Rebel Territorial Control and Civilian Collective Action in Civil War

Evidence from the Communist Insurgency in the Philippines

Supplementary Materials

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Please find the latest version of the paper and appendix at www.michaelarubin.com/research.html.

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A Appendix: Quantitative Data and Robustness Checks

A.1 Quantitative Administrative Data

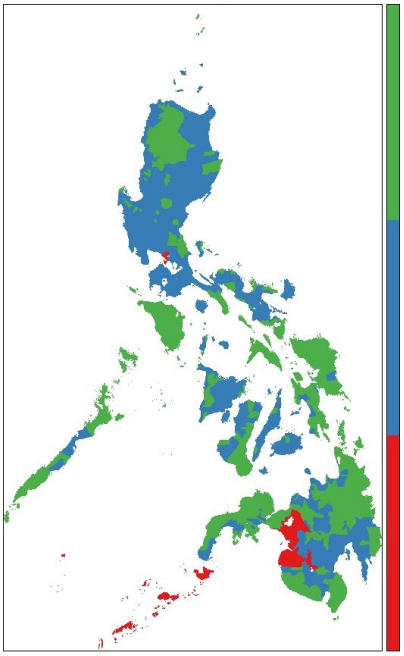
Family-based village networks were constructed from a 2008-2010 census conducted by the Department of Social Welfare and Development (DSWD) National Household Targeting System for Poverty Reduction (NHTS-PR). I used the *stringr* package to parse unique family names in each municipality. I then assigned a unique ID code to each name and used the *igraph* package to convert the list of municipality-specific name IDs into a network object from which to calculate the modularity and other network statistics. The R script accompanying the online appendix includes the code used to create the variables included in regression analysis. I do not include the raw data from which the name assignments and network statistics were calculated because the data were provided with the stipulation to preserve household anonymity and a commitment not to share publicly the household data. Researchers wishing to replicate the analysis or use the data for their own research purposes may file a request with the National Household Targeting Office of the Department of Social Welfare and Development in the Philippines. They have a standard process to share data with researchers, but given that I requested access to information on names I had to receive direct approval from the Secretary and sign a memorandum of agreement with a confidentiality clause. The data can be requested by contacting DSWD at http://www.dswd.gov.ph/contact-us/ or the Research Monitoring and Evaluation Office directly, rmeo@dswd.gov.ph.

The NHTS-PR conducted a full census in 710 of the total 1647 municipalities and cities in the Philippines. 595 of the sub-total 1497 municipalities and cities excluding NCR and ARMM[31] were assessed using the full census. These 595 municipalities contain 13479 villages. In the rest of the municipalities, the NHTS-PR conducted a full census only in "pockets of

[31] I exclude Isabela City and Cotabato City for the same reasons ARMM villages are excluded. Though they are not included administratively in ARMM, Isabela City is the capital of the ARMM island of Basilan

poverty" identified by the governments own poverty assessment tools. In the areas of the municipality outside these pockets of poverty, the NHTS-PR invited households to apply for poverty assessment in order to determine their eligibility for program assistance. In these municipalities, non-poor households get included in the sample by a non-random process that differs in crucial ways from non-poor household inclusion in the full census municipalities. Figure 9 illustrates the geographic variation in the poverty assessment strategies.

Figure 9: NHTS-PR Assessment



The Good Governance Index (GGI) was designed further the central government's transparency initiative, to improve local governance throughout the country. The GGI adopts a specific definition of governance, and identified key component indicators, aggregated to create the GGI score by averaging the component indicator scores. Detailed information regarding the data collection procedure for the Good Governance Index (GGI), its component indicators and calculation of the aggregate score, can be found on the governments Philippine Statistics Authority (PSA) official website: http://nap.psa.gov.ph/ggi/techNotes.asp.

The final sample used in the main regression analysis includes 12450 villages in 567 municipalities. 929 of the 1029 missing villages are excluded because they are in highly urbanized cities not assessed by the Good Governance Index, and mentioned in the main text. The remaining missing villages are excluded because there were no direct matches with the village units in the GADM database of Global Administrative Areas[32] used to calculate the geographic variables, including the distance to dense forests, terrain ruggedness, and the

and Cotabato City is the main city center at the center of the Moro Islamic Liberation Front (MILF) factions in Maguindanao Province of ARMM.

[32] http://gadm.org/

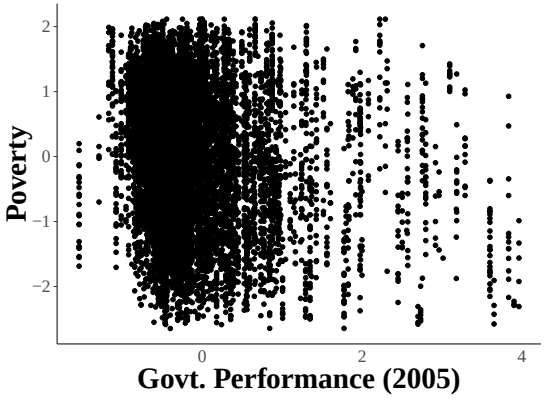
municipality distance to the provincial capital.

A.1.1 Additional Descriptive Statistics

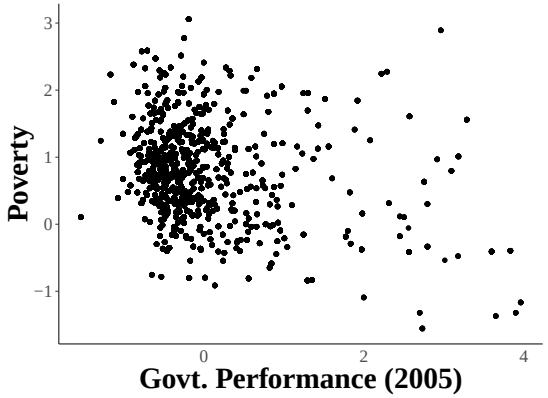
One may be concerned that the measure of local government performance may exhibit collinearity with particular confounders, especially the poverty rate and the community kinship ties to political families. As Figure 10 shows, there is significant overlap across the ranges of the good governance index and these potential confounders. The low correlation implies collinearity is not a major problem for the reported coefficient estimates.

Figure 10: GGI 2005 and Confounders

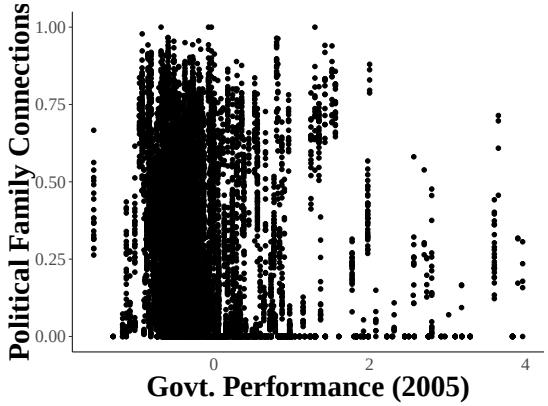
(a) Village-Level Poverty



(b) Municipality-Level Poverty



(c) Political Family Connections



A.2 Notes on Model Specification

The logit specification models the rebel territorial control outcome as a latent continuous variable corresponding degree of communist control, C^*, divided into the observed discrete

categories based on *cut-points* in the continuous scale estimated within the model:

$$C_{ij} = \begin{cases} 0 & \text{if } C^* < c_1 \\ 1 & \text{if } C^* \geq c_1 \end{cases}$$

The multi-level model is also often referred to as "random effects" regression. The multi-level model specification accounts for both group-level variation (administrative unit-specific effects, and year-specific effects in the model specifications that model the variation in the observed outcome over the course of the panel) and adjusts uncertainty estimates to account for dependencies inherent in the data structure (Gelman and Hill 2006, p. 246).

Table 4: Model 1 Results

	Coef. Estimates			Odds Ratios	
	Est.	S.E.	95% CI	Est.	95% CI
Bridging	0.06	0.07	$[-0.07, 0.19]$	1.06	$[0.93, 1.21]$
				+6.3%	[−7.3%, +21.1%]
Gov. Score 2005	-0.25	0.12	$[-0.48, -0.02]$	0.78	$[0.62, 0.98]$
				-28.1%	[−61%, −2%]
Bridging*Gov.	-0.23	0.08	$[-0.37, -0.08]$	0.8	$[0.69, 0.93]$
				-25.4%	[−45.5%, −8%]
Network Size	0.2	0.06	$[0.08, 0.32]$	1.22	$[1.08, 1.38]$
				+22.4%	[+8.2%, +38.4%]
Net. Density	0.09	0.07	$[-0.05, 0.23]$	1.09	$[0.95, 1.25]$
				+9.3%	[−5.1%, +25.5%]
Poverty	1.33	0.08	$[1.17, 1.49]$	3.78	$[3.22, 4.44]$
				+278.3%	[+222.1%, +344.3%]
Politician Connections	0.04	0.09	$[-0.13, 0.22]$	1.04	$[0.87, 1.24]$
				+4.3%	[−14.4%, +24.4%]
Dist. to Forest	-0.35	0.12	$[-0.59, -0.12]$	0.7	$[0.55, 0.89]$
				-42.2%	[−80.3%, −12.2%]
Prov. Capital	-0.29	0.07	$[-0.43, -0.15]$	0.75	$[0.65, 0.86]$
				-33.8%	[−54.2%, −16.1%]
Terrain	0.05	0.08	$[-0.11, 0.21]$	1.05	$[0.9, 1.24]$
				+5.3%	[−11.7%, +23.9%]
Muni. Rebel Control	1.03	0.04	$[0.96, 1.11]$	2.8	$[2.6, 3.02]$
				+180.3%	[+160.2%, +202%]

Sample Summary	Model Fit
N (Villages): 12450	Deviance: 3407.81
Municipalities: 567	AIC: 3560.08
Provinces: 56	DIC: 3281.55

A.3 Main Results

In the main body of the article, I present the results from the main model specifications visually due to space constraints. Here, Table 4 presents the full results for Model 1 and Table 5 presents the full results for Model 2. The tables include numerical values for the coefficient estimates, odds ratios, and confidence intervals.

The article's main text does not include interpretation of the coefficient estimates for the variables included for covariate adjustment due to space constraints. The results are consistent with conventional wisdom suggesting "conditions favoring insurgency" increase the probability of rebel control: the village's distance to dense forests is negatively associated, and terrain ruggedness is positively associated, with observed CPP-NPA influence. The results are also consistent with conventional claims that the economic deprivation remains a key predictor of community vulnerability to rebel control. The coefficient estimate on poverty incidence in the municipality is positive and distinguishable from zero. This may be because economically marginalized communities are more likely to favor the communist rebels' political program, because they have lower opportunity costs for rebellion, or a combination of both. It is clear that these geographic features contributing to the loss-of-strength gradi-

Table 5: Model 2 Results

	Coef. Estimates			Odds Ratios	
	Est.	S.E.	95% CI	Est.	95% CI
Bridging (Q1 Govt. Performance)	0.18	0.06	[0.07, 0.29]		
Bridging (Q2 Govt. Performance)	0.14	0.07	[0.01, 0.27]		
Bridging (Q3 Govt. Performance)	0.02	0.07	[-0.11, 0.16]		
Bridging (Q4 Govt. Performance)	-0.13	0.08	[-0.28, 0.02]		
Network Size	0.2	0.06	[0.08, 0.32]	1.22 +22.1%	[1.08, 1.38] [+8%, +38%]
Net. Density	0.09	0.07	[−0.05, 0.23]	1.09 +9.5%	[0.95, 1.26] [−4.8%, +25.6%]
Politician Connections	0.07	0.09	[−0.1, 0.25]	1.07 +7.4%	[0.9, 1.28] [−10.9%, +27.9%]
Dist. to Forest	-0.35	0.12	[−0.59, −0.11]	0.7 -42.1%	[0.56, 0.89] [−80.1%, −12.1%]
Poverty	1.33	0.08	[1.17, 1.49]	3.78 +278.2%	[3.22, 4.44] [+222%, +344.1%]
Prov. Capital	-0.29	0.07	[−0.43, −0.15]	0.75 -34%	[0.65, 0.86] [−54.4%, −16.3%]
Terrain	0.05	0.08	[−0.11, 0.21]	1.05 +5%	[0.89, 1.24] [−12.1%, +23.6%]
Muni. Insurget Control	1.02	0.04	[0.95, 1.1]	2.78 +177.7%	[2.58, 2.99] [+158%, +198.9%]

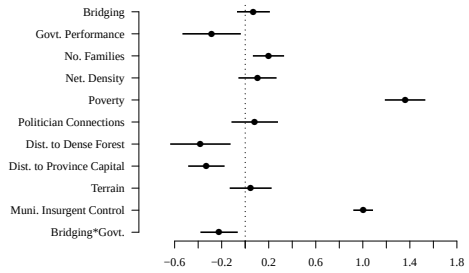
Sample Summary		Model Fit Stats	
N (Villages):	12450	AIC:	3569.63
Govt. Performance Levels:	4	Deviance:	3407.09
		DIC:	3270.55

ent and the economic factors that produce horizontal inequality across identity, sectoral, or regional groups in the country are the main contributors to variation in rebel territorial control. Nonetheless, even with covariate adjustment for these important explanatory factors, the measure of village network structure remains statistically and substantively significant in the model.

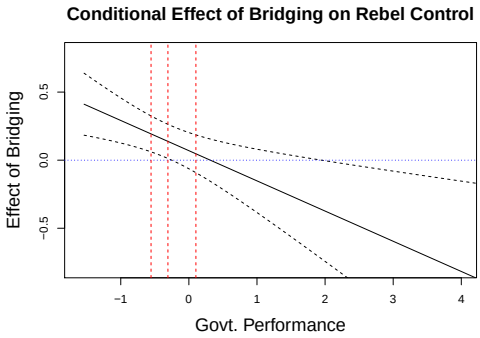
A.4 Logit Model with Province Fixed Effects

Figure 11: Model 3 Results

(a) Coefficient Plot



(b) Marginal Effects



Sample	Outcome Variable	Model Fit
· N (Villages): 12450	· 1: Influence ≥ 2	· Deviance: 3382.85
· Fixed Effects: Provinces (56)	· 0: Influence < 2	

Figure 11a: dots represent coefficient estimates and line segments represent 95% confidence intervals. Figure 11b: The marginal effect of village level bridging as it changes with the municipality-level governance score. The dotted black lines represent the 95% confidence intervals surrounding the estimate. Vertical dashed red lines represent the 25th, 50th, and 75th percentile of Government Performance.

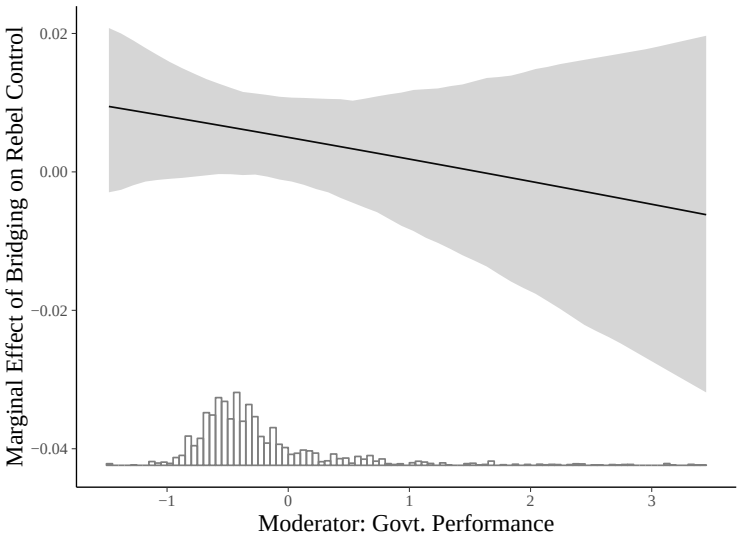
The multilevel model specification is vulnerable to bias if there exist omitted variables that, because they are not included in the model, induce correlation between the group-level effects and the bridging predictor of interest. As a result, I also fit Model 3, a Logit model with Province fixed effects as an alternative.

Model 3. $C_{ijk} \sim logit^{-1}(\alpha_k z_{k[i]} + \tau B_{ijk} + \rho G_{jk} + \kappa B_{ijk} * G_{jk} + \mathbf{X_i}\beta + \mathbf{W_j}\delta)$,

where $z_{k[i]}$ represents the series of dichotomous indicators for the village's membership in a Province: $z_{k[i]} = 1$ if village i falls within Province k and $z_{k[i]} = 0$, otherwise. This specification results in a series of dummy variables representing the separate intercepts for each Province. Figure 11 presents the results from fitting the cross-sectional Logit model with Province fixed effects. Consistent with the theory's predictions and with the correlation detected using the multi-level logit specification, the effect of bridging on communist territorial control is positive at lowest levels of local government performance and the estimated effect declines as government performance increases.

Figure 12 plots the marginal effect of village-level bridging on communist insurgent control over the range of local government performance, modifying Model 3 by relaxing the assumptions of linear conditional marginal effect and common support, following Hainmueller et al.

Figure 12: Model 1 Marginal Effect, Relaxing Linear Conditional Marginal Effect Assumption



The figure is produced using the *interflex* package in R (Hainmueller et al. 2018).

(2018). The plot shows a linear conditional marginal effect, trending negative in a pattern similar to that reported in the main body of the paper and the Model 3 results reported here. The main difference here is that the slope of the line is flatter and the error bounds overlap 0 for the majority of the range in local government performance. This difference is driven partly by the complexity of the model that relaxes the linear conditional marginal effect assumption, and partially by the skewed distribution such that very few municipalities fall at the very high ends of the government performance distribution. Because the conditional effect using this more complex model reveals a linear pattern despite relaxing the assumption, I report the simpler version of the model fit that retains the linearity assumption in the main body of the paper because the efficiency gains seem warranted given that the linearity in the conditional effect appears to hold fairly well in this case.

A.5 Alternative Measures of Community Outside Options

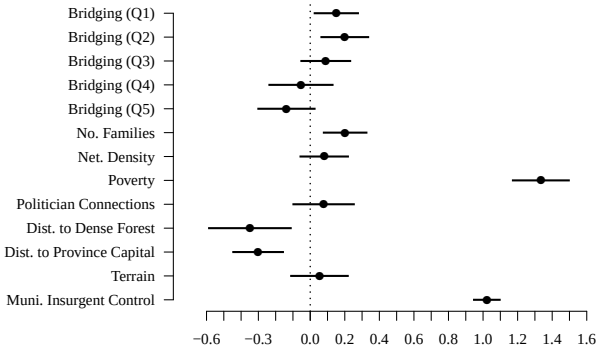
A.5.1 Alternative Categorization of Government Performance

Figures 13a and 13b present the results associated with modifying Model 2 by grouping municipality government performance into 5 (quintiles) and 10 (deciles) categories, respectively. The results are largely similar to the results presented in the main text using 4 categories (quartiles): the effect of bridging on CPP-NPA territorial control is positive for villages in municipalities with lower government performance and negative in villages with higher municipality local government performance.

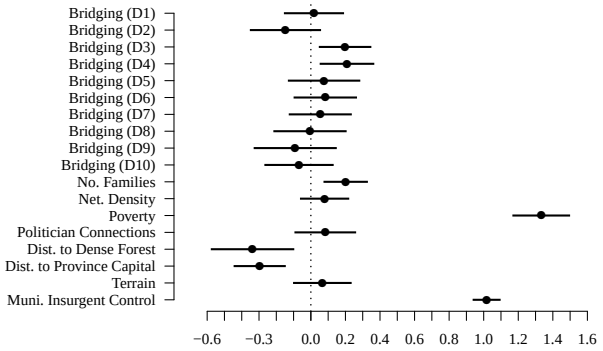
The results are stronger using quintiles than using deciles. In the model using quintiles,

Figure 13: Results w/ Govt. Performance Quintiles, Deciles

(a) Quintiles



(b) Deciles



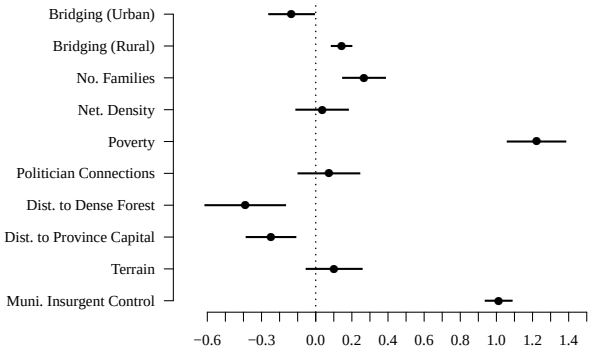
Sample	Outcome Variable	Model Fit (Qunitiles)	Model Fit (Deciles)
N (Villages): 12450	· 1: Influence ≥ 2	Deviance: 3407.39	Deviance: 3404.61
Municipalities: 567	· 0: Influence < 2	AIC: 3570.56	AIC: 3571.62
Provinces: 56		DIC: 3270.21	DIC: 3263.6

the effect of bridging is positive in the bottom two quintiles, though the effect is not statistically distinguishable from 0 for the first quintile. In the middle quintile, the effect is about 0 (no effect), and the effect of bridging is negative and statistically distinguishable from 0 in the top two quintiles. In the model using deciles, the overall pattern is similar; where bottom deciles have positive bridging coefficients, middle deciles have bridging coefficients close to 0, and top deciles have mainly negative bridging coefficients. But, likely because the model estimates many parameters and there are fewer observations in each category, the coefficient estimates for specific deciles (especially the first and the tenth deciles) do not neatly follow the predicted pattern. Nevertheless, overall the trend is largely consistent with the theory's predictions.

A.5.2 Alternatives to Government Performance measure

Because the 2005 GGI score may be endogenous to prior rebel territorial control and conflict dynamics, I also present alternatives to capture community outside options in order to explore the conditional effect of collective action capacity. Figure 14 fits an alternative to Model 2 in which the effect of bridging varies according to whether the village is rural or urban. Rural villages, like those with lower government service provision, likely have lower government presence. These are more peripheral villages further from centers of state power, and are targeted with communist political propaganda. Consistent with the theoretical expectations, the effect of bridging is positive for rural villages and negative for urban villages.

Figure 14: Effect of Bridging with Rural/Urban Varying Slope



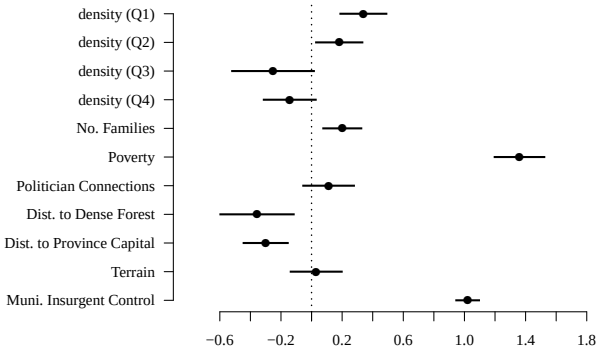
Sample	Outcome Variable	Model Fit
N (Villages): 13275	· 1: Influence ≥ 2	Deviance: 3595.71
Municipalities: 569	· 0: Influence < 2	AIC: 3756.91
Provinces: 56		DIC: 3460.51

A.6 Alternative Measures of Collective Action Capacity

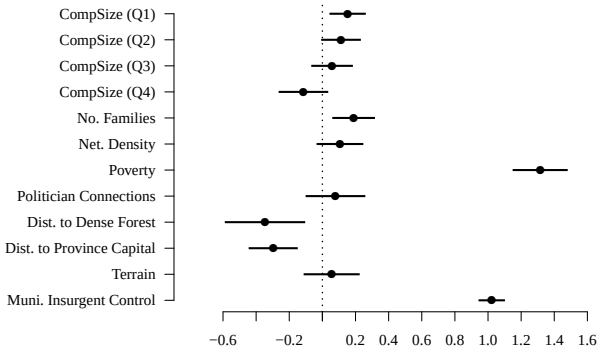
Network bridging measures the divisions in social networks to proxy for the barriers to bridging social capital. But it is also a complex measure that is dependent on the community detection algorithm. For robustness, I also substitute alternative measures for the community network structure. Figure 15a presents the results using overall network density to measure collective action capacity. Figure 15b presents the results using the size of the largest component in the network as a percentage of network size. Communities in which the largest component of the network represents a greater share of the overall network may have better communication across social cleavage divides, consistent with bridging social capital. Social ties through family connection link a greater percentage of the villagers together. Consistent with the accountability theory, the coefficient on each of these alternatives to the bridging (modularity) measure of community social structure suggest the effect of collective action capacity is positive and statistically distinguishable from 0 at low-to-moderate levels of local governance, and decline as local governance increases. The results are a bit weaker for the largest component size measure, in which the positive coefficients in the bottom two quartiles are not statistically distinguishable from 0, while the negative coefficients for the top two quartiles are statistically distinguishable from 0.

Figure 15: Model 1, Network Density/Largest Network Component Size Measure Collective Action Capacity

(a) Density



(b) Largest Component Size

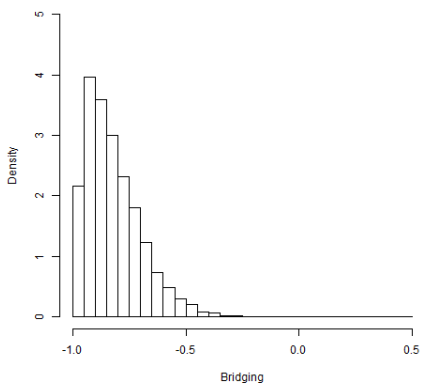


Sample	Outcome Variable	Model Fit (Density)	Model Fit (Component)
N (Villages): 12450	· 1: Influence ≥ 2	Deviance: 3395.62	Deviance: 3411.54
Municipalities: 567	· 0: Influence < 2	AIC: 3559.62	AIC: 3572.57
Provinces: 56		DIC: 3255.62	DIC: 3276.51

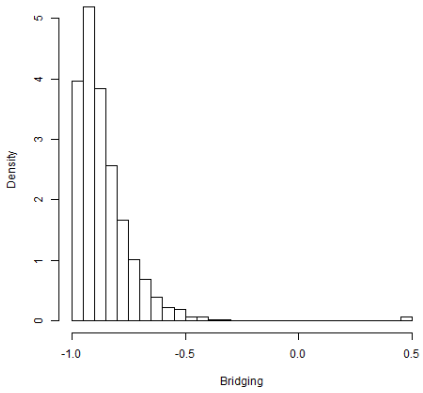
A.7 Alternative Sample: Poor Household Networks

Figure 16: Compare Bridging across Samples

(a) Full-Census Municipalities



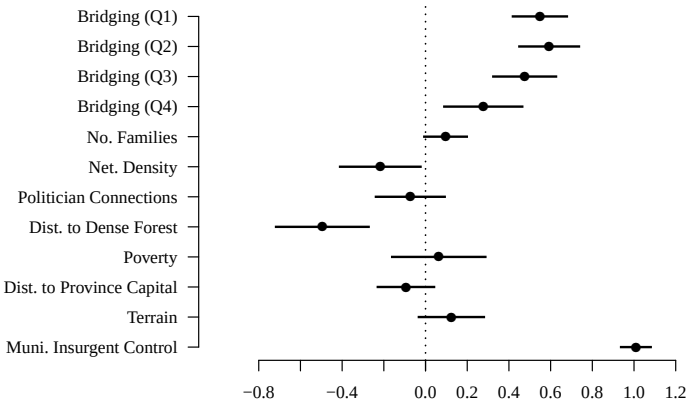
(b) All Municipalities, Poor HH Networks



In the main regression analysis, I used only the sample of villages within municipalities in which the NHTS-PR conducted a full census, excluding the municipalities assessed using

the "pockets of poverty" assessment strategy. I restricted the sample in this way because the non-poor households included in the areas of "pockets of poverty" assessment are not included by a random process nor by a process that can be argued is independent of community social structure. Non-poor households were included based on their own request for assessment, and therefore may be related to their connections with other families that were assessed by the NHTS-PR. For robustness, I estimate the same regressions included in the main empirical analysis on an alternative sample that includes all of the villages, save for those in ARMM and NCR. In this sample, measures of network structure (including bridging) are all calculated on only the sample of poor households. These are incomplete networks, but the subset of poor households are targeted for full assessment in the villages in which the government conducted only a partial census such that the population of poor households is at least roughly comparable across the census collection strategies. Figure 16 demonstrates the differences in the distribution of network bridging across the full-census and pockets of poverty assessment samples.

Figure 17: Model 2 Results, Poor HH Networks on (more) Complete Sample of Villages



Sample	Outcome Variable	Model Fit
· N (Villages): 12450	· 1: Influence ≥ 2	AIC: 3903.67
· Varying Slope/Intercept:	· 0: Influence < 2	Deviance: 3750.72
Govt. Performance Levels (4)		DIC: 3623.77

To explore the robustness of the results to including information from the broader sample of villages, I fit Model 2 with an adjustment to measure bridging among the poor population only. This measure includes information among only the poor sub-sample of each village, but includes a larger sample of villages. It is also worth noting that instead of using the percentage of sampled households identified as poor to measure poverty, I use municipality-level poverty incidence collected by the Government's National Statistics Coordination Board. I use the poverty incidence from 2009. Because the Cruz, Labonne and Querubin (2017)

replication data is available only for the full census municipalities, I drop the indicator for the community members' kinship ties to political families in this specification. Finally, I also added a municipality-level covariate to indicate whether the village is in a municipality targeted with the complete census or partial census data collection strategy. Using the larger sample of villages including those assessed with a partial census yields the same substantive results. Figure 17 reports the results in a coefficient plot. The effect of bridging is positive at low levels of local governance and declines as the quality of governance improves, consistent with Hypothesis 1. Though the effect of bridging does not become negative at the highest observed levels of government performance, it is worth noting again that the sample excludes the urban areas of greatest state presence and the community networks for this analysis exclude non-poor households.

A.8 Family Networks and Collective Action

If family network structure is an adequate measure of collective action, it should be correlated with observable collective action outcomes in the community. To explore the validity of the family network structure as a measure, I check its correlation with limited data available to measure observable collective action. Unfortunately, measures of social cohesion and collective action at the community level are very difficult to come by. I draw upon available data in only a small number of villages, not representative of the full conflict zone. The results are mixed, as discussed below.

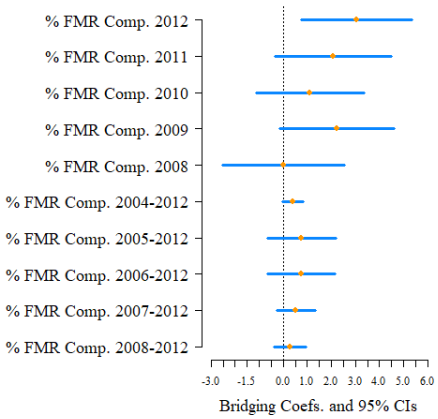
First, I examine data provided by the Department of Agrarian Reform (DAR), which implements land reform projects and monitors performance in Agrarian Reform Communities (ARC). ARCs are clusters of barangays organized to implement DAR projects and meet performance standards. The ARC Level of Development Assessment (ALDA) measures "the levels of development of the ARCs and define the appropriate interventions." The ALDA assesses ARC performance on 6 key areas: 1) Land Tenure Improvement, 2) Economic and Physical Infrastructure Support Services, 3) Farm Productivity and Income, 4) Basic Social Services, 5) Gender and Development, and 6) Organizational Maturity.

To measure collective action outcomes, I focus on the completion of infrastructure projects, including the building of farm-to-market roads, bridges, irrigation systems, and the provision of pre- and post-harvest facilities. DAR provides funding and sets targets for the ARC to complete these infrastructure targets, and the ALDA assesses the ARC's completion of these tasks. If cohesive family network structure represents an indicator of collective action capacity, then communities with higher bridging should be more successful at completing infrastructure projects. I created ARC-level family networks and summarized network structure and characteristics using the same metrics as in the village-level networks. I then regress the ALDA assessment scores for each category on the ARC-level bridging and covariates.

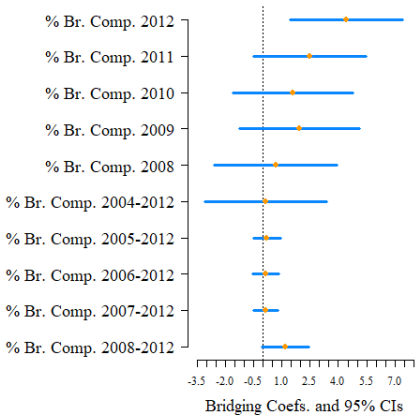
Figure 18 reports the results from simple OLS model specifications in which the yearly assessments of ARC completion on each dimension of infrastructure, as well as aggregated measures of each dimension over the panel, are regressed on bridging and covariates. The figures report only the coefficients for the ARC-level bridging score for clarity, but each model

Figure 18: Family Network Structure and Completion of DAR Infrastructure Projects

(a) Farm-to-Market Roads (FMR)



(b) Bridges (Br.)



(c) Irrigation (Irr.)

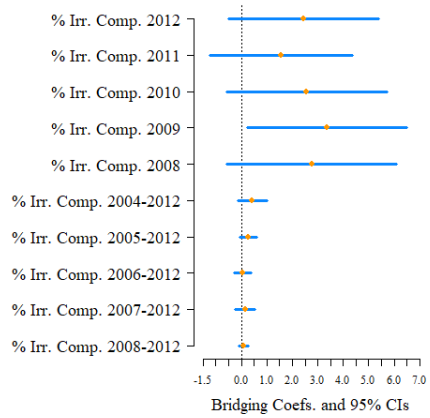


Figure 18: Each line in each coefficient plot presents the coefficient estimate and 95% CI on the ARC-level bridging statistic associated with a distinct outcome variable regressed on an identical battery of covariates. The top 5 outcomes measure the percent completion in the given year. The bottom 5 measure the percent of the goal set in the first year in the range completed by 2012.

also includes the size of the ARC family network (number of families), the Good Governance Index score from 2005 for the municipality in which the ARC is situated, and poverty incidence in the ARC. The correlation between ARC-level bridging across family groups and completion of infrastructure projects is weak but largely consistent with the expected positive relationship as proposed in the accountability theory of rebel regimes. The correlation appears to strengthen over time, suggesting the possibility that while collective action capacity does not produce immediate results, it may help communities sustain collective action to complete long-term infrastructure projects.

These results provide weak confirmation for the measurement strategy. As mentioned above, accessing appropriate measures of community collective action at the village level is extremely difficult to come by. Because the measurement strategy has strong face validity given the vast historical and social science literature on the centrality of family networks to social, political, and economic life in the Philippines, I argue that the results presented here offer important empirical insights to test the civilian agency theory. Furthermore, village elder interviews are consistent with the theoretical mechanisms, strenghtening confidence in

the measure. See also Rubin (2018) for additional details. Future data collection may further validate the measure and explore additional implications.

B Appendix: Village-Level Interviews

First, a word about the interviews with military personnel cited in the article. Interviews with AFP, OPAPP, DSWD, and other government officials took place during fieldwork in the Philippines July-August 2014 and September-November 2015. Interviews with Brigadier General Estomo (Ret.) and Pablo Escober for OPAPP took place in Manila, while interviews with Colonel Jake Obligado took place in Davao City. I also conducted interviews with other military and government personnel, but the discussions cited in the article touched upon topics directly germane to the theory and evidence presented here.

B.1 Design and Sampling Procedure

The survey is designed to construct a representative sample of villages, rather than of individual respondents within villages. I targeted villages as the units of analysis because CPP-NPA territorial control and governance varies at the village level. The sampling frame includes all villages in three provinces of south-eastern Mindanao: Compostela Valley, Davao Oriental, and Agusan del Sur. To conduct the interviews, I partnered with a local independent research firm, the Association of Psychologists Helping Practitioners (APHP). APHP is a team of researchers whose director and personnel are faculty and affiliates at Ateneo de Davao University, mainly in the Psychology Department. The researchers have years of experience conducting research on sensitive topics related to the the insurgency and human rights abuses by both sides in the area.

The sampling frame was restricted to the three provinces because of resource and security constraints. In case of emergency, enumerators were not sent to interview sites too far from the base in Davao City. Municipality centers are reachable by car and enumerators would be required to stay overnight in a local accommodation at most one night for each research trip to collect a round of interviews. At the same time, many villages in these provinces have been affected by the communist insurgency at some point over the last few decades, making the region an appropriate area to study the dynamics of communist insurgent interactions with local communities. In fact, the AFP intelligence report provided by OPAPP suggests that Compostela Valley and Agusan del Sur were listed as the top two provinces in terms of the level of the communist insurgency in the first half of 2013, though it ranked Davao Oriental only the 21st most affected province.[33] The rankings are based on a weighted average of the manpower, firearms, level of insurgent influence over villages, and the number of violent incidents involving the communist insurgents recorded in the Province during the first half of 2013. While Davao Oriental was not ranked as highly as the other two provinces in the aggregate measure, it did rank the fourth highest in terms of communist insurgent manpower.

To ensure the sample of villages remain representative of the three provinces while also

[33]These rankings are reported in the AFP year-end intelligence assessment addressing the state of the communist insurgency, provided to the author by OPAPP.

maximizing the number of villages sampled within the budget constraint, I used a cluster random sampling procedure. First, municipalities were randomly selected, with probability proportional to the number of barangays in the municipality, for inclusion into the sample. Second, five barangays were selected at random within each selected municipality. The resulting sample of 75 villages is representative of the full sampling frame of villages in Agusan del Sur, Compostela Valley, and Davao Oriental.

B.2 Recruiting Subjects and Conducting Interviews

For each sampled municipality, APHP's director and research team called contacts in the Local Government Unit (LGU) office for assistance identifying and recruiting village experts in each of the sampled villages within the municipality. LGU officials were asked to provide contact information for village experts from the 5 villages sampled in their municipality. The primary targets for interview respondents were village elders, those who have lived in the village for many years and were old enough to recall details from the periods of NPA presence in the village at least since the 1980's. Other eligible interview subjects included barangay political office holders (present or former barangay captains or council members) and leaders of community organizations. The individuals selected for interviews were not selected to be representative of the village population; rather, they were selected for their knowledge of village history and their ability to comment on the CPP-NPA activities in the village since the late 1970's. When requesting potential village experts to participate in the survey as interview subjects, the APHP personnel used the IRB-approved recruitment script.

Because some sampled villages remain within or near communist insurgent presence, all interviews were arranged to take place at selected safe areas within the subject's municipality, often but not exclusively the municipality capital. Where necessary for security reasons, APHP personnel coordinated with military officers stationed in the area to ensure safe passage for the enumerators and village experts. Interview subjects were provided reimbursement for their travel to the interview site as well as a meal during their stay in the area. For the most part, especially for municipalities very far from Davao City, interview subjects from each of the five barangays within the sampled municipality were interviewed during the same field trip. Enumerators arranged a day or consecutive days for which the five selected interview subjects were all available to travel to a mutually convenient interview site within the municipality for their respective interviews. The design called for interviews to be conducted privately so that an interview subject's responses were not influenced by others. Nonetheless, logistical challenges that caused the enumerators to arrive late to appointments in a few municipalities far from Davao City required collective interviews.

B.3 Limitations

The interview data suffer from a few key limitations worth noting, since they impose some constraints on the process-tracing of causal mechanisms. First, many interview subjects seemed adamant to avoid voicing what could be construed as support for the NPA. This

leaves open the possibility that the responses may discount the ways in which NPA personnel may have invested resources and effort to provide benefits to the community. In many interviews, it was difficult to establish a direct link between the community social structure and the cost-benefit calculus of the rebel personnel deciding whether and how to infiltrate the sampled village. This is the main reason the research design called for a medium-N sample sufficient to examine the patterns in CPP-NPA territorial control and governance rather than concentrate on a small number of villages for process tracing the precise causal chain linking community collective action to NPA activities.

Second, the transcripts reveal the possibility of some confusion regarding timeline in the interviews. The questionnaire was designed to elicit subjects to recount past NPA behavior, specifically during time periods in which the NPA's local units had greater influence in the village. However, many interview subjects were either wary about assigning motives and intent to the NPA personnel in their area, especially since for many the peak of NPA presence occurred decades ago in the 1980's, or simply assumed that the researcher would be more interested in recent conflict processes. Therefore, many subjects tended to shift the conversation towards more recent history of NPA activities. Despite the request for elder subjects for the interview, occasionally the municipality government officials in the area nonetheless set the interview with current leaders who were children at the time of heavy NPA presence in the community. Enumerators occasionally failed to correct the subject's tendency to focus on recent history rather than describe the first periods of NPA presence in the 1980's-90's. The recent history of the conflict unsurprisingly yields lower levels of rebel territorial control and governance, owing to counterinsurgent success and NPA disintegration over the last decade or so of the conflict.

Finally, because the procedure for recruiting interview subjects in sampled villages operated through the research team's contacts in the municipality centers, the interview subjects are generally from central districts within the barangay rather than the outskirts in which the CPP-NPA generally operate. This subject recruitment strategy was intentional; it was designed to ensure those interviewed were more centrally connected in the village and had knowledge of the entire village and its history rather than specific peripheral areas. But, it comes at the cost that some selected subjects had less exposure to NPA activities, having lived in the central districts, and possibly increases the interview subjects' bias against the NPA.