Supplementary Appendix to 'Legacies of Wartime Sexual Violence: Survivors, Psychological Harms, and Mobilization'

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Contents

1. Ethics

Conducting research in (post-)conflict contexts in general and on sexual violence in particular is always a sensitive matter. A key question is whether the potential benefits of the research for the local public outweigh the potential harm being done. Addressing the methodological shortcomings of

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earlier studies can offer new insights not only for academics, but most importantly for practitioners in the field.

This research project was approved by the Ethikkommission (Ethics Commission) at the University of Konstanz (approval reference: 14/2015) on 8 September 2015. The survey was implemented by a research organization, Research Initiatives for Social Development, with expertise and experience with surveys including sexual and gender-based violence. The organization is managed by a network of local academics and practitioners with a keen interest and experience in empowering local communities and social development through evidence-based research. The organization pays their staff and enumerators fair salaries. Senior staff members of local and international humanitarian organizations active in Sexual and Gender-based Violence (SGBV) prevention and treatment were present throughout the training, observed and consulted on the survey instrument.

Enumerators were trained to arrange a private and safe environment for the interview, in particular to make sure respondents did not appear distressed and had enough time for the interview which lasted between 40 and 80 minutes. In accordance with standard protocols for research on violence against women, female respondents were exclusively interviewed by women, and male respondents by men. This protocol helps to ensure greater privacy and comfortability of subjects during the interview.

To avoid any deception about the goals of the survey and to ensure true informed consent, prior agreeing to survey participation, enumerators informed respondents that some questions in the survey addressed experiences of violence, including sexual violence. Enumerators then explained that respondents could choose to skip any questions or terminate the survey at any time. Then, prior to asking questions in the violence modules, respondents were again informed about the content of the upcoming series of questions. Researchers made sure that respondents were comfortable and willing to continue. Researchers administering the survey reported that sometimes the interview was paused until the respondent was alone and other family members were gone. To avoid undue pressure for participation or continued participation in this context, participants were not compensated.

After the survey each respondent was given the contact of the survey organization to address any questions, complaints or suggestions or to seek contact with a psychosocial support facility. Lastly, of respondents that chose to give contact details to researchers, after the survey has been completed the survey organization followed up with a random sample of respondents to inquire whether any problems have emerged during or after the survey. No complaints or reports of re-traumatization were received.

2. Sampling Protocol

Please see supplementary materials (Codebook & Survey Details) available on Harvard Dataverse.

3. Variables Descriptions

Please see supplementary materials (Codebook & Survey Details) available on Harvard Dataverse.

4. Descriptive Statistics

Table (A1) Difference in Means Estimates

	lower	estimate	upper
list	-0.0060926	0.1243682	0.254829
direct	0.0491162	0.0643216	0.079527

Table (A2) Descriptive Statistics for Independent and Control Variables by Respondent Gender

	Female	Male	Overall
	(N=500)	(N=500)	(N=1000)
CRSV Exposure (Direct)			
Mean (SD)	0.0765 (0.266)	0.0522 (0.223)	0.0643 (0.245)
Median [Min, Max]	0 [0, 1.00]	0 [0, 1.00]	0 [0, 1.00]
Missing	3 (0.6%)	2 (0.4%)	5 (0.5%)
Age			
Mean (SD)	40.3 (16.5)	46.1 (16.7)	43.2 (16.8)
Median [Min, Max]	37.0 [18.0, 100]	45.0 [18.0, 95.0]	40.0 [18.0, 100]
Education Level			
Mean (SD)	0.928 (1.19)	2.13 (1.43)	1.53 (1.45)
Median [Min, Max]	0 [0, 6.00]	2.00 [0, 6.00]	1.00 [0, 6.00]
Household Size			
Mean (SD)	7.06 (3.19)	7.17 (3.49)	7.12 (3.34)
Median [Min, Max]	7.00 [1.00, 18.0]	7.00 [1.00, 23.0]	7.00 [1.00, 23.0]
Witnessing CRSV			
Mean (SD)	0.525 (1.59)	0.838 (2.31)	0.682 (1.99)
Median [Min, Max]	0 [0, 20.0]	0 [0, 20.0]	0 [0, 20.0]
Missing	1 (0.2%)	0 (0%)	1 (0.1%)
Assets			
Mean (SD)	0.186 (0.178)	0.251 (0.187)	0.219 (0.185)
Median [Min, Max]	0.200 [0, 1.00]	0.200 [0, 1.00]	0.200 [0, 1.00]
Previous Social Exchange			
Mean (SD)	2.71 (0.853)	3.04 (0.923)	2.88 (0.904)
Median [Min, Max]	3.00 [1.00, 5.00]	3.00 [1.00, 5.00]	3.00 [1.00, 5.00]
Missing	14 (2.8%)	6 (1.2%)	20 (2.0%)
Homicide			
Mean (SD)	0.159 (0.366)	0.188 (0.391)	0.174 (0.379)
Median [Min, Max]	0 [0, 1.00]	0 [0, 1.00]	0 [0, 1.00]
Missing	3 (0.6%)	1 (0.2%)	4 (0.4%)

Table (A3) Descriptive Statistics of Mechanisms by Respondent Gender

	Female	Male	Overall
	(N=500)	(N=500)	(N=1000)
Anticipated Stigma			
Mean (SD)	0.333 (0.367)	0.302 (0.375)	0.317 (0.371)
Median [Min, Max]	0.333 [0, 1.00]	0 [0, 1.00]	0 [0, 1.00]
Internal Stigma, Self-Blame			
Mean (SD)	0.310 (0.334)	0.297 (0.326)	0.304 (0.330)
Median [Min, Max]	0.200 [0, 1.00]	0.200 [0, 1.00]	0.200 [0, 1.00]
Post-Traumatic Growth			
Mean (SD)	1.44 (0.639)	1.58 (0.739)	1.51 (0.694)
Median [Min, Max]	1.40 [0, 3.00]	1.60 [0, 3.00]	1.50 [0, 3.00]
Displacement			
Mean (SD)	0.594 (0.492)	0.622 (0.485)	0.608 (0.488)
Median [Min, Max]	1.00 [0, 1.00]	1.00 [0, 1.00]	1.00 [0, 1.00]
Missing	2 (0.4%)	0 (0%)	2 (0.2%)

Table (A4) Descriptive Statistics for Outcome Variables by Respondent Gender

	Female	Male	Overall
	(N=500)	(N=500)	(N=1000)
Freq. Personal Exchanges			
Mean (SD)	1.02 (0.674)	1.57 (0.798)	1.29 (0.787)
Median [Min, Max]	1.00 [0, 3.00]	1.50 [0, 3.00]	1.00 [0, 3.00]
Leader of Organization			
Mean (SD)	0.0741 (0.262)	0.190 (0.393)	0.132 (0.339)
Median [Min, Max]	0 [0, 1.00]	0 [0, 1.00]	0 [0, 1.00]
Missing	1 (0.2%)	0 (0%)	1 (0.1%)
Memberships in Organizations			
Mean (SD)	0.406 (0.686)	0.670 (0.927)	0.538 (0.825)
Median [Min, Max]	0 [0, 4.00]	0 [0, 4.00]	0 [0, 4.00]
Freq. Engagment in Events			
Mean (SD)	1.20 (0.905)	1.74 (0.890)	1.47 (0.938)
Median [Min, Max]	1.00 [0, 3.50]	2.00 [0, 4.00]	1.50 [0, 4.00]
Missing	0 (0%)	1 (0.2%)	1 (0.1%)
Public Goods Contribution			
Mean (SD)	279 (313)	316 (292)	297 (303)
Median [Min, Max]	200 [0, 5000]	200 [0, 1500]	200 [0, 5000]

5. Balance on Determinants of Exposure

Table A5 describes the balance in respondent characteristics for respondents that report exposure to CRSV (Conflict-related Sexual Violence, which we are using interchangeably with "Wartime Sexual Violence" in this appendix) in the direct measure and respondents that do not report exposure to CRSV in the direct measure. These are calculated as differences in means t.tests. The only difference between respondents that report CRSV in the direct measure and those that do not that approaches statistical significance is the variable *Female*. Such a difference is to be expected given feminist understandings of women being disproportionately targeted and given that levels of knowledge about victimization may be higher among females in the household.

Table (A5) Balance Table for Direct Measure of CRSV

Variable Name	CRSV=1	CRSV=0	Difference	p-value
Female	0.5902	0.4783	0.1119	0.0931
Head of Household	0.5738	0.6133	-0.0395	0.5511
Age	40.4918	43.4851	-2.9933	0.1804
Education	1.541	1.5595	-0.0185	0.9259
Farmer	0.8689	0.8055	0.0634	0.1689
Married	0.7541	0.841	-0.0869	0.132
Household Size	7.6393	7.1556	0.4837	0.3522
Monthly Income	1.2623	1.381	-0.1187	0.2105
Assets	0.1967	0.2249	-0.0282	0.2433
Previous Social Exchange	2.9344	2.8936	0.0408	0.7604
Previous Social Activity	1.7541	1.7231	0.031	0.7395
Dist. to Village	1.4918	1.5561	-0.0643	0.5192
Dist. from Mines	3.8361	3.9737	-0.1376	0.4679
Dist. from Armed Groups	4.1967	4.3867	-0.19	0.2397
Participated in Survey Before	0.1967	0.1831	0.0137	0.7973
Village Population	1269.0492	1243.6201	25.429	0.8895
Rape in Village	0.2295	0.2162	0.0133	0.895
Rape in Village(7yr)	0.6393	0.5183	0.121	0.4182
Rape in Village (15yr)	1.1148	0.9027	0.212	0.275
Observations	61	874		

Table A6 uses a maximum likelihood logistic regression of Education and Assets on the response to the list experiment treatment. The analysis uses the item count technique regression (ict.reg command) from the "List" package in R in order to simultaneously account for the estimated responses to nonsensitive items in the list experiment while also estimating responses to the CRSV (sensitive) item in the list. We find no evidence that current education or assets (covariates that are plausibly related to previous social exchange) are correlated with exposure to CRSV. It is unlikely that people already more involved in the community were targeted with sexual violence.

Table (A6) Correlates with List Experiment Measure of CRSV

	Estimate	Std. Error
Intercept	-0.699	0.309
Edu	-0.045	0.153
Assets	-1.035	1.171

6. Models for Analyses of Mechanisms: Correlates of Sexual Violence

Tables A7-A16 are regression tables related to Figure 4 "Psychosocial Correlates of Wartime Sexual Violence" and Figure 5 "Other Correlates of Wartime Sexual Violence" in the main paper. For each correlate, we first include the table used directly to create Figures 4 and 5: Ordinal and continuous variables have been normalized for comparability and dichotomous variables are examined using linear regression analyses for ease of interpretation. These are titled "Figure Equivalent." Second, we include the table for each correlate that use non-normalized variables for ordinal and continuous variables and logistic analyses for dichotomous variables.

In our models, we used a measure of levels of stigma that respondents *anticipate* rather than survey measures of levels of stigma that respondents report to have *experienced*. In Tables A.15-A.16, we replace *anticipated stigma* with *experienced stigma* to see if it is similarly associated with reporting sexual violence exposure. We present the analyses using both the normalized and non-normalized stigma variable. As with anticipated stigma, experienced stigma is associated with the list experiment measure. However the relationship with the direct measure of rape is positive and statistically significant at the .05 level.

Table (A7) Anticipated Stigma, Figure Equivalent

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.371***	(0.075)	0.106	(0.068)
CRSV Exposure	0.042	(0.049)	0.643***	(0.023)
List Treatment	-0.008	(0.023)		
Witnessed CRSV	0.016**	(0.006)	-0.003	(0.007)
Homicide	0.096**	(0.032)	0.003	(0.028)
Female	0.011	(0.027)	-0.004	(0.024)
Age	-0.002**	(0.001)	-0.001*	(0.001)
Education	-0.003	(0.01)	0.001	(0.009)
HH Size	-0.003	(0.004)	-0.002	(0.004)
Assets	-0.126+	(0.069)	-0.082	(0.06)
Prev Exchange	-0.009	(0.013)	0.024*	(0.01)
Kabare	0.093*	(0.042)	0.084*	(0.034)
Kalehe	0.211***	(0.037)	0.077*	(0.034)
Mwenga	0.058	(0.049)	0.015	(0.044)
Uvira	0.079+	(0.045)	0.037	(0.036)
Walungu	0.083*	(0.041)	0.045	(0.037)
N	969		969	

Note:
Linear (Normalized)
significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A8) Anticipated Stigma, Not Normalized

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.371***	(0.075)	0.106	(0.068)
CRSV Exposure	0.042	(0.049)	0.643***	(0.023)
List Treatment	-0.008	(0.023)		
Witnessed CRSV	0.016**	(0.006)	-0.003	(0.007)
Homicide	0.096**	(0.032)	0.003	(0.028)
Female	0.011	(0.027)	-0.004	(0.024)
Age	-0.002**	(0.001)	-0.001*	(0.001)
Education	-0.003	(0.01)	0.001	(0.009)
HH Size	-0.003	(0.004)	-0.002	(0.004)
Assets	-0.126+	(0.069)	-0.082	(0.06)
Prev Exchange	-0.009	(0.013)	0.024*	(0.01)
Kabare	0.093*	(0.042)	0.084*	(0.034)
Kalehe	0.211***	(0.037)	0.077*	(0.034)
Mwenga	0.058	(0.049)	0.015	(0.044)
Uvira	0.079+	(0.045)	0.037	(0.036)
Walungu	0.083*	(0.041)	0.045	(0.037)
N	969		969	

Note:
Linear (not normalized)
significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A9) Self-blame, Figure Equivalent

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.364***	(0.063)	0.194**	(0.068)
CRSV Exposure	0.054	(0.041)	0.542***	(0.019)
List Treatment	0.026	(0.019)		
Witnessed CRSV	0.02***	(0.005)	0.002	(0.005)
Homicide	0.021	(0.026)	-0.031	(0.026)
Female	-0.024	(0.023)	-0.031	(0.021)
Age	-0.003***	(0.001)	-0.002**	(0.001)
Education	-0.011	(0.008)	-0.01	(0.008)
HH Size	-0.002	(0.003)	-0.001	(0.003)
Assets	-0.143*	(0.058)	-0.133**	(0.051)
Prev Exchange	-0.005	(0.011)	0.007	(0.009)
Kabare	0.206***	(0.035)	0.152***	(0.035)
Kalehe	0.27***	(0.031)	0.179***	(0.033)
Mwenga	0.001	(0.041)	-0.007	(0.056)
Uvira	0.216***	(0.037)	0.128***	(0.039)
Walungu	0.015	(0.034)	0.038	(0.036)
N	969		969	

Note:
Linear (Normalized)
significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A10) Self-blame, Not Normalized

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.364***	(0.063)	0.194**	(0.068)
CRSV Exposure	0.054	(0.041)	0.542***	(0.019)
List Treatment	0.026	(0.019)		
Witnessed CRSV	0.02***	(0.005)	0.002	(0.005)
Homicide	0.021	(0.026)	-0.031	(0.026)
Female	-0.024	(0.023)	-0.031	(0.021)
Age	-0.003***	(0.001)	-0.002**	(0.001)
Education	-0.011	(0.008)	-0.01	(0.008)
HH Size	-0.002	(0.003)	-0.001	(0.003)
Assets	-0.143*	(0.058)	-0.133**	(0.051)
Prev Exchange	-0.005	(0.011)	0.007	(0.009)
Kabare	0.206***	(0.035)	0.152***	(0.035)
Kalehe	0.27***	(0.031)	0.179***	(0.033)
Mwenga	0.001	(0.041)	-0.007	(0.056)
Uvira	0.216***	(0.037)	0.128***	(0.039)
Walungu	0.015	(0.034)	0.038	(0.036)
N	969		969	

Note:
Linear (not normalized)
significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A11) Post Traumatic Growth, Figure Equivalent

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.221***	(0.043)	0.181***	(0.05)
CRSV Exposure	-0.047+	(0.028)	0.066	(0.046)
List Treatment	-0.024+	(0.013)		
Witnessed CRSV	0.004	(0.003)	0	(0.005)
Homicide	0.046*	(0.018)	0.028	(0.021)
Female	-0.003	(0.015)	-0.017	(0.019)
Age	0	(0)	0	(0)
Education	0.016**	(0.006)	0.017**	(0.006)
HH Size	0.007**	(0.002)	0.008***	(0.002)
Assets	0.071+	(0.039)	0.058	(0.044)
Prev Exchange	0.039***	(0.007)	0.045***	(0.009)
Kabare	0.133***	(0.023)	0.137***	(0.026)
Kalehe	0.185***	(0.021)	0.179***	(0.024)
Mwenga	-0.106***	(0.027)	-0.135***	(0.033)
Uvira	0.041	(0.025)	0.033	(0.027)
Walungu	0.174***	(0.023)	0.159***	(0.029)
N	969		969	

Note:
Linear (Normalized)
significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A12) Post Traumatic Growth, Not Normalized

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.663***	(0.128)	0.543***	(0.15)
CRSV Exposure	-0.14+	(0.083)	0.199	(0.138)
List Treatment	-0.073+	(0.039)		
Witnessed CRSV	0.013	(0.01)	0.001	(0.016)
Homicide	0.137*	(0.054)	0.085	(0.062)
Female	-0.008	(0.046)	-0.051	(0.057)
Age	-0.001	(0.001)	0	(0.001)
Education	0.048**	(0.017)	0.052**	(0.019)
HH Size	0.02**	(0.006)	0.023***	(0.007)
Assets	0.213+	(0.117)	0.173	(0.132)
Prev Exchange	0.117***	(0.022)	0.134***	(0.026)
Kabare	0.398***	(0.07)	0.41***	(0.077)
Kalehe	0.555***	(0.063)	0.538***	(0.072)
Mwenga	-0.318***	(0.082)	-0.405***	(0.1)
Uvira	0.124	(0.076)	0.1	(0.08)
Walungu	0.523***	(0.069)	0.477***	(0.086)
N	969		969	

Note:

Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A13) Displacement, Figure Equivalent

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	0.391***	(0.095)	0.012	(0.074)
CRSV Exposure	0.034	(0.062)	0.903***	(0.092)
List Treatment	-0.041	(0.029)		
Witnessed CRSV	0.029***	(0.008)	-0.005	(0.006)
Homicide	0.179***	(0.04)	0.003	(0.023)
Female	-0.026	(0.034)	-0.027	(0.022)
Age	-0.001	(0.001)	0	(0.001)
Education	-0.008	(0.013)	0.001	(0.01)
HH Size	0.011*	(0.004)	0.002	(0.003)
Assets	-0.147+	(0.087)	-0.042	(0.044)
Prev Exchange	0.032+	(0.017)	0.022*	(0.009)
Kabare	-0.112*	(0.052)	0.001	(0.033)
Kalehe	0.186***	(0.046)	-0.003	(0.036)
Mwenga	0.233***	(0.061)	0.048	(0.038)
Uvira	0.341***	(0.056)	0.735***	(0.076)
Walungu	0.136**	(0.051)	0.03	(0.032)
N	969		969	

Note:

Linear (Dichotomous)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A14) Displacement, Logistic

	Direct (Model 1)		Indirect Pred (Model 2)	
	Coef	SE	Coef	SE
(Intercept)	-0.742	(0.473)	-1.787**	(0.633)
CRSV Exposure	0.162	(0.358)	2.009***	(0.597)
List Treatment	-0.22	(0.146)		
Witnessed CRSV	0.273***	(0.068)	0.008	(0.125)
Homicide	1.007***	(0.228)	0.597*	(0.299)
Female	-0.1	(0.169)	-0.07	(0.228)
Age	-0.005	(0.005)	-0.003	(0.006)
Education	-0.038	(0.063)	-0.088	(0.084)
HH Size	0.055*	(0.023)	0.056+	(0.03)
Assets	-0.718+	(0.432)	-0.729	(0.551)
Prev Exchange	0.177*	(0.084)	0.349**	(0.116)
Kabare	-0.334	(0.251)	-0.336	(0.348)
Kalehe	0.918***	(0.229)	0.992**	(0.322)
Mwenga	1.155***	(0.305)	1.235**	(0.427)
Uvira	1.811***	(0.311)	2.153***	(0.382)
Walungu	0.71**	(0.244)	0.85**	(0.33)
N	969		969	

Note:

Logistic (Dichotomous)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A15) Correlate, Experienced Stigma Normalized

	Direct		Indirect Pred	
	Coef	SE	Coef	SE
(Intercept)	0.167***	(0.028)	0.106***	(0.03)
CRSV Exposure	0.037*	(0.018)	0.279***	(0.011)
List Treatment	0.004	(0.009)		
Witnessed CRSV	0.006**	(0.002)	0.001	(0.002)
Homicide	0.023+	(0.012)	0.011	(0.011)
Female	0.023*	(0.01)	0.013	(0.011)
Age	-0.001***	(0)	-0.001**	(0)
Education	-0.009*	(0.004)	-0.004	(0.004)
HH Size	-0.003*	(0.001)	-0.001	(0.001)
Assets	0.002	(0.026)	0	(0.026)
Prev Exchange	-0.006	(0.005)	0.003	(0.005)
Kabare	0.033*	(0.016)	0.028*	(0.014)
Kalehe	0.042**	(0.014)	0.023+	(0.013)
Mwenga	0.031+	(0.018)	-0.005	(0.017)
Uvira	-0.026	(0.017)	-0.021	(0.016)
Walungu	-0.005	(0.015)	-0.003	(0.016)
N	969		969	

Note:

Linear (Normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A16) Correlate, Experienced Stigma Not Normalized

	Direct		Indirect Pred	
	Coef	SE	Coef	SE
(Intercept)	0.669***	(0.113)	0.426***	(0.118)
CRSV Exposure	0.146*	(0.074)	1.116***	(0.042)
List Treatment	0.015	(0.035)		
Witnessed CRSV	0.025**	(0.009)	0.004	(0.008)
Homicide	0.093+	(0.048)	0.045	(0.044)
Female	0.094*	(0.041)	0.054	(0.043)
Age	-0.004***	(0.001)	-0.004**	(0.001)
Education	-0.035*	(0.015)	-0.018	(0.017)
HH Size	-0.014*	(0.005)	-0.006	(0.006)
Assets	0.007	(0.104)	0.001	(0.104)
Prev Exchange	-0.026	(0.02)	0.014	(0.019)
Kabare	0.13*	(0.062)	0.111*	(0.056)
Kalehe	0.168**	(0.056)	0.092+	(0.053)
Mwenga	0.124+	(0.073)	-0.019	(0.068)
Uvira	-0.102	(0.067)	-0.084	(0.065)
Walungu	-0.021	(0.061)	-0.011	(0.064)
N	969		969	

Note:

Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

7. Models is Main Analysis: Social and Political Effects of Wartime Sexual Violence

Tables A.17-A.21 are regression tables related to Figure 3 "Social and Political Effects of Wartime Sexual Violence" in the main paper. Each table is for a single outcome variable. For Models 1 and 2 we include the models we used directly to create Figure 3: Ordinal and continuous variables have been normalized for comparability and dichotomous variables are examined using linear regression analyses for ease of interpretation. In Models 3 and 4, we show the non-normalized variables for ordinal and continuous variables and logistic analyses for dichotomous variables.

Table (A17) Freq. Personal Exchanges

	Direct (Model 1)		Indirect Pred (Model 2)		Direct (Model 3)		Indirect Pred (Model 4)	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
(Intercept)	0.142**	(0.048)	0.114*	(0.058)	0.426**	(0.145)	0.341*	(0.173)
CRSV Exposure	0.004	(0.031)	0.108*	(0.049)	0.011	(0.094)	0.325*	(0.146)
List Treatment	0.003	(0.015)			0.009	(0.045)		
Witnessed CRSV	0.002	(0.004)	-0.008	(0.008)	0.007	(0.012)	-0.024	(0.025)
Homicide	0.044*	(0.02)	0.029	(0.023)	0.132*	(0.061)	0.087	(0.069)
Female	-0.111***	(0.017)	-0.121***	(0.021)	-0.333***	(0.052)	-0.364***	(0.064)
Age	0.001**	(0)	0.001**	(0.001)	0.004**	(0.001)	0.004**	(0.002)
Education	0.025***	(0.006)	0.021**	(0.007)	0.074***	(0.019)	0.064**	(0.021)
HH Size	0.005*	(0.002)	0.003	(0.003)	0.015*	(0.007)	0.01	(0.008)
Assets	0.102*	(0.044)	0.1*	(0.05)	0.307*	(0.133)	0.3*	(0.15)
Prev Exchange	0.061***	(0.008)	0.069***	(0.01)	0.182***	(0.025)	0.206***	(0.03)
Kabare	-0.037	(0.027)	-0.016	(0.032)	-0.111	(0.08)	-0.049	(0.097)
Kalehe	-0.007	(0.024)	-0.005	(0.029)	-0.022	(0.071)	-0.016	(0.088)
Mwenga	0.105***	(0.031)	0.116**	(0.038)	0.316***	(0.093)	0.347**	(0.114)
Uvira	0.035	(0.029)	0.042	(0.033)	0.105	(0.086)	0.127	(0.1)
Walungu	-0.009	(0.026)	0.006	(0.033)	-0.026	(0.078)	0.018	(0.099)
N	969		969		969		969	

Note:

M1 & M2 Linear (normalized)

M3 & M4 Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A18) Leader of Organization

	Direct (Model 1)		Indirect Pred (Model 2)		Direct (Model 3)		Indirect Pred (Model 4)	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
(Intercept)	-0.357***	(0.066)	-0.153**	(0.054)	-6.968***	(0.789)	-7.815***	(1.092)
CRSV Exposure	0.017	(0.043)	0.777***	(0.032)	0.112	(0.433)	2.075**	(0.721)
List Treatment	0.005	(0.02)			0.124	(0.214)		
Witnessed CRSV	0.012*	(0.005)	-0.008***	(0.002)	0.086+	(0.047)	-0.115	(0.108)
Homicide	-0.012	(0.028)	-0.044**	(0.016)	-0.049	(0.301)	-0.437	(0.428)
Female	0.003	(0.024)	-0.01	(0.015)	-0.072	(0.262)	-0.509	(0.383)
Age	0.002*	(0.001)	0.001	(0)	0.014+	(0.008)	0.012	(0.01)
Education	0.074***	(0.009)	0.024***	(0.005)	0.642***	(0.093)	0.655***	(0.111)
HH Size	0.011***	(0.003)	0.005+	(0.003)	0.102**	(0.031)	0.108**	(0.041)
Assets	0.102+	(0.061)	0.048	(0.045)	1.053+	(0.623)	1.043	(0.813)
Prev Exchange	0.034**	(0.012)	0.022***	(0.007)	0.313**	(0.12)	0.504**	(0.183)
Kabare	0.143***	(0.036)	0.065*	(0.03)	1.524***	(0.423)	1.926***	(0.544)
Kalehe	0.129***	(0.032)	0.018	(0.025)	1.37***	(0.391)	1.319**	(0.489)
Mwenga	0.025	(0.043)	-0.012	(0.034)	0.214	(0.545)	-0.257	(0.699)
Uvira	0.063	(0.039)	0.013	(0.031)	0.582	(0.522)	0.605	(0.635)
Walungu	0.153***	(0.036)	0.039	(0.028)	1.598***	(0.417)	1.375*	(0.535)
N	968		968		968		968	

Note:

M1 & M2 Linear (dichotomous)

M3 & M4 Logistic (dichotomous)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A19) Membership in Organization

	Direct (Model 1)		Indirect Pred (Model 2)		Direct (Model 3)		Indirect Pred (Model 4)	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
(Intercept)	-0.107**	(0.041)	-0.105*	(0.047)	-0.429**	(0.162)	-0.42*	(0.187)
CRSV Exposure	0.035	(0.026)	0.332***	(0.013)	0.14	(0.105)	1.33***	(0.054)
List Treatment	-0.01	(0.012)			-0.04	(0.05)		
Witnessed CRSV	0.009**	(0.003)	0	(0.003)	0.036**	(0.013)	0.002	(0.013)
Homicide	0.005	(0.017)	-0.011	(0.015)	0.021	(0.068)	-0.043	(0.061)
Female	-0.006	(0.015)	0.001	(0.018)	-0.026	(0.058)	0.004	(0.07)
Age	0	(0)	0.001	(0)	0.001	(0.002)	0.002	(0.002)
Education	0.038***	(0.005)	0.028***	(0.006)	0.15***	(0.022)	0.113***	(0.026)
HH Size	0.008***	(0.002)	0.006**	(0.002)	0.032***	(0.008)	0.023**	(0.008)
Assets	0.02	(0.037)	0.004	(0.044)	0.08	(0.149)	0.014	(0.175)
Prev Exchange	0.021**	(0.007)	0.019**	(0.006)	0.084**	(0.028)	0.076**	(0.026)
Kabare	0.068**	(0.022)	0.042+	(0.023)	0.271**	(0.089)	0.167+	(0.094)
Kalehe	0.094***	(0.02)	0.036+	(0.021)	0.375***	(0.079)	0.144+	(0.083)
Mwenga	-0.008	(0.026)	-0.014	(0.029)	-0.032	(0.105)	-0.056	(0.115)
Uvira	0.009	(0.024)	-0.002	(0.027)	0.035	(0.097)	-0.008	(0.108)
Walungu	0.053*	(0.022)	0.034	(0.024)	0.211*	(0.087)	0.137	(0.095)
N	969		969		969		969	

Note:

M1 & M2 Linear (normalized)

M3 & M4 Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A20) Freq. Engagement in Events

	Direct (Model 1)		Indirect Pred (Model 2)		Direct (Model 3)		Indirect Pred (Model 4)	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
(Intercept)	0.364***	(0.045)	0.361***	(0.056)	1.456***	(0.181)	1.442***	(0.223)
CRSV Exposure	-0.004	(0.03)	0.153***	(0.038)	-0.017	(0.118)	0.613***	(0.15)
List Treatment	0.003	(0.014)			0.013	(0.056)		
Witnessed CRSV	0.012**	(0.004)	0.001	(0.006)	0.047**	(0.014)	0.005	(0.022)
Homicide	0.033+	(0.019)	0.019	(0.022)	0.133+	(0.076)	0.078	(0.089)
Female	-0.113***	(0.016)	-0.156***	(0.022)	-0.451***	(0.065)	-0.623***	(0.089)
Age	-0.001	(0)	-0.001*	(0.001)	-0.003	(0.002)	-0.004*	(0.002)
Education	0.007	(0.006)	0.004	(0.007)	0.027	(0.024)	0.016	(0.027)
HH Size	0.004+	(0.002)	0.005+	(0.003)	0.015+	(0.009)	0.019+	(0.01)
Assets	0.027	(0.042)	0.037	(0.052)	0.107	(0.167)	0.147	(0.208)
Prev Exchange	0.024**	(0.008)	0.027**	(0.009)	0.097**	(0.032)	0.11**	(0.035)
Kabare	-0.025	(0.025)	-0.017	(0.031)	-0.1	(0.1)	-0.068	(0.124)
Kalehe	-0.019	(0.022)	-0.019	(0.028)	-0.075	(0.089)	-0.077	(0.112)
Mwenga	-0.117***	(0.029)	-0.153***	(0.039)	-0.467***	(0.117)	-0.613***	(0.156)
Uvira	-0.129***	(0.027)	-0.126***	(0.035)	-0.516***	(0.108)	-0.505***	(0.14)
Walungu	0.015	(0.024)	0.024	(0.032)	0.059	(0.098)	0.097	(0.129)
N	969		969		969		969	

Note:

M1 & M2 Linear (normalized)

M3 & M4 Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

Table (A21) Public Goods Contribution

	Direct (Model 1)		Indirect Pred (Model 2)		Direct (Model 3)		Indirect Pred (Model 4)	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
(Intercept)	0.035**	(0.012)	0.032*	(0.016)	174.181**	(62.173)	158.56*	(80.066)
CRSV Exposure	0.009	(0.008)	0.025	(0.016)	45.034	(40.463)	124.054	(81.475)
List Treatment	0.006	(0.004)			31.434	(19.102)		
Witnessed CRSV	-0.002*	(0.001)	-0.003	(0.002)	-10.762*	(4.957)	-14.257	(9.108)
Homicide	0.004	(0.005)	0	(0.007)	18.752	(26.13)	-0.311	(37.32)
Female	-0.001	(0.004)	-0.005	(0.007)	-3.446	(22.253)	-26.045	(34.622)
Age	0	(0)	0	(0)	-0.645	(0.635)	-0.627	(0.843)
Education	0.004**	(0.002)	0.005*	(0.002)	22.293**	(8.303)	23.227*	(10.481)
HH Size	0.001*	(0.001)	0.002*	(0.001)	5.818*	(2.932)	8.026*	(3.599)
Assets	0.033**	(0.011)	0.029*	(0.015)	167.433**	(57.177)	146.563*	(74.553)
Prev Exchange	0	(0.002)	0.002	(0.003)	0.272	(10.875)	10.432	(16.857)
Kabare	0.011+	(0.007)	0.011	(0.009)	57.309+	(34.263)	57.256	(42.575)
Kalehe	-0.003	(0.006)	-0.007	(0.008)	-15.091	(30.473)	-36.622	(41.35)
Mwenga	0.011	(0.008)	0.001	(0.011)	53.071	(40.091)	3.041	(56.416)
Uvira	-0.002	(0.007)	-0.005	(0.009)	-8.091	(37.032)	-25.677	(44.332)
Walungu	0.012+	(0.007)	0.007	(0.009)	60.415+	(33.552)	32.739	(44.195)
N	969		969		969		969	

Note:

M1 & M2 Linear (normalized)

M3 & M4 Linear (not normalized)

significance levels indicated as +p<.1 *p<=.05, **p<.01, ***p<.001

8. Comparison of Survey Measures with Geospatial Measures

In this section, we evaluate the correlation between our survey-based measure of household exposure to sexual violence and prominent, publicly available, and commonly used, geospatial conflict event data. Specifically, we conducted an analysis of three types of violent events occurring within a 5km radius of each sampled village, associating these events with the households surveyed in those respective villages. The three categories of geospatial data considered were as follows: i) ACLED subsetted to violence against civilians (henceforth *acled.all*), ii) ACLED subsetted to sexual violence against civilians (henceforth *acled.sv*), and iii) UCDP-GED subsetted for violence against civilians (henceforth *ged.all*).[1] To ensure temporal alignment with our survey measures, we restricted our analyses to the period spanning from 2002 to 2017.

Table A22 shows that *acled.all* and *acled.sv* measures are both positively and significantly correlated with our direct individual-level measure of sexual violence. *ged.all* shows no correlation with the direct measure. This gives reason to believe that the direct self-reported sexual violence question in our survey is consistent with other sources where conflict has been reported. However, as show in in Table A23, neither *acled.all*, *acled.sv*, nor *ucdp.all* correlates significantly with the list experiment. There are many reasons why the household measure and the conflict event measure may not correlate. For instance, within-village variation captured with household data is removed, by definition, when using conflict event data to assign sexual violence exposure to all households within a geographic radius. More importantly, perhaps, ACLED and UCDP-GED do only pick up violent events recorded in news sources. There are known biases in conflict event data and we expect that many events that our household data, in particular the list experiment, include are not captured by event data. Overall, we consider that ACLED and UCDP-GED data come with profound limitations for the analysis of individual- and household-level attitudes and behavior in response to conflict.

Even while the ACLED measures are positively and significantly correlated with our direct measure of individual exposure to sexual violence (Table A22), the ACLED and UCDP-GED measures do not yield comparable results to our main analysis when we regress the sociopolitical outcomes on *acled.all*, *acled.sv*, and *ged.all*. Tables A24-A28 show the estimated linear relationship between spatial measures and socio-political outcomes controlling for the same covariates as included in our main models.[2] Tables A24-A28 use clustered standard errors to account for the way in which all respondents are coded as having been exposed to sexual violence in the same village. Figure A1 summarizes estimated coefficients and standard errors from Tables A24-28.

Figure A1 and Tables A24-A28 show that relationships are insignificant (as in our direct measure of Sexual Violence in our main analysis). However, in some cases *acled.sv* predicts decreased levels of socio-political engagement by community members (negative significant correlation). While we suggest to interpret these results with caution due to compound assignment to experiences to violence, we speculate that shifting the level of analysis from the household level—which is what our main analysis does—to the community level—which is what the assignment of conflict event data on households does—could produce diverging findings.

[1]For more information on these datasets see ACLED. (2019). "ACLED Codebook, 2019." Armed Conflict Location & Event Data Project (ACLED). and Hogbladh Stina, 2023, "UCDP GED Codebook version 23.1", Department of Peace and Conflict Research, Uppsala University as well as Sundberg et al (2013) and Raleigh et al (2023) cited in References.

[2]Note that the variable "List Experiment" is whether an individual was treated with the sensitive item, also a control variable in our main models.

Table (A22) Correlations between spatial measure of Violence and our direct measure of SV

	Dependent variable:		
	rape_yes		
	(1)	(2)	(3)
acled.all	0.003*** (0.001)		
acled.sv		0.005** (0.002)	
ged.all			−0.001 (0.003)
Constant	0.053*** (0.009)	0.061*** (0.008)	0.067*** (0.009)
Observations	968	968	968
R^2	0.010	0.005	0.0001
Adjusted R^2	0.009	0.004	-0.001
Note:			*p<0.1; **p<0.05; ***p<0.01

Bivariate linear model regressing the direct survey measure on spatial measures from ACLED and UCDP-GED

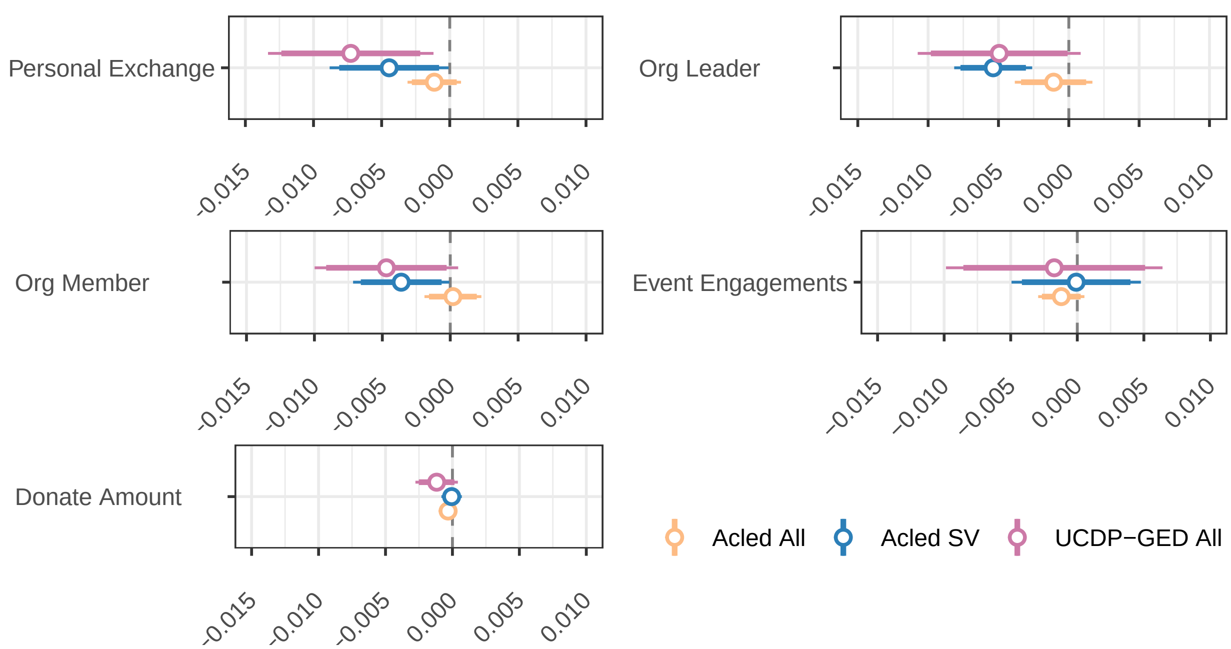


Figure (A1) Spatial measures and socio-political outcomes (Coefficients from Tables A24-A28)

Table (A23) Correlations between Spatial measures and List measure of SV

Coefficient	Standard Error
0.002	0.008
0.024	0.020
-0.014	0.025

Note:
Bivariate linear model regressing spatial measure on our list experiment measure using ict.reg from the list package.

Table (A24) Political Exchange

	Dependent variable:		
	(1)	(2)	(3)
Acled All	-0.001 (0.001)		
Acled SV		-0.004^{**} (0.002)	
UCDP-GED All			-0.007^{**} (0.003)
List Treatment	0.004 (0.014)	0.003 (0.014)	0.002 (0.014)
Witnessed CRSV	0.002 (0.004)	0.001 (0.004)	0.002 (0.004)
Homicide	0.046^{**} (0.020)	0.046^{**} (0.020)	0.042^{**} (0.020)
Female	0.109^{***} (0.018)	0.110^{***} (0.018)	0.108^{***} (0.018)
Age	0.001^{***} (0.001)	0.001^{***} (0.001)	0.002^{***} (0.001)
Education	0.026^{***} (0.006)	0.025^{***} (0.006)	0.026^{***} (0.006)
HH Size	0.004^{*} (0.002)	0.004^{*} (0.002)	0.004^{*} (0.002)
Assets	0.108^{**} (0.050)	0.113^{**} (0.050)	0.111^{**} (0.050)
Prev. Exchange	0.062^{***} (0.008)	0.062^{***} (0.008)	0.063^{***} (0.008)
Constant	0.032 (0.043)	0.036 (0.043)	0.035 (0.043)
Territory Fixed Effects	Yes	Yes	Yes
Observations	948	948	948
R^2	0.231	0.233	0.234
Adjusted R^2	0.219	0.221	0.222

Note: *p<0.1; **p<0.05; ***p<0.01
Linear Models with Normalized Outcome Variables
Standard Errors clustered at the Village Level

Table (A25) Org Leader

	Dependent variable:		
	(1)	(2)	(3)
Acled All	−0.001 (0.001)		
Acled SV		-0.005^{***} (0.001)	
UCDP-GED All			-0.005^{*} (0.003)
List Treatment	0.011 (0.019)	0.011 (0.019)	0.009 (0.019)
Witnessed CRSV	0.011^{**} (0.006)	0.011^{*} (0.005)	0.012^{**} (0.006)
Homicide	−0.008 (0.027)	−0.008 (0.027)	−0.011 (0.027)
Female	−0.007 (0.027)	−0.006 (0.027)	−0.007 (0.027)
Age	0.002^{**} (0.001)	0.002^{**} (0.001)	0.002^{**} (0.001)
Education	0.074^{***} (0.012)	0.073^{***} (0.012)	0.074^{***} (0.012)
HH Size	0.011^{***} (0.003)	0.011^{***} (0.003)	0.011^{***} (0.003)
Assets	0.120^{*} (0.063)	0.129^{**} (0.065)	0.121^{*} (0.064)
Prev. Exchange	0.036^{***} (0.012)	0.036^{***} (0.012)	0.037^{***} (0.012)
Constant	-0.368^{***} (0.062)	-0.361^{***} (0.061)	-0.368^{***} (0.060)
Territory Fixed Effects	Yes	Yes	Yes
Observations	947	947	947
R^2	0.172	0.174	0.173
Adjusted R^2	0.159	0.161	0.159
Note:			*p<0.1; **p<0.05; ***p<0.01
			Linear Models with Normalized Outcome Variables
			Standard Errors clustered at the Village Level

Table (A26) Org Member

	Dependent variable:		
	(1)	(2)	(3)
Acled All	0.0002 (0.001)		
Acled SV		-0.004^{**} (0.002)	
UCDP-GED All			-0.005^{*} (0.003)
List Treatment	−0.008 (0.011)	−0.007 (0.011)	−0.008 (0.011)
Witnessed CRSV	0.009^{***} (0.004)	0.009^{**} (0.004)	0.010^{***} (0.004)
Homicide	0.010 (0.020)	0.011 (0.020)	0.008 (0.020)
Female	0.003 (0.015)	0.003 (0.015)	0.002 (0.015)
Age	0.0003 (0.0004)	0.0003 (0.0004)	0.0004 (0.0004)
Education	0.037^{***} (0.006)	0.037^{***} (0.006)	0.038^{***} (0.006)
HH Size	0.009^{***} (0.002)	0.008^{***} (0.002)	0.008^{***} (0.002)
Assets	0.023 (0.032)	0.035 (0.033)	0.031 (0.032)
Prev. Exchange	0.022^{***} (0.007)	0.022^{***} (0.008)	0.022^{***} (0.007)
Constant	-0.123^{***} (0.038)	-0.113^{***} (0.038)	-0.116^{***} (0.037)
Territory Fixed Effects	Yes	Yes	Yes
Observations	948	948	948
R^2	0.161	0.164	0.164
Adjusted R^2	0.147	0.151	0.150
Note:			*p<0.1; **p<0.05; ***p<0.01
			Linear Models with Normalized Outcome Variables
			Standard Errors clustered at the Village Level

Table (A27) Event Engagements

	Dependent variable:		
	(1)	(2)	(3)
Acled All	−0.001 (0.001)		
Acled SV		−0.0001 (0.002)	
UCDP-GED All			−0.002 (0.004)
List Treatment	0.0001 (0.014)	−0.001 (0.014)	−0.001 (0.014)
Witnessed CRSV	0.011*** (0.004)	0.011*** (0.004)	0.011*** (0.004)
Homicide	0.032** (0.016)	0.031** (0.015)	0.030* (0.016)
Female	0.117*** (0.020)	0.118*** (0.020)	0.117*** (0.020)
Age	−0.001* (0.0005)	−0.001* (0.0005)	−0.001* (0.0005)
Education	0.008 (0.006)	0.007 (0.006)	0.007 (0.006)
HH Size	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)
Assets	0.034 (0.047)	0.028 (0.046)	0.030 (0.046)
Prev. Exchange	0.021** (0.009)	0.021** (0.009)	0.021** (0.009)
Constant	0.268*** (0.042)	0.262*** (0.043)	0.264*** (0.043)
Territory Fixed Effects	Yes	Yes	Yes
Observations	948	948	948
R^2	0.172	0.170	0.171
Adjusted R^2	0.159	0.157	0.157
Note:			*p<0.1; **p<0.05; ***p<0.01
			Linear Models with Normalized Outcome Variables
			Standard Errors clustered at the Village Level

Table (A28) Donate Amount

	Dependent variable:		
	(1)	(2)	(3)
Acled All	−0.0003* (0.0002)		
Acled SV		−0.0001 (0.0004)	
UCDP-GED All			−0.001 (0.001)
List Treatment	0.006 (0.004)	0.006 (0.004)	0.005 (0.004)
Witnessed CRSV	−0.002** (0.001)	−0.002** (0.001)	−0.002** (0.001)
Homicide	0.007 (0.005)	0.007 (0.005)	0.006 (0.005)
Female	0.0002 (0.005)	0.0005 (0.005)	0.0003 (0.005)
Age	−0.0002 (0.0001)	−0.0002 (0.0001)	−0.0002 (0.0001)
Education	0.005*** (0.002)	0.005*** (0.002)	0.005*** (0.002)
HH Size	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)
Assets	0.032*** (0.010)	0.030*** (0.010)	0.032*** (0.010)
Prev. Exchange	0.0003 (0.002)	0.0004 (0.002)	0.0005 (0.002)
Constant	0.036*** (0.010)	0.034*** (0.010)	0.035*** (0.009)
Territory Fixed Effects	Yes	Yes	Yes
Observations	948	948	948
R^2	0.069	0.066	0.069
Adjusted R^2	0.054	0.051	0.054
Note:			*p<0.1; **p<0.05; ***p<0.01
			Linear Models with Normalized Outcome Variables
			Standard Errors clustered at the Village Level

9. List Experiment Modeling and Assumptions

There are three main assumptions that are important to consider and validate when analyzing list experiments. In this Appendix Section 9, we analyze the assumptions descriptively and conduct standard statistical tests outlined by Blair and Imai (2012), Aronow et al. (2015), and Buckley et al (2022). This section is organized according to the three key assumptions in analyses of list experiments as described in Imai (2011). The following sections of the appendix assess potential violations of these assumptions.

1. Assumption 1: Randomization of treatment

2. Assumption 2: No design effect. This addresses the question of whether respondents give different responses to control items depending on whether treatment item is included.

3. Assumption 3: No liars. Respondents give a truthful response to the list experiment.

To preview, do not find evidence of assumption violations either descriptively or statistically in a wide range of tests.

9.1 Assumption 1: Randomization of Treatment

List experiments rely on randomization of respondents to treatment and control conditions. Table A29 provides a balance check of our randomization, showing similarity between respondents in treatment and control across a range of descriptive characteristics. The balance check indicates that the list experiment was randomized successfully. There are no differences between treatment and control groups that give any reason for concern.

Table (A29) Balance Table for List Experiment Randomization

Variable Name	List Treatment = 1	List Treatment = 0	Difference	p-value
Female	0.4854	0.4858	-4e-04	0.9897
Head of Household	0.6151	0.6061	0.0089	0.7797
Age	43.0628	43.5274	-0.4646	0.6703
Education	1.5628	1.5536	0.0092	0.9234
Farmer	0.7866	0.8337	-0.0471	0.0663
Married	0.8201	0.8512	-0.0311	0.1993
Household Size	7.0774	7.302	-0.2246	0.305
Monthly Income	1.3619	1.3851	-0.0232	0.6452
Assets	0.2318	0.214	0.0178	0.1437
Previous Social Exchange	2.9017	2.8906	0.0111	0.851
Previous Social Activity	1.6883	1.7637	-0.0754	0.1124
Dist. to Village	1.5439	1.5602	-0.0162	0.759
Dist. from Mines	3.9268	4.0044	-0.0776	0.3838
Dist. from Armed Groups	4.4184	4.3282	0.0902	0.1783
Participated in Survey Before	0.1799	0.1882	-0.0083	0.7447
Village Population	1321.8556	1165.1838	156.6718	0.1234
Rape in Village	0.2176	0.2166	9e-04	0.9831
Rape in Village(7yr)	0.4854	0.5689	-0.0836	0.2328
Rape in Village (15yr)	0.8494	0.9869	-0.1375	0.121
Observations	478	457		

9.2 Assumption 2: No Design Effects

Analysis of list experiments requires an assumption of no design effects. In the presence of design effects, the inclusion of the sensitive item in the list of options would change responses to the control (non-sensitive) items in the list of items, and thus confound our interpretation of the comparison between treatment and control using difference in means or other methods to estimate sexual violence. An example of a design effect would be that respondents recall a non-sensitive item because of the existence of a sensitive item in the list. In this section, we examine this assumption to validate our list experiment estimate.

9.2.1 Distribution of LE Responses in Treatment and Control

We first examine the distribution of responses to the list experiment descriptively. Table A30 shows the distribution of list experiment responses in treatment and control conditions of the list experiment.[3]

Table (A30) Distribution of LE Responses

	Frequency_Control	Proportion_Control	Frequency_Treatment	Proportion_Treatment
0	98	0.207	95	0.192
1	134	0.283	155	0.313
2	174	0.367	143	0.289
3	68	0.143	74	0.149
4	0	0.000	28	0.057

14.9% of people (74 respondents) in treatment condition responded yes to three items, with a similar number reporting three items in the control condition. Only 5.7% of people in the treatment condition responded yes to 4 items, meaning these respondents reported yes to the sensitive item even though no increased privacy was provided relative to the direct question formulation. This is reasonable given that a similar proportion of respondents also reported to the direct question in our survey. Overall, the majority of our respondents answering with a response of 1 or 2 items in the control conditions, a feature of well designed list experiments.

However, Table A30 also shows that 20.7% in control and 19.2% in treatment responded no to all items. This proportion is slightly higher than ideal, but it is not as high as prominent work using list experiments that find no statistical evidence of design effects.[4]

9.2.2 Statistical Design Effects Test (Blair and Imai 2012)

Blair and Imai (2012) have provided a tool to increase the efficiency of list experiments by predicting the likelihood of each respondent in the sample having experienced the sensitive item and the non-sensitive items. This robust modeling alternative is available through "List" package in R.

Design effects occur if an individual's response to the non-sensitive items in the list experiment changes depending upon whether or not the respondent receives the treatment of the sensitive item. "[I]f the assumption of no design effect is satisfied, the addition of the sensitive item to the control list makes the response variable of the treatment group larger than the control response [. . .], but at most by one item." (Blair and Imai 2012, p.64). If the estimated proportions are negative and unusually large, there is a possibility that there are design effects.

[3] This table reflects Table 2 on p. 58 in Blair and Imai (2012).

[4] See, for example, distributions in Table 2, p. 58 of Blair and Imai 2012 which estimates (at the ceiling) 39% of respondents in control and 24% in treatment for the sensitive item on affirmative action. They go on to find no evidence of design effects for this affirmative action study.

Table (A31) Estimated respondent types for the list experiment

	PropSensitiveEst=0	s.e.	PropSensitiveEst=1	s.e.
ControlItem=0	0.192	0.018	0.015	0.026
ControlItem=1	0.298	0.029	-0.016	0.032
ControlItem=2	0.304	0.029	0.063	0.024
ControlItem=3	0.087	0.019	0.057	0.010
Total	0.882		0.118	

Table A31 shows the estimates from the latent variable model. There is only one negative estimate, but it is not large and not statistically different from zero. We implement Blair and Imai's (2012) design effects test estimating a Bonferroni-corrected p-value to examine the null hypothesis that this value has arisen by chance. The Bonferroni-corrected p-value testing for design effects is estimated to be .6278 using the generalized moment selection procedure which increases the power of the test.[5] This means that we fail to reject the null hypothesis of no design effect, meaning that we don't have evidence suggesting that there is a design effect based on this test.

9.3 Assumption 3: No Liars

The third assumption deals with whether respondents are provided the anonymity within the list experiment to provide private but truthful answers to the sensitive item. Ideally, non-sensitive items in a list experiment will be negatively correlated with one another such that there are very few responses of "yes" to all non-sensitive items and very few responses of "no" to all non-sensitive items.

Ceiling effects refers to a situation where a respondent has experienced all three non-sensitive items and thus decides not to reveal the sensitive item because that would remove anonymity. This would lead to an underestimation of sexual violence when using the list experiment and a violation of the no liars assumption in particular. Floor effects would occur if the control items are so rare that most people are expected to respond no to all sensitive items. Ceiling or floor effects would lead to an underestimation of sexual violence and violation of assumptions central to estimating list experiments. In DR Congo, the occurrence of the non-sensitive items are not theoretically rare, but we still evaluate this assumption through examining ceiling and floor effects and their potential impact on people's responses.

9.3.1 Descriptive Evidence: Blair and Imai (2012)

The distributions of responses in the list experiment (Table A30) shows most respondents in the control group respond with one or two non-sensitive items, suggesting ceiling and floor effects should be minimal if existent. We estimate the probability of each respondent having experienced sexual violence based on our covariates using a maximum likelihood model. Table A31 shows the distribution of respondents estimated to have responded yes to the control items and/or sensitive items using the latent variable estimation procedure.

In Table A31, 8.7% of people are estimated (by our model) not to have experienced sexual violence (the sensitive item) are also estimated to have responded yes to all three control items. 5.7% of people estimated to have experienced sexual violence (the sensitive item) also responded yes to all three control items in our models of sexual violence, reflecting distribution of people

[5] The p-value is estimated to be 1 without using the generalize moment selection procedure.

respondent yes to all 4 items available in Table A30. This low percentage of respondents estimated to have responded yes to all three items suggests that there are likely no ceiling effects.

At the floor, 19.2% of people are estimated to have said no to all three items and are also estimated to have not experienced sexual violence; while 1.5% of people are estimated to have said no to all three items and are also estimated to have experienced sexual violence.

9.3.2 Correlating Nonsensitive List Experiment Items with Direct Measures (Buckley et al 2022)

To further probe ceiling and floor effects and assess potential for design effects, we conduct an additional descriptive analysis using an approach taken by Buckley et al. (2022). We use three direct questions in our survey data that approximate the three non-sensitive items within the list experiment. Using these direct measures of nonsensitive items, we assess the assumptions of no ceiling or floor effects in our list experiment. The three nonsensitive list items and related direct questions are listed in Table 32 below:

Table (A32) Direct Question Non-sensitive Item Approximations

List Item	Direct Approx
1. I moved away from my original place of birth	Leavehome_yes: Have you ever been forced to leave your home for more than 1 night due to violent attacks or fear of violent attacks since 2002?
2. I have lost a family member in an armed group attack.	Murder_yes: Has anyone in your household ever been murdered by armed groups or the army since 2002?
3. I have experienced looting or theft of my house or property	Burn_yes: Have you or anyone else in your household ever experienced looting or burning of home or property since 2002?

We take the sum of the dichotomous responses of these direct questions that approximate our list experiment nonsensitive items and plot the sum against the list experiment responses for treatment respondents and control respondents separately in Figure A2. The results should show two parallel lines emerging between the treatment and control conditions of the list experiment. Two parallel lines indicate that the proportion of respondents adding the sensitive item is roughly constant across directly estimated non-sensitive covariates. If there is more reporting of the sensitive item at higher or lower levels of the directly estimated non-sensitive covariate, this would be evidence of ceiling or floor effects.

Two parallel lines emerge in Figure A2, yielding no evidence of ceiling or floor effects. The distance between the two lines is roughly equivalent at higher values and lower values of the directly measured items. This means that people are reporting the sensitive item in the list experiment at similar levels across the directly measured, non-sensitive covariates.[7]

We also note that there is evidence here of deflation, a phenomenon present in list experiments (Buckley et al. 2022). Deflation can lead to underestimation of a sensitive item, because as the number of items in a list increases, there is a tendency for the number of items reported to increase but less than 1:1 mapping. Deflation, however, should be a greater concern for interpreting list experiments in which *not* including the sensitive item is sensitive (rather than our list experiment in which inclusion of the sensitive item is sensitive). In our analysis, deflation leads us to underestimate

[6]This is a visual test. Crosstabulation (crosstab) is provided in 07.Appendix.ListExpChecks.R

[7]There is some overlap in confidence intervals at high and low values of the direct non-sensitive responses; this is likely due to lower numbers of respondents in those categories.

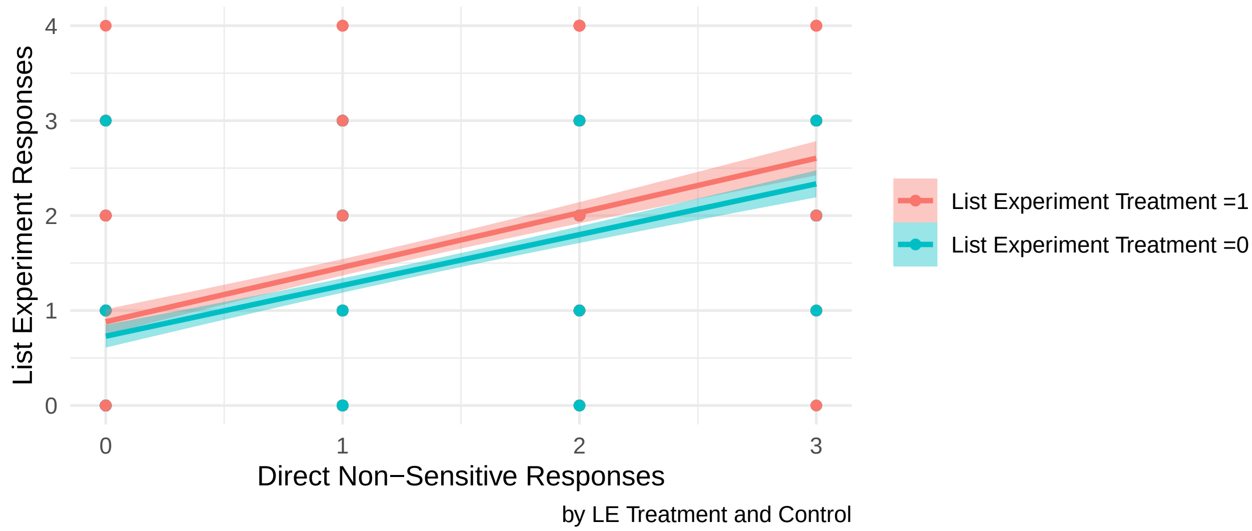


Figure (A2) Parallel Lines Test[6]

rather than overestimate our effects. However, deflation might be one reason why our list experiment estimate is not higher than it is.

9.3.3 Statistical Examination: Blair and Imai (2012)

Given no evidence of a design effect from analyses in Section 9.2.2, Blair and Imai (2012) provide a method for estimating ceiling and floor effects. We estimate the proportion of potential survivors who do not report the sensitive item by first employing an intercept-only Maximum Likelihood Estimation (MLE) model for sexual violence, with assumptions of no ceiling and no floor effects. Next, we relax those assumptions, estimating the same models without the assumption of ceiling effects and then without the assumption of floor effects. We compare the coefficient estimates for these models and derive nondisclosure rates associated with potential ceiling and floor effects.

Table A33 below shows the logistic coefficient estimating sexual violence with (1) no ceiling or floor effects, (2) ceiling effects and (3) floor effects. Our examination considers whether the coefficient differs substantively or significantly across the models.

Table (A33) Empty Models with and without Ceiling or Floor Effects

	Estimate	Standard Error
ML	-0.995	0.199
ML w Ceiling	-0.994	0.199
ML w Floor	-0.864	0.186

At the ceiling, it is clear that the non-disclosure difference is negligible. We estimate the potential share of ceiling liars at .02 percent. The potential share of floor liars is larger. Comparing the floor effects model to the naive model suggests a potential non-disclosure difference of 3.6 percent.[8] The 'no liar' assumption might be problematic, but only at the floor. Note however, that practically floor effects should not result in under-reporting in our list experiment since reporting no or only one item does not affect anonymity with regard to sexual violence victimization.

[8] We report the estimate of 3.6 percent, since this is the highest of our estimates. This calculation is found in 08_Appendix_Sensitivity.R.

Nevertheless, for the sake of rigor, we conduct a follow-up analysis to assess whether the estimated difference in disclosure for potential floor liars, 3.6 percent, affects the estimated effects of sexual violence on social and political engagement.

9.3.4 Robustness of Sociopolitical Outcome Models to Potential Liars

We explore what would happen to our estimated effects of sexual violence on sociopolitical engagement if some people preferred not to disclose sexual violence victimization in the list experiment. We evaluate how sensitive our results are to a potential breach of the 'no liar' assumption. Specifically, we can consider the chance of floor and ceiling effects occurring in the responses to the list experiment, as outlined in the appendix by Blair & Imai (2012).

We employ a simulation-based sensitivity analysis as suggested by Lu and Traunmüller (2021) and Gonzalez and Traunmüller (2023). To integrate the share of potential 'liars' in the outcome model of social and political engagement, we randomly declared respondents as 'liars' by drawing from a Bernoulli distribution with a probability corresponding to the estimated share of potential survivors who may have not disclosed sexual violence, i.e., 3.62 percent.

Practically, we added 1 additional item——theoretically the underreported sensitive item——to all respondents who were (i) in the treatment group (ii) had an item count below 4 (iii) with a probability of 3.6%. We then use this new random set of sexual violence-affected and non-affected respondents and estimate the effect of sexual violence on each outcome variable. We repeat this procedure 1,000 times for each outcome variable.

Figure A3 shows the results of these simulations. Each subfigure (a-e) represents one of our five outcome variables from the main analysis. The histograms show the variations in the effect estimates based on the 1,000 simulations and indicate the uncertainty introduced through the random assignment of additional 'liars'. The red-dotted line shows the original estimate from our main analysis, and the black-dotted line shows the average estimate from the 1,000 simulations. Overall, we find that the average estimate of the simulations is very close to the original estimate. For most outcomes, the effect size is being reduced slightly, for some outcomes the effect size increases.

Overall, we conclude that the actual risk of violating the 'no liars' assumption is very low. Moreover, the even in the presence of liars are results appear to be sufficiently robust to be not moved significantly by their inclusion.

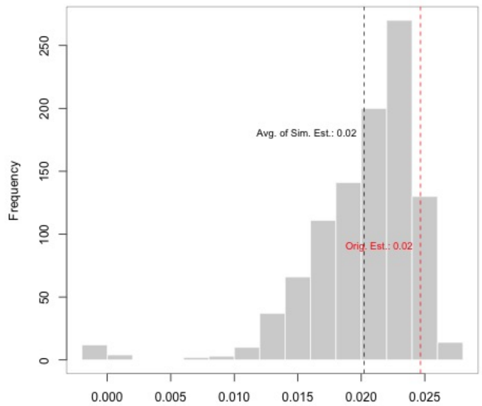
9.4 Additional Statistical Tests of Monotonicity, No Liars and No Design Effects

In "Combining List Experiment and Direct Question Estimates of Sensitive Behavior Prevalence," Aronow et al. (2015) provide additional tests to help detect violations of monotonicity,[9] no liars and no design effects that incorporates insights from including a direct question about the sensitive item alongside the list experiment, which we have in our survey.

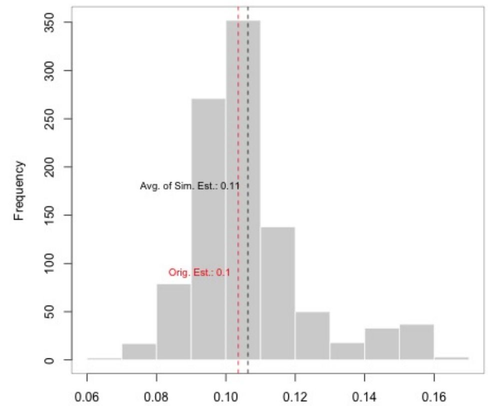
The authors propose a placebo test (Placebo test I) to test for the Joint Null hypothesis of Monotonicity, No Liars and No Design Effects by comparing the number of treated admitters to control admitters and their variance with reference to the direct question response. The design of the test examines whether there is enough evidence of any of these three violations to be of concern.

Table A34 (Test I) shows, with a p-value of .96 that we fail to reject the joint null hypothesis of monotonicity, no liars and no design effects, providing no statistical evidence of violations in our list experiment.

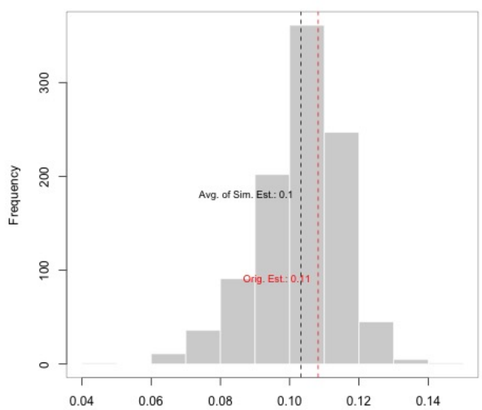
[9] Monotonicity is the assumption that, when asked directly, respondents do not report the sensitive item in the direct question falsely.



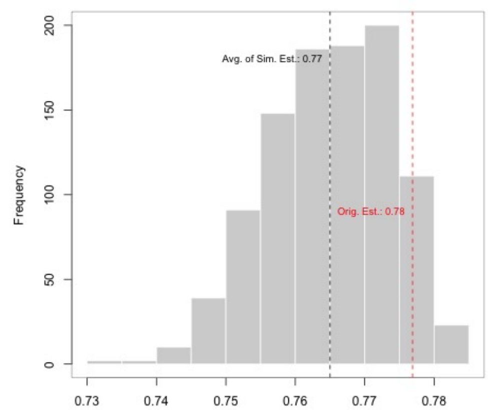
(a) Donate Amount



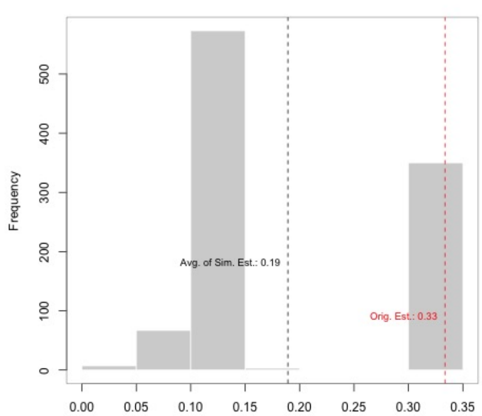
(b) Event Engagements



(c) Personal Exchange



(d) Org Leadership



(e) Org Membership

Figure (A3) Simulations of Robustness to Potential Liars.
Note: Simulated estimates using linear models with normalized outcome variables; Calculations in 08_Appendix_Sensitivity.R

Aronow et al. (2015) also design a second placebo test (Placebo test II) to examine whether treatment assignment affects the direct question responses. Indeed, our study employed direct and list experiment questions for all respondents after the list experiment response, so null results are expected. As shown in Table A34 (Test II), we find no evidence to suggest that assignment to treatment affect responses to direct questions (p-value = .21).

Table (A34) Placebo Tests

	Test I	Test II
Estimate	1.011	0.020
Standard Error	0.222	0.016
p-value	0.959	0.208
n	63.000	969.000

9.5 Caveats to Statistical Detection of Violations

The statistical tests proposed by Blair and Imai (2012) and Aronow et al (2015) are potentially underpowered in our study. Aronow et al (2015) specifically point out that detection of violations will be dependent on the prevalence rate and the number of respondents in a study. The large-N studies of sensitive issues that will best employ these statistical tests will be large-scale online surveys which are not conducive to work the rural, remote areas of DR Congo among unlettered populations or to asking questions about personally sensitive issues such as conflict-related sexual violence where scholars should not be asking questions to a greater number of respondents than absolutely needed to learn about the population. We note that our list experiment approximates and adapts many of the best-practices provided by list experiment scholars to this very important context and sensitive issue. Despite these caveats, we believe that the non-detection of any assumption violations within the standard statistical tests provide greater confidence in our list experiment.

9.6 Maximum Likelihood Estimation

The predicted estimate of sexual violence from the list experiment, as used in our estimates of the effect on sociopolitical outcomes, uses a maximum likelihood model to estimate the likelihood that each individual in the sample experienced sexual violence based on supplied covariates: *Witness violence, female, age, education, household size, assets, previous exchange, and territory fixed effects.*

Maximum likelihood models have been a primary method of estimating sensitive items within list experiments and is the only way to simultaneously estimate sensitive items and their effects on outcomes with appropriate standard errors and p-values using the widely-accepted and used statistical package (List) in R.[10] We use the same covariates to predict sexual violence as our outcome models.

Blair et al. (2019) and Alquist et al (2014) also highlight that confidence intervals of rare events can sometimes fail to fall in the range of a reasonable estimate of a sensitive item (understood as the difference-in-means estimate). Note that the difference in means prevalence estimates of our sensitive item is much larger (difference in means estimate = 12%) than the sensitive items in the

[10]Using each individual-level prediction of sexual violence, one might then estimate the predicted value of sexual violence on sociopolitical outcomes in a two-step estimator procedure. However, this two-step approach does not take into account error from estimating the sensitive item in the outcome regression. It can also result in omitted variable bias because it may require excluding important covariates in the outcome regression since perfectly collinear with covariates used to predict sexual violence (Imai et al. 2015). We therefore adopt the fully efficient single-step estimation method described within the main text.

studies that they examine on voter fraud (difference in means estimate = approx. 0%) and alien abduction (difference in means estimate = approx. 5%).

Even so, we check that our maximum likelihood estimate (with covariates, as in our sociopolitical outcome models) falls within the range of our linear difference in means estimate of sexual violence. Figure A4 and Table A35 show that the maximum likelihood estimate that includes covariates as predictor variables for sexual violence falls within the confidence interval of the basic linear (difference-in-means) estimate with and without covariates. This similarity gives us increased confidence in the maximum likelihood estimate with covariates that we use to estimate the relationship between sexual violence and socio-political outcomes.[11]

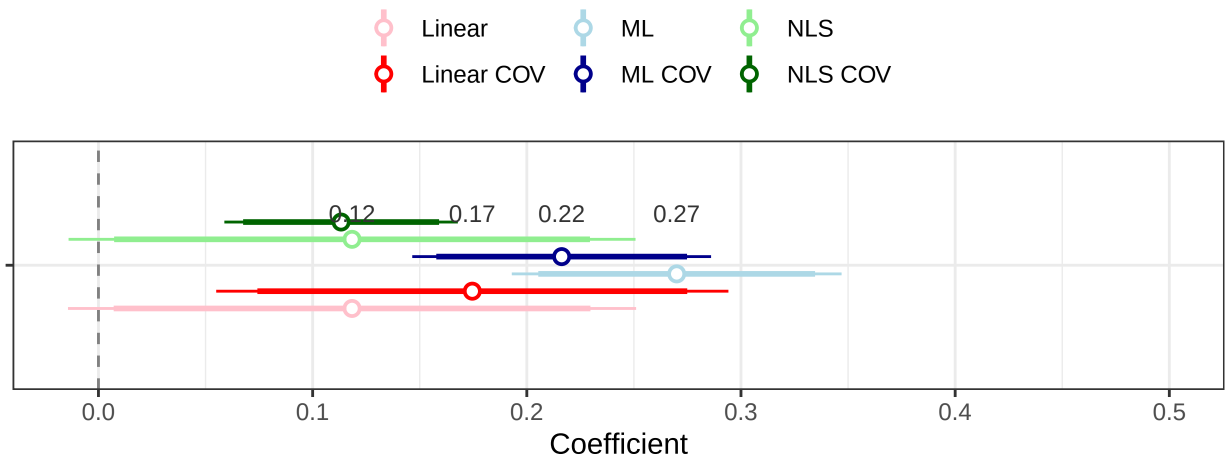


Figure (A4) Estimates of the Sensitive Item[12]

Table (A35) Estimates of the Sensitive Item

Model	Estimate	SE
Linear	0.1184	0.0677
NLS	0.1184	0.0675
ML	0.2700	0.0393
Linear COV	0.1746	0.0610
NLS COV	0.1133	0.0278
ML COV	0.2163	0.0356

We also conduct the Hausman test recommended by Blair and Imai (2019) to test for model misspecification by comparing the NLS model specification (with covariates) known to approximate the linear difference in means estimates while reducing variance and the Maximum Likelihood specification (with covariates) which can sometimes be subject to misspecification.[13] If the maximum likelihood modeling assumptions are correct, then the two estimates should yield statistically indistinguishable results. Our Hausman test with 18 degrees of freedom shows a p-value of .99 suggesting there is no statistical difference. We thus fail to reject the null hypothesis of correct specification. The Hausman test does not provide evidence of model misspecification using maximum likelihood estimation with covariates, the model the best approximates that used in our analyses of sociopolitical outcomes.

[11]The NLS model with territory fixed effects cannot be estimated, so we exclude territory fixed effects from the list of covariates for the NLS Covariate model only.

[12]See Table A35 for the table of results that correspond to Figure A4.

[13]Territory Fixed effects excluded from both models for comparability since the NLS estimate with territory fixed effects cannot be estimated.

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