Cultural Distance and Conflict-Related Sexual Violence*

Eleonora Guarnieri Ana Tur-Prats

May 20, 2020

Abstract: This paper examines the relationship between ethnic-based gender norms and conflict-related sexual violence. We generate a novel dyadic dataset that contains information on the ethnic identity of all the actors involved in ethnic civil conflicts in Africa between 1989 and 2009 and their use of sexual violence. We exploit ethnographic information to construct a new gender inequality index at the ethnicity level that captures deep-rooted gender norms. First, we find that gender-unequal armed actors are more likely to be perpetrators of sexual violence. Second, we consider the cultural distance in gender norms between the combatants. Applying a gravity approach, we show that sexual violence is driven by a specific *clash of conceptions* on the appropriate role of men and women in society: sexual violence increases when the perpetrator is more gender-unequal than the victim. These patterns are specific to sexual violence and do not explain general violence within a conflict. Differences in other cultural dimensions unrelated to gender are not associated with conflict-related sexual violence.

Keywords: Ethnic civil conflict, sexual violence, cultural distance, gender norms

JEL classification: D74, J16, O55, Z1.

*Author affiliations and contacts: Guarnieri (ifo Institute at the University of Munich, guarnieri@ifo.de), Tur-Prats (University of California at Merced, atur-prats@ucmerced.edu). We thank Alberto Alesina, Sofia Amaral, Samuel Bazzi, Anke Becker, Jeff Butler, Gordon Dahl, Christian Fons-Rosen, Andreas Kotsadam, Nathan Nunn, Helmut Rainer, Romain Wacziarg and seminar and conference participants at Harvard, UBC, ASREC 2019, PacDev 2020, and EconVaW Worskhop at ifo Institute, for useful comments and suggestions. Sarah Bögl provided excellent research assistance. All errors remain our own.

1. Introduction

Ethnic civil conflict accounts for roughly half of all civil conflicts around the world during the period 1946-2005 (Wimmer *et al.* [2009]). While the relationship between ethnicity and conflict has received considerable attention by the scholarly literature, we lack knowledge on what specific dimensions of ethnicity bring about conflict. Ethnic groups differ in many aspects, like religion, language, gender, or social structure. However, it is unclear which of these ethnic cleavages become salient in a given violent situation, and how they determine the way combatants fight. In this paper we introduce, for the first time, distance in ethnic-specific gender norms as a potential trigger of sexual violence in conflict, a largely understudied technology of war.

Sexual violence in armed conflict is one of the most brutal forms of violence against women. It is a widespread crime that encompasses, among others, acts of rape, sexual slavery, and forced prostitution (International Criminal Court [2002]). At least 500,000 women were raped during the Rwandan genocide (April-July 1994), 50,000 during the Bosnian war (1992-1995), 250,000 during the Sierra Leonean civil war (1991-2002), 200,000 in the Bangladesh liberation war (1971), and 400,000 in a single year of the ongoing conflict in Eastern Congo (Meger [2016]). This phenomenon comes with disastrous long-lasting physical and psychological consequences for victims, their families, and their communities (Ba and Bhopal [2017]).

Despite being widespread, armed-related sexual violence is not ubiquitous; its prevalence and intensity vary considerably both *across* and *within* conflicts (Skjelsbaek [2001]). Why do some actors systematically rape while others never do so? We propose and test two main hypotheses for explaining the occurrence and intensity of sexual violence in armed conflicts in Africa:[1] (1) gender-unequal ethnic actors are more likely to perpetrate sexual violence, and (2) sexual violence increases with the cultural distance in gender norms between the two actors. Additionally, we test whether cultural distance in gender norms can explain the use of general (not sexual) violence, and whether other measures of cultural distance—linguistic or religious—determine the use of conflict-related sexual violence.

To this end, we build on the Sexual Violence in Armed Conflict (SVAC) dataset (Cohen and Nordås [2014]), which comprises all civil conflicts between 1989 and 2009 and includes

[1]We restrict our analysis to Africa for two reasons. First, the ethnographic information is better documented and systematized for this continent. Second, the concordance table that we use to merge ethnic groups from the EPR dataset to the Murdock Ethnographic Atlas, provided by Michalopoulos and Papaioannou [2016], covers only African countries.

an index of the intensity of sexual violence that ranges from 0 (no sexual violence) to 3 (massive and systematic sexual violence). We combine this dataset with other sources to include information on the ethnic identity of both actors involved and their ancestral socioeconomic characteristics. More precisely, we use the dyadic version of the SVAC dataset, GEO-SVAC (Bahgat *et al.* [2016]), to add information on the identity of both actors involved in the conflict (i.e., government/state military and rebel forces). We then assign to each actor its ethnic identity using the Ethnic Power Relations (EPR) dataset (Vogt *et al.* [2015]). Finally, we use the Murdock Ethnographic Atlas to add information on the ethnic characteristics of each actor. The resulting dataset has a dyadic and bidirectional structure and contains information on the intensity of sexual violence as well as on the ethnic characteristics at the actor-conflict-country-year level.[2] Our dataset covers 128 actors (106 related pairs of actors) involved in 33 ethnic civil conflicts fought in 27 different countries spanned over the period 1989-2009 (N=623).

The empirical investigation includes several steps. We first generate and validate an ethnic gender inequality index (thereafter, eGII) and then use this index to test our two main hypotheses. To construct the eGII, we start by identifying nine ethnic traits that, according to well-established interdisciplinary literature, relate to anthropological notions of gender (in)equality:[3] matrilineality, patrilocality, stem family types, dependence on gathering, hunting, agriculture, husbandry, pastoralism, and the use of the plough. Next, we use principal component analysis (PCA) to construct an Africa-wide gender-inequality index for each ethnicity based on these nine ethnic characteristics. Consistently with anthropological notions, the first component loads positively on ancestral arrangements conducive to gender-unequal norms—e.g., patrilocality and dependence on male-dominated activities like animal husbandry and pastoralism—and negatively on ancestral traits conducive to gender equality like matrilineality and dependence on agriculture, in which women played a prominent role.

We then show that our eGII is a powerful predictor of an ethnic group's gender norms elicited through the Afrobarometer and the Demographic and Health Survey. The eGII

[2]For example, for the conflict that in 1994 confronted the Government of Chad against the *Comité de Sursaut National pour la Paix et la Démocratie* (CSNPD), we observe the prevalence and intensity of sexual violence that the Government of Chad exerted against the CSNPD (intensity 2) and the sexual violence that the CSNPD exerted against the Government of Chad (zero). At the same time, we also observe the ethnicity of both actors: the rulers of the Government of Chad at that time came from the Zaghawa and Bideyat ethnic groups, while the CSNPD rebel forces were formed by Sara soldiers. Table 1 illustrates this.

[3]We mostly draw from the social-sciences literature in economics (e.g., Boserup [1970], Alesina *et al.* [2013], Lowes [2017], Becker [2018], Tur-Prats [2019]), and anthropology (e.g., Schneider and Gough [1961], Sanday [1973], Friedl [1978], Korotayev [2003]).

tallies well with contemporary measures of gender inequality such as female employment, attitudes towards gender and towards wife beating, and the sexual component of intimate partner violence. Our eGII offers two advantages compared with these contemporary measures of gender inequality. First, since the eGII is based on ancestral characteristics and captures deep-rooted gender norms, it is plausibly unaffected by contemporaneous institutions and recent conflict-history. Second, it summarizes a broad range of domains related to gender inequality into a single dimension, which facilitates cross-cultural studies of gender norms. Additionally, we find a large within-country variation in the eGII, which speaks in favor of the use of ethnic-specific gender inequality indexes as opposed to the existing country-wide indexes, especially in ethnically diverse regions like Africa.

Having validated the eGII, we then test our first hypothesis—namely, that gender-unequal actors are more likely to perpetrate sexual violence—and indeed find that the eGII is positively associated with sexual violence in conflict. This association holds when we include conflict fixed effects, year fixed effects, conflict-specific time trends, and victim's ethnic characteristics.[4] This result is in line with previous findings on gender-based violence during peacetime (Alesina *et al.* [forthcoming]; Tur-Prats [2019]) but had not been previously tested in the context of war.

In a next step of our empirical analysis, we test our second hypothesis, i.e., whether sexual violence in conflict increases with the cultural distance in gender norms between the combatants. We exploit the dyadic structure of the data, and run a specification in the spirit of a gravity equation, similarly to recent literature adjusting the canonical trade models to other contexts (Becker *et al.* [2018]; Grosjean [2011]; Serafinelli and Tabellini [2017]; Spolaore and Wacziarg [2009]). By regressing the intensity of sexual violence on the absolute distance in gender norms between perpetrator and victim, we find that the larger the cultural distance between the ethnic belligerents, the higher the intensity of sexual violence. As is standard in this literature, we include a battery of controls (conflict and year fixed effects, and conflict-specific time trends) to net the effect of potential confounders.

When examining this association further, we uncover that it is driven by a specific *cultural clash*: sexual violence increases when the perpetrator holds more gender-unequal norms than the victim, but not viceversa. This result remains significant when we isolate the effect of cultural distance from the combatant's own characteristics by separately including perpetrator and victim fixed effects. This allows us to rule out potential al-

[4]Continuing with our previous example, the Government of Chad in 1994 had an eGII value of 0.52, whereas the rebel group CSNPD had an eGII value of 0.28.

ternative explanations for our results that have to do with actors' time-invariant factors correlated with their gender norms. For example, we can rule out that the effect is driven by the aggressive nature of more gender-unequal perpetrators, or that sexual violence is used strategically to harm women in gender-equal societies, where women represent a valuable asset. These results are also robust to a comprehensive battery of robustness tests, such as the inclusion of additional fixed effects (conflict-year, country), to alternative versions of the eGII, and to abstracting from the temporal variation in the data, among others.

We offer a new identity-based explanation for these findings (Akerlof and Kranton [2000]). This explanation rests upon the notion of cultural distance, and is consistent with the asymmetry of our results, i.e., the fact that we only find positive effects of cultural distance on sexual violence when perpetrators are *more* gender-unequal than their victims, but not viceversa. When confronting a more gender-equal society, perpetrators might perceive the relatively better position of women as a threat to their own norms, and resort to sexual violence to alleviate the negative feelings experienced by this encounter. Conversely, combatants that encounter a more gender-unequal society might not experience any menace or necessity to react against the different role of men and women in the opponent's society.

Cultural distance in gender norms could be correlated with other dissimilarities between ethnic groups, which in turn could trigger violence in general, and not only sexual violence. To test this, we conduct a placebo exercise in which we re-run our analysis replacing sexual violence with a measure of general violence: the number of deaths inflicted by the perpetrator on the victim.[5] Our results show that cultural distance in gender norms does not explain general violence within a conflict.

Finally, we explore whether general cultural differences, and not only differences in gender norms, can explain sexual violence in conflict. We exploit two widely-used measures of cultural distance: linguistic and religious distance. Following Fearon [2003], we construct a measure of linguistic distance for each related pair of actors. Albeit positively correlated with distance in gender norms, we do not find that linguistic distance is associated with sexual violence.

Similarly, religious distance between combatants is not powerful in explaining the use of sexual violence. Controlling for religious distance in our preferred specification leaves the main coefficients unchanged and, if at all, religious distance between perpetrator and

[5]Because this measure is also bidirectional, we can replicate our analysis replacing sexual violence by general violence as our dependent variable.

victim is negatively associated with sexual violence.[6] Taken together, these results suggest that conflict-related sexual violence is not driven by general cultural differences, and its understanding requires a gender-based explanation. Our eGII allows us to capture the specific dimension of cultural distance that matters to explain this widespread behavior.

This paper contributes to several strands of literature. First, we contribute to the interdisciplinary literature on sexual violence in armed conflict—summarized in the next Section—by advancing and empirically testing a new hypothesis, namely that the prevalence and the intensity of war-related sexual violence is explained by a *clash of conceptions* on what is the appropriate role of men and women in society. Second, this study adds to the literature on gender norms and gender inequality by proposing and validating a new gender inequality index based on ethnic traits, and enriches the growing literature on the long-run cultural determinants of violence against women (Alesina *et al.* [forthcoming], Tur-Prats [2019]) by empirically investigating a so-far overlooked form of gender-based violence. Third, our paper is related to the literature on how ancestral conditions, by persistently shaping cultural norms, can influence contemporary outcomes and behaviors (Alesina *et al.* [2013]; Becker [2018]; Guiso *et al.* [2016]; Voigtländer and Voth [2012]).

Finally, we add to work on ethnic conflict (see Blattman and Miguel [2010] for a summary) both on the empirical and conceptual front. From an empirical standpoint, we construct a novel dyadic dataset that includes information on the ethnic identity and ancestral characteristics of *all* actors involved in an ethnic civil conflict. Our conceptual contribution stems from the acknowledgment that previous work has focused on understanding whether ethnic diversity *triggers* war, but has remained silent on the role that ethnicity plays in shaping the technology of war. By analyzing the intensive margin of violence, we hypothesize and show that cultural distance in gender norms between actors can explain how violence *unfolds* once conflict takes place.

The remainder of the paper is structured as follows. Section 2 reviews the related literature and advances our hypotheses. Section 3 describes the data and the procedure used to merge the various sources, and presents some descriptive statistics. In Section 4 we construct and validate our eGII. Section 5 tests our first hypothesis, namely the impact of the perpetrator's gender norms on the use of sexual violence, and provides robustness tests. In Section 6 we test the cultural clash hypothesis, run a battery of robustness checks, and explore the relationship between gender-norms distance and general violence as well

[6]These findings are robust to alternative specifications in which we isolate the component of cultural distance that is unexplained by differences in gender norms. We first regress linguistic or religious distance on distance in gender norms, and use the residuals of this regression as our main explanatory variable.

as the relationship between other linguistic and religious distance and sexual violence in conflict. Finally, Section 7 concludes.

2. Existing Literature and Hypotheses

The first hypothesis we test is whether gender-unequal ethnic actors are more likely to perpetrate sexual violence during a conflict. The idea that gender norms in a society and the prevalence of gender-based violence are linked has been advocated by scholars across various disciplines. Two contributions in the economics literature have empirically shown that deeply entrenched norms about the role of men and women in society are associated to intimate partner violence (IPV). In Africa, women belonging to ethnic groups where, in ancestral times, women had more marginalized roles in the economy and society relative to men are today more likely to be IPV victims (Alesina *et al.* [forthcoming]). In Spain, Tur-Prats [2019] finds that historical family structures—stem versus nuclear—influenced women's participation in non-domestic work and persistently shaped gender roles. Areas where stem families were predominant in the past are characterized by more progressive gender norms, and women residing in these regions are today less likely to report IPV.

Among scholars investigating the determinants of gender-based violence in the context of armed conflict, some favored a socio-cultural rationale behind soldiers' use of sexual violence. Through the analysis of previous literature, Skjelsbaek [2001] noticed a consensus in considering sexual violence a weapon of war, i.e., part of a pre-meditated strategy, rather than the manifestation of a latent biological need triggered by a state of war.[7] In Skjelsbaek's [2001] conceptualization, perpetrators use sexual violence strategically to empower (i.e., masculinize) their own identity and to victimize (i.e., feminize) the opponent's. According to this view, any attempt to analyze sexual violence in conflict without considering gender relations is incomplete. Meger [2016] also lists context-specific gender norms—in turn shaped by political, economic, and social structures—as one of the factors underlying the occurrence of conflict-related sexual violence. These views, in turn, are in line with anthropological research on sexual coercion. For example, Sanday [1981b] suggests that rape is an expression of cultural forces operating at the societal level. Through the analysis of a cross-cultural sample of tribal societies, she shows that rape-prone societies are characterized, among other things, by a higher degree of male dominance,

[7]Inspired by early anthropological work by Symons [1979], a much-discussed contribution by Thornhill and Palmer [2001] describes rape through the lenses of evolutionary biology. According to the authors, rape is a biologically-determined behavior: it is either the direct result of an evolutionary adaptation to increase men's reproductive success, or a byproduct of other adaptive traits, such as aggressiveness.

compared to non rape-prone ones.

The first empirical analysis of the determinants of sexual violence in armed conflict was conducted by Cohen [2013], who finds support for the so-called *combatant socialization theory*, according to which soldiers recruited by force use rape as a method to socialize and generate cohesion. Contrary to the conjectures of the aforementioned literature, Cohen [2013] does not find a relationship between gender inequality and sexual violence in conflict at the country level. Albeit positive, the correlation between rape and fertility—used as a proxy for gender inequality—is not statistically significant. We test the gender inequality hypothesis by moving from the *country level* to the *conflict-actor's level*, and by measuring gender inequality through ethnic actors' deeply-rooted cultural norms, in turn shaped by their ancestral economic, societal, and family arrangements.

Our main hypothesis is that sexual violence is a function of cultural distance in gender norms between two opposing ethnic belligerents. To the best of our knowledge, there is no existing theory or empirical evidence on how cultural distance in gender norms between ethnic groups might influence their decision to perpetrate sexual violence during a conflict. However, anthropological work by Taylor [1999] emphasizes the gender component of the violence that unfolded during the Rwandan genocide, which materialized in systematic acts of sexual violence perpetrated by Hutu men against Tutsi women. According to Taylor [1999], this was the result of Hutu men disagreeing with Tutsi women's prominent role in society:

> Hutu extremists aimed at reclaiming the lost ground of patriarchy and re-asserting a male dominance that had probably never existed in Rwanda's actual history. [...] The Rwandan genocide was not simply a battle for political supremacy between groups of men, it was also about re-configuring gender. [...] Gender relations were falling into a state of decadence and disorder as more [Tutsi] women attained positions of prominence in economic and public life.

Boserup [1970] also describes the prominent role of Tutsi women, and mentions that these different social patterns were a source of extreme tensions between Hutu and Tutsi. Both tribes were characterized by a caste system, and besides both Hutu men and Hutu women worked as agricultural laborers for the Tutsi upper class. She notices that:

> The wives of the Tutsi chiefs had absolute power over most male members of the local communities, while the Hutu women were at the bottom of the

social hierarchy, doing the hard labour and subordinate to all other groups in the communities, including their own husbands.

Furthermore, our hypothesis is grounded in previous literature that analyzes how cultural distance between two entities can trigger a range of violent manifestations, from discrimination (see Becker's [1957] seminal work) to conflict. At the broad macro-cultural level, Huntington's [2000] 'clash of civilizations' thesis states that cultural and religious differences are the main determinants of conflict in the post World War II era. Focusing on interstate wars, Bremer [2000] argues that more ethnically distant societies will be more likely to fight against each other. Closer to our study, Caselli and Coleman's [2013] model of ethnic conflict predicts that ethnic groups are more likely to clash when the differences between them are more pronounced. Based on these theoretical insights, we hypothesize that cultural distance between ethnic groups may not only trigger conflict, but also influence in what ways violence unfolds once conflict takes place.[8]

3. Data

We construct a novel dataset, which combines a variety of sources on ethnic conflict, the actors involved, their use of war-related sexual violence, and their ancestral ethnic characteristics. This Section provides an overview of the main data sources used for the analysis. More details on the data sources as well as on the procedure we adopted to construct the dataset can be found at the Section A-1 in the Appendix.

3.1. Sexual Violence in Armed Conflict

The source of our dependent variable is the Sexual Violence in Armed Conflict (SVAC) Dataset (Cohen and Nordås [2014]), which contains information on sexual violence used in civil conflicts fought between 1989 and 2009. We focus on *ethnic* civil conflicts, which are defined as "armed conflicts between the government of a state and one or more internal opposition group(s) that cause at least 25 battle-related deaths within a year and in which armed groups (i) explicitly pursue ethno-nationalist aims, motivations, and interests; and (ii) recruit fighters and forge alliances on the basis of ethnic affiliation" (Gleditsch *et al.* [2002]). We exploit the *dyadic* version of the SVAC dataset, called GEO-SVAC (Bahgat

[8]Empirical findings on the relationship between cultural distance and the onset of conflict are mixed, and suggest that the direction of this association may depend on the nature of conflicts. When looking at intrastate conflicts, Arbatli *et al.* [2013] find that genetically diverse countries are more likely to engage in civil war. Conversely, Spolaore and Wacziarg [2016] show that genetic distance between any two countries is associated with less international conflict with each other.

et al. [2016]), which includes both the identity of the perpetrator of sexual violence and the identity of the other actor involved in the conflict. Consistently with the definition of civil conflict, one of these two actors is always the government of a state, and the opponent is always a rebel group.

Adhering to the International Criminal Court's rationale, SVAC defines war-related sexual violence as including acts of rape, sexual slavery, forced prostitution, forced pregnancy, forced sterilization, and forced abortion (International Criminal Court [2000]). In addition, following Wood [2009], sexual mutilation and sexual torture are also included. SVAC draws upon annual reports from three sources (Amnesty International, Human Rights Watch, and the US State Department) to construct a measure of prevalence of sexual violence at the conflict-actor-year level. The resulting variable is an index ranging between 0-3 that reflects the magnitude of the phenomenon. More specifically, it takes the value 3 if, in a given year of conflict, an actor perpetrated acts of massive, innumerable, or systematic sexual violence and if reported incidents or victims of sexual violence exceeded 1,000; 2 if sexual violence was described as widespread and common, and reports of victims or incidents ranged between 25 and 999; 1 if reported victims and incidents were below 25 and the occurrence of sexual violence was only isolated; 0 if no sexual violence was mentioned in a given year in relation to a specific conflict.[9]

3.2. Conflict Actors' Ethnic Identity and Ancestral Characteristics

To assign an ethnic identity to each conflict actor—rebel groups and governments—we exploit the rich information provided by the Ethnic Power Relations (EPR) Dataset Family (Vogt *et al.* [2015]). EPR defines an ethnic group as "an identity group that defines itself or is defined by others along linguistic, religious, or racial characteristics".

The EPR dataset family contains information, *inter alia*, on ethnic groups' involvement in civil war as part of a rebel organization and on ethnic groups' access to executive government power. We are therefore able to link each rebel force and each government to one or multiple EPR ethnic groups, depending on whether rebels and governments are the result of ethnic alliances.[10] Section A-14. in the Appendix illustrates this merging procedure with a concrete example of a conflict event in Liberia.

[9]For further details on the methodology of data collection and coding refer to Cohen and Nordås [2014].

[10]We assume that state and rebel military forces mirror the ethnic composition of governments and rebel groups, respectively. In Section 5.4 we conduct a robustness test in which we assume that state forces mirror the ethnic composition of the entire country (weighted by the size of each group's settlement area) and show that our results are robust to this alternative definition.

We add information on ethnic groups' ancestral characteristics using the Ethnographic Atlas (EA), coded by Murdock [1967] and updated by Nunn and Wantchekon [2011]. The EA is arguably the most compelling source of ethnographic information for 1,265 societies around the world, collected at the end of the 19th century. For Africa, the EA provides detailed information on groups' socio-economic conditions, settlement patterns, and family arrangements prior to European contact. We will describe these variables in detail in Section 4.

We add the information provided by the EA to the dataset on conflict through the concordance table provided by Michalopoulos and Papaioannou [2016], which links 196 EPR groups to 593 ethnicities in the EA using a variety of sources. In some cases, this matching procedure results in a one-to-one mapping between EPR groups and EA groups. For example, the ethnic group of the rebel force FLEC-FAC in Angola, the *Cabindan Mayombe*, is matched with the *Yombe* group in the EA. However, in other cases, a conflict actor is associated to multiple EA groups either because (i) an actor is represented by multiple EPR groups, (ii) an EPR group corresponds to multiple groups in the EA, or (iii) both.

An example of the latter case is the following: the RFDG rebel group in Guinea is composed of members belonging to the EPR groups called *Malinke* and *Peul*. In turn, the Michalopoulos and Papaioannou's [2016] correspondence table matches *Malinke* to four EA groups (*Yalunka, Konyanke, Malinke,* and *Koranko*), and the *Peul* to three EA groups (*Foutadjalon, Sokoto, Liptako*). In these instances, we weight the ethnic characteristics of each EPR group by the size of the EA groups to which it corresponds. In the just-mentioned example, *Peul*'s dependence on pastoralism will be a weighted average between *Foutadjalon's, Sokoto's*, and *Liptako's* dependence on pastoralism, based on the three ethnic groups' size, in turn proxied by the land area covered by their settlements. We will provide estimates using both the weighted and the un-weighted version of the ethnic characteristics, and show that our results are generally insensitive to this procedure.

The final sample includes 33 ethnic civil conflicts fought between 1989 and 2009 in 27 African countries, involving 128 different actors (106 related pairs of actors). The resulting sample size is N=623.

3.3. Descriptive Statistics

Sexual violence was present, in some level of intensity, in 82% of the conflicts included in our sample. 21% of all ethnic civil conflicts in Africa between 1989 and 2009 experienced

at least one episode of sexual violence at the highest intensity, i.e., involving at least 1,000 victims. State forces perpetrate sexual violence more frequently than rebel groups. However, when perpetrated by rebel groups, the intensity of sexual violence is on average higher.

Figure 1 reports the spatial variation of sexual violence at the ethnicity level, conditional on the ethnic group being involved in a conflict. The striking picture that emerges is that there is considerable within-country variation in whether or not ethnic groups (and therefore, armed actors) engage in sexual violence. An interesting example is that of Algeria. In the long civil war between the government and various rebel armed forces, which began in 1991, rebel groups never made use of sexual violence, while the government constantly engaged in it throughout the war. In other cases, such as the one of Sudan, the vast majority of ethnic groups involved in conflict perpetrated sexual violence, but there was a quite large variation in the intensity of it. Finally, as in the case of Nigeria, the use of sexual violence was widespread across groups, and its incidence homogeneous.

4. Ethnic Traits and Gender Norms

This section outlines the procedure we adopted for selecting and grouping ethnic characteristics into an Africa-wide ethnic gender-inequality index. Established literature spanning different disciplines has demonstrated that ancestral economic and societal arrangements have persistently shaped gender relations (see Giuliano [2018] for a review). Our choice of ethnic characteristics is informed by what this literature has highlighted as relevant determinants of gender norms in a society.[11]

4.1. Descent, Residence and Family Arrangements

Anthropologists have argued that societies where descent, residence, and family arrangements are centered around women tend to be characterized by higher gender equality

[11] We do not consider ethnic characteristics on which the literature is inconclusive. For example, it is unclear whether the practice of brideprice increases or decreases gender inequality. On the one hand, brideprice is a recognition of women's value, and it is more typical in societies where women have an important role in agricultural production (Boserup [1970]). On the other hand, the obligation of women to pay back the brideprice in case of divorce may decrease their bargaining power. The association between polygyny and gender equality is also ambiguous. On the one hand, women's status in polygynous unions may be lower, in particular for younger wives due to early marriage and large age gaps with the husband. Alesina *et al.* [forthcoming] show that women in polygynous unions are more likely to suffer from intimate partner violence across Africa, but, at the same time, women and men in societies that traditionally practice polygamy are less likely to justify intimate partner violence. Furthermore, as highlighted in Boserup [1970], polygyny is more typical in societies where women constitute an important economic asset.

(Martin and Voorhies [1975], Sanday [1981a]).

In matrilineal societies, inheritance is traced through female family members. Therefore, women are key for determining descent and have constant support from their kin network (Schneider and Gough [1961]). Lowes [2017] has shown that women belonging to matrilineal ethnic groups in the Democratic Republic of Congo detain higher bargaining power within the household compared to their counterparts in patrilineal societies, and that they are less likely to be victims of intimate partner violence. As shown in Gneezy *et al.* [2009], matrilineal women are also more likely to display behavioral traits that are usually typical of men—such as willingness to compete—ones that have often been advocated as factors explaining economic disparities between men and women. Taken together, this evidence supports the notion that matrilineal societies, when compared to patrilineal ones, are characterized by more equitable gender norms.

Lineage systems and kinship structures in a society are inextricably linked to residence patterns. Patrilineal societies are also likely to be patrilocal, a system of postmarital residence where the newly formed couple moves near the husband's kin group (Murdock [1967]). In these societies, women may be less protected by their own family, and husbands may more easily exercise their authority over women. Scholars in anthropology have hypothesized that patrilocality is a direct consequence of women's low economic participation (Korotayev [2003]).

Tur-Prats [2019] has linked the prevalence of stem family types to higher gender equality. The co-residence of the wife with the mother-in-law frees up women from the burden of domestic work, and allows them to exercise a productive role in the economy and participate in family subsistence.

Based on this literature, we consider matrilineality, patrilineality, patrilocality, and stem family types as relevant ethnic traits capturing gender norms in a society.

4.2. Subsistence Activities

In ancestral societies, the relative participation of women and men in economic activities has persistently shaped gender relations (Friedl [1978], Sanday [1973]). According to Friedl [1978], in hunter-gatherer societies men exerted control over animal protein, a scarce and hard to acquire resource. Since hunting activities require a certain amount of physical strength, they are predominantly a men's task. As a result, these societies tend to be characterized by high degrees of male dominance. The same applies to societies whose subsistence is highly dependent on animal husbandry.

Pastoralism is a specific type of animal husbandry based on herd animals that require natural pasture, and entailed frequent and extended periods of male absence from the community, resulting in higher paternity uncertainty. Becker [2018] shows that these byproducts of pastoralism—male absence and paternity uncertainty—incentivized the adoption of measures to control women's sexuality and mobility. Women in societies where pastoralism was historically an important source of subsistence are today more likely to be infibulated, to be restricted in their mobility, and to hold more gender-unequal attitudes.

In the African context, where agriculture was characterized by shifting cultivation, female participation in agricultural activities was traditionally high, as emphasized by Boserup [1970] and confirmed in the ethnographic data by Murdock [1967]. In contrast, in other regions of the world where plough agriculture was more common, the traditional division of labor was reversed, with men taking up the majority of agricultural work and women remaining confined to the domestic sphere. This agricultural system based on plough agriculture—and the consequent division of labor—contributed to the evolution of gender-unequal norms, as empirically demonstrated in Alesina *et al.* [2013].

In light of this literature, we consider dependence on hunting, gathering, pastoralism, agriculture, and the use of the plough, as relevant ethnic characteristics to describe gender norms in a society.

4.3. Ethnic Gender Inequality Index: Construction and Validation

We use the just-described nine ethnic characteristics to construct an Africa-wide index for each ethnic group using principal component analysis (PCA). Information on each characteristic comes from the Murdock Ethnographic Atlas. Three of these nine traits—matrilineality, stem family, and dependence on agriculture—are reconcilable with notions of gender equality. Therefore, we expect these single traits to be *negatively* correlated with the eGII. The remaining six ethnic characteristics—the use of the plough, patrilocality, dependence on gathering and hunting, dependence on pastoralism, and animal husbandry—have been associated with gender inequality. In turn, we expect these single traits to be *positively* correlated with the eGII.

The first principal component alone explains 32% of the common variance of the nine variables across Africa. Table 2 presents the loadings of each of the nine traits included, i.e., their correlation with the first principal component. The sign of the loadings is as expected for the majority of ethnic traits. Matrilineality and dependence on agriculture are negatively correlated with the first component, while patrilocality, dependence on

pastoralism, the use of the plough, and dependence on animal husbandry are positively correlated. Instead, the correlation between stem families and the first component is particularly small, and with an unexpected sign. Similarly, dependence on hunting and gathering are negatively correlated with the fist principal component, despite what is argued in the anthropological literature.[12]

Due to the presence of these "ambiguous" ethnic traits, we also provide an alternative version of the eGII, i.e., a restricted one based exclusively on ethnic characteristics that are unambiguously linked to gender (in)equality.[13] Table B-8 in the Appendix reports the corresponding loadings for these five ethnic traits, which hold the expected sign. When discussing our main results, we will show that they are robust to this alternative version of the eGII.

We normalize the predicted score of the PCA to range between 0 and 1, with 0 denoting highest gender equality and 1 denoting highest gender inequality. Figures 2 and 3 report the distribution of the eGII across Africa and in our sample, respectively. Ethnic groups in our sample, i.e. those that were involved in at least one conflict between 1989 and 2009, tend to be characterized by more gender unequal norms on average, compared to the average of the continent as a whole.

Figure 4 reports the geographical distribution of the eGII across Africa, displaying the Murdock ethnic map and the corresponding eGII for each group. The highest levels of gender inequality are prevalent in ethnic groups located in North and East Africa, while the lowest are concentrated in Central Africa and in some parts of West Africa. The distribution of the eGII varies considerably across regions, but also within countries. One of the most extreme cases is Tanzania, where ethnic groups span from the lowest bin of the eGII (0-0.25) to the highest bin (0.75-1). Figures B-2 and B-1 in the Appendix display the distribution of the restricted version of the index, which is very similar to the one of the main eGII. Finally, figure 5 compares the distribution of the eGII with the distribution of sexual violence in armed conflict.

Our eGII is correlated with proxies for gender (in)equality today. Figure 4 shows that countries with the lowest rates of female labor force participation are also those in which ethnic groups are characterized by a high eGII. We further validate our eGII by using micro-data from the Demographic and Health Survey (DHS) and the Afrobarometer survey. We match individuals' self-reported ethnicity to the Murdock Atlas via the Linking

[12] Actually, Alesina *et al.* [forthcoming] find that descendants of societies that depended more heavily on hunting are less prone to justifying intimate-partner violence today.

[13] We exclude the dependence on gathering and hunting, stem family, and the use of the plough.

Ethnic Data from Africa (LEDA) algorithm (Müller-Crepon *et al.* [2020]).[14] The advantage of this micro-data is that it allows us to include country fixed effects, which absorb time-invariant country-specific institutions and cultural traits that might have a direct effect on gender norms. We are therefore exploring whether the correlation between our eGII and gender (in)equality today is found across ethnicities within countries.

Tables 3 and 4 report these correlations. Column (1) in Table 3 shows that, within countries in sub-Saharan Africa, women belonging to ethnic groups with high values of the eGII are less likely to work. The eGII is also positively correlated with a measure of son preference (column (2)) and with attitudes justifying intimate partner violence (column (3)). While we do not find a significant correlation between the eGII and severe forms of physical intimate partner violence experienced by women (column (4)), we find a significantly positive correlation between the eGII and sexual violence perpetrated by an intimate partner.

Data from the Afrobarometer survey shows a correlation with some measures of gender attitudes (see Table 4). Individuals belonging to ethnic groups with a higher eGII are more likely to agree with the statement that "men make better political leaders than women, and should be elected rather than women" (column (1)) or that "if funds for schooling are limited, a boy should always receive an education in school before a girl" (column (3)). Conversely, respondents belonging to more gender-unequal ethnic groups are less likely to agree with the statement that "women should have the same right as men to own and inherit land" (column (5)). The correlation with other gender attitudes elicited in the survey has the expected sign, but is not statistically significant.[15]

These correlations tend to hold also for the restricted version of the eGII, as shown in Tables B-9 and B-10 in the Appendix. Taken together, this suggests that the eGII—which embeds information on ancestral arrangements that may no longer be in place today—performs fairly well in capturing contemporary measures of gender inequality.

5. Gender Inequality and Sexual Violence

Are gender-unequal ethnic groups more likely to be perpetrators of sexual violence in armed conflict when compared to more gender-equal ones? To test our first hypothesis,

[14]The LEDA algorithm merges ethnicities across dataset through linguistic trees in the Ethnologue. For additional details, see Müller-Crepon *et al.* [2020]. The algorithm allows us to successfully merge to the Ethnographic Atlas 71% of ethnic groups in the DHS, and 78% of ethnic groups in the Afrobarometer.

[15]These are: women and men should have equal rights (column (2)), men should have more right to a job when jobs are scarce (column (4)), it is better for a family if a woman takes care of the home and the children (column (6)).

we estimate the following:

$$SVAC_{ict} = \alpha + \beta eGII_i + \eta_c + \phi_t + \omega_c t + \epsilon_i \quad (1)$$

where the dependent variable, $SVAC_{ict}$, denotes the intensity of sexual violence perpetrated by actor i during conflict c in year t. $eGII_i$ captures the gender-inequality index of the perpetrator, either weighted by the size of the EA groups to which each conflict actor corresponds, or unweighted. η_c denotes conflict fixed effects, which account for time-invariant characteristics at the conflict level (e.g., conflict motives, external support, overall conflict cruelty, type of warfare, available technology, military tactics). Year fixed effects (ϕ_t) allow to control for time-specific shocks in the whole continent (e.g., the recognition of sexual violence in conflict as a crime, international policies or protocols that might affect data collection and categorization). A conflict-specific year trend ($\omega_c t$) accounts for time-varying factors at the conflict level (e.g., escalation of violence). Standard errors are clustered at the perpetrator level.

The just-described estimating equation abstracts from the victim's characteristics, focusing exclusively on the perpetrator. In order to isolate the role of the perpetrators' eGII from the victim's, we also estimate the following:

$$SVAC_{ijct} = \alpha + \beta eGII_i + \beta eGII_j + \eta_c + \phi_t + \omega_c t + \epsilon_i \quad (2)$$

where $SVAC_{ict}$ denotes the intensity of sexual violence perpetrated by actor i against actor j on conflict c and year t, and $eGII_j$ controls for the victim's eGII.

5.1. Results

Table 5 shows that the eGII is positively and significantly associated with sexual violence. In our preferred specification in column (2), one standard deviation increase in the eGII increases sexual violence by 0.45 standard deviations. When estimating Equation 2 and controlling for the victim's eGII, one standard deviation increase in the eGII increases sexual violence by 0.36 standard deviations (column (3)). Columns (4) to (6) show that the same associations hold for the unweighted version of the eGII, and the bottom panel of Table 5 shows that coefficients are similar when using the restricted version of the eGII, constructed with only five ethnic characteristics.

Tables B-1 to B-3 in the Appendix repeat this same exercise separately for each of the nine ethnic traits we used to construct the eGII. Interestingly, the association between each characteristic and sexual violence is generally consistent with what discussed in the

literature, and with the sign of the loadings in the PCA. Conflict actors with ancestral arrangements conducive to gender equality (matrilineality, stem families, dependence on agriculture) are less likely to perpetrate sexual violence, while actors characterized by more gender-unequal traits (dependence on hunting or gathering, dependence on animal husbandry, or pastoralism) are more likely to perpetrate sexual violence.[16]

5.2. Robustness Tests

The just-discussed associations between the eGII and the use of sexual violence in conflict are robust to various alternative specifications. Results are reported in Table B-4 in the Appendix.[17] First, to fully account for the victim's characteristics, we include victim fixed effects in the main specification. Columns (1) and (2) in Tables B-5 to B-7 display coefficients of this—more demanding—specification, for the weighted and unweighted version of the eGII, respectively. The significance of the estimates tends to fall, although the coefficients maintain the expected sign.

Next, we run Equation 1 replacing conflict fixed effects with country fixed effects. This specification is less conservative than our preferred one, since one country may experience multiple conflicts.[18] However, in few instances, one conflict may span across multiple countries.[19] As columns (3) and (4) show, the coefficients are insensitive to the choice of fixed effects, and maintain the same magnitude and significance as in the main specification.

Finally, in columns (5) and (6) we abstract from the temporal variation present in our data. Since the independent variables—i.e., ethnic ancestral characteristics—are time-invariant, we collapse the data and have as unit of observation a dyad (perpetrator-victim pair) in a specific conflict and country. The outcome variable is the average sexual violence intensity perpetrated by each actor in all years of a specific conflict. Reassuringly, results are similar to those obtained with the specification that includes the temporal variation.

[16] In the Appendix, we show that there is an expected association between the slave trade and sexual violence (see section A-2). However, we refrain from including the slave trade in the index due to the fact that it was a geographically constrained historical shock.

[17] Tables B-5 to B-7 are the respective robustness tables for each ethnic characteristic.

[18] Between 1989 and 2009, for example, Niger experienced what UCDP-GED defines as three different conflicts, i.e., the first, second, and third Tuareg rebellions, respectively, fought by five different rebel groups against the government.

[19] For example, the conflict between the government of the Central African Republic and the Forces of Francoise Bozize took place both in the Central African Republic and in Chad. Similarly, some events in the conflict between the government of Ethiopia and the Oromo Liberation Front took place in Kenya.

6. Cultural Distance in Gender Norms and Sexual Violence

Does cultural distance in gender norms between the combatants help explain the emergence of sexual violence in ethnic conflicts? To test our second hypothesis, we take advantage of the dyadic structure of the data.[20]

For each actor in every year of conflict, we have information on their ethnic characteristics, their use of sexual violence and, most importantly, their opponents. Two actors fighting against each other in a conflict constitute a *dyad*. For instance, the government of Chad (corresponding to the "Zaghawa, Bideyat" ethnic group) and the *Comité de Sursaut National pour la Paix et la Démocratie* (CSNPD) rebel group (corresponding to the "Sara" ethnic group) form a dyad in our dataset. Since we have information on sexual violence perpetrated by both actors, our dyadic dataset is bidirectional. Therefore, every dyad involved in a conflict event appears twice in the dataset. In one instance, the government of Chad is the perpetrator and the CSNPD is the victim. The variable $SVAC$, in this case, captures the intensity of sexual violence inflicted by the government of Chad to the CSNPD. In a second instance, the government of Chad is the victim, and the CSNPD is the perpetrator. In this case, the variable $SVAC$ captures the intensity of sexual violence inflicted by the rebel group CSNPD to the government of Chad.

We first construct a measure of absolute distance between the perpetrator's gender inequality index and the victim's gender inequality index as follows:

$$\text{eGII}_{pv}^{Dist} = |\text{eGII}_p - \text{eGII}_v|$$

Next, we estimate the following specification, in the spirit of a gravity approach (see Grosjean [2011] and Serafinelli and Tabellini [2017] as examples of gravity equations applied to culture):

$$\text{SVAC}_{pvct} = \alpha + \gamma \text{eGII}_{pv}^{Dist} + \Phi_c + \tau_t + \omega_c t + P_p + \epsilon_{pvct} \tag{3}$$

The dependent variable is an index capturing the intensity of sexual violence perpetrated by actor p against actor v during conflict c in year t; Φ_c and τ_t denote conflict and year fixed effect, respectively, and $\omega_c t$ is a conflict-specific time trend. The inclusion of perpetrator fixed effect (P_p) allows to control for perpetrator-specific time invariant characteristics such as own gender inequality index, overall aggressiveness, and other ethnic traits. Standard errors are clustered at the dyadic level. We restrict the sample to inter-ethnic conflicts only, i.e., to those where we are able to assign distinct ethnic

[20] Table 1 reports an extract of our dataset.

identities to the perpetrator and the victim.

To further explore the nature of the cultural clash, we split the absolute distance measure into two components, and separately assess the impact of (i) the perpetrator being *more gender unequal* than the victim and (ii) the perpetrator being *less gender unequal* than the victim when explaining the use of sexual violence in a conflict:

$$\text{Perpetrator More Unequal}_{pv} = \begin{cases} |\text{eGII}_p - \text{eGII}_v| & \text{if eGII}_p > \text{eGII}_v \\ 0 & \text{otherwise.} \end{cases}$$

$$\text{Perpetrator Less Unequal}_{pv} = \begin{cases} |\text{eGII}_p - \text{eGII}_v| & \text{if eGII}_p < \text{eGII}_v \\ 0 & \text{otherwise.} \end{cases}$$

To tease out the separate effect of these two distinct components of cultural distance, we estimate the following:

$$\begin{aligned} \text{SVAC}_{pvct} = \alpha + \eta_1 &\text{Perpetrator More Unequal}_{pv} \\ &+ \eta_2 \text{Perpetrator Less Unequal}_{pv} + \Phi_c + \tau_t + \omega_c t + P_p + \epsilon_{pvct} \end{aligned} \quad (4)$$

This specification is equivalent to the one in Equation 3, and it differs only in that it substitutes the cultural distance measure with its two main components. In this specification, η_1 and η_2 separately capture the effects of two distinct cultural clashes: one where the perpetrator faces an opponent characterized by more gender-equal cultural norms compared to its own norms (η_1), and one where the perpetrator is confronted with an opponent characterized by more gender-unequal cultural norms (η_2).

6.1. Results

Results are reported in Table 6. Column 1 presents the coefficient estimate of γ in Equation 3. There is a positive and significant association between the absolute cultural distance in gender norms of the combatants and the intensity in sexual violence in conflict. One standard deviation increase in the absolute distance in the eGII of the combatants increases the intensity of sexual violence by 0.21 standard deviations.

Columns (2)-(5) unpack this association, and separately assess the role played by the perpetrator's own eGII and by two distinct cultural clashes: when (i) the perpetrator is confronted with an opponent who holds more gender-equal cultural norms (*Perpetrator more unequal*) (ii) the perpetrator is confronted with an opponent that holds more gender-unequal norms (*Perpetrator less unequal*). Column (2) displays results of a horse-race between the perpetrator's eGII and the absolute cultural distance when the perpetrator is

more gender unequal than the victim. The coefficient on eGII is positive, but statistically insignificant and smaller than in Table 5, which showed the association between the eGII alone and sexual violence. Instead, the coefficient on *Perpetrator more unequal* is larger in magnitude, and significant at the 10 percent level. Column 3 includes *Perpetrator less unequal*, i.e., the absolute cultural distance when the perpetrator holds more equitable gender norms than the victim. The latter factor seems to not be positively associated with the use of sexual violence: the coefficient is small and not significantly different from zero. Instead, the coefficient on the perpetrator's eGII is large and significant in this specification.

Column (4) shows coefficient estimates for a specification that simultaneously includes the perpetrator's eGII and the two different cultural clashes. All coefficients estimates are positive, but the largest and only significant one is that on the perpetrator being more gender-unequal than the victim. This coefficient can be interpreted as follows: when a gender-unequal perpetrator with a eGII of 1 faces a gender-egalitarian victim with a eGII of 0, sexual violence intensity is 1.51 higher than when the perpetrator and the victim hold the same gender norms. In column (5), instead of controlling for the perpetrator's eGII, we add perpetrator fixed effects. Crucially, this allows us to account for any time-invariant perpetrator's characteristics that may confound the results, like other ethnic traits (including the perpetrator's own eGII), overall aggressiveness, whether the perpetrator is a state force or a rebel group. The coefficient barely changes in magnitude, and its statistical significance increases.

Interpretation of the Results

So far, we have interpreted the positive and significant coefficient of *Perpetrator more unequal* in Table 6 as the result of a cultural clash between combatants. However, one potential alternative explanation is that perpetrators strategically use sexual violence to target a valuable asset in the opponent's society (i.e., women). This behavior would arise when women have a prominent role in victim's society—and consequently, it would be more likely when perpetrators are more gender-unequal than the victim. This could occur also in the absence of a cultural clash driven by divergent gender norms.

To rule out this alternative explanation, we re-run our main specification controlling for victim's characteristics, which take into account the economic value of women in victim's society—as well as any other time-invariant victim's characteristics.[21] By and large, our

[21]For instance, whether women on the victim's side are a particularly easy target. It is not clear how this would be related to gender inequality: on the one hand, women in gender-equal societies might move

results are robust to this procedure (see Table B-11). When controlling for the victim's eGII rather than the perpetrator's, the coefficient on *Perpetrator more unequal* stays large and significant. When adding victim's fixed effects, the same coefficient loses significance despite maintaining a similar magnitude.

These tests support our hypothesis that cultural distance is what drives sexual violence in conflict, and not combatant-specific factors. A subsequent natural question to ask would be: what is the mechanism by which cultural distance triggers sexual violence? We propose a new explanation based on the identity model by Akerlof and Kranton [2000]. Perpetrators that confront more gender-equal opponents might perceive that the relatively better position of women is a threat to their own norms or ideals, and might resort to sexual violence to reinstate the loss of utility suffered by this encounter. The suggested explanation is consistent with the asymmetry of our findings, that is, the fact that we only find an association when the perpetrator is more gender-unequal than the victim, but not viceversa. Perpetrators that face a more gender-unequal opponent might not feel that the worse relative position of women in the opponents' societies threatens their masculinity. Since their identity utility is not affected, they do not necessarily respond with sexual violence to the clash in cultural norms.

To further validate our results, in the next Subsections we conduct a battery of robustness checks, and explore the relationship between gender-norms distance and general (i.e., non-sexual) violence as well as the relationship between other measures of cultural distance—linguistic and religious—and sexual violence in conflict.

6.2. Robustness Checks

We report robustness checks in Tables B-12 to B-15 in the Appendix. Given that our measure of cultural distance in gender norms is time-invariant, we show that our results are similar when running the same specifications abstracting from the temporal variation in the data (Table B-12).

Table B-13 shows that the coefficients are robust to the inclusion of alternative sets of fixed effects, and to alternative versions of the eGII. In column (1), we include conflict-year fixed effects, to account for any conflict-year specific factor that may confound the results (e.g., how cruel the conflict was in that specific year, changes in military tactics during the conflict, and so on). In column (2), we add country fixed effects. Our results remain unchanged when using the unweighted version of the eGII, and when using the

more freely in public spaces but, on the other hand, women in gender-unequal societies might be more vulnerable.

restricted version of the eGII that includes only five ethnic characteristics.

We also test whether our results hold when assigning an alternative measure of the eGII to state military forces. This exercise is motivated by the fact that the composition of the state military may not reflect the ethnic identity of the government. For instance, it is possible that the election of a new government does not (at least immediately) result into an alignment of the military with the ethnic identity of the new ethnic groups in power. For this reason, we explore whether our results hold when assigning to the government a more conservative measure, i.e. the average eGII of all the Murdock ethnic groups within a country, weighted by the size of each group's settlement area. Table B-14 shows that replacing the government's eGII with the country average leaves the results almost unchanged: the *Perpetrator more unequal* coefficient stays significant and slightly increases in magnitude compared to our baseline specifications in Table 6. Conversely, the *Perpetrator less unequal* coefficient remains insignificant, and its size slightly decreases.

Finally, in Table B-15, we show that results are robust to multi-way clustering, i.e. to clustering standard errors at the level of the first and of the second actor in a given pair. This allows for arbitrary correlations of the error term within a group of actors pairs that share the same perpetrator or that share the same victim.

6.3. Gender-Norms Clash and General Violence

Cultural distance in gender norms may be correlated to other dissimilarities between ethnic groups, which could in turn generate more violent conflicts, or more violent episodes within a conflict. If this was the case, sexual violence would only be a byproduct of general violence, and the cultural clash we are estimating would not be specifically linked to a gender-based form of violence.

The inclusion of conflict fixed effects in our main specification partially alleviates this concern because it accounts for the overall cruelty in a conflict. However, to fully rule out this alternative explanation, we run a placebo test using a different measure of violence as the outcome variable. We exploit information on the number of fatalities experienced by a conflict actor in every year of conflict to construct an index similar to the sexual violence variable, ranging between 0 to 3 depending on the number of recorded deaths. Since this measure of general violence is also bidirectional, we can run the same specifications of Equations 2 and 3 having as an outcome variable the number of deaths inflicted by the perpetrator on the victims.

Table 7 reports the results of this exercise. Column (1) shows that the distance in

gender norms of the combatants is not associated with the number of deaths inflicted to the victims: the coefficient is small and not statistically different from zero. The same holds for the coefficients in columns (2) to (5). Neither the perpetrator's own gender norms, nor the cultural clashes are positively and significantly associated with general violence. If at all, these elements seem to be negatively associated with general violence, although none of these coefficients is statistically significant. Taken together, this suggests that the perpetrator's eGII and the cultural clash in gender norms between perpetrator and victim explain only the use of *gender-based* forms of violence.

6.4. Distance in Gender Norms and Other Measures of Cultural Distance

In this section, we assess whether combatants' clashes in gender norms are the main driver of the use of sexual violence, or whether clashes in other cultural dimensions are similarly powerful in explaining this phenomenon. To disentangle the role of gender norms from other aspects of culture, we exploit linguistic and religious distance, widely-used proxies for cultural differences between populations.[22]

We use Fearon's [2003] measure of linguistic distance (called cladistic distance), which is based on linguistic trees in the Ethnologue, a comprehensive database of more than 7,000 known living languages. We merge information on languages spoken by ethnic groups through the Ethnic Power Relations-Ethnic Dimensions (EPR-ED) dataset, and compute distances between each pair of languages based on the number of common nodes in the tree. This allows us to compute a measure of linguistic distance between ethnic groups, and ultimately, between the perpetrator and the victim. Following the same methodology, we construct a measure of religious distance. Sections A-3 and A-4 in the Appendix provide additional details on how we construct these measures.

Figure 6 plots the correlation between linguistic distance between the combatants and our measure of distance in gender norms. Not surprisingly, the correlation is positive, suggesting that conflict actors that are linguistically distant are on average also more likely to differ in their gender norms. However, the figure and the respective correlation coefficient (0.25, statistically significant at the one percent level) also suggest that distance in gender norms is not a perfect predictor of overall cultural distance. On the other hand,

[22]Spolaore and Wacziarg [2016] use other country-level measures of cultural heterogeneity, like answers to World Value Survey (WVS) questions. We abstain from using the WVS due to potential reverse causality between this measure and our outcome variable. In addition, Spolaore and Wacziarg [2016] proposed genetic distance as a summary measure for populations' *relatedness*. This measure is unfeasible in our context due to a too wide categorization of ethnic groups in the original source of genetic data.

distance in gender norms is uncorrelated with religious distance (see Figure 7).[23] Taken together, this suggests that our gender norms measure captures a dimension distinct from already-proposed aspects of cultural distance.

To assess whether cultural clashes in traits unrelated to gender norms are associated with sexual violence, we first regress linguistic distance on distance in gender norms, and obtain residuals of this regression. These residuals capture the component of cultural distance that is unexplained by differences in gender norms. We re-run our main specifications controlling for this component of cultural distance and, alternatively, for linguistic distance. As can be seen in columns (2)-(3) and columns (5)-(6), this leaves the coefficients in our main specifications almost unchanged. Columns (7) and (8) in Table 8 show that neither overall cultural distance nor residuals alone can explain actors' use of sexual violence in conflict (the coefficient is small in magnitude and insignificant).

Table 9 repeats the same exercise using religious distance as a proxy for cultural distance between perpetrator and victim. Again, controlling for residuals or religious distance does not affect our main results. Interestingly, column (8) shows that, if at all, religious distance is *negatively* associated with the use of sexual violence.[24] Taken together, these results suggest that what matters in explaining the use of sexual violence is not cultural distance in general, but a specific clash in cultural norms related to gender.

7. Conclusion

Why do some conflict actors systematically rape, while others never do so? In this paper, we advance and test a new hypothesis for the use of sexual violence in armed conflict.

We find that armed actors characterized by more gender-unequal norms are more likely to engage in sexual violence during ethnic conflict. However, we show that this explanation for sexual violence—stemming from gender inequality on the perpetrator's side—is incomplete. The prevalence and the intensity of war-related sexual violence is better explained when considering both the perpetrator's and the victim's gender norms. In particular, sexual violence emerges and intensifies when there is a *clash of conceptions* between combatants on what is the appropriate role of men and women in society. Cultural distance in gender norms between perpetrator and victim explains sexual violence more strongly than the perpetrator's own gender inequality.

When examining this relationship further, we uncover that the effect is driven by a

[23] Religious distance and linguistic distance are positively correlated. See Figure B-3 in the Appendix.

[24] Given that distance in gender norms and religious distance are uncorrelated, it is not surprising that the coefficient in column 7 is almost identical to the one in column 8.

specific cultural clash, i.e., when the perpetrator holds more gender-unequal norms than the victim. We show that this just-described pattern is specific to gender-based violence, and that it does not explain the intensity of general violence perpetrated by an armed actor, measured by deaths inflicted on the opponent. Moreover, conflict-related sexual violence is not driven by general cultural differences, but by differences in gender norms.

Our contribution in this paper is threefold. First, we enrich existing conflict data sources with ethnic characteristics of the groups involved. This novel dyadic dataset may constitute a potentially valuable resource for future contributions in the conflict literature. While the literature has mainly focused on understanding how ethnic differences determine the onset of conflicts, we show that they can also explain how violence manifests once the conflict has started. Among the different ethnic dimensions that can induce violence, we focus on the role of gender norms in explaining the occurrence and intensity of sexual violence in conflict. Future research should continue to uncover how different ethnic dimensions can trigger and exacerbate conflict.

Second, we propose and validate an ethnic gender inequality index at the ethnic-group level for Africa. This index complements the gender inequality index (GII) introduced in 2010 by the United Nations Development Programme, which is constructed at the country level and based on contemporary variables (reproductive health, empowerment and labor market participation). Our Gender Inequality Index is instead constructed at the ethnic group level, is based on anthropological notions of gender (in)equality, and aims at capturing the deeply entrenched norms of a society. The large within-country variation found with our eGII makes more valuable our exercise, especially for regions in the world, such as the African continent, with high ethnic diversity.

Finally, in line with recent literature on the cultural determinants of intimate-partner violence (Alesina *et al.* [forthcoming]; Tur-Prats [2019]), we find that violence against women during wartime shares the same fundamental causes as violence against women during peacetime. From a policy perspective, this suggests that policies aimed at changing gender norms might have an effect on all the different manifestations of violence against women.

References

Akerlof, G. A. and Kranton, R. E. (2000). Economics and identity. *The Quarterly Journal of Economics*, **115** (3), 715–753.

Alesina, A., Brioschi, B. and La Ferrara, E. (forthcoming). Violence Against Women: A Cross-cultural Analysis for Africa. *Economica*.

—, Giuliano, P. and Nunn, N. (2013). On the Origins of Gender Roles: Women and the Plough. *The Quarterly Journal of Economics*, **128** (2), 469–530.

Arbatli, C. E., Ashraf, Q. H. and Galor, O. (2013). The nature of civil conflict. *Available at SSRN 2364127*.

Ba, I. and Bhopal, R. (2017). Physical, mental and social consequences in civilians who have experienced war-related sexual violence: a systematic review (1981–2014). *Public Health*, **142**, 121–135.

Bahgat, K., Nordås, R. and Østby, G. (2016). Geocoded SVAC Dataset (GEO-SVAC) version 1.0. Peace Research Institute Oslo (PRIO).

Becker, A. (2018). On the Economic Origins of Constraints on Women's Sexuality.

—, Enke, B. and Falk, A. (2018). *Ancient origins of the global variation in economic preferences*. Tech. rep., National Bureau of Economic Research.

Becker, G. S. (1957). 1971. the economics of discrimination.

Blattman, C. and Miguel, E. (2010). Civil war. *Journal of Economic literature*, **48** (1), 3–57.

Boserup, E. (1970). *Woman's role in economic development*.

Bremer, S. A. (2000). Who fights whom, when, where, and why? *What do we know about war*, pp. 23–36.

Caselli, F. and Coleman, W. J. (2013). On the theory of ethnic conflict. *Journal of the European Economic Association*, **11** (suppl_1), 161–192.

Cederman, L.-E., Min, B. and Wimmer, A. (2012). Ethnic Armed Conflict dataset.

Cohen, D. K. (2013). Explaining Rape During Civil War: Cross-National Evidence (1980–2009). *American Political Science Review*, **107** (3), 461–477.

— and Nordås, R. (2014). Sexual Violence in Armed Conflict: Introducing the SVAC Dataset, 1989–2009. *Journal of Peace Research*, **51** (3), 418–428.

Croicu, M. and Sundberg, R. (2017). UCDP GED Codebook version 18.1. Department of Peace and Conflict Research, Uppsala University.

Fearon, J. D. (2003). Ethnic and cultural diversity by country. *Journal of economic growth*, **8** (2), 195–222.

Friedl, E. (1978). Society and sex roles. *Human Nature*, **1** (4), 68–75.

Girardin, L., Hunziker, P., Cederman, L.-E., Bormann, N.-C. and Vogt, M. (2015). Growup-geographical research on war, unified platform. *ETH Zurich. http://growup. ethz. ch*.

Giuliano, P. (2018). *Gender: A Historical Perspective. In: The Oxford Handbook of Women and the Economy*. Edited by Susan L. Averett, Laura M. Argys, and Saul D. Hoffman. New York: Oxford University Press.

Gleditsch, N. P., Wallensteen, P., Eriksson, M., Sollenberg, M. and Strand, H. (2002). Armed Conflict 1946-2001: A New Dataset. *Journal of peace research*, **39** (5), 615–637.

Gneezy, U., Leonard, K. L. and List, J. A. (2009). Gender differences in competition: Evidence from a matrilineal and a patriarchal society. *Econometrica*, **77** (5), 1637–1664.

Grosjean, P. (2011). The weight of history on european cultural integration: a gravity approach. *American Economic Review*, **101** (3), 504–08.

Guiso, L., Sapienza, P. and Zingales, L. (2016). Long-term persistence. *Journal of the European Economic Association*, **14** (6), 1401–1436.

Holsoe, S. E. and Lauer, J. J. (1976). Who are the kran/guere and the gio/yacouba? ethnic identifications along the liberia-ivory coast border. *African Studies Review*, **19** (1), 139–150.

Huntington, S. P. (2000). The clash of civilizations? In *Culture and Politics*, Springer, pp. 99–118.

International Criminal Court (2000). Elements of crimes. PCNICC /2000/1/Add.2.

International Criminal Court (2002). Rome Statute. Document A/CONF.183/9.

Korotayev, A. (2003). Division of labor by gender and postmarital residence in cross-cultural perspective: A reconsideration. *Cross-Cultural Research*, **37** (4), 335–372.

Lowes, S. (2017). Matrilineal kinship and spousal cooperation: Evidence from the matrilineal belt. *Unpublished manuscript. URL: https://scholar. harvard. edu/files/slowes/files/lowes_matrilineal. pdf*.

Martin, M. K. and Voorhies, B. (1975). *Female of the Species*. Columbia University Press.

Meger, S. (2016). *Rape loot pillage: The political economy of sexual violence in armed conflict*. Oxford University Press.

Michalopoulos, S. and Papaioannou, E. (2016). The long-run effects of the scramble for africa. *American Economic Review*, **106** (7), 1802–48.

Müller-Crepon, C., Pengl, Y. and Bormann, N.-C. (2020). Linking ethnic data from africa.

Murdock, G. P. (1967). Ethnographic Atlas.

Nunn, N. and Wantchekon, L. (2011). The slave Trade and the Origins of Mistrust in Africa. *The American Economic Review*, **101** (7), 3221–3252.

Putterman, L. and Weil, D. N. (2010). Post-1500 population flows and the long-run determinants of economic growth and inequality. *The Quarterly journal of economics*, **125** (4), 1627–1682.

Sanday, P. R. (1973). Toward a theory of the status of women. *American anthropologist*, **75** (5), 1682–1700.

— (1981a). *Female power and male dominance: On the origins of sexual inequality*. Cambridge University Press.

— (1981b). The socio-cultural context of rape: A cross-cultural study. *Journal of social issues*, **37** (4), 5–27.

Schneider, D. M. and Gough, K. (1961). *Matrilineal kinship*. Univ of California Press.

Serafinelli, M. and Tabellini, G. (2017). Creativity over time and space. *Available at SSRN 3070203*.

Skjelsbaek, I. (2001). Sexual Violence and War: Mapping Out a Complex Relationship. *European Journal of International Relations*, **7** (2), 211–237.

Spolaore, E. and Wacziarg, R. (2009). The diffusion of development. *The Quarterly journal of economics*, **124** (2), 469–529.

— and — (2016). Ancestry, language and culture. In *The Palgrave handbook of economics and language*, Springer, pp. 174–211.

Sundberg, R. and Melander, E. (2013). Introducing the UCDP georeferenced event dataset. *Journal of Peace Research*, **50** (4), 523–532.

Symons, D. (1979). The evolution of human sexuality.

Taylor, C. C. (1999). A gendered genocide: Tutsi women and Hutu extremists in the 1994 Rwanda genocide. *PoLAR*, **22**, 42.

Teso, E. (2018). The long-term effect of demographic shocks on the evolution of gender roles: Evidence from the transatlantic slave trade. *Journal of the European Economic Association*, **17** (2), 497–534.

Thornhill, R. and Palmer, C. T. (2001). *A Natural History of Rape: Biological Bases of Sexual Coercion*. MIT press.

Tur-Prats, A. (2019). Family types and intimate partner violence: A historical perspective. *Review of Economics and Statistics*, **101** (5), 878–891.

Vogt, M., Bormann, N.-C., Rüegger, S., Cederman, L.-E., Hunziker, P. and Girardin, L. (2015). Integrating Data on Ethnicity, Geography, and Conflict: The Ethnic Power Relations Data Set Family. *Journal of Conflict Resolution*, **59** (7), 1327–1342.

Voigtländer, N. and Voth, H.-J. (2012). Persecution perpetuated: the medieval origins of anti-semitic violence in nazi germany. *The Quarterly Journal of Economics*, **127** (3), 1339–1392.

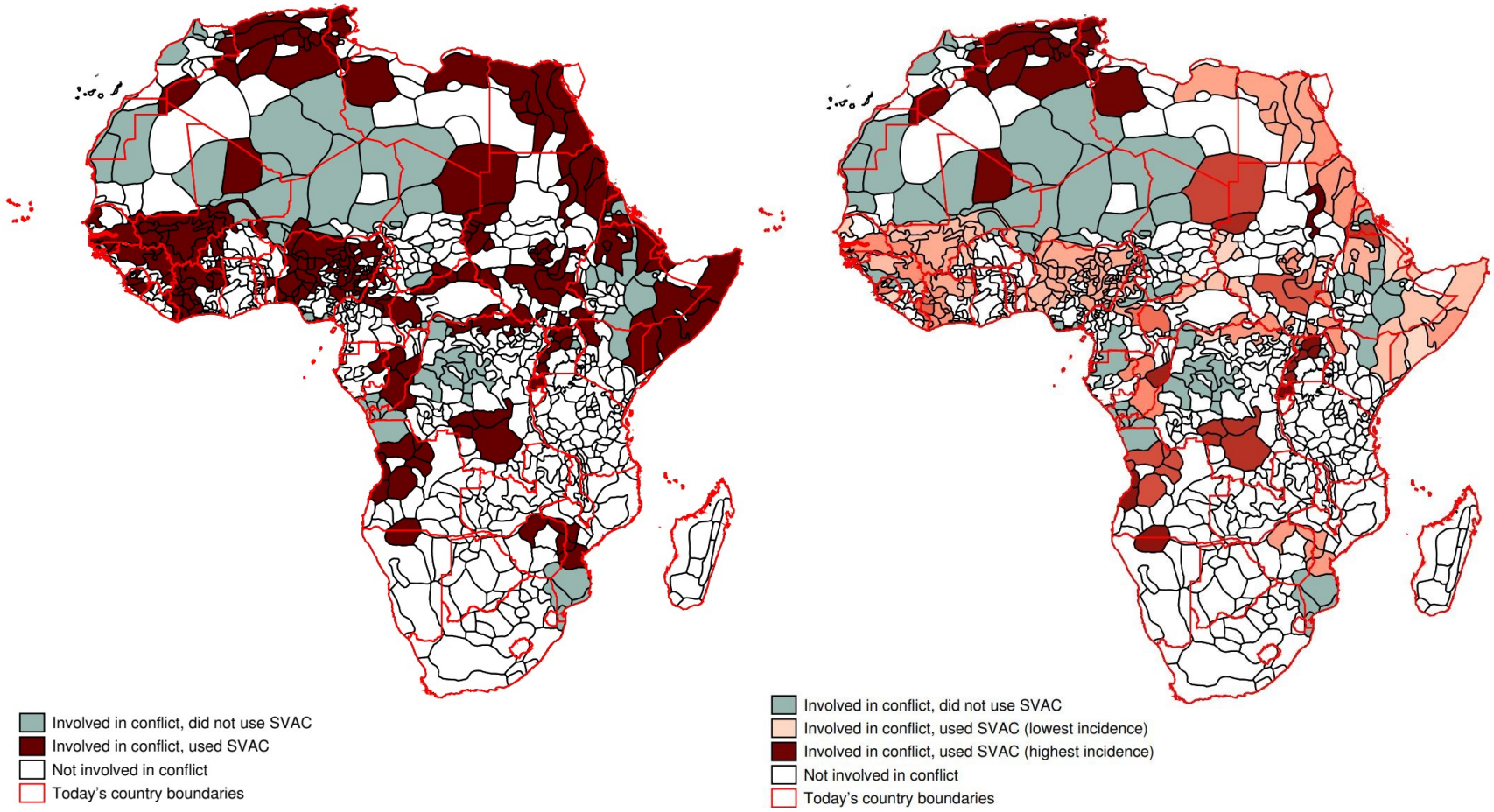
Wimmer, A., Cederman, L.-E. and Min, B. (2009). Ethnic politics and armed conflict: A configurational analysis of a new global data set. *American Sociological Review*, **74** (2), 316–337.

Wood, E. J. (2009). Armed Groups and Sexual Violence: When is Wartime Rape Rare? *Politics & Society*, **37** (1), 131–161.

Wucherpfennig, J., Metternich, N. W., Cederman, L.-E. and Gleditsch, K. S. (2012). Ethnicity, the state, and the duration of civil war. *World Politics*, **64** (1), 79–115.

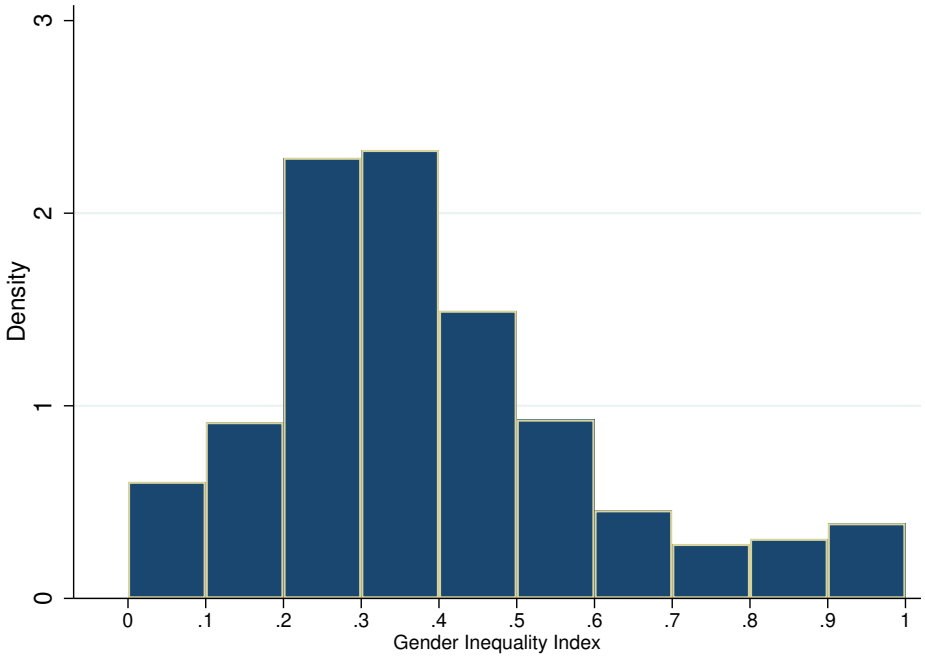
Figures and Tables

FIGURE 1: *Murdock ethnic groups' use of sexual violence in armed conflict (1989-2009) in Africa*



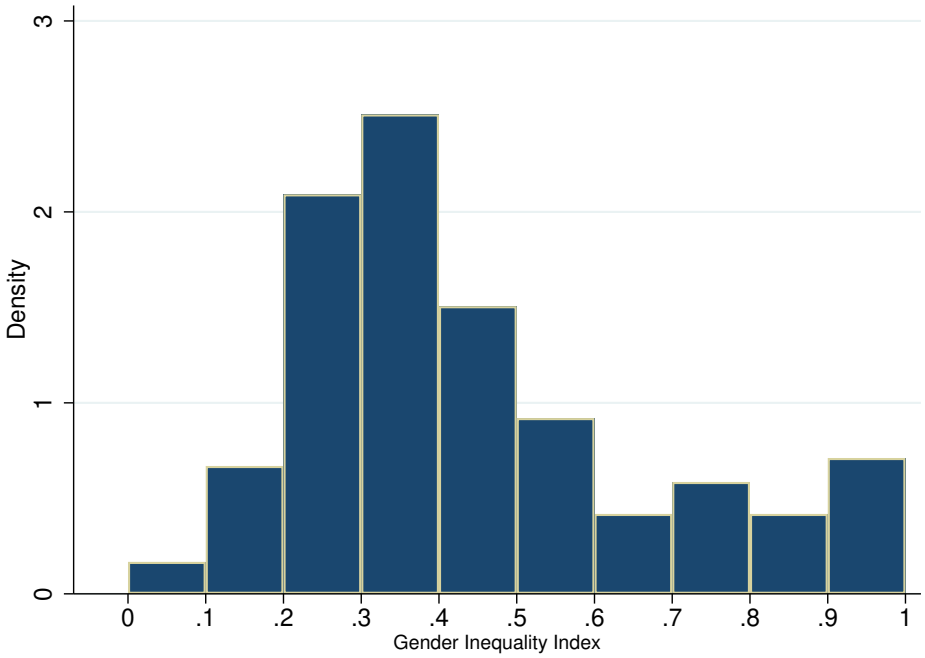
NOTES: Left: involvement in conflict and use of sexual violence by Murdock ethnic groups in Africa. Right: involvement in conflict and incidence of sexual violence used by Murdock's ethnic groups in Africa, through an index varying between 0-1, which captures the total incidence of sexual violence in armed conflict for the period 1989-2009. Sources: Murdock Ethnographic Atlas and GEO-SVAC dataset.

FIGURE 2: *Distribution of the eGII in Africa*



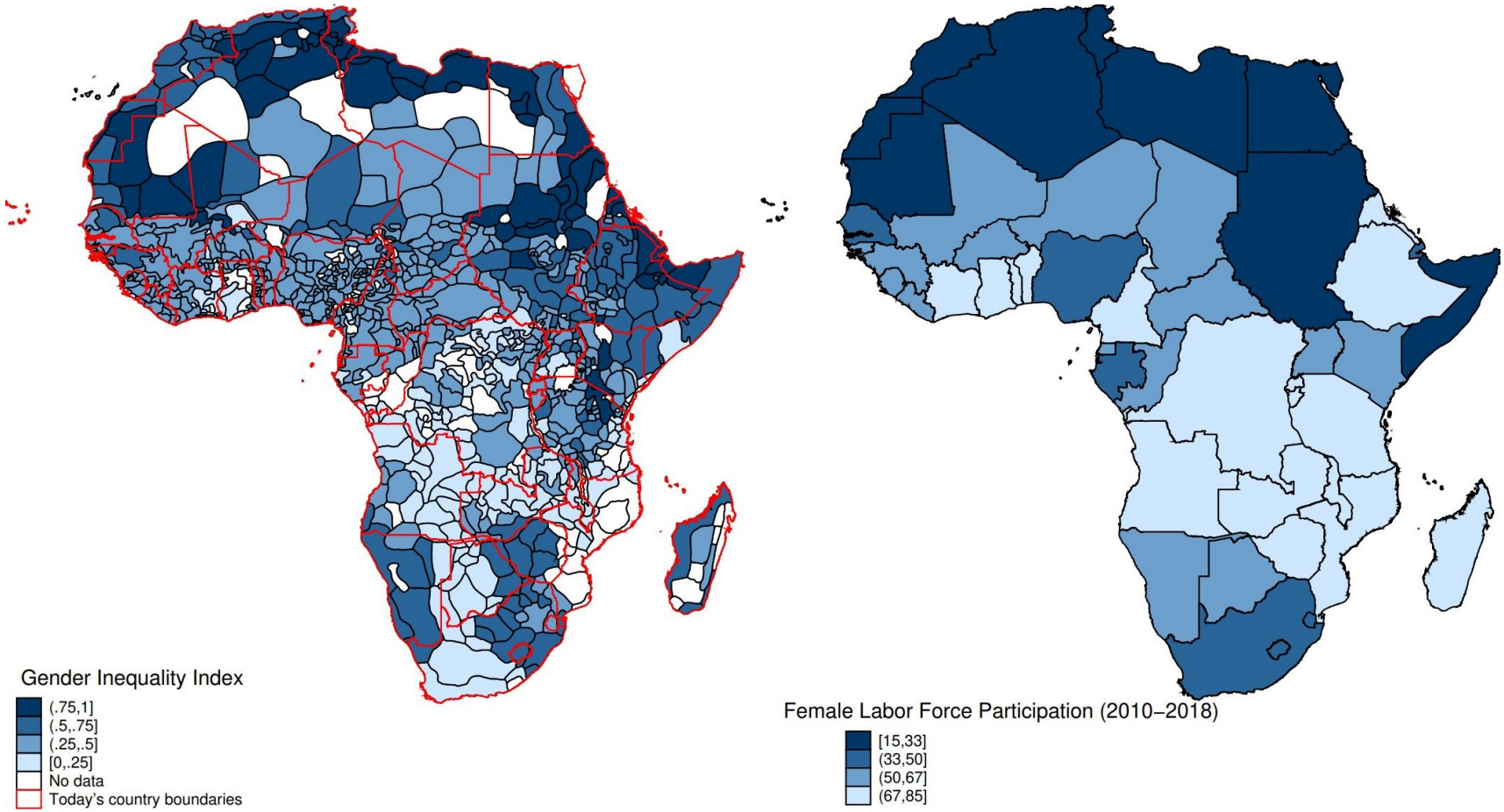
NOTES: Distribution of the eGII in Africa. Mean (standard deviation) of the index: 0.40 (.21).

FIGURE 3: *Distribution of the eGII in our sample*



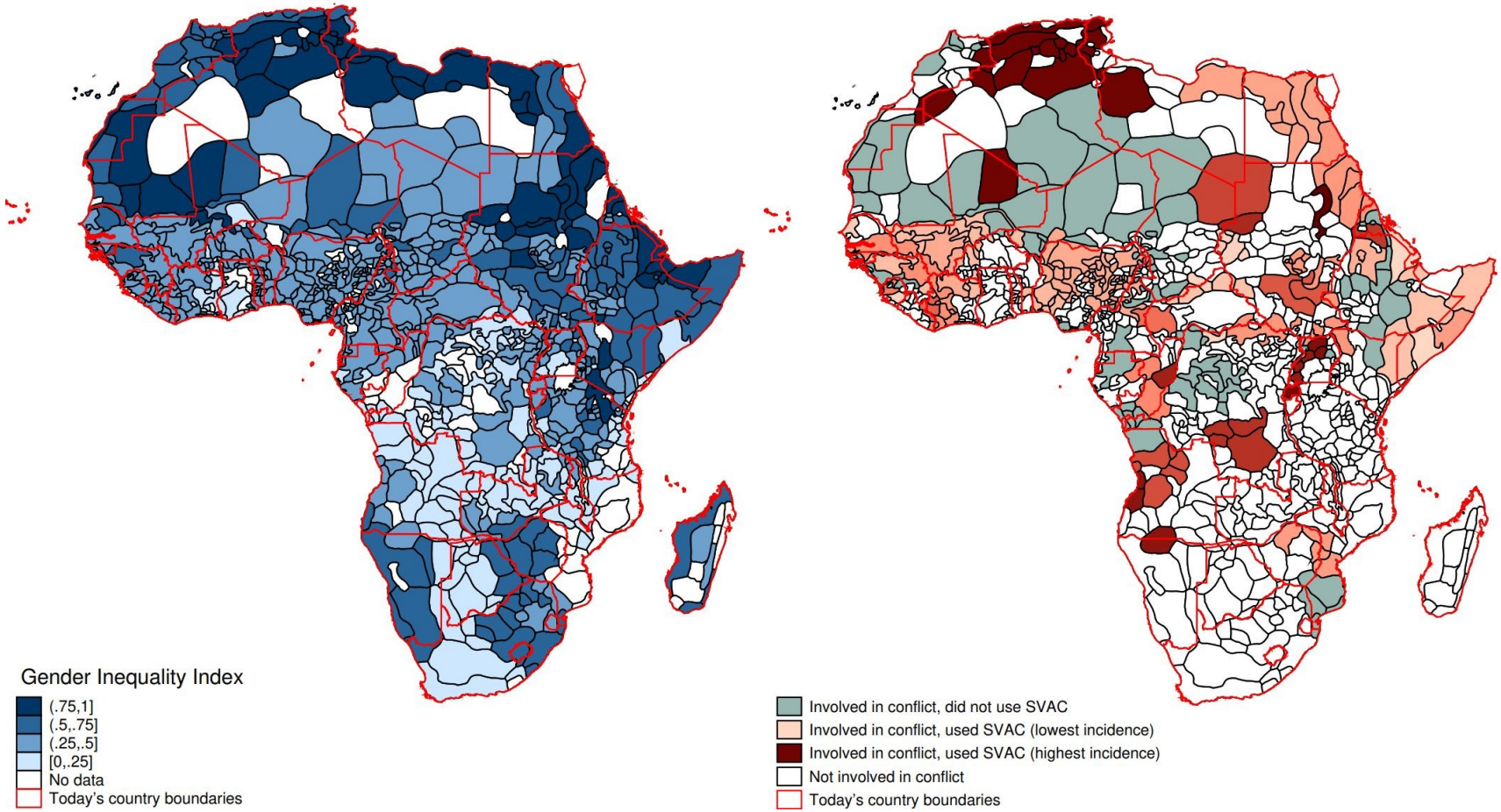
NOTES: Distribution of the eGII in our sample. Mean (standard deviation) of the index: 0.45 (.22).

FIGURE 4: *Distribution of the eGII across Africa and female labor force participation*



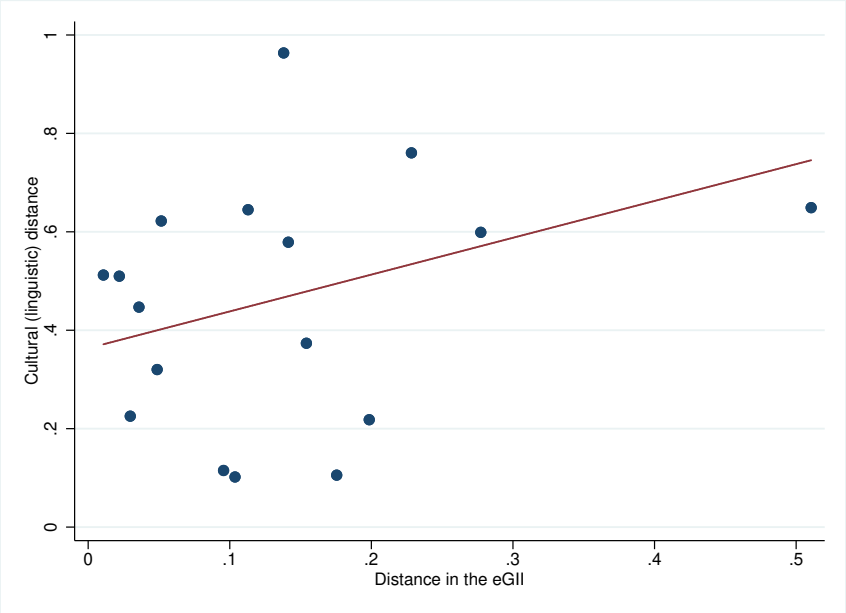
NOTES: Distribution of the eGII across Murdock's ethnicities in Africa and contemporary country borders. Right: Female labor force participation at the country level (2010-2018) for women older than 15. Darker colors denote lower participation. Source: International Labor Organization.

FIGURE 5: *Distribution of the eGII across Africa and incidence of sexual violence in armed conflict*



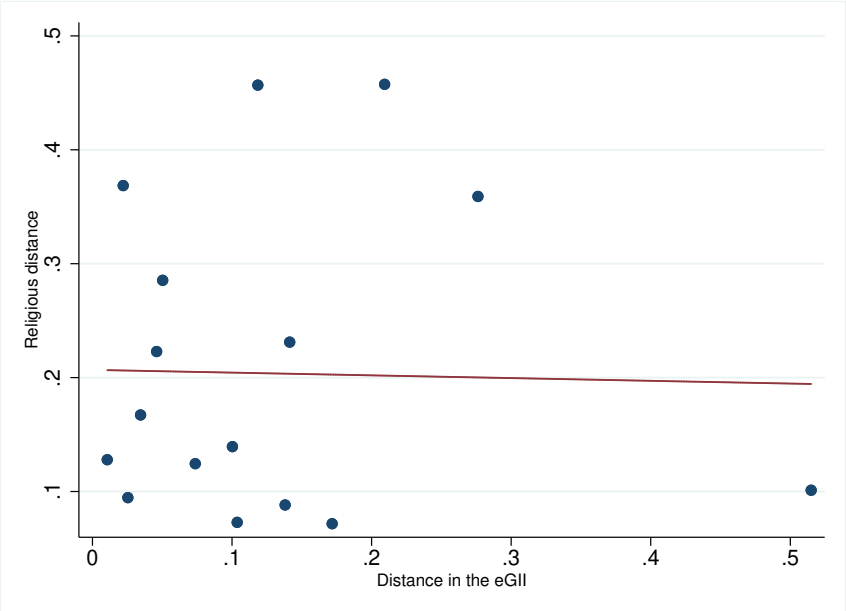
NOTES: Left: Distribution of the eGII across Murdock's ethnicities in Africa and contemporary country borders. Right: Total incidence of the use of sexual violence in armed conflict by Murdock ethnicities from 1989 to 2009, measured through an index ranging between 0 and 1.

FIGURE 6: *Correlation between cultural distance in gender norms and overall cultural (linguistic) distance*



NOTES: Correlation between the absolute distance in gender norms between the combatants and their cultural (linguistic) distance for the sample of ethnicities involved in inter-ethnic conflict. Correlation coefficient: 0.25***. Sources: Murdock Ethnographic Atlas and Ethnologue.

FIGURE 7: *Correlation between cultural distance in gender norms and religious distance*



NOTES: Correlation between the absolute distance in gender norms between the combatants and their religious distance for the sample of ethnicities involved in inter-ethnic conflict. Correlation coefficient: -0.02. Sources: Murdock Ethnographic Atlas and EPR-ED dataset.

TABLE 1: *Dataset extract illustrating the dyadic structure*

Country	**Year**	**Conflict ID**	**Perpetrator**	**Victim**	**Perpetrator's ethnicity**	**Victim's ethnicity**	**SVAC**
Chad	1994	288	Government of Chad	CSNPD	Zaghawa, Bideyat	Sara	2
Chad	1994	288	CSNPD	Government of Chad	Sara	Zaghawa, Bideyat	0

TABLE 2: *eGII: PCA loadings*

Variables	*Loading*
Gender Equal Traits	
Matrilineal	-0.26
Dependence on agriculture	-0.27
Gender Unequal Traits	
Virilocal	0.30
Dependence on pastoralism	0.55
Use of the plough	0.29
Dependence on animal husbandry	0.55
Ambiguous Traits	
Stem	0.01
Dependence on gathering	-0.15
Dependence on hunting	-0.26
Kaiser-Meyer-Olkin's measure of sampling adequacy	0.58

NOTES: Loadings from the principal component analysis on the eGII.

TABLE 3: *Gender Inequality Index and Gender Inequality Outcomes (DHS)*

	Dependent variable				
				Intimate partner violence:	
	Female employment	Son Preference	Justifies beating	Physical	Sexual
	(1)	(2)	(3)	(4)	(5)
eGII (weighted)	-0.200***	0.063***	0.141**	-0.002	0.078**
	(0.057)	(0.012)	(0.056)	(0.025)	(0.032)
Adj R-squared	0.046	0.157	0.094	0.042	0.041
eGII (unweighted)	-0.227***	0.072***	0.156**	-0.011	0.081**
	(0.063)	(0.013)	(0.061)	(0.029)	(0.038)
Adj R-squared	0.091	0.047	0.157	0.018	0.026
Mean dep. var.	0.580	0.032	0.534	0.064	0.100
Country FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Observations	571,184	428,718	481,728	113,192	69,706
Clusters	618	587	564	458	348
Countries	24	24	22	19	15
Years	27	25	20	15	11

NOTES: Dependent variables: column (1): female employment; column (2): son preference, defined as (ideal number of boys - ideal number of girls)/(total number of wanted children); column (3) wife beating is justified in at least one of the following instances: she goes out without telling him, she neglects the children, she argues with him, she refuses to have sex with him, she burns the food; column (4) Faced at least one of the following severe physical violence events in the past 12 months: been kicked or dragged; been strangled; been threatened with knife/gun or other weapon; (5) Faced at least one of the following sexual violence events in the past 12 months: physically forced into unwanted sex; forced into other unwanted sexual acts; physically forced to perform sexual acts she didn't want to. Explanatory variables: perpetrator's eGII weighted by the ethnic group land area and unweighted. All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the ethnic group's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 4: *Gender Inequality Index and Gender Attitudes (Afrobarometer)*

	Dependent variable					
	Men better political leaders (1)	Women and men equal rights (2)	Educating boys priority (3)	Men more right to a job (4)	Women right to own land (5)	Women care home and kids (6)
eGII (weighted)	0.109***	-0.057	0.118**	0.022	-0.059**	0.030
	(0.029)	(0.040)	(0.046)	(0.053)	(0.029)	(0.047)
Adj R-squared	0.050	0.062	0.040	0.040	0.117	0.052
eGII (unweighted)	0.144***	-0.074	0.134**	0.045	-0.083**	0.024
	(0.037)	(0.052)	(0.060)	(0.059)	(0.036)	(0.053)
Adj R-squared 0.185	0.051	0.062	0.040	0.040	0.117	0.052
Mean dep. var.	0.301	0.717	0.184	0.440	0.740	0.577
Country FE	✓	✓	✓	✓	✓	✓
Round FE	✓	✓				
Observations	141,567	81,026	36,971	33,420	33,699	32,676
Clusters	770	638	473	413	412	413
Countries	34	34	32	31	31	31
Rounds	5	4	1	1	1	1

NOTES: Dependent variables: column (1): agreeing with the statement "Men make better political leaders than women, and should be elected rather than women" as opposed to "Women should have the same chance of being elected to political office as men"; column (2) agreeing with the statement "In our country, women should have equal rights and receive the same treatment as men do" as opposed to "In our country, women should have equal rights and receive the same treatment as men do"; column (3): agreeing with the statement "If funds for schooling are limited, a boy should always receive an education in school before a girl" as opposed to "If funds for schooling are limited, a family should send the child with the greatest ability to learn"; column (4) agreeing with the statement "When jobs are scarce, men should have more right to a job than women"; column (5): agreeing with the statement "Women should have the same rights as men to own and inherit land"; column (6): agreeing with the statement "In general, it is better for a family if a woman has the main responsibility for taking care of the home and children rather than a man". Explanatory variables: perpetrator's eGII weighted by the ethnic group land area and unweighted. All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the ethnic group's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 5: *Gender Inequality Index and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)					
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Gender Inequality Index						
eGII (weighted)	1.83***	1.87***	1.55**			
	(0.505)	(0.564)	(0.715)			
eGII (unweighted)				1.84***	1.90***	1.54**
				(0.457)	(0.507)	(0.635)
Adjusted R^2	0.307	0.377	0.376	0.311	0.382	0.382
restricted eGII (weighted)	1.40***	1.43***	1.45*			
	(0.502)	(0.525)	(0.755)			
restricted eGII (unweighted)				1.54***	1.57***	1.46**
				(0.455)	(0.480)	(0.658)
Adjusted R^2	0.299	0.368	0.369	0.307	0.376	0.377
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62
Conflict fixed effect	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓
Conflict-specific time trend		✓	✓		✓	✓
Victim's eGII			✓			✓
Observations	900	900	893	900	900	893
Clusters	128	128	127	128	128	127

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the perpetrator's eGII (weighted by the ethnic group land area and unweighted) and the perpetrator's restricted version of the eGII (weighted by the ethnic group land area and unweighted). All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 6: *Cultural distance in gender norms and sexual violence in armed conflict (weighted eGII)*

	Dependent variable: sexual violence (0-3)				
	(1)	(2)	(3)	(4)	(5)
Absolute distance ($\lvert eGII_p - eGII_v \rvert$)	1.53***				
	(0.518)				
Perpetrator's eGII		0.58	2.05**	1.13	
		(0.629)	(0.957)	(0.997)	
Perpetrator *more* unequal		1.44*		1.51*	1.53***
		(0.814)		(0.811)	(0.503)
Perpetrator *less* unequal			0.20	0.64	1.56
			(0.919)	(0.888)	(1.214)
Conflict fixed effect	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓				✓
Mean dep. var.	0.62	0.62	0.62	0.62	0.62
Observations	623	643	643	643	623
Clusters	76	76	76	76	76
Adjusted R^2	0.597	0.379	0.374	0.379	0.596

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the perpetrator's eGII (weighted by the ethnic group land area); the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 7: *Cultural distance in gender norms and general violence: perpetrator's killings (weighted eGII)*

	Dependent variable: victim's fatalities (0-3)				
	(1)	(2)	(3)	(4)	(5)
Absolute distance ($\lvert eGII_p - eGII_v \rvert$)	-0.18				
	(0.856)				
Perpetrator's eGII		-0.03	-1.40	-0.63	
		(0.720)	(0.991)	(1.136)	
Perpetrator *more* unequal		-1.17		-1.24	-0.06
		(0.807)		(0.805)	(0.976)
Perpetrator *less* unequal			-0.35	-0.71	-0.58
			(1.011)	(0.982)	(1.111)
Conflict fixed effect	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓				✓
Mean dep. var.	1.07	1.07	1.07	1.07	1.07
Observations	623	643	643	643	623
Clusters	76	76	76	76	76
Adjusted R^2	0.317	0.266	0.263	0.265	0.316

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of deaths inflicted by the perpetrator on the victim, coded like the sexual violence variable (0: no killings; 1: between 1 and 24; 2 between 25 and 999; 3: equal to or larger than 1000). The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the perpetrator's eGII; the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 8: *Cultural distance in gender norms, linguistic distance, and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Distance in gender norms ($\lvert eGII_p - eGII_v \rvert$)	1.53***	1.52***	1.54***					
	(0.518)	(0.513)	(0.516)					
Perpetrator *more* gender unequal				1.53***	1.51***	1.53***		
				(0.504)	(0.502)	(0.500)		
Perpetrator *less* gender unequal				1.56	1.54	1.56		
				(1.214)	(1.205)	(1.209)		
Distance in other cultural traits (residuals)		-0.02			-0.02		-0.08	
		(0.050)			(0.049)		(0.107)	
Linguistic distance			-0.02			-0.02		-0.01
			(0.050)			(0.049)		(0.072)
Conflict fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Observations	623	623	623	623	623	623	623	623
Clusters	76	76	76	76	76	76	76	76
Adjusted R^2	0.597	0.596	0.596	0.596	0.596	0.596	0.592	0.592

NOTES: OLS coefficient estimates of Equations 3 and 4 with controls for distance in other cultural traits or linguistic distance. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim; residuals of regressing linguistic distance on distance in gender norms; linguistic distance between perpetrator and victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE 9: *Cultural distance in gender norms, religious distance, and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Distance in gender norms ($\lvert eGII_p - eGII_v \rvert$)	1.53***	1.65***	1.65***					
	(0.518)	(0.552)	(0.556)					
Perpetrator *more* gender unequal				1.53***	1.96***	1.96***		
				(0.504)	(0.465)	(0.470)		
Perpetrator *less* gender unequal				1.56	1.14	1.14		
				(1.214)	(1.114)	(1.114)		
Distance in other cultural traits (residuals)		-0.06			0.03		-0.44**	
		(0.182)			(0.177)		(0.212)	
Religious distance			-0.06			0.03		-0.45**
			(0.182)			(0.177)		(0.209)
Conflict fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Observations	623	590	590	623	590	590	590	590
Clusters	76	72	72	76	72	72	72	72
Adjusted R^2	0.597	0.560	0.560	0.596	0.559	0.559	0.556	0.556

NOTES: OLS coefficient estimates of Equations 3 and 4 with controls for distance in other cultural traits or religious distance. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim; residuals of regressing religious distance on distance in gender norms; religious distance between perpetrator and victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

Appendix A

A-1 Data Sources and Dataset Construction

We hereby present in detail the data sources used for the analysis and the procedure adopted to merge the various datasets.

A-11. Sexual Violence in Armed Conflict

The source of our dependent variable is the Sexual Violence in Armed Conflict Dataset (SVAC) (Cohen and Nordås [2014]). The SVAC dataset includes information on all conflicts between 1989 and 2009, as defined by the UCDP/PRIO Armed Conflict Database: any "contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths" (Gleditsch *et al.* [2002]). The SVAC dataset provides information on war-related sexual violence perpetrated by three types of armed-conflict actors: government/state military, pro-government militias, and rebel/insurgent forces. In total, the dataset covers 129 active conflicts and 625 armed actors involved in them. Adhering to the International Criminal Court's rationale, SVAC defines war-related sexual violence as including the following acts: rape, sexual slavery, forced prostitution, forced pregnancy, forced sterilization, and forced abortion (International Criminal Court [2000]). In addition, following Wood [2009], sexual mutilation and sexual torture are also included.

SVAC draws upon annual reports from three sources (Amnesty International, Human Rights Watch, and the US State Department) to construct a measure of prevalence of sexual violence at the conflict-actor-year level. The resulting variable is an index ranging between 0-3 that reflects the magnitude of the phenomenon. More specifically, it takes the value 3 if, in a given year of conflict, an actor perpetrated acts of massive, innumerable, or systematic sexual violence according to the aforementioned sources and, furthermore, if reported incidents or victims of sexual violence exceeded 1,000; 2 if sexual violence was described as widespread and common, and reports of victims or incidents ranged between 25 and 999; 1 if reported victims and incidents were below 25 and the occurrence of sexual violence was only isolated; 0 if no sexual violence was mentioned in a given year in relation to a specific conflict.[25]

We exploit the dyadic version of the SVAC dataset, i.e., the GEO-SVAC dataset (Bahgat *et al.* [2016]). GEO-SVAC uses as its starting point the UCDP GED dataset (Sundberg and Melander [2013]; Croicu and Sundberg [2017]) and enriches it with the information on sexual violence provided by SVAC for *state-based* conflicts between government/state military and rebel/insurgent forces between 1989 and 2009.[26]

[25]For further details on the methodology of data collection and coding refer to Cohen and Nordås [2014].

[26]Figure A-1 illustrates the relationship between GEO-SVAC, UCDP GED, and SVAC. Conflicts covered by GEO-SVAC are only a subset of those included in the original UCDP GED dataset, which includes also *non-state* conflicts and episodes of *one-sided* violence. Moreover, GEO-SVAC does not cover SVAC conflict events involving pro-government militias. As a result, GEO-SVAC includes information on 106

The unit of observation in GEO-SVAC is a geo-located state-based conflict event. Since the variation in our variable of interest (i.e., sexual violence prevalence) occurs at the actor-conflict-year level—and not at a geo-located event level—we maintain actor-conflict-year as the unit of observation in the analysis. For our purposes, however, GEO-SVAC offers an important advantage. In addition to the identity of the perpetrator of sexual violence, it codes the identity of the other actor involved in the conflict. In other words, the dataset is *dyadic*, i.e. it includes the identity of side A, which is always a government (corresponding "government/state military" in the SVAC coding) and side B, a rebel or opposing government (corresponding to "rebel/insurgent forces" in SVAC). It furthermore reports the intensity of sexual violence perpetrated by both side A and side B in a specific year of conflict.

As illustrated in Figure A-2, we restrict the GEO-SVAC sample in two ways. First, we focus on 45 conflicts fought in the African continent.[27] Second, we restrict our analysis to 33 *ethnic* civil conflicts defined as "armed conflicts between the government of a state and one or more internal opposition group(s) that cause at least 25 battle-related deaths within a year and in which armed groups (i) explicitly pursue ethno-nationalist aims, motivations, and interests; and (ii) recruit fighters and forge alliances on the basis of ethnic affiliation" (Gleditsch *et al.* [2002], Cederman *et al.* [2012]).[28] We categorize conflict-years as ethnic relevant based on Wimmer *et al.*'s [2009] definition.[29] In addition, we include in the sample three additional conflicts that, according to the sources we consulted, qualify as ethnic.[30] Our results are robust to dropping the latter three conflicts from the sample.

A-12. Conflict Actors' Ethnic Identity

Next, we assign to each actor (i.e., to both side A and side B in GEO SVAC) an ethnic identity. To achieve this, we exploit the rich information provided by the Ethnic Power Relations (EPR) Dataset Family (Vogt *et al.* [2015]), where an ethnic group is "an identity group that defines itself or is defined by others along linguistic, religious, or racial characteristics". The EPR dataset family provides information, *inter alia*, on ethnic groups' involvement in civil war as part of a rebel organization. We are therefore able to assign

state-based conflicts around the world involving the following actors: *government/state military* and *rebel/insurgent forces*. Finally, GEO-SVAC includes only active years of conflict, whereas SVAC provides information also on interim and post-conflict years.

[27] African conflicts constitute 42% of conflicts in GEO-SVAC, which includes a total of 106 conflicts.

[28] "[...] we conducted new research and coded each conflict for whether rebel organizations pursued ethnonationalist aims and recruited along ethnic lines. We also coded whether rebels aimed at establishing a new independent state. We distinguish between ethnic and nonethnic conflicts using the aims of the armed organization and their recruitment and alliance structures [...]. We identify as "ethnic" the aims of achieving ethnonational self-determination, a more favorable ethnic balance-of-power in government, ethnoregional autonomy, the end of ethnic and racial discrimination, language and other cultural rights, and so forth. In ethnic wars, armed organizations also recruit fighters predominantly among their leaders' ethnic group and forge alliances on the basis of ethnic similarity" (Wimmer *et al.*'s [2009]).

[29] In the case of 17 conflicts categorized as ethnic in Wimmer *et al.* [2009], we include additional conflict-years that were not recorded by Wimmer *et al.* [2009] but that were part of a conflict that was qualified as ethnic. Results are robust to excluding these conflict years.

[30] Government of Guinea-Bissau vs. Military Junta for the Consolidation of Democracy, Peace and Justice (1998-1999); Government of Eritrea vs. Government of Ethiopia (1998-2000); Government of Eritrea vs. EIJM-AS (1993-2003).

FIGURE A-1: *Relationship between UCDP-GED, SVAC and GEO-SVAC*

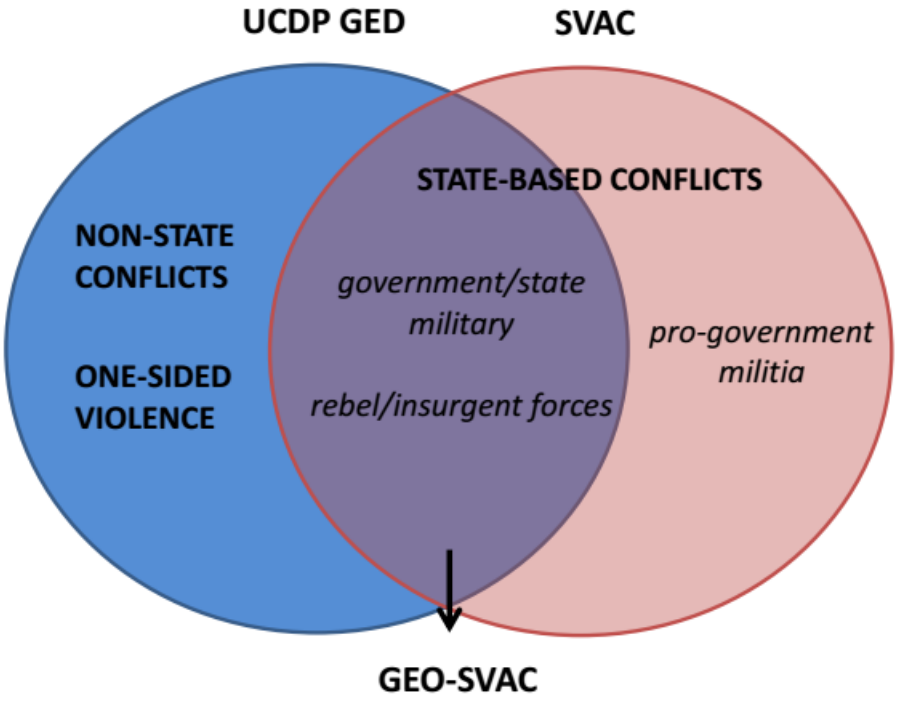
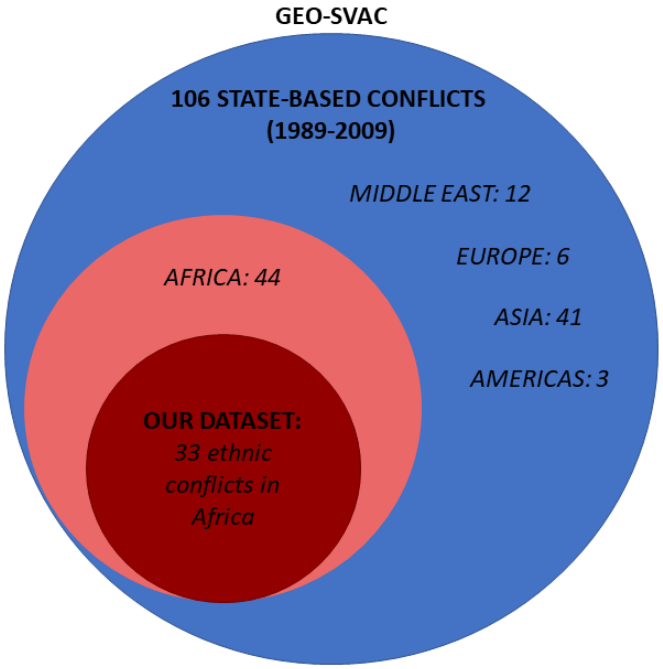


FIGURE A-2: *Relationship between GEO-SVAC and our dataset*



to the majority of sides B (i.e. rebel or insurgent forces as mentioned above) one or more EPR ethnic groups.[31] Using a variety of additional sources, we identify the ethnic identity of four remaining sides B involved in conflicts classified as ethnic.[32]

The EPR dataset family also provides information on ethnic groups' access to executive government power. When an ethnic group holds exclusive or almost exclusive power in the government, it is classified as either *Monopolist* or *Dominant*. When power is formally or informally shared by different groups, the latter are defined as *Senior* or *Junior Partners*, depending on their relative position in the government. Groups that do not detain any power are either defined as *Discriminated* or *Powerless*, depending on whether or not the central power pursues actions of active discrimination against them. The remaining categories refer to either *Self-Excluded*—i.e. controlling a particular territory in the state that they have declared independent—or *Irrelevant* groups. Finally, EPR also records instances of *State Collapse*.

Given the nature of conflicts included in our data—civil (state-based) ones where side A is always a government—we can assign to side A an ethnic identity. In instances where, in a certain year and during a conflict, central power is held exclusively by one ethnic group—defined by EPR either as *Dominant* or *Monopolist*—the matching is straightforward. Whenever more groups detain government power jointly, we always assign to side A the ethnic identity of the *Senior Partner*, and, in addition, of the *Junior Partner* only in cases where sources indicate direct involvement of that ethnic group in civil conflict. As a result, side A can be assigned to either one or more EPR ethnic groups.[33]

A-13. Conflict Actors' Ancestral Characteristics

Finally, we merge our dataset with the Ethnographic Atlas (EA), coded by Murdock [1967] and updated by Nunn and Wantchekon [2011]. The EA is arguably the most compelling source of ethnographic information for 1,265 societies around the world, collected at the end of the 19th century. For Africa, the EA provides detailed information on groups' socio-economic conditions, settlement patterns, and family arrangements prior to European contact.

We link the information provided by the EA to the dataset on conflict through the concordance data provided by Michalopoulos and Papaioannou [2016]. This data links 196 EPR groups to 593 ethnicities in Murdock using a variety of sources. We successfully merge 71 EPR groups to the EA through Michalopoulos and Papaioannou's [2016] concor-

[31] The sub-dataset—belonging to the EPR dataset family—that allows this merging is ACD2EPR (Wucherpfennig *et al.* [2012]). We classified the ethnic identity of 91 rebel groups with this procedure. To quality-check the validity of the merging, we simultaneously consulted the narratives in the EPR Atlas, accessible through the GrowUp database (https://growup.ethz.ch/). For 51 of these rebel groups, we confirmed the merging by consulting additional sources.

[32] These sides B belong to the three conflicts that Wimmer *et al.* [2009] do not classify as ethnic-relevant (the Military Junta for the Consolidation of Democracy, Peace, and Justice; EIJM-AS; Government of Ethiopia) and to a rebel group whose ethnic identity is missing in ACD2EPR (the AQIM in Algeria and Niger).

[33] We always conduct a quality-check on these merges by consulting the narratives in the EPR Atlas, accessible through the GrowUp database (https://growup.ethz.ch/) and, in the case of 13 (out of 28) governments, additional sources.

dance table. For 13 of the 15 EPR groups[34] that remain unmerged, we rely on a variety of sources and identify the Murdock groups of interest.[35] For two EPR ethnic groups (Americo-Liberians and Muslim Eritreans), it is impossible to identify a correspondence in the EA, and therefore they remain un-merged.

In some cases, this matching procedure results in a one-to-one mapping between EPR and the Ethnographic Atlas. For example, the ethnic group of the rebel force FLEC-FAC in Angola, the *Cabindan Mayombe*, is matched with the *Yombe* group in the EA. However, in other cases, a conflict actor is associated to multiple Murdock groups either because (i) side A, side B, or both are represented by multiple EPR groups, as described in the previous section, or (ii) an EPR group corresponds to multiple groups in the EA, or (iii) both. An example of the latter case is the following: the RFDG rebel group in Guinea is composed of members belonging to the EPR groups called *Malinke* and *Peul*. In turn, the Michalopoulos and Papaioannou's [2016] correspondence table matches *Malinke* to four Murdock groups (*Yalunka, Konyanke, Malinke,* and *Koranko*), and the *Peul* to three Murdock groups (*Foutadjalon, Sokoto, Liptako*). In these instances, we weight the ethnic characteristics of each EPR group by the size of the EA groups to which it corresponds. In the just-mentioned example, *Peul*'s dependence on pastoralism will be a weighted average between *Foutadjalon's, Sokoto's*, and *Liptako's* dependence on pastoralism, based on the three ethnic groups' size, proxied by the land area covered by their settlements. We provide estimates using both the weighted and the un-weighted version of the various ethnic characteristics, and show that our results are generally insensitive to this procedure.

A-14. Example

Figure A-3 summarizes the merging process described in this section for a conflict event that took place in 1989 in Liberia between the rebel group NPFL (National Patriotic Front of Liberia) and the government. The GrowUp platform[36] illustrated in Figure A-3 provides a summary of the ethnic power relations in Liberia in the year 1989. One ethnic group, the *Krahn (Guere)*, detains exclusive power in the government and is thus defined as *Dominant*. The remaining politically relevant groups (the *Americo-Liberians*, the *Gio* and the *Mano*) are all discriminated against. However, only the latter two are involved in a conflict, i.e., those marked by a star.[37] Consequently, the group *Krahn (Guere)* is assigned to side A (the government of Liberia), while side B corresponds to the *Gio* and *Mano* groups.

To confirm the validity of these matches, we consult the chapter on Liberia in the EPR Atlas (Girardin *et al.* [2015]). The following extract confirms the *Krahn* dominant position in the government:

[34]These EPR groups are: Afar, Americo-Liberians, Arabs, Arabs/Moors, Bembe, Christian Eritreans, Gio, Goula Isaas (Somali), Mandingo, Masalit, Muslim Eritreans, Somali, Sharawis, and Zaghawa

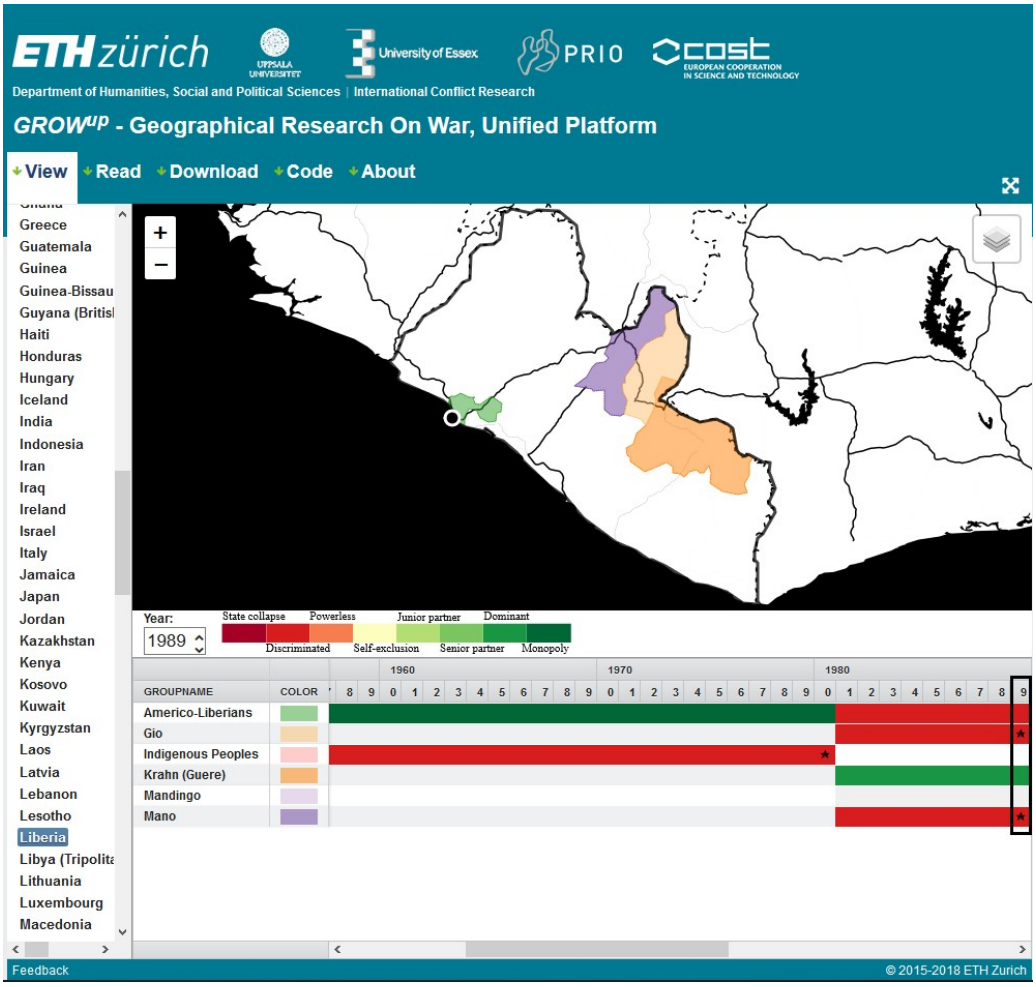
[35]Sources include the Joshua Project, the Ethnologue dataset, Wikipedia, and others. In some instances, we also exploit the fact that EPR provides the geo-location of the ethnic settlements to cross-validate the just mentioned sources.

[36]The interface depicted in Figure A-3 displays the information contained in the Ethnic Power Relations Dataset (Vogt *et al.* [2015]) and the UCDP conflict data (Croicu and Sundberg [2017]).

[37]This is the equivalent of the information contained in the ACD2EPR sub-dataset of the EPR family and in the Wimmer *et al.*'s [2009] classification of ethnic relevant conflict.

[...] Doe's coup brought an end to the Americo-Liberian dominance. [...] Doe's rule relied heavily on his own *Krahn* group, which occupied the state's key positions. They soon dominated political and military life in Liberia. Thus, the Krahn are coded as "dominant" during Doe's regime. There is also widespread discrimination and state violence against the *Gio* and *Mano* ethnic groups (where opposition against Doe was widespread) [...]. Thus, these groups are also coded as "discriminated".

FIGURE A-3: *Merging process example through the GrowUp platform*



NOTES: The figure displays the Grow-Up platform (Girardin *et al.* [2015]) with the Liberian example. On top, it displays the EPR groups' settlements, and at the bottom the power relations between the six ethnic groups from the 1960s to the 1980s. The year highlighted in black captures the war between the rebel forces represented by the Gio and Mano ethnicities and the government, represented by the Krahn (Guere) ethnic group.

Moreover, to confirm the ethnic nature of the NPFL rebel group, we rely on other narratives, such as Wikipedia, according to which "most NPFL fighters were originally drawn from the Gio and Mano ethnic groups of northern Liberia that were persecuted

under Doe's regime".[38]

Finally, the remaining step consists in associating the EPR groups with the EA. Straightforwardly, Michalopoulos and Papaioannou [2016] assign *Krahn* to *Kran* and *Mano* to *Ngere* in the Atlas. Gio is not included in the correspondence table. However, we retrieve the necessary information from Holsoe and Lauer [1976], according to whom "in Liberia, Gio persisted as the name for the Dan"[39], and link the EPR group *Gio* to *Dan* in the EA. As a final check, we also compare the EPR ethnic boundaries with the Ethnographic Atlas settlement map.

A-2 The Slave Trade and Conflict-Related Sexual Violence

In this section, we test whether an ethnic group's exposure to the transatlantic and Indian Ocean slave trade is a factor explaining the use of sexual violence in conflict, despite not including this ethnic characteristic in the eGII. According to Teso [2018], exposure to a demographic shock such as the transatlantic slave trade, where slaves exported were predominantly men, contributed to the evolution of more gender-equitable norms. In heavily raided ethnic groups, women started taking up typically men's tasks, and this resulted in a shift of the traditional gender division of labor. This shock had persistent effects in the long run: today, women whose ancestors were exposed to the transatlantic slave trade are more likely to be in the labor force, and to have lower fertility and higher decision-making power within the household.

We rely on information on the number of slave shipments provided by Nunn and Wantchekon [2011] to construct a measure of exposure to the transatlantic and the Indian Ocean slave trade. As shown in Table A-1 below, ethnic groups exposed to the transatlantic slave trade are less likely to engage in sexual violence in conflict. Moving from no slave trade exposure to the highest level of exposure in the sample decreases the intensity of sexual violence by 0.86-1.56. Equivalently, one standard deviation increase in exposure to the slave trade reduces sexual violence by 0.09-0.16 standard deviations.

Ethnic groups exposed to the Indian Ocean slave trade, conversely, use sexual violence in conflict at a higher intensity. The Indian Ocean slave trade did not distort the sex ratio as the transatlantic trade did, because it did not preferentially export men. The coefficient, however, loses significance once we control for the victim's slave trade exposure.

A-3 Linguistic Distance

We use Fearon's [2003] measure of linguistic distance, which is based on linguistic trees in the Ethnologue. For each language, the Ethnologue provides a classification starting with the language family (e.g. Afro Asiatic, Nilo-Saharan, Creole), followed by "nodes", i.e., the branching points of the linguistic tree, and ending with the language itself. We merge information on languages spoken by ethnic groups through the Ethnic Power Relations-Ethnic Dimensions (EPR-ED) dataset, and compute distances between each pair of languages based on the number of common nodes in the tree.

[38] https://en.wikipedia.org/wiki/National_Patriotic_Front_of_Liberia

[39] Page 142 in Holsoe and Lauer [1976].

TABLE A-1: *The slave trade and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)					
	(1)	(2)	(3)	(4)	(5)	(6)
The Slave Trade						
Transatlantic Slave Trade	-1.12**	-0.86*	-1.56***			
	(0.434)	(0.442)	(0.372)			
Indian Ocean Slave Trade				0.74***	0.74**	1.66
				(0.258)	(0.292)	(1.247)
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62
Conflict fixed effect	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓
Conflict-specific time trend		✓	✓		✓	✓
Victim's characteristic			✓			✓
Observations	900	900	893	900	900	893
Clusters	128	128	127	128	128	127
Adjusted R^2	0.277	0.341	0.343	0.273	0.340	0.277

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific exposure to the Atlantic and the Indian slave trade, respectively. Both variables are constructed as: ln(1+Number of slaves/Ethnic group's land area) as in (Nunn and Wantchekon [2011]). All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

For example, the language spoken by the ethnic group Zaghawa is classified as follows: *Nilo-Saharan, Saharan, Eastern*. The language of Zaghawa's opponent, Sara, is classified as: *Nilo-Saharan, Satellite-Core, Satellites, Central Sudanic, West, Bongo-Bagirmi, Sara-Bagirmi, Sara, Sara Proper*. These two languages have only one node in common (Nilo-Saharan, i.e. the language family). Following Putterman and Weil [2010], we calculate the distance between language i and language j as follows:

$$d_{ij} = 1 - \left(\frac{\#\text{ of common nodes between } i \text{ and } j}{\frac{1}{2}(\#\text{ of nodes of language } i + \#\text{ of nodes of language } j)} \right)^{\lambda} \tag{5}$$

Languages originating from different families have no nodes in common, and their distance will be equal to 1. The parameter λ ranges between 0 and 1, and is used to attribute higher weight to earlier common nodes, as early separations in the language tree are likely to signify larger cultural divergence on average than later separations (see Fearon [2003]). As in Putterman and Weil [2010] and Fearon [2003], we assign to λ the value of 0.5.[40]

The EPR-ED dataset assigns to each EPR ethnic group up to three languages, which are the three largest language segments spoken by group members in descending order.

[40]In the above example, the linguistic distance between Zagawa and Sara is equal to:

It also attributes a relative size to each of these languages, which sums up to 1 and reflects the percentage of individuals within an ethnic group speaking a specific language. Given this, we exploit the relative size of languages as weights, and calculate the linguistic distance for each perpetrator-victim pair of ethnic groups as follows:

$$LD_{pv} = \sum_{i=1}^{3} \sum_{j=1}^{3} (s_{pi} \times s_{vj} \times d_{ij}) \tag{7}$$

where p and v denote an ethnic group on the perpetrator's and on the victim's side, respectively, s_{pi} and s_{vj} denote the relative size of language i (j) in the ethnic group of the perpetrator (victim), and d_{ij} is the linguistic distance between language i and language j described above.

Since perpetrators and victims can be composed by multiple ethnic groups, the ultimate linguistic distance between two opposing actors in a conflict is given by the average distance between each perpetrator-victim ethnic-group pair:

$$LD_{PV} = \sum_{p=1}^{M} \sum_{v=1}^{N} (\frac{1}{M} \times \frac{1}{N} \times LD_{pv}) \tag{8}$$

where M denotes the number of ethnic groups fighting on the perpetrator's side, N the number of ethnic groups fighting on the victim's side, and LD_{pv} the linguistic distance of each ethnic group pair.

A-4 Religious Distance

We construct a measure of religious distance between ethnic belligerents exploiting information on ethnic groups' religion provided by the EPR-ED dataset. Similar to languages, EPR-ED codes up to three religions professed by each ethnic group, as well as their relative size (reflecting the percentage of individuals within an ethnic group professing a specific religion).

We construct a measure of religious distance analogous to the one for linguistic distance (see equations 5-8 in section A-3). To this end, we exploit EPR-ED classification of language segments. To continue the example of section A-3, the main religion of the ethnic group Zaghawa is Sunni Islam, classified as follows: *Abrahamic Religions, Islam, Sunni Islam.* The main religion of Zaghawa's opponent, Sara, is Protestantism, classified as *Abrahamic Religions, Christianity, Protestantism.* In this case, the two religions in the pair have one node in common, and their distance will be equal to 0.42.[41]

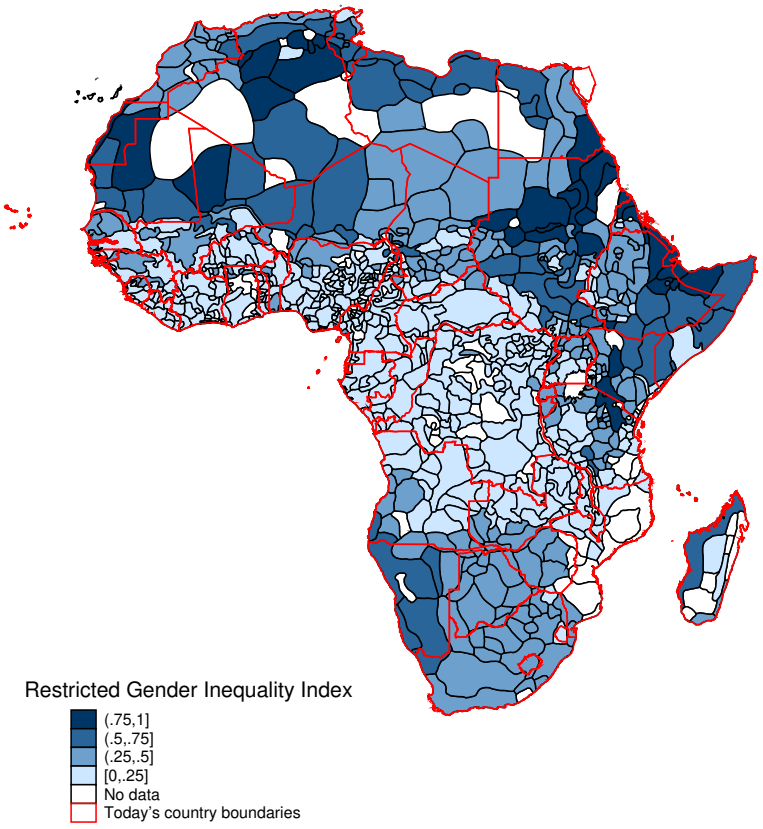
$$d_{ij} = 1 - \left(\frac{1}{\frac{1}{2}(3+9)} \right)^{0.5} = 0.59 \tag{6}$$

[41] Resulting from equation 5:

$$d_{ij} = 1 - \left(\frac{1}{\frac{1}{2}(3+3)} \right)^{0.5} = 0.42 \tag{9}$$

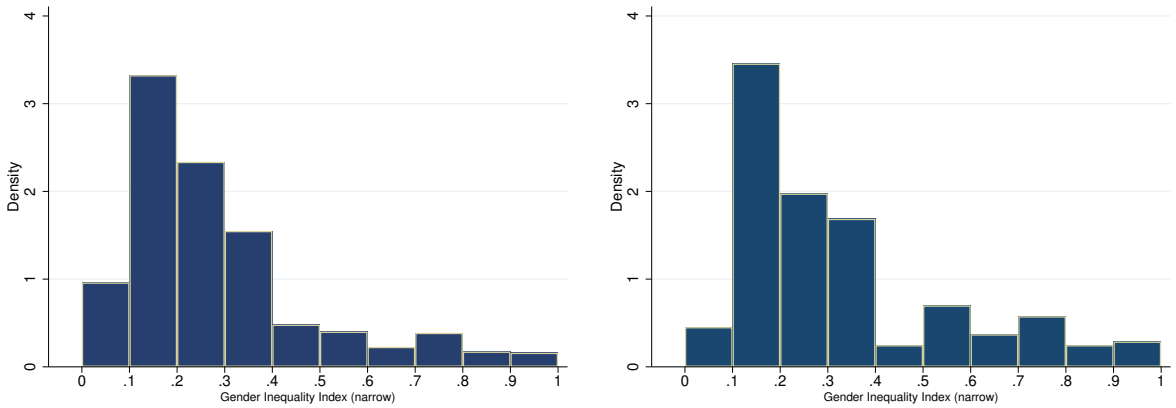
Appendix B: Additional Figures and Tables

FIGURE B-1: *Distribution of the restricted eGII across Africa*



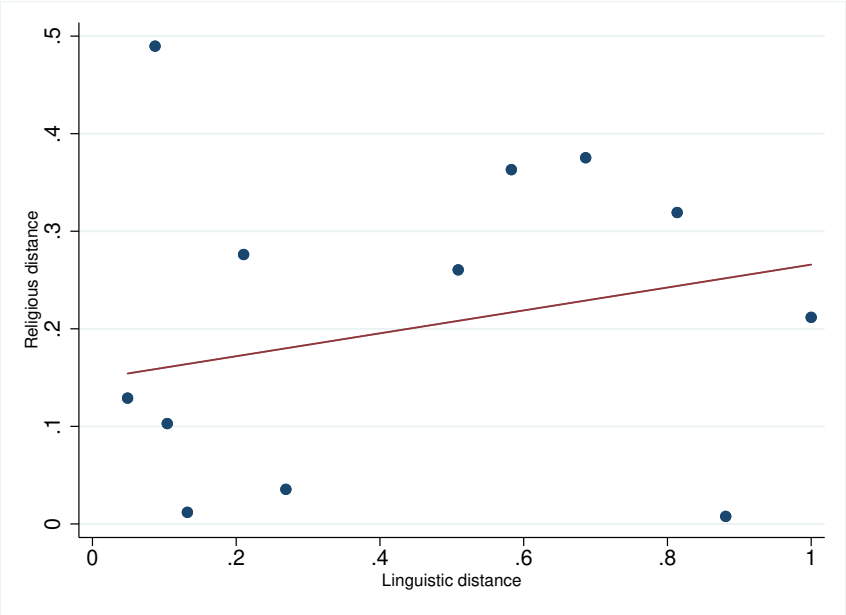
NOTES: Restricted Gender Inequality Index across Murdock's ethnicities in Africa and contemporary country borders.

FIGURE B-2: *Distribution of the restricted eGII*



NOTES: Left: Distribution of the restricted eGII in Africa. Mean (standard deviation): 0.28 (0.20); right: Distribution of the restricted eGII in our sample. Mean (standard deviation): 0.32 (0.23)

FIGURE B-3: *Correlation between linguistic distance and religious distance*



NOTES: Correlation between linguistic distance between the combatants and their religious distance for the sample of ethnicities involved in inter-ethnic conflict. Correlation coefficient: 0.23***. Sources: Ethnologue and EPR-ED dataset.

TABLE B-1: *Perpetrator's ethnic characteristics and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)					
	(1)	(2)	(3)	(4)	(5)	(6)
Lineage, Residence and Family Arrangements						
Matrilineal (weighted)	-0.78***	-0.85***	-0.66**			
	(0.219)	(0.283)	(0.326)			
Matrilineal				-0.77***	-0.84***	-0.66**
				(0.218)	(0.276)	(0.315)
Adjusted R^2	0.292	0.363	0.367	0.292	0.364	0.368
Patrilocal (weighted)	0.65***	0.70***	0.60**			
	(0.201)	(0.249)	(0.284)			
Patrilocal				0.64***	0.69***	0.59**
				(0.205)	(0.248)	(0.286)
Adjusted R^2	0.291	0.362	0.363	0.291	0.361	0.362
Stem (weighted)	-0.42	-0.47*	-0.40			
	(0.340)	(0.283)	(0.521)			
Stem				-0.50	-0.52*	-0.28
				(0.334)	(0.301)	(0.533)
Adjusted R^2	0.278	0.347	0.347	0.282	0.350	0.351
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62
Conflict fixed effect	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓
Conflict-specific time trend		✓	✓		✓	✓
Victim's characteristic			✓			✓
Observations	900	900	893	900	900	893
Clusters	128	128	127	128	128	127

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics—either unweighted or weighted by the ethnic group's land area—capturing lineage systems (matrilineal), residence patterns (virilocal) and family arrangements (stem). All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-2: *Perpetrator's ethnic characteristics and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)					
	(1)	(2)	(3)	(4)	(5)	(6)
Subsistence Activities (I)						
Gathering (weighted)	1.70	1.40	1.55			
	(1.431)	(1.522)	(1.560)			
Gathering				0.71	0.27	0.82
				(1.823)	(2.000)	(2.246)
Adjusted R^2	0.274	0.340	0.341	0.271	0.338	0.340
Hunting (weighted)	1.31	1.38	2.77			
	(2.212)	(2.215)	(2.703)			
Hunting				2.50	2.46	3.40
				(2.275)	(2.294)	(2.764)
Adjusted R^2	0.272	0.340	0.343	0.276	0.343	0.345
Agriculture (weighted)	-1.38**	-1.34**	-1.47*			
	(0.569)	(0.605)	(0.877)			
Agriculture				-1.47***	-1.46**	-1.43*
				(0.545)	(0.578)	(0.786)
Adjusted R^2	0.295	0.362	0.363	0.300	0.367	0.368
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62
Conflict fixed effect	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓
Conflict-specific time trend		✓	✓		✓	✓
Victim's characteristic			✓			✓
Observations	900	900	893	900	900	893
Clusters	128	128	127	128	128	127

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics—either unweighted or weighted by the ethnic group's land area—capturing dependence on different subsistence activities (gathering, hunting, agriculture). All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-3: *Perpetrator's ethnic characteristics and sexual violence in armed conflict*

	Dependent variable: sexual violence (0-3)					
	(1)	(2)	(3)	(4)	(5)	(6)
Subsistence Activities (II)						
Plough (weighted)	0.15	0.07	-0.05			
	(0.606)	(0.701)	(0.701)			
Plough				0.31	-0.23	0.09
				(0.689)	(0.506)	(0.781)
Adjusted R^2	0.274	0.340	0.341	0.271	0.338	0.340
Husbandry (weighted)	1.50***	1.56***	1.56*			
	(0.567)	(0.578)	(0.812)			
Husbandry				1.65***	1.70***	1.59**
				(0.506)	(0.523)	(0.713)
Adjusted R^2	0.296	0.366	0.367	0.304	0.375	0.375
Pastoralism (weighted)	1.50***	1.56***	1.57*			
	(0.562)	(0.575)	(0.810)			
Pastoralism				1.67***	1.73***	1.62**
				(0.504)	(0.522)	(0.713)
Adjusted R^2	0.297	0.367	0.367	0.305	0.376	0.376
Mean dep. var.	0.62	0.62	0.62	0.62	0.62	0.62
Conflict fixed effect	✓	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓	✓
Conflict-specific time trend		✓	✓		✓	✓
Victim's characteristic			✓			✓
Observations	900	900	893	900	900	893
Clusters	128	128	127	128	128	127

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics—either unweighted or weighted by the ethnic group's land area—capturing the use of the plough, and dependence on different subsistence activities (animal husbandry and pastoralism). The specification with "use of the plough" as an explanatory variable controls for dependence on agriculture. All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-4: *Perpetrator's eGII and sexual violence in armed conflict. Robustness tests*

	Dependent Variable: Sexual Violence (0-3)					
	Victim FE		Country FE		No time variation	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Gender Inequality Index						
eGII	0.84	0.81*	1.47***	1.48***	1.54**	1.59***
	(0.550)	(0.472)	(0.461)	(0.450)	(0.630)	(0.585)
Adjusted R^2	0.547	0.548	0.296	0.298	0.260	0.269
Restricted eGII	1.20	1.07*	1.01**	1.10***	1.18**	1.40***
	(0.726)	(0.594)	(0.458)	(0.391)	(0.566)	(0.528)
Adjusted R^2	0.550	0.550	0.283	0.287	0.251	0.267
Conflict fixed effect	✓	✓			✓	✓
Country fixed effect			✓	✓		
Year fixed effect	✓	✓	✓	✓		
Conflict-specific time trend	✓	✓				
Country-specific time trend			✓	✓		
Victim fixed effect	✓	✓				
Observations	880	880	900	900	266	266
Clusters	127	127	128	128	128	128

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics related to descent, residence patterns, family arrangements and subsistence activities. All explanatory variables are normalized and range between 0 and 1. Observations are at the perpetrator-victim-conflict level. Columns (1), (3) and (5) report coefficients for covariates weighted by the size of the ethnic group, while columns (2), (4) and (6) report coefficients for unweighted covariates. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-5: *Perpetrator's ethnic characteristics and sexual violence in armed conflict. Robustness tests*

	Dependent Variable: Sexual Violence (0-3)					
	Victim FE		Country FE		No time variation	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
	(1)	(2)	(3)	(4)	(5)	(6)
Lineage, Residence and Family Arrangements						
Matrilineal	-0.33*	-0.35*	-0.84***	-0.82***	-0.58***	-0.55***
	(0.179)	(0.182)	(0.200)	(0.199)	(0.206)	(0.208)
Adjusted R^2	0.547	0.547	0.290	0.290	0.249	0.247
Virilocal	0.33*	0.31	0.83***	0.80***	0.51**	0.47**
	(0.182)	(0.192)	(0.186)	(0.185)	(0.213)	(0.216)
Adjusted R^2	0.547	0.546	0.299	0.296	0.244	0.242
Stem	0.06	0.42	-0.54**	-0.59**	-0.48	-0.71*
	(0.755)	(0.735)	(0.258)	(0.275)	(0.403)	(0.407)
Adjusted R^2	0.544	0.547	0.272	0.277	0.234	0.245
Conflict fixed effect	✓	✓			✓	✓
Country fixed effect			✓	✓		
Year fixed effect	✓	✓	✓	✓		
Conflict-specific time trend	✓	✓				
Country-specific time trend			✓	✓		
Victim fixed effect	✓	✓				
Mean dep. var.	0.62	0.62	0.62	0.62	0.57	0.57
Observations	880	880	900	900	266	266
Clusters	127	127	128	128	128	128

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics related to descent, residence patterns, family arrangements, and subsistence activities. All explanatory variables are normalized and range between 0 and 1. Observations are at the perpetrator-victim-conflict level. Columns (1), (3) and (5) report coefficients for covariates weighted by the size of the ethnic group, while columns (2), (4) and (6) report coefficients for unweighted covariates. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-6: *Perpetrator's ethnic characteristics and sexual violence in armed conflict. Robustness tests*

	Dependent Variable: Sexual Violence (0-3)					
	Victim FE		Country FE		No time variation	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
	(1)	(2)	(3)	(4)	(5)	(6)
Subsistence Activities (I)						
Gathering	2.91	3.37	0.09	-0.71	1.52	0.35
	(1.790)	(2.301)	(1.536)	(1.841)	(1.318)	(1.489)
Adjusted R^2	0.548	0.547	0.259	0.259	0.230	0.226
Hunting	4.80*	4.66*	1.55	2.18	0.91	2.00
	(2.432)	(2.460)	(2.110)	(2.242)	(2.376)	(2.446)
Adjusted R^2	0.550	0.549	0.261	0.264	0.226	0.230
Agriculture	-1.48*	-1.30*	-1.02**	- 1.07**	-1.26**	-1.50***
	(0.845)	(0.715)	(0.483)	(0.472)	(0.588)	(0.572)
Adjusted R^2	0.551	0.550	0.279	0.280	0.251	0.264
Mean dep. var.	0.62	0.62	0.62	0.62	0.57	0.57
Conflict fixed effect	✓	✓			✓	✓
Country fixed effect			✓	✓		
Year fixed effect	✓	✓	✓	✓		
Conflict-specific time trend	✓	✓				
Country-specific time trend			✓	✓		
Victim fixed effect	✓	✓				
Observations	880	880	900	900	266	266
Clusters	127	127	128	128	128	128

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics related to descent, residence patterns, family arrangements, and subsistence activities. All explanatory variables are normalized and range between 0 and 1. Observations are at the perpetrator-victim-conflict level. Columns (1), (3) and (5) report coefficients for covariates weighted by the size of the ethnic group, while columns (2), (4) and (6) report coefficients for unweighted covariates. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-7: *Perpetrator's ethnic characteristics and sexual violence in armed conflict. Robustness tests*

	Dependent Variable: Sexual Violence (0-3)					
	Victim FE		Country FE		No time variation	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
	(1)	(2)	(3)	(4)	(5)	(6)
Subsistence Activities (II)						
Plough	-0.78***	-0.74***	0.21	0.29	-0.47	-0.47
	(0.248)	(0.272)	(0.480)	(0.481)	(0.296)	(0.304)
Adjusted R^2	0.555	0.554	0.278	0.281	0.229	0.229
Husbandry	1.21	1.14*	1.09**	1.18***	1.24*	1.48**
	(0.778)	(0.654)	(0.458)	(0.440)	(0.657)	(0.603)
Adjusted R^2	0.549	0.549	0.282	0.286	0.248	0.263
Pastoralism	1.248	1.171*	1.080**	1.186***	1.24*	1.50**
	(0.779)	(0.654)	(0.456)	(0.439)	(0.648)	(0.602)
Adjusted R^2	0.549	0.550	0.282	0.286	0.249	0.264
Mean dep. var.	0.62	0.62	0.62	0.62	0.57	0.57
Conflict fixed effect	✓	✓			✓	✓
Country fixed effect			✓	✓		
Year fixed effect	✓	✓	✓	✓		
Conflict-specific time trend	✓	✓				
Country-specific time trend			✓	✓		
Victim fixed effect	✓	✓				
Observations	880	880	900	900	266	266
Clusters	127	127	128	128	128	128

NOTES: OLS coefficient estimates of Equation 1. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. Explanatory variables are perpetrator-specific ethnic characteristics related to descent, residence patterns, family arrangements, and subsistence activities. All explanatory variables are normalized and range between 0 and 1. Observations are at the perpetrator-victim-conflict level. Columns (1), (3) and (5) report coefficients for covariates weighted by the size of the ethnic group, while columns (2), (4) and (6) report coefficients for unweighted covariates. Standard errors are clustered at the perpetrator's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-8: *Restricted eGII: PCA loadings*

Variables	*Loading*
Gender Equal Traits	
Matrilineal	-0.29
Dependence on agriculture	-0.41
Gender Unequal Traits	
Virilocal	0.30
Dependence on pastoralism	0.57
Dependence on animal husbandry	0.57
Kaiser-Meyer-Olkin's measure of sampling adequacy	0.58

NOTES: Loadings from the principal component analysis on the restricted eGII.

TABLE B-9: *Restricted Gender Inequality Index and Gender Inequality Outcomes (DHS)*

	Dependent variable				
				Intimate partner violence:	
	Female employment	Son Preference	Justifies beating	Physical	Sexual
	(1)	(2)	(3)	(4)	(5)
eGII (weighted)	-0.257***	0.054***	0.147***	-0.014	0.061*
	(0.051)	(0.013)	(0.048)	(0.026)	(0.034)
Adjusted R^2	0.092	0.046	0.156	0.018	0.026
eGII (unweighted)	-0.279***	0.059***	0.156***	-0.020	0.056
	(0.053)	(0.013)	(0.050)	(0.028)	(0.038)
Adjusted R^2	0.093	0.047	0.156	0.018	0.026
Mean dep. var.	0.580	0.032	0.534	0.064	0.100
Country FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Observations	571,184	428,718	481,728	113,192	69,706
Clusters	618	587	564	458	348
Countries	24	24	22	19	15
Years	27	25	20	15	11

NOTES: Dependent variables: column (1): female employment; column (2): son preference, defined as (ideal number of boys - ideal number of girls)/(total number of wanted children); column (3) wife beating is justified in at least one of the following instances: she goes out without telling him, she neglects the children, she argues with him, she refuses to have sex with him, she burns the food; column (5) Faced at least one of the following severe physical violence events in the past 12 months: been kicked or dragged; been strangled; been threatened with knife/gun or other weapon; column (6) Faced at least one of the following sexual violence events in the past 12 months: physically forced into unwanted sex; forced into other unwanted sexual acts; physically forced to perform sexual acts she didn't want to. Explanatory variables: perpetrator's eGII weighted by the ethnic group land area and unweighted. All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the ethnic group's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-10: *Restricted Inequality Index and Gender Attitudes (Afrobarometer)*

	Dependent variable					
	Men better political leaders (1)	Women and men equal rights (2)	Educating boys priority (3)	Men more right to a job (4)	Women right to own land (5)	Women care home and kids (6)
eGII (weighted)	0.152***	-0.128**	0.186***	0.090	-0.059	0.052
	(0.036)	(0.053)	(0.064)	(0.058)	(0.041)	(0.046)
Adjusted R^2	0.051	0.062	0.041	0.040	0.117	0.051
eGII (unweighted)	0.182***	-0.143**	0.198***	0.116*	-0.081*	0.046
	(0.041)	(0.060)	(0.072)	(0.062)	(0.045)	(0.049)
Adjusted R^2	0.051	0.062	0.040	0.040	0.117	0.052
Mean dep. var.	0.301	0.717	0.184	0.440	0.740	0.577
Country FE	✓	✓	✓	✓	✓	✓
Round FE	✓	✓				
Observations	141,567	81,026	36,971	33,420	33,699	32,676
Clusters	770	638	473	413	412	413
Countries	34	34	32	31	31	31
Rounds	5	4	1	1	1	1

NOTES: Dependent variables: column (1): agreeing with the statement "Men make better political leaders than women, and should be elected rather than women" as opposed to "Women should have the same chance of being elected to political office as men"; column (2) agreeing with the statement "In our country, women should have equal rights and receive the same treatment as men do" as opposed to "In our country, women should have equal rights and receive the same treatment as men do"; column (3): agreeing with the statement "If funds for schooling are limited, a boy should always receive an education in school before a girl" as opposed to "If funds for schooling are limited, a family should send the child with the greatest ability to learn"; column (4) agreeing with the statement "When jobs are scarce, men should have more right to a job than women"; column (5): agreeing with the statement "Women should have the same rights as men to own and inherit land"; column (6): agreeing with the statement "In general, it is better for a family if a woman has the main responsibility for taking care of the home and children rather than a man". Explanatory variables: perpetrator's eGII weighted by the ethnic group land area and unweighted. All explanatory variables are normalized and range between 0 and 1. Standard errors are clustered at the ethnic group's level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-11: *Cultural distance in gender norms and sexual violence in armed conflict. Robustness tests (I): controlling for victim's characteristics*

	Dep. Variable: Sexual Violence (0-3)			
	(1)	(2)	(3)	(4)
Victim's eGII	0.83	-1.14	1.13	
	(0.879)	(0.806)	(0.997)	
Perpetrator *more* unequal	2.77**		2.64**	2.17
	(1.057)		(1.047)	(2.101)
Perpetrator *less* unequal		-0.75	-0.49	0.88
		(0.658)	(0.641)	(1.527)
Conflict fixed effect	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓
Conflict-Specific time trends	✓	✓	✓	✓
Victim fixed effect				✓
Mean Dep. Var	0.62	0.62	0.62	0.62
Observations	643	643	643	625
Adjusted R^2	0.60	0.59	0.60	0.70

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the victim's eGII (weighted by the ethnic group land area); the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-12: *Cultural distance in gender norms and sexual violence in armed conflict. Robustness tests (II): abstracting from temporal variation*

	Dependent Variable: Sexual Violence (0-3)			
	(1)	(2)	(3)	(4)
Absolute distance ($\lvert eGII_p - eGII_v \rvert$)	1.98*			
	(1.027)			
Perpetrator's eGII		-0.19	2.71	1.36
		(0.888)	(1.753)	(1.916)
Perpetrator *more* unequal		1.95*		2.26**
		(1.007)		(0.966)
Perpetrator *less* unequal			1.60	2.11
			(1.745)	(1.854)
Conflict fixed effect	✓	✓	✓	✓
Mean Dep. Var	0.54	0.54	0.54	0.54
Observations	189	189	189	189
Adjusted R^2	0.226	0.245	0.234	0.256

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the perpetrator's eGII (weighted by the ethnic group land area); the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Robust standard errors are reported in parenthesis. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-13: *Cultural distance in gender norms and sexual violence in armed conflict. Robustness tests (III): alternative fixed effects and alternative versions of the eGII*

	Dependent Variable: Sexual Violence (0-3)			
	Conflict-year FE	Country FE	Unweighted eGII	Restricted eGII
	(1)	(2)	(3)	(4)
Perpetrator *more* unequal	1.18**	1.62***	1.14*	1.27**
	(0.521)	(0.514)	(0.618)	(0.502)
Perpetrator *less* unequal	1.60	1.45	0.81	1.55
	(1.067)	(1.246)	(1.239)	(1.260)
Conflict fixed effect	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓
Conflict-specific time trends		✓	✓	✓
Country fixed effect		✓		
Conflict-Year fixed effect	✓			
Perpetrator fixed effect	✓	✓	✓	✓
Mean Dep. Var	0.62	0.62	0.62	0.62
Observations	604	623	623	623
Adjusted R^2	0.64	0.74	0.74	0.74

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-14: *Cultural distance in gender norms and sexual violence in armed conflict. Robustness tests (IV): assigning to governments a country-level measure of the eGII*

	Dependent Variable: Sexual Violence (0-3)				
	(1)	(2)	(3)	(4)	(5)
Absolute distance ($\lvert eGII_p - eGII_v \rvert$)	1.69***				
	(0.495)				
Perpetrator's eGII		0.59	1.70*	0.60	
		(0.832)	(0.886)	(0.934)	
Perpetrator *more* unequal		1.83**		1.83**	1.75***
		(0.867)		(0.867)	(0.434)
Perpetrator *less* unequal			-0.43	0.01	1.52
			(0.933)	(0.855)	(1.112)
Conflict fixed effect	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓				✓
Mean dep. var.	0.62	0.62	0.62	0.62	0.62
Observations	633	653	653	653	633
Adjusted R^2	0.600	0.367	0.360	0.366	0.599

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. Government forces' eGII is a country-level measure capturing the weighted average of ethnic groups' eGII within a country, weighted by the size of their land area. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the dyad level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.

TABLE B-15: *Cultural distance in gender norms and sexual violence in armed conflict. Robustness tests (V): multi-way cluster*

	Dependent Variable: Sexual Violence (0-3)				
	(1)	(2)	(3)	(4)	(5)
Absolute distance ($\lvert eGII_p - eGII_v \rvert$)	1.53**				
	(0.623)				
Perpetrator's eGII		0.58	2.05	1.13	
		(0.468)	(1.398)	(1.379)	
Perpetrator *more* unequal		1.44**		1.51***	1.53**
		(0.584)		(0.569)	(0.650)
Perpetrator *less* unequal			0.20	0.64	1.56
			(1.328)	(1.350)	(1.488)
Conflict fixed effect	✓	✓	✓	✓	✓
Year fixed effect	✓	✓	✓	✓	✓
Conflict-specific time trends	✓	✓	✓	✓	✓
Perpetrator fixed effect	✓				✓
Mean dep. var.	0.62	0.62	0.62	0.62	0.62
Observations	623	643	643	643	623
Adjusted R^2	0.579	0.379	0.374	0.379	0.578

NOTES: OLS coefficient estimates of Equations 3 and 4. The sample is restricted to include inter-ethnic conflicts only. The dependent variable is an index ranging between 0 and 3 that captures the intensity of sexual violence. The explanatory variables are the following: the absolute distance in the eGII between perpetrator and victim when the perpetrator is more gender unequal than the victim; the absolute distance in the eGII between perpetrator and victim when the perpetrator is less gender unequal than the victim. Standard errors are clustered at the perpetrator and victim level. *** (**) (*) indicate significance at the 1% (5%) (10%) level.