rothstein and Teorell, 2008) or “good governance” (e.g. Kaufmann, Kraay and Mastruzzi, 2009). There is substantial variation in the quality of formal local government institutions in Africa. Some are trusted by the public and function well, with little corruption and efficient administration, while others are corrupt, wasteful and enjoy little trust from the citizens they are set to govern (see e.g. Olowu and Smoke, 1992; Bratton, 2012).

We claim that the quality of local institutions affects conflict risk through two primary channels: By shaping the motivations that give rise to violence, and by functioning as opportunity structures that can either facilitate or curtail conflict.
To test our main expectation we create a dataset combining spatialized survey data with georeferenced data on conflict events in Africa. Specifically, we rely on georeferenced data from the Afrobarometer rounds 3 (2005) and 4 (2008) to proxy for local institutional quality, as perceived by citizens, and combine this with geographically disaggregated conflict data from the UCDP-GED database (Sundberg and Melander, 2013). While acknowledging the limits of survey data for measuring institutional quality (discussed below), we maintain that this dataset presents us with a comprehensive picture of perceived local institutional quality across surveyed countries. Our dataset contains information on over 50 000 respondents in 1638 administrative districts and 20 states in Africa. While the nature of our sample — restricted to countries in waves 3 and 4 of the Afrobarometer — limits the scope for generalization, this allows us to assess more general patterns than the ones probed in extant single-country studies.

Our main finding is that administrative districts with high-quality local government institutions are less likely to experience violence. This relationship holds when controlling for a number of potential confounders, such as previous levels of violence, poverty, demographics, local support for the government, urbanization and geographic location. It also holds when we control for country-level characteristics by including country-fixed effects. A central threat to inference regarding this finding is endogeneity; while institutions have an impact on the risk of conflict, conflict impacts on institutions, creating a circular relationship. While we do not identify a satisfactory instrumental variables strategy for untangling this knot, we rather present a set of robustness tests that go some way towards alleviating at least some of these concerns, such as matching on previous levels of violence and assessing the sensitivity of our results to omitted variables following Altonji, Elder and Taber (2005). While our results align with and contribute to previous cross-country studies showing that good governance can pacify (e.g., Hegre and Nygård, 2014), we extend this insight to political institutions at the local level, contributing to an emerging discussion on the inter-linkages between local institutions and civil war violence (e.g., Voors and Bulte, 2014). Ultimately, the results indicate that the quality of formal local government institutions matters to local civil peace.

2 Institutional quality and conflict: State of the art

If institutions can pacify societies, they should do so not only through what they prescribe — e.g., elections, civil liberties or power sharing — but through how well they function. Institutional quality here refers to quality in the output side of the political process, and is thus distinguishable from democracy which is (primarily) conceptualized with reference to how policies and politicians are selected (see e.g., Dahl, 1971). We here draw on extant literature on institutional quality (see for example Kaufmann, Kraay and Mastruzzi, 2009; Rothstein and Teorell, 2008), and define high-quality institutions as uncorrupt, law
governed, capable, trusted by the public, and efficient in their performance.

Does institutional quality matter to peace? The most prominent arguments come in three main varieties. Some claim that well-functioning institutions help solve commitment problems that can lead to armed conflict (e.g., Hartzell and Hoddie, 2003; Walter, 2014), while others have been more concerned with how institutions alleviate conflict-inducing grievances through inclusion in the political system (e.g., Hegre and Nygård, 2014; Cederman, Gleditsch and Buhaug, 2013). Yet others emphasize that high-quality institutions shrink the opportunity space for rebellion (Fearon and Laitin, 2003). In short, these arguments yield the expectation that high-quality institutions should reduce political violence in a society.

A handful of cross-country studies duly investigate whether institutional quality is indeed associated with peace. Hegre and Nygård (2014) find that informal aspects of institutions, such as low corruption and strong rule of law, have a significant pacifying effect at the national level. This also resonates with Fearon (2011), documenting that “good governance” is associated with less conflict (see also Walter (2014)). Missing from this literature however, is the local dimension of political institutions. This is out of step with recent trends in the study of internal conflict, where studies are increasingly moving beyond focusing on the macro-level of the nation state, to take a geographically disaggregated look at conflict processes at the local level within countries (e.g. Buhaug, Gleditsch, Holtermann, Tollefsen and Østby, 2011; Rustad, Buhaug, Falch and Gates, 2011). Our paper extends this move towards disaggregation to the link between institutions and conflict.

It is to some extent understandable that the reorientation towards the local has not been followed in studies of the institutions-conflict link. Firstly, most of the political institutions that scholars are interested in only exist at the national level per definition (e.g., national elections, supreme courts, power-sharing constitutions etc.). Secondly, there is a disconcerting lack of high quality data on the design and functioning of local political institutions. In spite of this, studying the impact of local institutions is vital. Crucially, many conflicts have been shown to have local roots and dynamics that do not fit neatly within the national-level perspective (Kalyvas, 2006), and conflict areas are often unrepresentative of the country at large (Buhaug and Rød, 2006). Given this, ignoring local institutions misses a crucial dimension of variation that can give us more leverage in terms of identifying causal effects of political institutions. Moreover, looking at the local level brings us closer to the actual level of interaction; occurring between groups and individuals in their local institutional surroundings. While we readily acknowledge that there are important links between national institutions and local-level institutional patterns (discussed below), this study seeks to isolate the impacts of local institutions as such.

There are indeed a handful of studies investigating how local institutions shape conflict-patterns. These draw on single-country evidence, with examples covering Nepal (Bohara, Mitchell and Nepal,
2006), and Indonesia (Barron, Kaiser and Pradhan, 2009; Tajima, 2013). Although few in number, the general pattern appearing in these studies is that high-quality local institutions reduce the incidence of local conflict. Relatedly, a number of recent contributions study the reverse causal direction, namely how conflict violence affects institutions (and related outcomes), in diverse contexts such as Burundi (Voors and Bulte, 2014), Sierra Leone (Bellows and Miguel, 2009), Nepal (Gilligan, Pasquale and Samii, 2014), and Kenya (Linke, 2013). However, there is a need for studies with a greater potential for generalization than these single-country designs. This article contributes to this.

3 Why local institutional quality pacifies

This section discusses why local institutional quality should reduce local-level violence. We argue that aspects of local institutions should affect both the motivations and opportunities that give rise to violence in a local context. While explicitly focusing on how institutions affect conflict risk, we acknowledge the potential for reverse causality in the institutions-conflict relationship, and that this affects the scope for drawing causal inferences. Hence, we end this section with a discussion of institutions as endogenous to conflict.

To structure our discussion of how local institutions impact on local conflict risk we sort the causes of local conflict-related violence into two categories: External and internal. External explanations highlight external actors’ strategic motivations for attacking in a given locality. This can be done to target collaborators of the opposing side (Fjelde and Hultman, 2014), terrorize a population into supporting the attackers (Lyall, 2009), gain strategic control of an area (Zhukov, 2013), or to access loitable resources such as diamonds (e.g. Buhaug and Rød, 2006). Another brand of external explanations downplays the strategic aspect, focusing on the spread and diffusion of conflict events across space and time. On this view, conflict can be seen as an “epidemic” that can spill over administrative boundaries and affect communities with few stakes in the ongoing conflict (e.g. Schutte and Weidmann, 2011).

Internal explanations on the other hand emphasize conflict mechanisms that are endogenous to the local communities where violence occurs, and that interact with the strategic motivations of outside conflict actors. On this view, outside actors and motivations serve as opportunity structures that locals can manipulate (e.g., Kalyvas, 2006). Hence, where the external view focuses on the outside “supply” of violence (spillover, external strategic motivations etc.), the internal view adds local “demand” (local grievances, and opportunistic behavior) to the picture. We are interested in how local institutions condition both internal and external drivers of violence and assume that they do so through affecting opportunities and motivations.
Local institutional quality and opportunities

Local institutions are opportunity structures that affect the costs and benefits of resorting to violence. We argue that high-quality institutions make violence more costly, both for external militias seeking to enter an area, and for local armed groups with endogenous origins. In doing so, we view high-quality institutions as a constituent factor in local state capacity. Districts with high-quality local institutions will have a more efficient police force, and a stronger justice system, that will increase the costs of taking up arms.

First, a strong police can deter external conflict actors. When conflict has originated elsewhere, but is bound to spread, a strong, uncrupt and efficient local police force can provide collective protection preventing encroaching conflict-actors from entering an area. A corrupt and poorly organized police force can have the opposite effect, and pull rebels in. The M23 rebels in North Kivu province in the DRC is one example of a rebel group taking advantage of poor institutions, and particularly of those tasked with security. Some local police forces have even collaborated with the rebels. Human Rights Watch cites a local police officer charged with investigating M23 killings of civilians:

...before each investigation, a high-ranking M23 commander, Innocent Kayna, told him: “You will do the investigation. You will say it’s bandits in the neighborhood who killed, not M23.” (Human Rights Watch, 2013).

A corrupt and inefficient police can thus be manipulated, coerced or bought by rebels, in addition to posing a much smaller security threat to rebels seeking to enter an area. When motivations for conflict are local on the other hand, local police forces can be instrumental in preventing local militias from organizing. They can indirectly disband existing armed groups, seize their assets and weapons, or cut off their resource base through shutting down illicit activities such as drug-trafficking, looting or protection rackets. When local police are corrupt or lack loyalty to the central government, then citizens will turn to rebels or local militias for protection. Areas where the police is weak and corrupt provides fertile grounds for armed groups. The Al Shahaab in Somalia (and Kenya) is one example. The group has stepped in to fill a security vacuum left by dysfunctional public security institutions. In spite of the harsh and dictatorial rule imposed by the group, it has gained some support in the population by introducing a measure of relative security (Human Rights Watch, 2010). In short, high-quality police forces will both make it harder for local rebel groups to form, and it will reduce support for local militias that claim to provide security.
Local institutional quality and motivations

Our second set of explanations highlight how local motivations for conflict can be affected by institutional quality. We will here both focus on the economic or political grievances that generate local conflict-related violence, and on more indirect and parochial motivations that use a wider context of conflict as a window of opportunity to settle scores.

First, local institutional quality might directly or indirectly affect the grievances that generate the conflict in the first place. In the case of conflicts with exogenous origins, poor institutions might cause local grievances that make locals more willing to join already existing rebellions. In other cases, poor institutions can lead to rebellions that are homegrown. High-quality institutions will reduce the number of local grievances that might give rise to such rebellions. Take the example of corruption. Local corruption can fuel grievances in itself, and is often claimed by rebel groups across Africa to be their reason for taking up arms (see e.g. Meredith, 2006). In this way corruption might affect the propensity for revolt directly, through amplifying perceptions of injustice.

Corruption and poor governance can also have indirect effects, through suppressing local investments in public-goods projects such as education and infrastructure (Le Billon, 2003), which in turn can lower the opportunity costs of participating in a rebellion. Additionally, corruption can lead to violence through creating rents that are appropriable through violence (Le Billon, 2003). High levels of corruption can thus engender community-wide grievances that fuel rebellions.

Furthermore, institutional quality can also interact with local grievances that are not directly related to the conflict in their content, but that can generate opportunistic behavior that increases violence in a local context of violent conflict. For example, Kalyvas (2006) illustrates how a context of national civil war can trigger local violence with motivations that are not specific to the broader national conflict but to local grievances and unsettled scores. On this view, civil war can amount to what Kalyvas calls the “privatization of politics” (Kalyvas, 2006, 332). Through denunciations and selective information local citizens can use conflict actors to “do their dirty work”, for example by using the conflict as a pretext for getting rid of enemies for private gains. Private motivations for local violence can stem from family feuds, land disputes, or other personal conflicts.

Local motivations for violence can also revolve around local political competition. Rebel groups are often used as instruments in local political disputes that have little or no relation to the broader national conflict. For example, Reno (2011, 232–234) illustrates this in his description of what he calls “parochial” rebel groups, with examples from the Niger delta. These are rebel groups that operate in local political patronage networks, and that are often used as tools in local power struggles. When rebels and government forces are thus used as tools for producing violence to solve local conflicts it is because
there exists a large number of issues that are not solved peacefully, in the local political system through local institutions. In institutional environments that function well, conflicts should be efficiently and peacefully adjudicated through local courts of justice, while local political competition takes place at the ballot box, reducing the demand for violent actors to step in to tip the scales in local conflicts.

We have now discussed some plausible channels through which high-quality local political institutions might reduce the risk of local conflict violence. This discussion yields the expectation that: Administrative areas with high-quality formal local government institutions will have a lower probability of conflict-related violence than other administrative areas. There are, however, potential opposing arguments that could call this expectation into question. Indeed, one could argue that in some cases high-quality institutions might increase the risk of violence. For example, when a government turns on parts of its own population, such as during genocides, an efficient police force and high trust in government (among the majority population) would make it easier to carry out massacres. Furthermore, local institutions that are trusted and respected by a majority of the local population might be detested and feared by a minority, which is often the case in places with ethnic animosities. For example, a highly capable local police force might be used to more effectively repress unwanted minorities, and thus create conflict-inducing grievances. In these cases, there might be no – or even a positive – association between high-quality institutions and conflict violence. While these caveats are important, and could explain a potential null-finding, we believe the sum of arguments discussed above leads to the expectation that local institutional quality should – on average – induce local peace.

Endogenous institutions

A clear threat to inference regarding the pacifying effect(s) of political institutions is reverse causality. Indeed, several theoretical accounts of the relationship between conflict and institutions have treated the two as endogenous (e.g., Acemoglu and Robinson, 2006). First, conflict plausibly has a direct effect on institutional development through creating environments in which specific institutions thrive. For example, Wood (2003) describes how the conflict in El Salvador “militarized” local institutions, gearing them towards serving the demands of conflict actors rather than the needs of civilian citizens. Second, conflict can have indirect effects on institutional development, through destroying physical, human and social capital that is instrumental for institutional development. An example is found in Linke (2013) who documents that local experiences with conflict reduces trust in government. Third the risk of conflict can impact on institutions through altering expectations and preferences. This could, for example, lead to local institutions in highly conflict-prone areas placing greater emphasis on security provision, or collusion with actors with military potential. Finally, institutional quality is probably endogenous to
many of the same processes that drive conflict, such as ethnic antagonisms, repression, social distrust, and deeply rooted political cleavages. In line with these arguments, a recent wave of studies indicate institutional effects of local conflict (Linke, 2013; Bellows and Miguel, 2009; Gilligan, Pasquale and Samii, 2014).

Since we believe it is almost certainly the case that institutional quality affects conflict and vice versa, disentangling the individual causal components in this (arguably circular) relationship is crucial, yet hard. The most obvious way to deal with such a problem is through finding (instrumental) variables that can predict institutional quality but that are otherwise exogenous to violent conflict. Unfortunately, no such instrument is currently available. We therefore opt for a different strategy, where we use matching and sensitivity analysis, both of which will be discussed below.

Local government institutions in Africa

Since we apply our argument to formal local government institutions in Africa, these deserve a brief discussion. Formal local government institutions, defined in the introduction, are manifest in local government councils, municipalities and city governments. While there is great variety in the structures and powers of local governments in Africa, most African states have an administrative level corresponding to the municipality level in some form (GADM, 2012). As highlighted in previous studies (e.g., Olou and Wunsch, 2004), many African states have undergone a several waves of “decentralization” since independence, entailing a shift in power from central to local governments.

An important aspect of this process of decentralization has been the simultaneous delegation of powers to formal local government councils and so-called “customary institutions”, such as traditional Kingdoms with pre-colonial roots (e.g., Herbst, 2000). In one sense, these are distinct from formal local government institutions: They (commonly) did not originate with contemporary states but usually have endogenous pre-colonial roots. Furthermore, they usually constitute “political systems” in the sense that they enjoy limited forms of self-rule and autonomy, with some of the trappings of traditional state-sovereignty. This is for example evident in the Buganda kingdom in Uganda, which has its own king, government and legislature. On the other hand they are often integrated with local government institutions, with vertical links to the state. This is, for example, the case, when local customary chiefs are also the leaders of local municipal councils or hold similar offices. In this sense, formal local government institutions and customary institutions are partly integrated and partly distinct sets of entities. While recognizing these nuances, we still restrict our focus to formal local government institutions. This is partly because we have no empirical tools for disentangling the effects of customary institutions from formal government institutions, but also because they are often overlapping in ways that make such a distinction difficult.
Another crucial aspect of local institutions in Africa is their relationship with central governments. As has been noted by several scholars (Herbst, 2000; Michalopoulos and Papaioannou, 2014), many African regimes have a weak state presence in their peripheries, thus allowing various forms of local government to play a crucial role. Some peripheries are weakly penetrated by national institutions for the simple reason that central governments are not interested in them, while others are weakly penetrated because of a lack of state capacity and inaccessibility (e.g., Tollefson and Buhaug, 2015). Furthermore, in some cases local institutions may be undermined and corrupted by local governments on purpose, such as when a region is home to a marginalized ethnic group that the government wants to disenfranchise. While these complex relationships warrant a study in their own right, we here zoom in on the quality of local institutions in their own right, aiming to isolate their effects from those of national institutions through either a) controlling for factors that could capture local-national relationships (such as ethnic exclusion), b) by trying to parse out omitted variable-bias that is due to macro-level country context, and c) through trying to handle the noted endogeneity issues, of which a government policy to weaken local institutions would be an instance.

4 Data

To investigate our expectations we need information on local variations in institutional quality, conflict violence and potential confounders, in a unified data structure. Since we are concerned with local institutions, local administrative units is a natural template for our dataset. We therefore rely on the spatial data of sub-national administrative units from the Global-Administrative Areas Database (GADM, 2012) (version 2.0) to serve as a template. This dataset contains the boundaries for all sub-national political units in Africa within the time period of our study. Since we want our data to be at a high level of spatial resolution, we choose the second administrative level below the state as our unit of analysis (i.e. the level that is below “regions”, or “states” etc.), usually corresponding to the “district” level in the Afrobarometer surveys. These administrative units will be referred to as GADM units below.

Measuring local institutional quality

Since data that directly captures aspects of local institutional quality is unavailable, we rely on survey data from the Afrobarometer measuring the quality of local government institutions as perceived by citizens.

Afrobarometer has a number of properties that make it well suited for our purpose. The surveys cover a very high number of African countries and have currently been conducted in five rounds (2001, 2004, 2005, 2008 and 2012). The most attractive feature of the data however is the fact that the Afrobarometer
contains information on what region and district a survey respondent inhabits. Round 3 and 4 contain both region and district-level information, and are therefore used here. This allows us to link respondents to GADM-units by using the district, region and country identifiers. Using the Jaro Winkler distance matching procedure (Winkler, 1999), we are able to identify GADM units for over 80% of the districts in Afrobarometer rounds 3 and 4, allowing us to integrate the information in Afrobarometer in a GIS framework with other spatial data. Further details on this matching procedure is described in the online appendix.

As discussed above, we conceptualize high-quality political institutions as uncorrupt, law governed, capable, trusted by the public, and efficient in their performance. Although we are not able to capture all of these dimensions directly through the survey items, we identify a group of measures that can function as proxies for these aspects. We use the following items: How much trust the respondent has in local politicians, how much trust the respondent has in police, how much trust the respondent has in the courts, how much police corruption he/she perceives, how much local political corruption he/she perceives, how the respondent rates the performance of local politicians over the past year, and whether the respondent has attended a community meeting in the past year (all variable codings are detailed in the appendix).

Since we are interested in institutional quality as a latent variable, and since analyzing one (or many) individual measures in isolation would make our results more sensitive to measurement error, we opt to create an index of local institutional quality. This allows us to make somewhat stronger inferences in the face of reliability and validity issues (discussed below) since the results will hinge less on individual measures. Using the survey items described above, we therefore perform a factor analysis to identify whether they form a latent dimension. In this analysis, where we include a number of other variables, we indeed find that these six items load strongly on the same factor (see appendix). In addition to the fact that these six items form a dimension, they can intuitively be said to capture the same latent concept, namely the quality of local political institutions: High quality institutions have less corrupt officials and police that perform better and whom the public trusts. They should also engage citizens through facilitating their participation. This also aligns closely with the conceptualization of institutional quality discussed above. In summary, we think an aggregate index is both more valid and reliable than individual measures.\(^1\)

To create the index, we rescale the indicators such that they all point in the same direction (i.e. high corruption means lower institutional quality), before taking the average score of all the items composing the index (\textit{Local Institutional Quality} henceforth).

\(^1\)We run analyses on each single item in the appendix, with similar results.
Figure 1: Map showing the distribution of Local Institutional Quality (district level) in Afrobarometer rounds 3 and 4

Note: Districts with darker shades have higher institutional quality

Figure 1 shows a map of Local Institutional Quality in all the districts that we have data on in all countries participating in Afrobarometer rounds 3 (left) and 4 (right). This map shows that much of the continental variation is country specific. Countries such as Zimbabwe, Zambia and Nigeria have relatively low Local Institutional Quality, while Botswana, Mozambique, and Tanzania have higher levels. Aggregating this to the country-level for round 3, we find that the country with the highest score on Local Institutional Quality in 2005 was Mozambique (2.57) and Tanzania (2.51), while the lowest-scoring countries were Nigeria (1.13) and Zambia (1.56). In round 4, the highest scoring country was Mozambique (2.50), while the lowest scoring was Nigeria (1.36).

As a validity test, we correlated the country scores on the Local Institutional Quality index with an additive country-level index consisting of the following World Governance Indicators: Control of corruption, government effectiveness, regulatory quality and rule of law. The results of this test (shown and discussed in the appendix) indicate an expectedly positive association between these measures and Local Institutional Quality.

Issues with survey data

While the survey data approach presented above currently represents our best shot at measuring local institutional quality, it comes with some limitations. First, while our data covers a wide range of African countries, as shown above, generalizations must be made with caution. This especially applies to generalizations from these data to other African countries. The Afrobarometer sample includes fewer than half of all African states, and the sample does not constitute a random draw. However, the internal
representativeness is quite good, and we believe the Afrobarometer’s procedures for selecting respondents – they rely on regional stratification and random sampling within the regions covered – ensures that we can draw modest generalizations within countries. While some districts include very few respondents, and thus might not be representative of the district, we run robustness tests where we exclude these cases. These generalization issues notwithstanding, our data provides much more scope for generalization than the single-country studies dominating the literature.

Relying on perceptions measured in survey data also introduces concerns about reliable and valid measurement. Crucially, since survey data provides an inherently subjective measurement (the perceptions of citizens) of an objective latent variable (the quality of local institutions), biases can arise. Several factors might make perceptions both biased and noisy measures of institutional quality. For example, citizens might have different expectations, that, when varying stochastically, will create classical measurement error. Furthermore, when these expectations vary systematically, for example if people have higher expectations of institutional quality where institutions perform better, this will create systematic measurement biases. Relatedly, assessments of local government performance might also vary with cultural factors, that could be either country- or ethnicity-specific, and that are unrelated to actual institutional quality.

In spite of these concerns, we still believe there are good reasons for using survey data for our purposes. At present it is the best (and only) data source available for tapping local institutional quality. While citizen perceptions might suffer from the above noted problems, they still should be strongly correlated with actual institutional quality. Studies using the Afrobarometer data indicate that citizens perceptions of local (and national) institutions display the patterns we would expect if they indeed tapped objective institutional quality. For example, in a study of local administrative districts in Ethiopia, Jilke (2013), using Afrobarometer data, finds that districts that provide more access to information about political decision making and public fora for political deliberations – measured using non-perceptional data – are seen as more accountable by citizens. Perceptional data on government performance in the Afrobarometer data is also found to be internally consistent, and there are indications that they are tapping into the procedural aspects of government performance we are interested in (see e.g., Bratton, 2012).

Fortunately, many of these issues, relating to biases and measurement error can either be handled within the framework of our analysis, or do not constitute great threats to our conclusions. For example, much of the measurement error in perceptual measures will undoubtedly be stochastic and thus only induces attenuation bias. This will pull our estimates towards zero and make for more conservative tests. Moreover, some of the systematic (cultural or ethnic) biases in the perceptual data can be handled within the modeling framework we present below. For example, we can investigate whether our results are driven by country-specific biases by including country-fixed effects, or we can probe whether perceptions
of institutional quality simply reflect other latent factors, by including such variables as controls. We return to these issues below.

**Dependent variable: Conflict-related violence events**

Our primary source for conflict data comes from the UCDP-GED dataset, version 1.5 (Sundberg and Melander, 2013). This dataset contains information on yearly conflict events in Africa in the period 1989-2010, where a conflict event is defined as “the incidence of the use of armed force by an organized actor against another organized actor, or against civilians, resulting in at least 1 direct death in either the best, low or high estimate categories at a specific location and for a specific temporal duration.” (Sundberg and Melander, 2013, 4). All events that are part of a conflict with over 25 battle-deaths in a year are part of the dataset, and we include both civil conflict, non-state conflict, and one-sided violence. The GED captures exactly the kind of conflict-violence we are interested in, namely that which involves organized armed groups in internal armed conflicts. While alternative datasets exists, such as the ACLED dataset (Raleigh, vard Hegre, Karlsen and Linke, 2010), they are further removed from the types of violence we are interested in. For example, ACLED includes low-scale conflict such as riots and protests, which are conceptually distinct from conflict violence performed by organized armed actors. While protests and riots might indeed also be related to the quality of local political institutions – arguably through many of the same mechanisms mentioned above – the conflict events coded in the UCDP-GED are more representative of armed conflict violence as defined here. We therefore use GED in our main analysis. In the appendix, we include the ACLED dataset in alternative robustness tests, with no qualitative difference in results.

The UCDP-GED dataset is constructed based on information from international news sources. Typical events include skirmishes between rebel groups and government forces, assassinations, and violent raids on villages. Since we here rely on information from Afrobarometer rounds 3 and 4, in 2005 and 2008 respectively, we will operationalize our dependent variable as post-survey violence, meaning that we count all instances of conflict related violence in a district after the survey. To best capture the prevalence of post-survey conflict-related violence in a district, we utilize a count version of this variable that registers the number of post-survey violence events in a given district. In the countries surveyed in round 3, there were 557 GED events in the period after the survey (2006-2010), while in round 4, there were 303 (2009-2010). The countries experiencing conflict events in round 3 were Benin, Ghana, Kenya, Madagascar, Mali, Nigeria, Senegal, Tanzania, Uganda, and Zimbabwe, while the countries experiencing events after round 4 are Ghana, Kenya, Madagascar, Mali, Nigeria, Senegal, South Africa, and Uganda. In figure 3 we present a map showing our main explanatory variable, with the GED events
in the post-round 3 period overlaid. This shows that the variation in Local Institutional Quality, and the
distribution of conflict events is substantial.

Figure 2 illustrates the data structure at a more fine-grained level of resolution, focusing on Nigeria
and Uganda, where Local Institutional Quality is measured in round 3, with a relatively high number of
GED events in the post-survey period (i.e. after 2005). They also show the variation in reported Local
Institutional Quality at the subnational level in both of these countries.

Figure 2: Map showing the distribution of Local Institutional Quality in GADM districts in Uganda and
Nigeria, round 3, and GED conflict events overlaid

Districts with darker shades have higher institutional quality

Figure 3: Map showing the continental distribution of Local Institutional Quality (district level), round
3, and GED conflict events overlaid

Districts with darker shades have higher institutional quality
Controls

To avoid the possibility that our estimates are confounded by factors that both affect conflict propensity and the probability of having high-quality formal local government institutions in a district, we control for a number of variables that can plausibly be suspected to affect both conflict and institutional quality.

Since larger political units might differ in their levels of institutional quality (e.g., Hansen, 2013), and since larger units are likely to have more conflict (e.g. Hegre and Sambanis, 2006), we include covariates for local population size and the area of the district in question. The variable capturing local population comes from the Gridded Population of the World dataset (for International Earth Science Information Network CIESIN, 2005) (version 3), and captures the log of the population in the district \( L(\text{population}) \) henceforth. Furthermore, we include a control for the area of the district, measured as the log of square kilometers \( L(\text{area}) \).

We also include estimates for the number of men (between the ages of 15 to 20) present in the GADM unit, since young men should provide a pool of recruits for rebel groups and other conflict actors (we here take the log, referred to as \( L(\text{young men}) \) henceforth) (Urdal, 2006). This data comes from Tatem, Garcia, Snow, Noor, Gaughan, Gilbert and Linard (2013). Additionally, we include a control capturing the travel time to the nearest city with more than 50 000 inhabitants \( L(\text{travel time}) \) (Uchida and Nelson, 2009), tapping the difference between rural and urban areas, which also has been shown to correlate with conflict patterns (Buhaug and Røed, 2006). This variable is taken from PRIO-GRID (Tollefsen, Strand and Buhaug, 2012).

Local economic conditions are also included, to exclude the possibility that institutions affect conflict through the local economy and not through the mechanisms we put forward. To do this, we include two variables: One capturing subjective perceptions of poverty, operationalized as a Lived Poverty Index \( LPI \) henceforth), measuring how often respondents have gone without basic necessities such as food, water, healthcare etc., over the past year. In addition to this we include a variable capturing the log of local infant mortality rate in the district \( L(\text{infant mortality rate}) \) henceforth), which relies on data from the SEDAC Global Poverty Mapping project (Storeygard, Balk, Levy and Deane, 2008).

In addition to population, area, travel time to nearest city, demographics, and economic factors, we also include a control for the popularity of the current government, by using the presidential approval rating \( \text{Support for president} \) henceforth) in a given district. This is because we suspect that people will be less inclined to give positive answers to the questions relating to institutional quality if they disapprove of the current government, and since this approval will both be affected by recent conflict and affect subsequent conflict risk.

Finally, we control for the time since a previous conflict, since that will both affect Local Institutional
Quality, and the risk of future conflict. We do this by creating a half-life parameter (Past conflict events (half-life)), calculated such that if there has been a conflict in the past ten years, we perform the following calculation: \(2^{-(\text{years since conflict}/2)}\), and where there has been no conflict in the past ten years we assign a zero. In this setup, the effect of a conflict would almost be completely gone after 10 years, and halved after 2 years. We also include a spatial lag of conflict events, the log mean number of conflict events in contiguous neighboring districts (Spatial lag, henceforth), to capture spatial clustering in our dependent variable.

5 Results

As noted, our analysis uses data from rounds 3 and 4 of the Afrobarometer survey. Combined, there are 20 countries in the data and 1638 administrative districts in total. Since some districts and regions do not appear in both rounds, while many do appear in both rounds, it is hard to treat the data as a cross-section time-series panel. We have therefore chosen to analyze data from round 3 and round 4 separately in our main regression analyses.

Since the dependent variable in our analyses is the count of GED events, we use a count model. More specifically, we use a model that can handle the following properties of the data: The counts are not independent of each-other (if a district experiences one GED event, it has a higher probability of experiencing the next), and the variance of the counts is greater than the conditional mean. The negative binomial count model is well equipped for handling these properties, and is chosen as the baseline estimator (c.f Long, 1997, 217-250).

Table 1 shows the results from our first set of negative binomial regressions for rounds 3 (columns 1-4) and 4 (columns 5-8). The coefficients capture the change in the logarithm of a districts expected count of conflict events in the post-survey period. The first column shows a model that only includes population, area, young male population, travel time to nearest city, past conflict and the spatial lag of conflict. This model displays a strong negative association between Local Institutional Quality and post-survey conflict events, as expected. The next column adds poverty (LPI and Infant Mortality Rate) to the basic specification. The inclusion of poverty does not shake the results of Local Institutional Quality, which remains negative and strongly significant. Column three adds Support for the President, which is added to make sure that we are capturing the effect of institutional quality, and not of the popularity of the current government. The results of this inclusion shows that the negative coefficient for Local Institutional Quality is actually strengthened when this variable is included. The final column adds country-fixed effects to the specification, which only slightly weakens the negative coefficient for Local Institutional Quality. This suggests that Local Institutional Quality is indeed important at the local level.
and not because it only reflects the quality of national-level institutions.

The final four columns repeat this set of estimations for round 4. In these models, the results are similar but slightly weaker: *Local Institutional Quality* is still negatively related to post-survey conflict events in all models. This is precisely estimated, except for in the most demanding model that includes country-fixed effects. Here, the coefficient is -800 with a standard error of .521 (with a p value of .12). It is not unsurprising that the results are weaker for round 4, given that there are much fewer conflict-events in the post-survey period in round 4. However, the similarity of the pattern in both rounds support our main expectation.

The influence of high-quality institutions is also strong in substantive terms. Figure 4 is based on a simulation of model 3 in table 1 (which is representative of the general pattern of the estimates for *Local Institutional Quality*). The figure shows the average expected number of GED events when *Local Institutional Quality* increases from its minimum to its maximum value when all other variables are kept at their means. This figure shows that the expected count of GED events drops radically towards zero as institutional quality rises. The average number of GED events in a district with *Local Institutional Quality* at a minimum is 2.7, while the average number where *Local Institutional Quality* is at a maximum is close to zero. This attests to the substantive importance of local institutional quality and supports our claim that local institutions matter to peace.
### Table 1: Negative Binomial Count models regressing GED events on the quality of local institutions

<table>
<thead>
<tr>
<th>Conflict events</th>
<th>(Round 3)</th>
<th>(Round 3)</th>
<th>(Round 3)</th>
<th>(Round 3)</th>
<th>(Round 4)</th>
<th>(Round 4)</th>
<th>(Round 4)</th>
<th>(Round 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local institutional quality</td>
<td>-1.868***</td>
<td>-1.723***</td>
<td>-3.107***</td>
<td>-2.080***</td>
<td>-0.852**</td>
<td>-0.898**</td>
<td>-1.034**</td>
<td>-0.800</td>
</tr>
<tr>
<td>Support for president</td>
<td>0.550**</td>
<td>0.560**</td>
<td>(0.242)</td>
<td>(0.285)</td>
<td>-0.545***</td>
<td>0.325</td>
<td>0.198</td>
<td>0.256</td>
</tr>
<tr>
<td>LPI</td>
<td>0.613**</td>
<td>0.828***</td>
<td>(0.245)</td>
<td>(0.257)</td>
<td>0.122</td>
<td>0.654**</td>
<td>0.391</td>
<td>0.108</td>
</tr>
<tr>
<td>L( infant mortality rate)</td>
<td>0.399</td>
<td>0.329</td>
<td>0.528</td>
<td>(0.430)</td>
<td>(0.422)</td>
<td>(0.685)</td>
<td>1.105**</td>
<td>1.309***</td>
</tr>
<tr>
<td>L(population)</td>
<td>-0.292*</td>
<td>-0.295</td>
<td>-0.186</td>
<td>-0.500**</td>
<td>0.091</td>
<td>0.033</td>
<td>-0.088</td>
<td>-0.458*</td>
</tr>
<tr>
<td>L( young men)</td>
<td>-0.028</td>
<td>-0.068</td>
<td>0.031</td>
<td>0.225</td>
<td>0.870**</td>
<td>0.795**</td>
<td>1.343***</td>
<td>1.401***</td>
</tr>
<tr>
<td>L(area)</td>
<td>0.342**</td>
<td>0.331**</td>
<td>0.375**</td>
<td>0.711***</td>
<td>0.661***</td>
<td>0.730***</td>
<td>0.697***</td>
<td>0.607***</td>
</tr>
<tr>
<td>L(travel time)</td>
<td>-0.048</td>
<td>-0.091</td>
<td>-0.157</td>
<td>-0.456</td>
<td>-1.016***</td>
<td>-1.164***</td>
<td>-1.089***</td>
<td>-1.566***</td>
</tr>
<tr>
<td>Conflict events (spatial lag)</td>
<td>0.525***</td>
<td>0.497***</td>
<td>0.490***</td>
<td>0.220***</td>
<td>0.487***</td>
<td>0.356***</td>
<td>0.310***</td>
<td>0.192***</td>
</tr>
<tr>
<td>Country dummies</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>1.089</td>
<td>1.089</td>
<td>1.089</td>
<td>1.089</td>
<td>1.339</td>
<td>1.335</td>
<td>1.335</td>
<td>1.335</td>
</tr>
<tr>
<td>ϑ</td>
<td>0.140*** (0.023)</td>
<td>0.145*** (0.024)</td>
<td>0.147*** (0.024)</td>
<td>0.227*** (0.038)</td>
<td>0.135*** (0.027)</td>
<td>0.167*** (0.031)</td>
<td>0.178*** (0.038)</td>
<td>0.309*** (0.066)</td>
</tr>
<tr>
<td>Akaike Inf. Crit.</td>
<td>855.645</td>
<td>821.463</td>
<td>818.769</td>
<td>781.691</td>
<td>660.352</td>
<td>651.653</td>
<td>648.228</td>
<td>608.424</td>
</tr>
</tbody>
</table>

*Note:* *p<0.1; **p<0.05; ***p<0.01

Standard errors in parentheses, intercept and country dummies omitted from table.
Figure 4: Expected count of GED-events in a district in the post-survey period

Additional tests

This section addresses several threats to inference that could throw our results into question.

First, we address the possibility that Local Institutional Quality is endogenous to conflict and conflict-risk, and thus not a cause but (partly) a product of conflict, as discussed above. Since plausible instruments for Local Institutional Quality are very hard to come by, we proceed by using matching techniques to increase our confidence that our result is not driven by this specific source of bias (Ho, Imai, King and Stuart, 2007). Matching is a technique that preprocesses the data by using matching algorithms to improve balance between control units (observations where the treatment is 0) and treatment units (observations where the treatment is 1), thus achieving a greater approximation of the controlled conditions found in an experiment than we do when we use standard parametric models. Inferences drawn from analyses run on properly matched data are less model-dependent and more robust than model based inferences on unprocessed data (Ho et al., 2007). Since standard matching techniques assume a
binary treatment variable, we dichotomize local institutional quality to take on the value 1 for units with above-average institutional quality and zero otherwise. Since this truncates the variation on the independent variable of interest, this makes for a more demanding test.

Since we are concerned with the possibility that \textit{Local Institutional Quality} is endogenous to conflict, we would like to compare units that have the same expected value on this variable given their conflict history, but different actual levels of institutional quality. Those units would thus be similar in their propensity to receive treatment (i.e. have high-quality institutions) but dissimilar in their actual levels of treatment. To approximate this, we match all observations on four variables relating to conflict-history; A dummy variable capturing whether the district has had conflict in the five-year pre-survey period, our proximity of conflict parameter, a count variable capturing the absolute number of GED events in the pre-survey period, and a spatial lag of conflict events. We proceed by using Iacus, King and Porro (2009)’s Coarsened Exact Matching (CEM) procedure, which is both computationally efficient, easy to use, and appropriate for our covariates. This groups the data into strata of units that are as similar as possible in their propensity to receive treatment, given their conflict history. We do this for both rounds, and run negative binomial models on the matched datasets, with dummy variables for each strata that are created by the matching procedure; In doing so, we attempt to investigate the effect of \textit{Local Institutional Quality} within strata that are similar with respect to how conflict-history has affected the \textit{Local Institutional Quality} in these districts. When estimating models with dummy variables on these strata, we exclude the spatial lag of conflict as a control, since there is not enough variation in this variable that is not exhausted by including the dummies on matching strata.\footnote{When we include this variable, it is omitted from the estimation since it is perfectly predicted by the other variables in the model.}

The results of this procedure is presented in table 2. The first column in the table shows the analysis on data from round 3. In this column, we see that although the substantial effect is weaker than most of the models presented above on data from round 3, we still find a negative coefficient for \textit{Local Institutional Quality} when we match and run fixed effects on CEM strata. The second column, running the same model on data from round 4, shows a similar pattern, although the coefficient is much weaker (P-value=0.13). That the coefficients are less precise is not surprising since we a) loose statistical power due to preprocessing the dataset, and b) truncate the variation in \textit{Local Institutional Quality}. Nevertheless, the results still indicate a negative impact of institutional quality on the number of post-survey conflict events in a GADM unit. While there arguably are several other sources of omitted variable bias and (more specifically) potential endogeneities that could be driving our result, this exercise increases our confidence that there is indeed an independent effect of local institutional quality on conflict risk.

Another consideration counting in favor of our results not being caused by omitted variable bias (of
Table 2: Negative Binomial Count Models When Observations are matched on Conflict History

<table>
<thead>
<tr>
<th></th>
<th>Conflict events (1)</th>
<th>Conflict events (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local institutional quality (Binary)</td>
<td>-1.136** (0.464)</td>
<td>-0.576 (0.427)</td>
</tr>
<tr>
<td>Support for president</td>
<td>-0.110 (0.234)</td>
<td>-0.470* (0.248)</td>
</tr>
<tr>
<td>LPI</td>
<td>0.533 (0.359)</td>
<td>0.827** (0.366)</td>
</tr>
<tr>
<td>L(infant mortality rate)</td>
<td>0.175 (0.506)</td>
<td>1.005* (0.586)</td>
</tr>
<tr>
<td>L(population)</td>
<td>-0.049 (0.284)</td>
<td>0.149 (0.292)</td>
</tr>
<tr>
<td>L(young men)</td>
<td>0.0001*** (0.00002)</td>
<td>0.00003** (0.00001)</td>
</tr>
<tr>
<td>L(area)</td>
<td>-0.035 (0.203)</td>
<td>0.816*** (0.245)</td>
</tr>
<tr>
<td>L(travel time)</td>
<td>-0.135 (0.363)</td>
<td>-1.480*** (0.429)</td>
</tr>
<tr>
<td>Past conflict events (half-life)</td>
<td>0.490 (7.375)</td>
<td>-12.974 (10.455)</td>
</tr>
</tbody>
</table>

Observations: 1,061 (1,300)  
Log Likelihood: -208.907 (-214.254)  
\( \theta \): 0.077*** (0.018) 0.092*** (0.025)  
Asym Inf Crt: 539.815 458.507

Note: *p<0.1; **p<0.05; ***p<0.01

which endogeneity is a specific instance) is the fact that our estimates are not severely weakened by the inclusion of additional controls. As Altonji, Elder and Taber (2005) argue, the sensitivity of an estimate to the inclusion of (observed) covariates often yields a good indication of how sensitive the result is to confounding in general. In our case, the coefficient (from round 3 estimates) changes from -0.983 (SE of 0.313) to -2.080 (SE of .618) when we move from a parsimonious model with no controls (appendix, table 10, model 1) to a model with a full set of controls (table 1, model 4). In fact, the coefficient actually becomes stronger when including controls, indicating that the confounding we are able to pick up with observables is actually masking a fairly strong effect. We conclude from this that our results seem fairly robust to omitted variable bias.

As an additional check, we run a number of models with additional control variable sets. First, we include proxies for state presence. This is because part of the Local Institutional Quality measure will reflect the mere presence of local authorities, and this might contaminate the estimate for Local Institutional Quality. For example, it is hard for respondents to describe police corruption if police is absent. To capture this, we include two measures: Whether the investigator (performing the survey) has observed police in the sampling area (Police presence), and whether the investigator has observed
the army in the sampling area (Army presence). The latter variables are only present in round 3 of the survey. Second, we control for a composite measure of local social trust, since social trust potentially affects institutional quality, and conflict (e.g., Voors and Bulte, 2014). To capture this, we create an index of social trust, based on the factor analysis above, containing the following components: How much trust the respondent has in relatives, other countrymen, and neighbors. High scores on this index indicates greater social trust.

Third, we control for two alternative measures of socio-economic development that might pick up other aspects of local development than the two included in the main analysis. We include the mean level of employment in the district, and the mean level of education. Furthermore, we introduce controls for distance to the border and distance to the capital, since conflicts are more often found in the periphery (e.g., Buhag and Rød, 2006), and state-capacity should be expected to decline in more peripheral areas (e.g. Michalopoulos and Papaioannou, 2014). Finally, we control for the presence of excluded ethnic groups, since Local Institutional Quality might simply reflect ethnic antagonisms that make respondents hostile to government institutions. We use the spatialized version of the EPR dataset (Wucherpfennig, Weidmann, Girardin, Cederman and Wimmer, 2011), and register the share of the area of the GADM unit that belongs to an excluded ethnic group.

Table 3 includes these four sets of additional controls (into the baseline model). The first column include Army presence and Police presence, without significantly altering the main result. This is not done for round 4 since these two questions are not included in that round. The next two models include the social trust index, columns 4-5 control for the additional development indicators, while columns 6-7 includes the distance to the capital and border. Column 8-9 controls for the presence of excluded ethnic groups. The estimate for Local Institutional Quality remains qualitatively similar across these specifications, although it loses statistical power in the model that controls for ethnic exclusion estimated on data from round 4 (column 9).
### Table 3: Additional control variables

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>GED events</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(Round 3)</td>
<td>(Round 3)</td>
<td>(Round 4)</td>
<td>(Round 3)</td>
<td>(Round 4)</td>
<td>(Round 3)</td>
<td>(Round 4)</td>
<td>(Round 3)</td>
</tr>
<tr>
<td>Local institutional quality</td>
<td>-3.164***</td>
<td>-2.484***</td>
<td>-1.450***</td>
<td>-3.103***</td>
<td>-1.006*</td>
<td>-1.992***</td>
<td>-0.874*</td>
<td>-2.113***</td>
</tr>
<tr>
<td></td>
<td>(0.637)</td>
<td>(0.710)</td>
<td>(0.547)</td>
<td>(0.629)</td>
<td>(0.556)</td>
<td>(0.631)</td>
<td>(0.529)</td>
<td>(0.617)</td>
</tr>
<tr>
<td>Police presence</td>
<td>-1.256**</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(0.542)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Army presence</td>
<td>1.881**</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Social trust</td>
<td>1.511***</td>
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<td>(0.531)</td>
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<td>1.242***</td>
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<td>(0.434)</td>
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<td>Education</td>
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<td></td>
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<tr>
<td>Employment</td>
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<td>-1.183**</td>
<td></td>
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<td></td>
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<td>(0.443)</td>
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<td>(0.547)</td>
<td></td>
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</tr>
<tr>
<td>L(capital distance)</td>
<td></td>
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<td>-0.241</td>
<td>0.287</td>
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<td>(0.246)</td>
<td>(0.243)</td>
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<tr>
<td>L(border distance)</td>
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<td>0.174</td>
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<td></td>
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<td>(0.179)</td>
<td>(0.198)</td>
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<tr>
<td>Ethnic Exclusion</td>
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<td>-0.286</td>
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<td></td>
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<td></td>
<td></td>
<td>(0.404)</td>
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<tr>
<td>Observations</td>
<td>1,088</td>
<td>1,063</td>
<td>1,335</td>
<td>1,089</td>
<td>1,335</td>
<td>1,089</td>
<td>1,335</td>
<td>1,089</td>
</tr>
<tr>
<td>σ</td>
<td>0.196*** (0.033)</td>
<td>0.176*** (0.031)</td>
<td>0.302*** (0.064)</td>
<td>0.206*** (0.034)</td>
<td>0.295*** (0.065)</td>
<td>0.179*** (0.030)</td>
<td>0.309*** (0.067)</td>
<td>0.183*** (0.031)</td>
</tr>
</tbody>
</table>

Note: *p<0.01; **p<0.05; ***p<0.01

Negative binomial models of GED events for round 3 and 4. All controls, intercept and country-fixed effects included but omitted from table. Standard errors in parenthesis.
In addition to these tests, we perform a number of further investigations, all shown and discussed in the appendix. For example, we run our baseline models on alternative conflict data, and with different functional forms, observing no qualitative change in results. We also investigate hurdle models (see e.g. Zeileis, Kleiber and Jackman, 2007) that separate between having any conflict violence and the intensity of counts, estimating these two components simultaneously (see appendix for more discussion). By implementing this model we are able to assess whether Local Institutional Quality affects both the probability of having some conflict (i.e. more than zero conflict events) and the distribution of counts given that a district experiences conflict. The results from the hurdle estimation (shown in the appendix) indicate that Local Institutional Quality, while mattering slightly more for the intensity of conflict than for conflict occurrence per se, is relevant for both processes.

These additional tests, and further investigations not discussed here but shown in the appendix, all suggest that our results are quite robust. In summary, they provide evidence for the claim that Local Institutional Quality reduces the incidence of local conflict violence.

6 Conclusion

Local institutions have often been overlooked in the discussion about how institutional quality relates to peace, partly stemming from a lack of data on local institutions. This paper shows how disaggregated local-level research designs also can be used to study the impact of local institutions on conflict patterns in a more generalizable fashion than current studies relying on single-country evidence (e.g. Voors and Bulte, 2014; Bellows and Miguel, 2009; Gilligan, Pasquale and Samii, 2014). In doing so, we heed the call to go inside the “black box” of the nation state in quantitative civil war studies (e.g. Kalyvas, 2003), as it specifically relates to the study of institutions.

We have argued that local institutions can protect societies from conflict-related violence through three channels: High-quality institutions entails a potent local police force and justice system that will increase the costs of rebels taking up arms in a given area, they solve local political and personal disputes that could otherwise lead to violence in the broader context of civil war, and they reduce local grievances that create motivations for joining or starting a conflict.

We furthermore proceed to show that “good governance” locally, as measured by georeferenced survey responses relating to dimensions like local political corruption, trust in politicians and political performance, is associated with a lower probability of conflict-related violence at the subnational level.

These findings come with several caveats. First, while providing more room for generalization than previous country-level studies, our findings do not support excessive generalization outside of the 20 country sample studied, due to the non-random nature of selection into the Afrobarometer rounds in-
cluded. Second, the inherent difficulties of capturing "objective" local institutional quality, using inherently subjective survey data, highlight the need for future studies where the patterns discovered here are corroborated using other, more objective, measures than survey data. Third, we have not entirely resolved the potential endogeneity biases that haunt the institutions-conflict relationship; which really warrant a instrumental-variables strategy. While reasonably confident – after matching and sensitivity assessments – that our result is not driven by the noted endogeneity, we can not fully rule this out. Future studies should therefore probe the causal nature of the relationship documented here in greater depth. These nuances notwithstanding, we believe our data and results provide support for the claim that well-functioning, high-quality institutions can pacify, also at the local level. Hence, building well-functioning institutions locally should be a key priority for policymakers wanting to create a sustainable civil peace.
References


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