

Rebel Leader Ascension and Wartime Sexual Violence

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Abstract: A number of explanations have been advanced for why soldiers commit acts of sexual violence in wartime, yet we have little understanding of why some rebels refrain from sexual violence when faced with similar conditions. We examine the systematic absence of sexual violence by certain rebel groups using original data on rebel leader selection practices (specifically electoral practices) coupled with data on sexual violence from the Sexual Violence in Armed Conflict (SVAC) project. We find strong quantitative support for our claim that different leader selection processes hold significant consequences for engagement in sexual violence: rebel groups who choose leaders via an electoral process are systematically less likely to engage in sexual violence in wartime. Moreover, we find that the degree of electoral inclusiveness significantly impacts whether rebels commit sexual violence. Rebel groups that utilize leader elections inclusive of both the civilian population and rebel group members are significantly less likely to use sexual violence than groups whose leader elections occur only amongst group members or top-level rebel officials.

Keywords: Civil war, sexual violence, rebel leaders, elections

Supplementary material for this article is available in the Data Appendix in the online edition.

Replication files are available in the JOP Data Archive on Dataverse

(<http://thedata.harvard.edu/dvn/dv/jop>).

Both within and across civil conflicts, there is wide variation among rebel organizations in their use of sexualized civilian victimization, despite its condemnation as a crime against humanity by the global community (ICC Rome Statute, 1998, Article 7). While not all civil conflicts involve rebel perpetrated sexual violence (Cohen 2016; Wood 2008; Wood 2009), its appearance in any conflict emphasizes our need to understand the conditions that encourage it (Butler et al. 2007; Wood 2009; Cohen and Nordås 2014). As with other forms of civilian targeting, sexual violence during war inflicts not only mental, emotional, and physical harm on individual victims (Lončar, et al. 2006) but also inter-generational damage on families and communities; the latter harm can be particularly pronounced where manifestations of personal sexuality are considered part of the public interest (Sivakumaran 2007). Sexual violence also tends to encourage a perception of victim fault that does not usually accompany other forms of civilian abuse; even when shaming is not the perpetrator's intention, it is nonetheless a common consequence (see Eriksson Baaz and Stern 2013; Wood 2009).

As Wood (2017) notes, wartime rape has been theorized both as a bottom-up “practice” reflecting generalized personal opportunism among recruits, and as a top-down “strategy” of civilian victimization that is specifically encouraged by the group's leadership. We see that both logics hinge on the principal-agent relationship between rebel leaders and their rank-and-file: while sexual violence-as-practice may occur because leaders are not able or willing to sanction their followers (Butler et al. 2007), sexual violence-as-strategy is often deliberately incited by group leaders as a means of encouraging comradery, strong bonds of loyalty among perpetrators, and intra-organizational cohesion, thus promoting high levels of compliance with rebel leaders (Cohen 2016).¹

¹ This may not necessarily work if victims of rape are within rebel organizations, though Cohen (2016) finds rape generated cohesion in Sierra Leone even when victims were group members.

From the first perspective, rank-and-file are thought to see sexual violence as part of the spoils of war; from the second perspective, leaders utilize it as a selective benefit to be distributed. Coupling these perspectives with emerging literature on rebel governance that demonstrates how significant the foundation and sources of rebel leaders' authority can be for the wartime treatment of civilians (c.f. Mampilly 2011; Kaplan 2017), one might expect that rebels seeking leadership positions would have strong incentives to tacitly allow or even explicitly encourage sexual violence in order to solidify their own power.

In contrast, we argue that the use of voting practice in rebel leader selection—namely, determining leadership ascension by elections—disrupts these multiple pathways to both strategic and tactical sexual violence against civilians. As leader elections encourage the rank-and-file to make long-term investments in group stability and provide internal constraints on commanders against promoting civilian abuse, we expect that these will mitigate principal-agent problems or perverse socialization processes that have been previously argued to encourage sexual violence. Using original data on rebel leadership elections in conjunction with data on wartime sexual violence from Cohen and Nordås (2014),² we find that rebel groups with elected leaders are significantly less likely to perpetrate sexual violence than groups whose leaders come to power without any electoral process.

Leader Elections, Strategic Constraint, and Tactical Restraint

Rebel leaders come to power through a variety of means. Those selected through an electoral process are chosen via voting by rebel elites, group members, and in some cases, the surrounding civilian population. The adoption of democratic practice has been shown to influence

² See the Data Appendix for further information about the Rebel Leadership Ascension Dataset.

rebel groups' prospects for peacemaking: they tend to be seen as more credible bargaining partners and are more likely to get a seat at the negotiation table than groups whose leaders seize power through more violent or disruptive means, partly because the former are expected to be able to better deliver on their promises (Cunningham and Sawyer 2019).³

We suggest several mechanisms through which the election of rebel leaders may work to limit groups' use of sexual violence. First, in order to remain viable, rebel groups must recruit and retain members from a largely local base of support, and rebel leaders are often constrained in their ability to successfully recruit by the preferences of those mobilized (Gates 2002; Weinstein 2007). A more inclusive leadership selection process may constrain the *leadership's* willingness to promote sexual violence by structuring the group in a way that makes rebel leaders more sensitive to the costs of abusing potential recruits (e.g., being voted out of power, or not being voted in at all). The specter of being internally sanctioned for endorsing behavior that may alienate supporters, current cadre, and/or future members may well discourage leaders from using sexual violence as a strategic device for promoting internal cohesion.

Second, the opportunity to participate in choosing group leadership may also support restraint *among the rank-and-file*. According to Weinstein (2007), rebel leaders can mitigate the risk that their followers will engage in spontaneous civilian abuses by recruiting and retaining individuals oriented toward maximizing the group's future returns from organizational longevity and stability, rather than toward satisfying immediate predatory impulses. Indeed, the challenge for every rebel command is to balance its recruitment demands with its need for reliable cadre support (Jo 2015; Mampilly 2011; Stanton 2016). We expect that the opportunity to engage in collective decision-making likely attracts and reflects a rank-and-file comprised of such 'investor recruits,' who may

³ See Staniland (2014) on the possible diverse links between rebel leaders and rank-and-file soldiers.

have an a priori predisposition against abusing civilians during wartime as a general, or even idiosyncratic, practice.

Third, as elections can institutionalize accountability by tying leaders' power to popular constituency support, the preferences of leaders in groups that use elections are likely to be highly congruent with, if not derivative of, their (restrained) followers' preferences. Particularly in cases where elections lead to changes in rebel group authority, the electoral process provides a credible avenue for those investor recruits to sanction leaders for encouraging or allowing sexual violence against its support base. We expect this dynamic not only to reduce the risk of principal-agent problems as a source of sexualized civilian victimization, but also to bias groups that engage in leader elections away from this behavior from a normative perspective.

H1: Rebel organizations that have elected leadership are less likely to commit acts of sexual violence against civilians during civil conflict.

Not all elections for rebel leadership are equivalent. In particular, they tend to vary not only in the size of the selectorate but also in its makeup (Bueno de Mesquita et. al 2005). At the most basic level, a rebel leader dependent on some degree of popular support for power risks alienating a portion of the group's critical support network by failing to provide basic security assurances. Allowing or encouraging the use of direct violence towards civilians could be more politically hazardous for leaders whose ascension relied on direct civilian support. Further, election-based leader selection may reduce the expected efficacy of sexual violence as a method of recruitment, since members can be offered the selective benefit of an institutionalized say in the group's direction and activities. Therefore, we expect that rebel leaders elected to power by a selectorate that includes civilians should be less likely to condone—if not explicitly prohibit—sexual violence against civilians

than leaders who are elected by a rebel council or even rebel group members in general.

H2: As the electoral process for leader selection becomes more inclusive, rebels are less likely to commit acts of sexual violence against civilians during civil conflict.

Data and Methods

To test our hypotheses, we estimate a series of logit models using original data on rebel leadership and organizational structure from the Rebel Leadership Ascension Dataset in conjunction with data on rebels' use of wartime sexual violence from the Sexual Violence in Armed Conflict Dataset (Cohen and Nordås 2014). Our unit of analysis is the conflict-dyad-year; we compare rebel groups that commit any form of sexual violence against no acts of sexual violence over the 133 civil wars fought worldwide between 1989 and 2011.⁴ A dichotomous variable, *rebel sexual violence*, is coded one if the rebel group committed one or more acts of sexual violence against women in a given year.⁵

We proceed with two main independent variables. *Elected leader* is a binary variable indicating whether a leader elected into power was active in a particular dyad-year. We also code for the degree of civilian inclusiveness with respect to the election process. *Electoral inclusion* is an ordinal variable that describes this range and distinguishes among groups which select the rebel leader, specifically: if selection is based on a subset of top-level group members only (e.g., an electoral council or only top

⁴ We include dyad years prior to 1989 if the war was active in our study period.

⁵ The SVAC dataset includes a measure of prevalence in the level of sexual violence. As a robustness check, we report an ordered probit model of rebel elections across the measure of prevalence, see Appendix Table 10. The results are robust with respect to rebel elections.

officials, coded as 1), rebel group members only (coded as 2), civilians and rebel group members (coded as 3). This variable is coded as zero for rebel groups that do not elect leaders.

We also control for a variety of group-level and conflict-level characteristics that have been previously associated with rebel engagement in wartime civilian victimization. The group-level controls include dichotomous indicators of whether the group used *forced conscription*,⁶ enjoyed any degree of *territorial control* (Non-State Actor Data 2013), or had access to *contraband funding* (Cohen 2016), as well as the natural log-transformed number of rebel troops as a measure of *group strength* (UCDP). We also add a dichotomous measure of *democracy* coded from the revised Polity IV index (Gleditsch 2013), a dichotomous measure of *state failure* coded from the Political Instability Task Force (Marshall et al. 2015), a measure of *GDP per capita* following Butler et al. (2007), the size of the country's population (natural log-transformed, World Development Indicators), a measure of *ethnic fractionalization* (Nagel 2003, Fearon 2003), and whether the foundation of the conflict is identity based (*ethnic*, Braithwaite and Cunningham 2019).

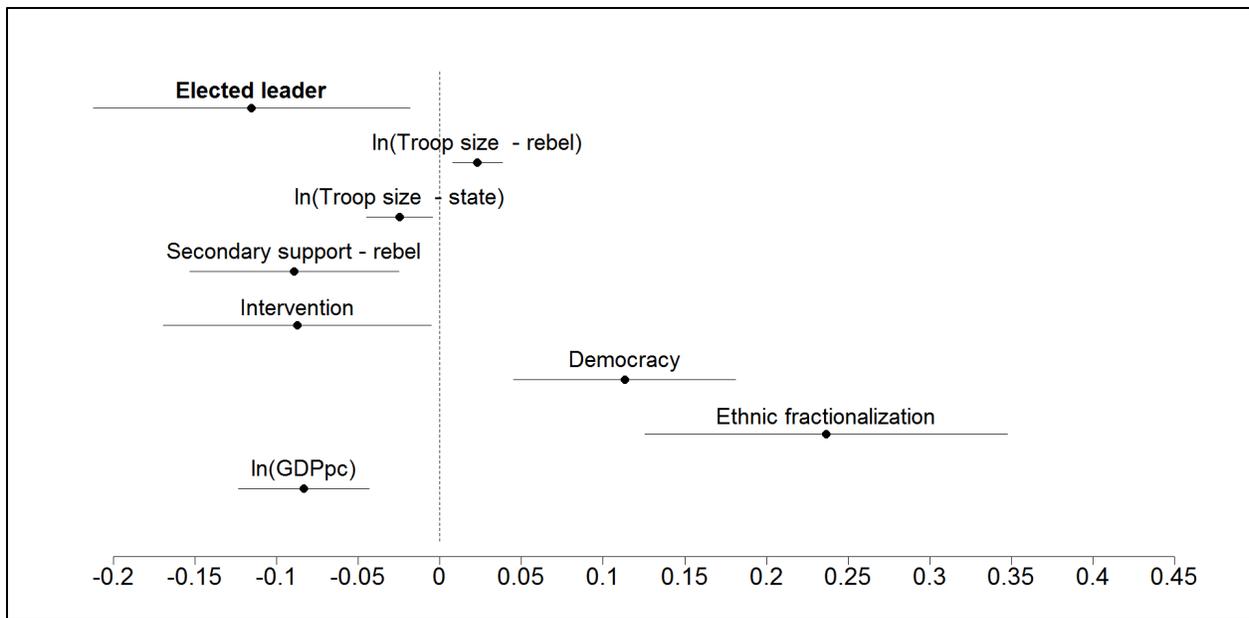
Results and Discussion

We evaluate our two hypotheses using a series of logistic regressions predicting rebel perpetrated acts of sexual violence. We find strong support for the central hypothesis of the paper: rebels that elect their leaders are significantly and consistently less likely to commit acts of sexual violence than groups whose leaders come to power through other means. Figures 1 and 2 depict the substantive effects for all statistically significant predictors of sexual violence as reported by our logistic regression models evaluating each of the two hypotheses in turn. With respect to our first

⁶ This includes abduction and pressganging. See Cohen (2013).

hypothesis, we find that having a leader that was elected to power has the largest negative effect on the probability a group will commit acts of sexual violence – an 11.54 percentage point decrease on average.⁷ In additional analyses, we find a significantly depressant effect of leader elections on the likelihood of wartime sexual violence perpetration not only during the specific tenures of leaders who have been so selected, but also in rebel groups with a general history of elected leadership (Appendix Table 2).

Figure 1. Marginal Effects: Rebel Elections and Sexual Violence

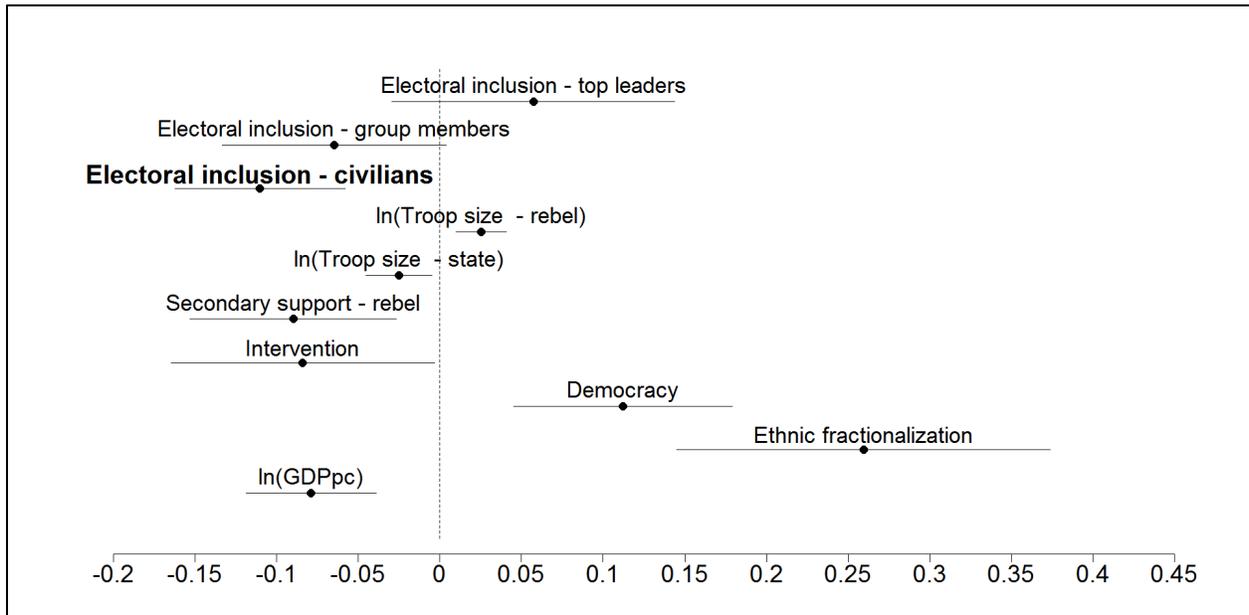


With respect to our second hypothesis (shown in Figure 2): rebels that incorporate civilians in their election of leaders are significantly less likely to commit acts of sexual violence in wartime (11.02 percentage point decrease on average) than rebels that do not elect leaders. Again, this effect

⁷ The results are statistically significant at the 95% confidence level, holding all other variables (from Model 3 of Appendix Table 1 and Model 3 of Appendix Table 4, respectively) to their observed values.

is statistically significant while accounting for other factors that are likely correlated with both rebel leadership ascension processes and sexual violence including rebel territorial control, the strength of rebel and state troops, external support to rebels and states, contraband, forced inscription/abduction, whether or not the state is democratic, the level of ethnic fractionalization, and the country's GDP per capita and population size (Appendix Tables 3 and 4).

Figure 2. Marginal Effects: Electoral Inclusion and Sexual Violence



Since our treatment variable—*rebel elections*—is not randomly assigned, we also test our hypotheses using the coarsened exacting matching procedure (as described by Iacus et al. 2011) designed to balance the distribution of the covariates across rebel groups, reducing the statistical bias of the estimates that occurs as a result of omitted variable bias and potential endogeneity. The results with respect to our hypotheses remain statistically and substantively significant (Appendix Table 5, Models 1 and 2). Moreover, our results are consistent across several other logistic model specifications, including models with additional controls for the type of religious conflict (Appendix Table 6 and Appendix Table 7), the possibility of time dependency (Appendix Table 8), alternative

measures of rebel strength (Appendix Table 11), state-level gender equality (Appendix Table 12), and group-level political ideology (from Wood and Thomas (2017), Appendix Table 13). The Online Appendix includes a complete report of all analyses.

Conclusion

Rebel group leadership and organizational hierarchy varies widely and affects not only the outcomes of civil conflict and the prospects of long-term peace (Ryckman and Braithwaite 2018; Prorok 2016), but also the tactics rebels employ during the conflict. This work contributes to a burgeoning literature on the centrality of internal political processes to rebel activity in general (c.f. Hoover Green 2018) and to rebels' use of sexual violence against civilians in particular. In this article, we argue and find substantial evidence that the organizational dynamics surrounding how leaders come into power—specifically, the presence of an electoral process—significantly affect groups' propensity to commit sexual violence. Using new data on how rebel leaders come to power, we show that leadership elections effectively reduce the incidence of sexual violence perpetration by individual organizations. Our work also suggests two promising areas for future research. First, in-depth analysis of groups that elect leaders could elucidate whether there are systematic differences among them in the nature and quality of rebel recruits. Second, focused investigation of how rebel groups use participatory decision-making and/or identity-centric framing to craft their own responses to sexual violence perpetration during wartime may highlight a new range of solutions for its eradication.

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Appendix

Appendix Table 1. Logit Model - Rebel Acts of Sexual Violence

	(1)	(2)	(3)
	Rebel Sexual Violence	Rebel Sexual Violence	Rebel Sexual Violence
Elected leader	-1.065** (0.468)	-1.286** (0.516)	-1.282** (0.550)
Territorial control	0.428** (0.198)	0.479** (0.206)	0.187 (0.237)
ln(Troop size - rebel)	0.170** (0.0718)	0.268*** (0.0765)	0.257*** (0.0837)
ln(Troop size - state)	-0.372*** (0.0682)	-0.400*** (0.0648)	-0.275** (0.115)
Contraband	0.182 (0.364)	0.286 (0.330)	-0.157 (0.399)
Rebel abduction	0.669* (0.388)	1.074*** (0.354)	0.602 (0.412)
Ethnic identity	0.963*** (0.221)	1.149*** (0.246)	0.480* (0.261)
External support - rebel		-1.282*** (0.319)	-0.990*** (0.370)
External support - state		-0.387 (0.251)	-0.189 (0.299)
Independent intervention		-0.600 (0.404)	-0.968** (0.472)
Democracy			1.258*** (0.385)
Ethnic fractionalization			2.630*** (0.612)
ln(population)			-0.161 (0.139)
ln(GDPpc)			-0.925*** (0.230)
State failure			0.133 (0.368)
Constant	-0.214 (0.940)	-0.510 (0.954)	5.473** (2.465)
N	1101	1101	906

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Appendix Table 2. Logit Model - Rebel Acts of Sexual Violence with History of Rebel Elections

	(1)	(2)	(3)
	Rebel Sexual Violence	Rebel Sexual Violence	Rebel Sexual Violence
Rebel elections	-1.262*** (0.468)	-1.443*** (0.505)	-1.522*** (0.543)
Territorial control	0.438** (0.197)	0.489** (0.207)	0.202 (0.236)
ln(Troop size - rebel)	0.177** (0.0723)	0.274*** (0.0769)	0.267*** (0.0841)
ln(Troop size - state)	-0.369*** (0.0683)	-0.395*** (0.0651)	-0.263** (0.116)
Contraband	0.215 (0.370)	0.302 (0.331)	-0.153 (0.400)
Rebel abduction	0.634 (0.397)	1.052*** (0.357)	0.578 (0.413)
Ethnicity	0.977*** (0.222)	1.171*** (0.247)	0.513* (0.262)
External support - rebel		-1.285*** (0.319)	-1.011*** (0.369)
External support - state		-0.395 (0.252)	-0.183 (0.300)
Independent intervention		-0.572 (0.401)	-0.930** (0.466)
Democracy			1.279*** (0.386)
Ethnic fractionalization			2.688*** (0.615)
ln(population)			-0.160 (0.140)
ln(GDPpc)			-0.948*** (0.236)
State failure			0.143 (0.368)
Constant	-0.298 (0.942)	-0.613 (0.960)	5.376** (2.487)
<i>N</i>	1101	1101	906

Reporting robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 3. Logit Model - Rebel Acts of Sexual Violence with Electoral Inclusion

	(1)	(2)	(3)
	Rebel Sexual Violence	Rebel Sexual Violence	Rebel Sexual Violence
Electoral inclusion	-0.350** (0.138)	-0.436*** (0.143)	-0.457*** (0.174)
Territorial control	0.432** (0.201)	0.484** (0.208)	0.193 (0.239)
ln(Troop size - rebel)	0.164** (0.0722)	0.259*** (0.0759)	0.248*** (0.0830)
ln(Troop size - state)	-0.361*** (0.0686)	-0.387*** (0.0652)	-0.248** (0.118)
Contraband	0.152 (0.372)	0.228 (0.336)	-0.174 (0.398)
Rebel abduction	0.689* (0.404)	1.146*** (0.368)	0.651 (0.414)
Ethnic identity	0.987*** (0.221)	1.204*** (0.252)	0.531** (0.261)
External support - rebel		-1.293*** (0.321)	-1.039*** (0.372)
External support - state		-0.387 (0.249)	-0.192 (0.299)
Independent intervention		-0.618 (0.402)	-0.991** (0.470)
Democracy			1.297*** (0.389)
Ethnic fractionalization			2.544*** (0.608)
ln(population)			-0.178 (0.141)
ln(GDPpc)			-0.963*** (0.241)
State failure			0.143 (0.371)
Constant	-0.272 (0.945)	-0.578 (0.957)	5.752** (2.523)
<i>N</i>	1101	1101	906

Reporting robust standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 4. Logit Model - Rebel Acts of Sexual Violence with Multinomial Electoral Inclusion

	(1) Rebel Sexual Violence	(2) Rebel Sexual Violence	(3) Rebel Sexual Violence
Electoral inclusion – top leaders	0.417 (0.320)	0.358 (0.322)	0.535 (0.381)
Electoral inclusion – group members	-0.633 (0.550)	-0.546 (0.582)	-0.844 (0.559)
Electoral inclusion – civilians	-1.698** (0.760)	-2.039*** (0.781)	-1.952** (0.867)
Territorial control	0.422** (0.200)	0.477** (0.209)	0.174 (0.241)
ln(Troop size - rebel)	0.187** (0.0727)	0.287*** (0.0792)	0.285*** (0.0872)
ln(Troop size - state)	-0.387*** (0.0705)	-0.412*** (0.0672)	-0.281** (0.117)
Contraband	0.267 (0.368)	0.356 (0.339)	-0.122 (0.405)
Rebel abduction	0.574 (0.380)	0.978*** (0.353)	0.519 (0.415)
Ethnic identity	0.935*** (0.214)	1.131*** (0.244)	0.468* (0.264)
External support - rebel		-1.310*** (0.317)	-1.007*** (0.369)
External support - state		-0.369 (0.250)	-0.130 (0.303)
Independent intervention		-0.592 (0.394)	-0.942** (0.467)
Democracy			1.259*** (0.384)
Ethnic fractionalization			2.913*** (0.644)
ln(population)			-0.157 (0.136)
ln(GDPpc)			-0.886*** (0.232)
State failure			0.122 (0.366)
Constant	-0.193 (0.942)	-0.535 (0.958)	4.772* (2.468)
N	1101	1101	906

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Appendix Table 5. Coarsened Exact Matching – Rebel Sexual Violence

	(1) Rebel Sexual Violence	(2) Rebel Sexual Violence
Rebel elections	-1.690** (0.774)	
Electoral inclusion		-0.521** (0.264)
Territorial control	0.300 (0.643)	0.279 (0.636)
ln(Troop size - rebel)	0.721*** (0.250)	0.722*** (0.249)
ln(Troop size - state)	-0.694** (0.354)	-0.696** (0.352)
Contraband	0.160 (1.347)	0.188 (1.350)
Rebel abduction	-3.137 (1.976)	-3.395* (2.010)
Ethnic identity	1.042 (0.732)	1.015 (0.729)
Religious identity	-0.247 (0.203)	-0.250 (0.203)
External support - rebel	-0.235 (0.550)	-0.216 (0.553)
External support - state	1.392** (0.638)	1.385** (0.633)
Independent intervention	3.276*** (1.250)	3.247*** (1.211)
Democracy	0.339 (0.917)	0.299 (0.915)
Ethnic fractionalization	6.832*** (1.961)	6.754*** (1.954)
ln(population)	0.529 (0.358)	0.525 (0.355)
ln(GDPpc)	0.173 (0.462)	0.164 (0.461)
State failure	0.0586 (0.817)	0.00688 (0.815)
Constant	-12.96** (5.500)	-12.76** (5.467)
N	413	413

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Appendix Table 6. Logit Model – Rebel Acts of Sexual Violence with Religious Identity

	(1)	(2)	(3)
	Rebel Sexual Violence	Rebel Sexual Violence	Rebel Sexual Violence
Rebel elections	-1.319*** (0.462)	-1.432*** (0.498)	-1.531*** (0.545)
Territorial control	0.261 (0.194)	0.389* (0.201)	-0.00719 (0.246)
ln(Troop size - rebel)	0.176** (0.0742)	0.270*** (0.0768)	0.260*** (0.0841)
ln(Troop size - state)	-0.359*** (0.0661)	-0.390*** (0.0650)	-0.262** (0.114)
Contraband	0.268 (0.335)	0.326 (0.322)	-0.0979 (0.386)
Rebel abduction	0.758** (0.374)	1.078*** (0.350)	0.632 (0.410)
Ethnic identity	1.077*** (0.253)	1.200*** (0.262)	0.540* (0.280)
Religious identity	-0.166** (0.0729)	-0.0871 (0.0738)	-0.137* (0.0729)
External support - rebel		-1.206*** (0.315)	-0.908** (0.361)
External support - state		-0.339 (0.248)	-0.0488 (0.301)
Independent intervention		-0.569 (0.396)	-0.961** (0.470)
Democracy			1.144*** (0.379)
Ethnic fractionalization			2.859*** (0.619)
ln(population)			-0.145 (0.134)
ln(GDPpc)			-0.964*** (0.238)
State failure			0.0390 (0.370)
Constant	-0.280 (0.946)	-0.572 (0.955)	5.433** (2.471)
N	1101	1101	906

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Appendix Table 7. Logit Model – Rebel Acts of Sexual Violence, Electoral Inclusion with Religious Identity

	(1)	(2)	(3)
	Rebel Sexual Violence	Rebel Sexual Violence	Rebel Sexual Violence
Electoral inclusion	-0.387** (0.135)	-0.442*** (0.140)	-0.478*** (0.175)
Territorial control	0.261 (0.196)	0.381* (0.202)	-0.0200 (0.246)
ln(Troop size - rebel)	0.163** (0.0741)	0.255*** (0.0761)	0.242*** (0.0831)
ln(Troop size - state)	-0.349*** (0.0665)	-0.380*** (0.0651)	-0.246** (0.116)
Contraband	0.192 (0.335)	0.248 (0.324)	-0.122 (0.383)
Rebel abduction	0.826** (0.380)	1.178*** (0.359)	0.704* (0.409)
Ethnic identity	1.099*** (0.255)	1.242*** (0.270)	0.565** (0.280)
Religious identity	-0.170** (0.0729)	-0.0952 (0.0740)	-0.146** (0.0722)
External support - rebel		-1.208*** (0.314)	-0.934** (0.363)
External support - state		-0.328 (0.245)	-0.0532 (0.301)
Independent intervention		-0.615 (0.396)	-1.029** (0.476)
Democracy			1.147*** (0.381)
Ethnic fractionalization			2.711*** (0.606)
ln(population)			-0.160 (0.136)
ln(GDPpc)			-0.989*** (0.244)
State failure			0.0266 (0.375)
Constant	-0.273 (0.952)	-0.551 (0.959)	5.870** (2.500)
<i>N</i>	1101	1101	906

Reporting robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

Appendix Table 8. Logit Model - Rebel Acts of Sexual Violence with time, time², time³ (Carter and Signorino 2010)

	(1) Rebel Sexual Violence
Rebel elections	-1.377** (0.592)
Territorial control	-0.0899 (0.279)
ln(Troop size - rebel)	0.247*** (0.0863)
ln(Troop size - state)	-0.243** (0.116)
Contraband	0.00210 (0.365)
Rebel abduction	0.399 (0.419)
Ethnic identity	0.571** (0.289)
Religious identity	-0.182** (0.0811)
External support - rebel	-0.929*** (0.360)
External support - state	-0.0916 (0.312)
Independent intervention	-0.836* (0.469)
Democracy	1.191*** (0.402)
Ethnic fractionalization	2.738*** (0.657)
ln(population)	-0.268* (0.139)
ln(GDPpc)	-1.158*** (0.263)
State failure	0.135 (0.362)
t	0.180** (0.086)
t ²	-0.006 (0.004)
t ³	<0.001 (<0.001)
Constant	6.925** (2.699)
<i>N</i>	906

Reporting robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

Appendix Table 9. Logit Model - Rebel Acts of Sexual Violence with Lagged Dependent Variable

	(1) Rebel Sexual Violence	(2) Rebel Sexual Violence
Rebel elections	-1.112* (0.611)	
Electoral inclusion		-0.408* (0.234)
lag(Rebel sexual violence)	2.872*** (0.304)	2.889*** (0.302)
Territorial control	-0.221 (0.350)	-0.229 (0.350)
ln(Troop size - rebel)	0.220** (0.107)	0.206* (0.106)
ln(Troop size - state)	-0.324** (0.152)	-0.309* (0.160)
Contraband	0.0574 (0.538)	0.0213 (0.535)
Rebel abduction	0.0452 (0.517)	0.0907 (0.506)
Ethnic identity	0.293 (0.332)	0.327 (0.334)
Religious identity	-0.155* (0.0823)	-0.165** (0.0827)
External support - rebel	-0.280 (0.382)	-0.305 (0.386)
External support - state	-0.131 (0.383)	-0.136 (0.385)
Independent intervention	-0.654 (0.487)	-0.682 (0.495)
Democracy	1.119** (0.513)	1.109** (0.510)
Ethnic fractionalization	2.094*** (0.796)	1.982*** (0.768)
ln(population)	-0.0990 (0.178)	-0.109 (0.183)
ln(GDPpc)	-1.143*** (0.303)	-1.173*** (0.315)
State failure	-0.384 (0.463)	-0.404 (0.463)
Constant	7.341** (2.882)	7.713*** (2.907)
N	787	787

Reporting robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

Appendix Table 10. Ordered Probit Model - Rebel Acts of Sexual Violence by Prevalence Level⁸

	(1) Rebel Sexual Violence	(2) Rebel Sexual Violence
Rebel elections	-0.742*** (0.281)	
Electoral inclusion		-0.258** (0.102)
Territorial control	-0.0548 (0.154)	-0.0606 (0.154)
ln(Troop size - rebel)	0.189*** (0.0533)	0.183*** (0.0529)
ln(Troop size - state)	-0.0190 (0.0693)	-0.00928 (0.0703)
Contraband	0.0507 (0.203)	0.0279 (0.203)
Rebel abduction	0.0849 (0.222)	0.115 (0.222)
Ethnic identity	0.0660 (0.156)	0.0889 (0.157)
Religious identity	-0.0535 (0.0358)	-0.0577 (0.0359)
External support - rebel	-0.645** (0.252)	-0.668*** (0.253)
External support - state	0.305* (0.180)	0.295 (0.181)
Independent intervention	0.550* (0.293)	0.521* (0.296)
Democracy	0.393* (0.218)	0.405* (0.221)
Ethnic fractionalization	1.583*** (0.388)	1.500*** (0.385)
ln(population)	-0.140* (0.0810)	-0.151* (0.0821)
ln(GDPpc)	-0.475*** (0.127)	-0.501*** (0.131)
State failure	-0.284 (0.240)	-0.306 (0.243)
cut1	-1.450 (1.277)	-1.758 (1.296)
cut2	-0.861 (1.265)	-1.169 (1.285)
cut3	-0.149 (1.266)	-0.458 (1.286)
<i>N</i>	663	663

Reporting robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

⁸ Based on state department reports of rebel perpetrated sexual violence. See Cohen and Nordas 2014.

Appendix Table 11. Logit Model – Rebel Acts of Sexual Violence with Ratio of Rebel to State Troops

	(1)	(2)
	Rebel Sexual Violence	Rebel Sexual Violence
Rebel elections	-1.532*** (0.537)	
Electoral inclusion		-0.479*** (0.171)
Territorial control	-0.00746 (0.242)	-0.0208 (0.243)
ln(Troop ratio)	0.261*** (0.0707)	0.243*** (0.0702)
Contraband	-0.0970 (0.378)	-0.120 (0.376)
Rebel abduction	0.631 (0.409)	0.702* (0.408)
Ethnic identity	0.539* (0.281)	0.564** (0.281)
Religious identity	-0.137* (0.0730)	-0.146** (0.0723)
External support - rebel	-0.909*** (0.347)	-0.937*** (0.349)
External support - state	-0.0489 (0.303)	-0.0535 (0.302)
Independent intervention	-0.960** (0.453)	-1.026** (0.460)
Democracy	1.146*** (0.381)	1.151*** (0.384)
Ethnic fractionalization	2.860*** (0.604)	2.715*** (0.594)
ln(population)	-0.147 (0.114)	-0.163 (0.114)
ln(GDPpc)	-0.964*** (0.240)	-0.990*** (0.245)
State failure	0.0389 (0.371)	0.0262 (0.375)
Constant	5.428** (2.349)	5.856** (2.405)
N	906	906

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Appendix Table 12. Logit Model - Rebel Acts of Sexual Violence with Fertility Rate⁹

	(1)	(2)
	Rebel Sexual Violence	Rebel Sexual Violence
Rebel elections	-1.312** (0.529)	
Electoral inclusion		-0.428** (0.182)
Territorial control	-0.212 (0.256)	-0.230 (0.256)
ln(Troop size - rebel)	0.259*** (0.0837)	0.242*** (0.0829)
ln(Troop size - state)	-0.354*** (0.121)	-0.344*** (0.122)
Contraband	0.0256 (0.397)	0.00334 (0.394)
Rebel abduction	0.739* (0.413)	0.800* (0.412)
Ethnic identity	0.411 (0.285)	0.435 (0.285)
Religious identity	-0.111 (0.0689)	-0.123* (0.0683)
External support - rebel	-0.730** (0.364)	-0.748** (0.362)
External support - state	0.215 (0.315)	0.229 (0.314)
Independent intervention	-1.219*** (0.469)	-1.292*** (0.476)
Democracy	1.190*** (0.388)	1.182*** (0.393)
Ethnic fractionalization	3.411*** (0.693)	3.298*** (0.681)
ln(population)	-0.209 (0.136)	-0.220 (0.137)
ln(GDPpc)	-1.531*** (0.295)	-1.572*** (0.300)
State failure	0.00905 (0.371)	0.00186 (0.375)
Fertility rate	-0.387*** (0.0947)	-0.399*** (0.0932)
Constant	12.81*** (3.074)	13.40*** (3.104)
N	904	904

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

⁹ World Development Indicators, 2013.

Appendix Table 13. Rebel Acts of Sexual Violence with Political Ideology¹⁰

	(1)	(2)
	Rebel Sexual Violence	Rebel Sexual Violence
Rebel elections	-1.767*** (0.576)	
Electoral inclusion		-0.633*** (0.188)
Territorial control	0.0505 (0.275)	0.0234 (0.280)
ln(Troop size - rebel)	0.216** (0.0858)	0.191** (0.0849)
ln(Troop size - state)	-0.185 (0.116)	-0.150 (0.122)
Contraband	-0.260 (0.452)	-0.315 (0.450)
Rebel abduction	0.563 (0.443)	0.657 (0.445)
Ethnic identity	0.231 (0.305)	0.260 (0.303)
Religious identity	-0.187** (0.0887)	-0.205** (0.0881)
External support - rebel	-0.893** (0.364)	-0.935** (0.365)
External support - state	-0.136 (0.330)	-0.149 (0.333)
Independent intervention	-0.789 (0.499)	-0.889* (0.511)
Democracy	1.289*** (0.441)	1.252*** (0.438)
Ethnic fractionalization	2.559*** (0.712)	2.439*** (0.704)
ln(population)	-0.143 (0.158)	-0.185 (0.167)
ln(GDPpc)	-0.975*** (0.248)	-1.028*** (0.258)
State failure	0.183 (0.383)	0.160 (0.388)
Leftist	-1.280* (0.666)	-1.243* (0.655)
Islamist	0.477 (0.454)	0.606 (0.463)
Nationalist	-0.0140 (0.358)	0.102 (0.372)
Constant	5.586** (2.668)	6.275** (2.726)
<i>N</i>	818	818

Reporting robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

¹⁰ Wood and Thomas (2017).