

Social Terrain and Conflict Diffusion: Civilian Networks and the Spread of Territorial Control in the Philippines

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Abstract

This paper examines how “social terrain” shapes cascading changes in territorial control during insurgent conflicts, with a focus on civilian social networks as a key factor driving conflict diffusion. Using large-scale data from the Philippines—including village-level military intelligence reports on insurgent presence, government development projects, and the network of family ties between 55 million individuals in 40,000 villages—I find that the government was more likely to secure new territory when civilians had social ties to other villages already under government control and benefitting from development projects. Drawing on field interviews, I propose that these networks primarily drive the diffusion of territorial control by serving as conduits for information about security and economic interests, which in turn shapes patterns of civilian cooperation with conflict actors. These findings underscore the importance of civilian social networks in shaping territorial control in civil conflicts.

Keywords: Civil war; Insurgency; Counterinsurgency; Social networks; Territorial control; Philippines

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In 2013, the Armed Forces of the Philippines (AFP) was engaged in extensive counterinsurgency operations in Sorsogon Province, where communist New People’s Army (NPA) rebels had been entrenched for several decades. Two of the villages targeted with these operations were Burgos and Mayon.¹ The two villages were only a few kilometers away from each other, had a similar demographic makeup, and were sites of new government investment in farm-to-market roads and school buildings aimed at winning civilian support. Despite these very similar conditions, rebels were successfully expelled from Burgos by the end of 2014 but retained an active presence in Mayon.

These different outcomes can be explained in part by the spread of information through civilian social networks. In order for counterinsurgents to fight an enemy who can hide in plain sight, they must first elicit information from civilians regarding rebel identities, whereabouts, and activities. In a conversation with a military intelligence officer from Sorsogon who regularly goes undercover to gather information about the NPA, I asked what makes civilians more or less willing to cooperate. He responded: “Personal connections. People form their opinions of the government because of the experiences of people they know.”²

Because of the nature of their social ties to nearby villages, the people in Burgos and Mayon formed very different impressions of the government’s capacity to provide sustained security and economic development. Civilians in Mayon had many family members in neighboring villages where the rebels were active, giving them the impression that the rebels had staying power in the area and would be able to retaliate even if they were expelled from Mayon. Despite the fact that Burgos was geographically proximate to these same rebel-held villages, the family ties of the population were mainly to other *government*-controlled villages, making counterinsurgent assurances of long-term security more credible. In addition, compared to the civilians in Mayon, people in Burgos had stronger ties to surrounding villages that received development projects of their own, enhancing the impression that the government was genuinely committed to fostering long-term economic development.

¹The village names were altered to protect confidentiality.

²Interview 17.

Stepping back from the above example, this paper addresses the broader research question: how do civilian social networks affect changes to territorial control in insurgent conflict? Currently, the dominant approach to counterinsurgency, in academia and in practice, is the “hearts and minds” model – also referred to as COIN – which is used to fight insurgents in places like Iraq, Afghanistan and the Philippines.³ Fundamental to this model is the recognition that civilians play a key role because, collectively, they hold a wealth of crucial information about insurgents. Without this information, government troops are left groping in the dark, unable to bring to bear their superior military capacity. The COIN model suggests that governments can win civilian cooperation by investing in local security and economic development, addressing two of the primary concerns of civilians in conflict zones. Although in theory this makes a great deal of sense, empirical research reveals that the results of this strategy have been unreliable. It has been successful in some situations but produced no discernible improvement – sometimes even appearing to be counterproductive – in other cases (Zurcher 2017).

My analysis is predicated on the recognition that civilians in conflict zones have a more sophisticated understanding of their situation than has previously been acknowledged. They understand that counterinsurgents have a strong incentive to win their support and so they are appropriately skeptical of government assurances that it has the military capacity needed to ensure civilian security and a genuine commitment to fostering lasting economic development. Even if the government increases military presence or implements a development project in their own village, civilians are left unsure if these actions are a genuine signal of long-run government intentions and capacity or whether they are simply a means to the end of winning the war. Civilians caught collaborating with the government may pay with their lives, creating a high bar of trust that governments need to cross to win their cooperation. How, then, do civilians resolve this uncertainty?

³This model has become predominant among counterinsurgency practitioners (US-Army 2007) and has kickstarted a blossoming literature on micro-level conflict dynamics (Berman and Matanock 2015).

I posit that they rely on an independent source of information: word of mouth from their social networks. In order to understand the determinants of civilian behavior in conflict zones, one must move past considering villages as independent units and consider how perceptions of conflict actors spread through a complex social terrain. In other words, civilian willingness to share information *vertically* (to counterinsurgents) is driven in large part by information about counterinsurgent and rebel credibility that spreads *horizontally* between civilians living in nearby villages. Horizontal information can help civilians solve two key information problems. First, it gives civilians a more accurate picture of rebel presence and military control in their vicinity which, in turn, informs them about the likelihood of rebel retaliation they might face for cooperating with the government. Second, information attained through social networks helps civilians understand the scope of government investment in economic services in villages like their own, helping to resolve uncertainty about the government's capacity and intention to stoke lasting development.

To test the argument, I investigate patterns of military and rebel control in the Philippines from 2010 to 2015. I measure year-to-year changes in village-level rebel presence, as reported by internal military intelligence assessments, to gauge variation in counterinsurgency effectiveness. The results indicate that counterinsurgency success in any one village is highly dependent on the security context in other villages where people share family ties. The government was significantly less likely to reduce rebel influence in a village when its residents had family ties to other villages where rebels were active. Moreover, the likelihood of counterinsurgents winning military control in a village was significantly shaped by whether the population had family ties to other villages where development projects were implemented, even after accounting for whether the village received development projects itself. The results suggest that these patterns of diffusion were driven primarily by family ties between villages rather than by geographic proximity.

The findings have several important implications. Scholars have long touted the importance of social networks underpinning mobilization in civil conflict, but empirical evidence

has thus far been limited mostly to qualitative case studies (Staniland 2014, Petersen 2001, Wood 2003, Lewis 2020) or inexact proxy measures such as ethnic demography or geographic distance (Schutte and Weidmann 2011). I introduce data on civilian social networks and territorial control that is both expansive and precise, allowing for one of the first systematic tests of how micro-level social network mechanisms link to wide-ranging patterns of military control. From a theoretical standpoint, this paper highlights the under-considered information problems that civilians face when governments and rebels try to win their support and shows how social networks help solve these problems and guide civilian behavior. This insight provides a more complete understanding of the conditions under which civilians are likely to cooperate with counterinsurgents, a key outcome for the “information-centric” view of insurgency (Berman and Matanock 2015).

Social Networks and Insurgency

Civil conflicts are shaped by social networks in a number of important ways (Larson 2021). At the group level, rebels groups leverage their members’ social ties in order to mobilize for violent conflict or recruit new members (Humphreys and Weinstein 2008, Aspinall 2009). The network ties that underly a rebel groups’ internal structures also affect their organizational capacity and vulnerability to countermeasures (Staniland 2014). At a broader level, the networks of alliances and tensions that link different rebel groups to each other have important impacts on violence and the longevity of conflict (Christia 2012, Dorff, Gallop and Minhas 2020). In this article, I shift the focus away from the social ties of rebels to instead focus on networks of civilians. This move is motivated by the central role that civilians play in determining the efficacy of military operations (Berman and Matanock 2015), and by the importance of “quotidian” civilian networks that support rebel groups (Parkinson 2013).

Research on the link between civilian social networks and civil conflict typically falls into two broad categories. First, scholars argue that communities’ social cohesiveness or isolation affects collective action capacity and forms of resistance (Petersen 2001, Arjona 2017, Kaplan 2017, Rubin 2020, Gade 2020). Although within-community networks are

greatly important to local conflict dynamics, I focus instead on network ties that connect between communities. This aligns with a second camp of research that highlights the ways in which conflict is shaped by the information or “rumors” that spread between civilians. Word of mouth that spreads between civilians contributes to narratives that frame perceptions of collective threat (Shesterinina 2016, Greenhill and Oppenheim 2017) and the viability of rebel groups in their early stages (Larson and Lewis 2018, Lewis 2020), which in turn affects whether individuals choose to join or support the warring parties. Even though rumors carry both accurate evidence and false narratives (Schon 2020), the general lack of credible information available during ongoing conflict means that rumors have a large impact on civilian behavior. I build on this work by honing in on information regarding two things that are particularly important to civilians in conflict zones: local military control and economic development. While existing work focuses largely on the process by which rumors spread and translate into civilian beliefs, I focus instead on the broader implications of systematic information spread for counterinsurgents’ and rebels’ ability to gain territory.

The social determinants of civilian behavior are especially important in the context of asymmetric insurgencies. Powerful governments often find themselves in protracted conflicts with relatively weak, but persistent, insurgent groups. Asymmetric insurgencies, characterized by a vast imbalance in military capacity of the two sides, account for the majority of civil conflicts fought since the end of World War II, including nearly all of the conflicts in which the United States and other Western countries have been involved (Kalyvas and Balcells 2010). In this type of conflict, the lines of territorial control are not easily drawn and insurgents operate under a veil of secrecy in the same areas where government troops patrol.

Non-combatants play a crucial role in insurgency because they have unique access to information about who insurgents are, where they operate, and when they engage in operations. In order for government troops to expose insurgents and exploit their firepower advantage, counterinsurgents must induce information-sharing from civilians. As a result,

both sides often devote substantial resources to winning civilian cooperation through a combination of intimidation and inducements. In this paradigm, the question of what makes counterinsurgency effective essentially boils down to: what allows counterinsurgents to effectively elicit useful information from civilians? Two core answers provided by the literature are that civilians are more likely to cooperate with counterinsurgents when they believe it will improve their prospects for 1) security and 2) economic well-being.⁴

First and foremost, civilians must determine the degree to which sharing information with counterinsurgents puts their security at risk. Informing on the insurgents carries a short term risk of rebel retaliation but may have long term security benefits if the military is able to win and hold control of the area. One heuristic civilians use to determine the security implications of their actions is the level of recent violence in their area. Yet the majority of empirical evidence suggests that, in many cases, actually carrying out violence against civilians generates backlash against the perpetrators, with counterinsurgents being particularly susceptible to blame (Condra and Shapiro 2012, Lyall, Blair and Imai 2013, Shaver and Shapiro 2016).

Perhaps even more important than reacting to violence that already occurred, civilians base their behavior on their understanding of military control. An assessment of the actors' military strength is central to civilians' expectations of *future* violence that might result from their actions. Defecting to the government in a rebel stronghold (or vice versa) entails a high risk of being targeted with selective violence. Perceptions of military control also shape civilians' understanding about the longer-term security implications of their actions. Because civilians are most likely to experience violence in areas where one of the sides has incomplete control, assisting a side that is on the brink of victory may bring about greater

⁴Civilians' identity and ideology also undoubtedly influences their behavior (Sanin and Wood 2014), but as Kalyvas (2006) and many others have noted, self preservation often trumps ideology. My argument proceeds under an "all else equal" assumption: given existing ideological beliefs, what makes civilians more willing to cooperate with one side or the other?

stability in the security situation. In short, civilian cooperation often shifts towards the side with military control or the side that civilians think is likely to win (Kalyvas 2006).⁵

While security is usually civilians' primary concern, they must also consider whether helping the government serves their economic interests. To win support, counterinsurgents commonly devote significant resources to implementing development projects. Winning "hearts and minds" through economic development can mitigate grievances that lead civilians to support rebel movements and can increase civilians' material incentives to share information. A large empirical literature on the effects of development projects in conflict zones was kick-started by Berman, Shapiro and Felter (2011), who formalize the logic behind the hearts and minds approach and find that development projects led to reduced violence during the Iraq War. Subsequent papers find support for the model using evidence from various countries (Croft, Felter and Johnston 2016, Beath, Christia and Enikolopov 2016, Haim, Ravanilla and Sexton 2021). While development interventions seem to play an important role in winning civilian support in some cases, the effects of these programs are uneven and contingent on a number of factors, like local military control (Sexton 2016) and the types of goods being distributed (Lyall, Zhou and Imai 2020).

The above literature illuminates important dynamics relating to the information-centric model of insurgency, but important puzzles remain. Rebels have in many cases been able to maintain (or even strengthen) their presence in the face of significant government investment in security and development. I contend that existing research relies too heavily on the assumption that civilians believe that governments' and rebels' observable actions represent their true intentions and abilities. Civilians in conflict zones are acutely aware of the fact that both sides have an incentive to misrepresent their military strength and commitment to peoples' economic well being and, as a result, civilians are generally skeptical of attempts to win their cooperation. My theory posits that civilians turn to information received through their social networks to help overcome this uncertainty.

⁵This is reflected in US counterinsurgency doctrine: "the likelihood of insurgent success is based in large part on [civilian] assessments of insurgent political and military strength" (US-Army 2013: p.II-11).

Horizontal Information and Military Credibility

“For your side to win, the people do not have to like you, but they must respect you, accept that your actions benefit them, and trust your integrity and ability to deliver on promises, particularly regarding their security. In this battlefield, popular perceptions and rumor are more influential than the facts and more powerful than a hundred tanks.”

– David Kilcullen (2010, p.43)⁶

As outlined in the previous section, whether civilians choose to share information with counterinsurgents is determined in large part by expectations about how this action will affect their future security and access to economic services. My core contention is that when forming these expectations, civilians are unlikely to rely only (or even primarily) on their direct observations of government and rebel actions in their own village. Civilians in conflict zones must determine whether the warring parties are likely to deliver on promises made about how their present day actions affect their future interests. Information about military control and the level of government economic investment in nearby villages can greatly reduce civilian uncertainty about the credibility of these promises.

In this section, I present a theory of how the flow of horizontal information (between civilians) can mitigate uncertainty about future security and economic well-being, which in turn shapes civilians’ decision to share information vertically to counterinsurgents. The theory stems from approximately four months of inductive field research I conducted in Sorsogon Province of the Philippines, during which I interviewed civilians, former rebels, and government troops.⁷ I begin by discussing how horizontal information flows allow civilians to

⁶Kilcullen was one of the chief architects of US counterinsurgency policy in Iraq and Afghanistan.

⁷See the SI for additional details on the nature of the fieldwork and a discussion of ethical considerations. During the inductive fieldwork stage, I formally interviewed 16 civilians, 2 former rebels, and 6 government security personnel – including military officers (AFP), police officers (PNP), and armed citizen defense forces (CAFGU). The interviews during this stage had the goal of developing (rather than testing) hypotheses, and were conducted before I acquired the data used in the quantitative analyses. After getting feedback on the quantitative results, I conducted three additional months of fieldwork to gather evidence on the mechanisms driving the results.

overcome uncertainty, particularly as it relates to future security and economic development. I then turn to why trusted social networks are the most likely avenue through which this information spreads.

Information Diffusion About Security

My first proposition is that counterinsurgency effectiveness is shaped by horizontal information about military control in surrounding villages. The foundation of this idea is that military control shapes civilian cooperation (Kalyvas 2006). However, military control in a given village cannot explain counterinsurgency success on its own; this would not explain how villages starting at the same level of military control reach divergent outcomes. For example, in two villages, each of which has an active insurgent presence, what determines in which village counterinsurgents are more likely to win control? I argue that, holding constant military control in their own village, perceptions about military control in the surrounding area affect civilians' expectations of short-term retaliation as well as longer-term benefits stemming from stable governance by one side or the other.

Military control in nearby villages affects civilians' understanding of the short term risks of cooperating with the warring parties. Civilians might expect that tips they provide to troops will help counterinsurgents clear their own village of rebel presence, but if the rebels remained strong in the surrounding area they would still be under constant threat of attack. Rebels could use their presence in the surrounding area to get information about the identity of defectors and use that information to commit selective violence. Rebel presence in the surrounding area also increases the risk that rebels will use collective punishment against friends and family members of suspected defectors who live nearby. Similarly, strong government military control in the surrounding area engenders civilians' fear of government repression and hesitance to collaborate with rebels.⁸

⁸Elliott (2003) hints at this dynamic using the example of two neighboring villages during the Vietnam War: "Once Vinh Kim fell under the control of the Front, Ban Long's security would be assured and the tasks of motivating the people (meetings, celebrations, labor recruiting) would be carried out freely and easily. On the other hand, if Vinh Kim was under [government] control, Ban Long would have to pay a lot of attention to safeguarding itself from traitors, keeping secrets, and defending itself" (p. 268).

Military control in the surrounding area also affects peoples' perceptions of whether cooperating with one of the warring parties would bring about sufficient long term benefits to their security that outweigh the short term risks. When civilians choose to actively cooperate with one of the warring parties, they often do so because they think their actions will help that side establish more stable military control, reducing the probability of being caught in the crossfire over the long run. Perceptions of military control in the surrounding area affect civilian assessments of whether cooperating in the present time period will help generate future stability. If insurgents remain strong in the nearby area, civilians may fear that helping government troops clear insurgents from their village will only have a temporary effect. Indeed, many of the worst atrocities committed against civilians during civil conflict occur in villages where one of the warring parties is initially expelled but is later able to regain an active presence.

To determine the security implications of their actions, it is important for civilians to not only assess the *level* of surrounding military control, but also the *trend* in control. Civilians are more likely to change their status quo behavior – which in many cases is non-involvement or playing both sides – if they perceive that either the government or the rebels are gaining ground in their vicinity. For example, the government's assurances that they can successfully drive out the rebels are made more credible when civilians know that the military recently won control of other villages in the area. If, on the other hand, the rebels have remained solidly entrenched in nearby villages or have recently gained ground themselves, civilians are prone to think that cooperating with the government is a futile exercise not worth the risk to their security.

To put the argument another way, civilians' understanding of the levels and trends in military control in the surrounding area affects the credibility they attribute to security-related promises and threats made by governments and rebels.⁹ This is because civilians

⁹For Kalyvas (2006), military control signals the credibility of threats and promises much in the way I discuss them in this paper: "Control signals credibility – both the short-term credibility of immediate sanctions, as well as the long-term credibility of benefits and sanctions based on expectations about the outcome of the war. Civilians would rather side with the (expected) winner than the loser" (p.148-149).

recognize that nearby government and rebel strength affects the costs these actors have to pay to follow through on threats to retaliate against defectors and promises to protect cooperators. When rebels or the military have a strong presence in nearby villages, it is easier to investigate and verify claims of who the defectors were, reducing the costs of carrying out targeted retaliation. The credibility of counterinsurgent or rebel promises to provide long-term security is also affected. For example, if rebels operate uninhibited in nearby villages, it becomes prohibitively costly for the government to commit the troops needed to prevent re-affectation by the rebels.

Information Diffusion About Development

My second proposition is that counterinsurgency effectiveness is shaped by horizontal information about economic investment in surrounding villages. Boiled down to a highly simplified version, civilians are uncertain about the government's intentions and capacity for fostering long-term development, which I refer to as the government's *type*. The government may be the "good" type that has a genuine concern for poverty alleviation, is motivated by incentives to continue long-term development, and has the capacity to overcome local corruption. On the other hand, the government may be the "bad" type that cares about development only insofar as it is a means to the end of defeating insurgents. Because even the bad type still needs civilian support to defeat insurgents, both types of government are willing to pay at least some costs towards development efforts while rebels are present.

Civilians in rebel-held villages, many of whom have experienced years of government neglect, are left with a hard time distinguishing government type based on their direct experience with development projects. My interviews with civilians consistently revealed their suspicion that the government had a strong incentive to implement short-term projects while misrepresenting their long-term commitment to development. Uncertainty over government motives and capabilities, which translates to mistrust over whether development is a sign of things to come should civilians cooperate with counterinsurgents, means projects often fail to win "hearts and minds." Civilians may even believe that the only reason they are

receiving government services is because of competition between the state and the rebels over their support, leading them to actively prevent one side from achieving a monopoly of control.¹⁰ In reality, government type is not a black and white concept, but the basic logic extends to situations where government type is more nuanced. Factors that lead citizens to believe that the government is closer to one of the ideal types could tip the scales towards or against them cooperating with counterinsurgents.

Because credible information regarding government type is difficult to attain directly from the actions of counterinsurgents in one's own village, I argue that civilians again rely on horizontal information about government actions in neighboring villages. When civilians hear that neighboring villages are also receiving benefits from government services, they are more likely to accept that development efforts are a genuine representation of government type. Civilians may perceive that it is more costly for the government to invest in these programs on a broad scale rather than targeting a few select villages. This is especially true when projects are also directed at villages under government military control, giving civilians a window into the services they might receive if insurgents are expelled. On the other hand, if civilians in a rebel-affected village are under the impression that their village is the only one in the area receiving a development project, they will be less likely to accept that the government is the type that will invest broadly in economic services after the rebels are defeated. Finally, trust in the government spills over to civilians in neighboring villages who may gain utility from seeing improvements to their friends' and family's economic situation. In short, civilian perceptions of broader development patterns allows them to "separate" the good and bad government types.

Social Networks Spread Credible Information

Given that horizontal information about military control and development projects in neighboring villages can significantly reduce civilian uncertainty over what actions are in

¹⁰Several elected village leaders independently shared this sentiment with me during interviews. These local elites serve as key interlocutors between their communities and the two warring parties.

their best interests, how do civilians attain this information? Conflict zones are notoriously information-scarce environments, and the information sources that do exist are mostly unreliable. Government troops and rebels both “trumpet their victories and attempt to hide their defeats” (Kalyvas 2006: p.149) in the surrounding area but, as discussed, civilians have to take these claims with a large grain of salt. Television and radio reports (if civilians even have access to these mediums) are often transparently biased towards one of the warring parties and are not fine-grained enough to provide information on things like military control in the immediate vicinity. Civilians are unlikely to directly observe insurgent presence in nearby villages when traveling through these places for day-to-day activities because insurgents blend in with the population.

In this vacuum of reliable information, the information that does circulate usually spreads as word of mouth between friends and family members, due to the increased *availability* and *credibility* of information afforded by these social networks. Friends and family members are more likely to communicate on a regular basis and so are an easily available source of information about what is going on in nearby villages where they live. Kinship networks, in particular, are a crucial avenue through which information spreads between the types of rural, isolated communities where insurgency flourishes. In addition, information relating to conflict that is received through social networks is more likely to be trustworthy because friends and family members usually have one’s best interests in mind. Simply discussing topics relating to insurgency with the wrong person could be dangerous, so the perception of aligned interests makes it more likely that people with close social ties will converse honestly about sensitive topics.

My interviews revealed two main ways in which social networks facilitate the spread of information that subsequently shifts civilians’ cooperation with rebels and the military. The first way is the *passive* spread of information between civilians. During informal conversations with each other, civilians often discuss topics like the new school buildings or roads that are being constructed in their village or details of their recent interactions with

insurgents and government security personnel. When I asked civilians how they came by information about the conflict, nearly everyone mentioned a sibling, cousin, or other family member who lived in the area and told them about recent military and rebel activity where they lived. Several frontline military personnel I interviewed independently brought up the passive spread of information as being critical to citizens' cooperation. For example, an intelligence officer who tried to build relationships with civilians while posing undercover as a door-to-door watch salesman told me that it was hopeless to recruit informants whose family members lived in nearby insurgent strongholds due to their fear of retaliation.¹¹

Second, social networks connections between villages facilitate the *active* spread of information, instigated by both the rebels and the military. Both sides rely on civilians in areas they already control to introduce them to new potential cooperators in areas where they want to expand their presence. This strategy is part of the Philippine military's official counterinsurgency doctrine (Corpus 1989) and was commonly mentioned in my interviews both with military personnel and with former rebels. Crucial to this mechanism is that civilians vouch for the credibility of the government or rebels to their social contacts. For example, a military officer told me that before asking an informant to introduce him to a family member, he usually waits for several months to prove that the military can protect the identity of the informant who they want to vouch for them.¹² Another intelligence officer said that he asked the beneficiaries of economic development programs to introduce him to their family members in nearby insurgent strongholds because they could provide concrete, verifiable examples of how the government helped them.¹³

All of this is not to say that information that spreads through social networks is always accurate. Schon (2020) and Greenhill and Oppenheim (2017) show, for example, that influential rumors often stem from unverified information and is shaped by political elites. Although false information (which is often concerned with distant events) spreads through

¹¹Interview 17.

¹²Interview 23.

¹³Interview 24.

the same social networks, I expect that verifiable information about localized patterns of military control and development can have an independent effect on civilian behavior.

Hypotheses

The main predictions stemming from the above theory are that changes to military control of a village are driven by military control and development projects in other nearby villages, conditioned by the strength of civilian social network ties between those villages. For simplicity, the hypotheses are stated in terms of the government's ability to shift military control in its favor, but the predictions also apply to the spread of rebel presence. This implies that counterinsurgency efforts can either be bolstered or undercut by the nature of military control and economic investment in socially connected villages.

H1 (*Security - Level*): The government will be more likely to gain (or maintain) military control of a village when its civilian population has denser social network ties to other villages already under government military control.

H2 (*Security - Trend*): The government will be more likely to gain (or maintain) military control of a village when its civilian population has denser social network ties to other villages where the government has recently gained control.

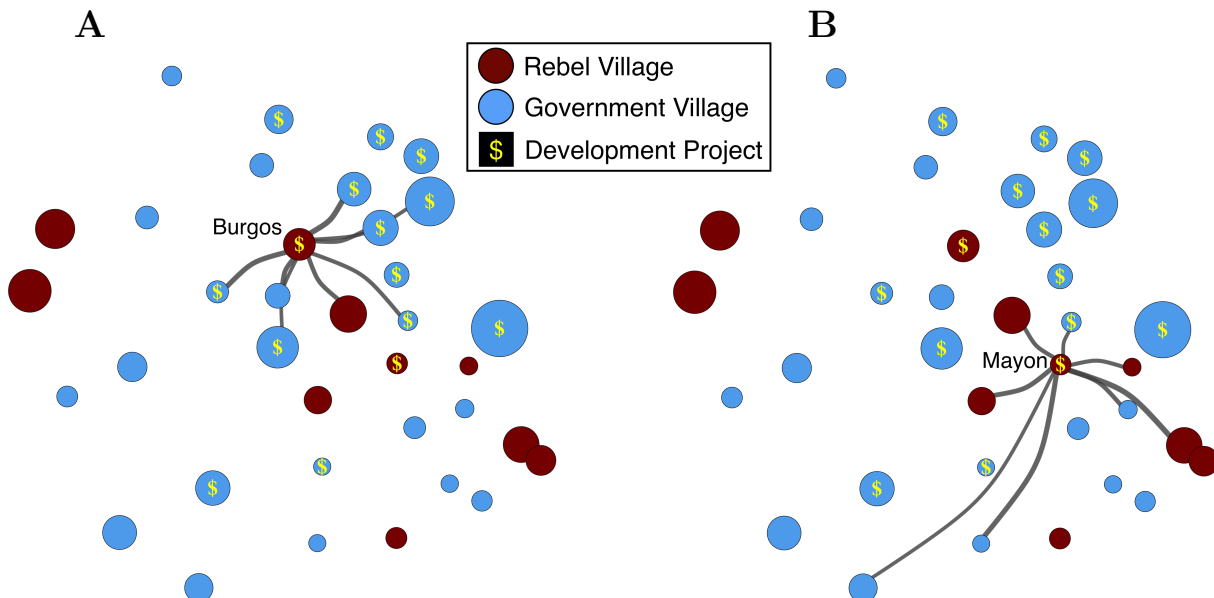
H3 (*Development*): The government will be more likely to gain (or maintain) military control of a village when its civilian population has denser social network ties to other villages that receive development projects.

As I turn to the Philippines case, the way these hypotheses might play out in reality is illustrated in Figure 1, which represents the actual inter-village family network ties of the two villages described in the opening anecdote of this paper.¹⁴ My hypotheses predict that even though the conditions within the confines of these two villages were similar, the inter-village social influences made it more likely that the government would win control of

¹⁴The data used to measure the social networks, military control, and development projects in this figure are described in the following section.

Figure 1. Hypothesized Counterinsurgency Effectiveness:

Villages where the government is (A) *more likely* and (B) *less likely* to win military control



The plots above represent the actual family network ties of two villages in the same municipality in the Philippines. Each “node” represents a village. Nodes are sized by population, colored by military control in 2013, and placed based on their geographic coordinates. Dollar signs represent development projects implemented in 2014. The network ties displayed are the eight strongest network ties from Burgos and Mayon to the other villages in the municipality. NPA rebels were present in the villages of Burgos and Mayon in 2013 and both villages received a development project in the following year.

Burgos compared to Mayon. Of the eight villages where the civilian population of Burgos had the strongest social ties, only one was rebel infiltrated and six received development projects of their own. This is in stark contrast to Mayon, where half of the villages to which civilians had the strongest social connections were also rebel infiltrated and only one received a development project. By end-of-year 2014, the government established military control in Burgos but the rebels held control of Mayon.

Research Context: Rebellion in the Philippines

The Philippines has experienced two simmering conflicts since the late 1960s. Both conflicts claim hundreds of lives per year on average, and insurgents continue to influence thousands of villages across the country. The first major insurgent conflict is with the New

People’s Army (NPA), the military wing of the Communist Party of the Philippines (CPP). The second is composed of various separatist and extremist groups concentrated in the Moro provinces of western Mindanao.¹⁵ Due to data availability, this paper focuses on the communist NPA. Post-2000, the NPA conflict has been responsible for more than two-thirds of the insurgent-related violence in the Philippines (Crost, Felter and Johnston 2014).

The NPA was founded in 1969, though it has roots in previous instances of peasant resistance (Kerkvliet 1977). Despite Ferdinand Marcos’ implementation of martial law in 1972, the group’s strength grew through the 1970s and took off in the 1980s. When Marcos fell in 1986, there were an estimated 25,000 active NPA fighters operating in approximately 20% of the villages (*barangays*) nationwide (Felter 2006). During its heyday, the NPA maintained a high degree of ideological cohesion and received high levels of civilian support, especially among rural peasants. The main grievances claimed by the rebels and their supporters were inequality, exploitation by landowners, and government failure to implement meaningful land reform.

In the following decade, insurgent strength dipped sharply, down to a low point of retaining a presence in a few hundred villages in 1995. This was due in part to the end of the Cold War, a brutal internal purge, and counterinsurgency tactics that shifted from heavy handed “search and destroy” missions to a “hearts and minds” approach. The NPA made a comeback during the 2000s, regaining influence in over 5,000 villages by 2011. That said, the balance of military power remains highly asymmetric in favor of the government, and the rebels operate primarily in remote, underdeveloped areas. The NPA has become less centralized and relies more heavily on coercion and “revolutionary taxes” extracted from large businesses and mining companies.

The Philippines is a good case with which to test theories of insurgency for a number of reasons. First, the military’s strategy used in the fight against the NPA is highly aligned with the model of counterinsurgency used in places like Afghanistan, Iraq, India, Pakistan, and

¹⁵These groups include the now-dominant MILF, MNLF, Abu Sayyaf, BIFF, and the Maute Group.

Colombia, among others. In addition to the inspiration that Philippine military leadership has taken from these contexts, American military advisors have been actively involved in assisting the Philippine government’s counterinsurgency efforts (McCoy 2009b). Because the tactics used in the fight against the NPA are tightly aligned with those used in other policy-relevant contexts, the lessons learned from this study are likely to be applicable to insurgency more broadly.

Further, the Philippines presents a unique data opportunity to test the relationship between social networks and insurgency. Reliable, large-scale social network data is hard to come by in most contexts, let alone a context with contemporaneous conflict data. As described below, I combine data on individual-level family ties between over 55 million civilians with village-level panel data on military control. In the rural areas of the Philippines where the NPA operates, kinship and marriage networks are crucially important for structuring social and political life. A rich history of anthropological work in the Philippines illuminates the importance of family ties for political mobilization (McCoy 2009a). This is supported by a growing empirical literature on the impact of family networks on election outcomes (Cruz, Labonne and Querubin 2017), clientelism (Cruz 2019, Ravanilla, Haim and Hicken 2021), public goods provision (Cruz, Labonne and Querubin 2020) and policing (Haim, Nanes and Davidson 2021). It is these same family ties that facilitate information spread related to insurgency.

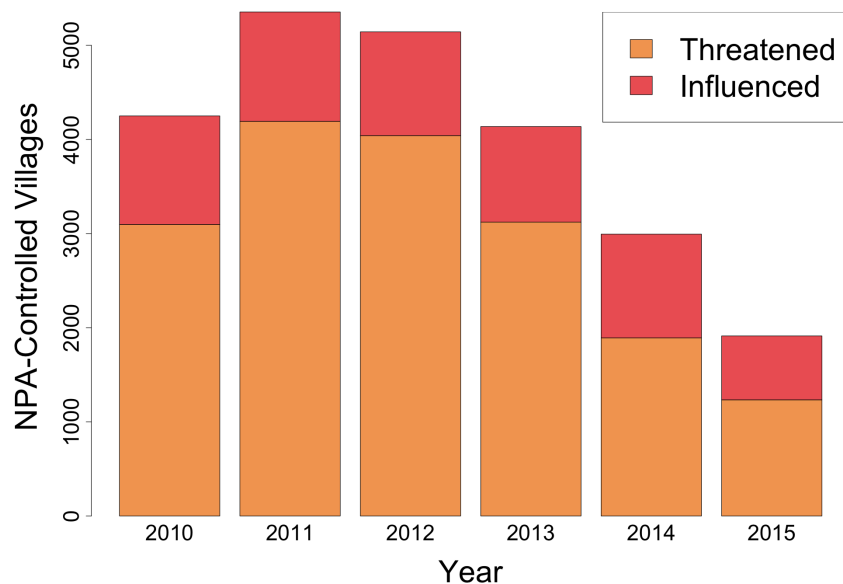
Data and Methods

To test the hypotheses in the previous section, I investigate village-level changes to NPA presence and military control over the 2010-2015 period. I begin by describing the outcome variable (changes to military control) before turning to data on economic development programs and family ties.

Military Control

To measure changes to military control (my key dependent variable), I use village-level data on NPA presence as coded by internal military intelligence reports. Each village in the country is coded on a three-point scale (0-2) by Armed Forces of the Philippines (AFP) intelligence officers at year-end, where 0 indicates a *clear* village, 1 indicates a *threatened* village and 2 indicates an *influenced* village. “Influenced” villages are ones in which the rebels regularly operate and their political branch has an active party organization. If rebels regularly travel through a village and interact with civilians but do not have an active party organization, the village is considered “threatened.” As seen in Figures 2 and 3, the military made significant progress in reducing NPA presence over the 2011-2015 period. At its peak in 2011, the NPA regularly operated in 5,354 of 42,036 villages (13%) nationwide, including 1,162 villages (3%) where it had established an active party organization. Over the subsequent four years, the military was able to clear rebel presence in nearly two-thirds of these villages.

Figure 2. Number of Villages with Rebel Presence, 2010-2015



The y-axis represents the raw number of villages that are either “influenced” or “threatened” by NPA rebels in a given year.

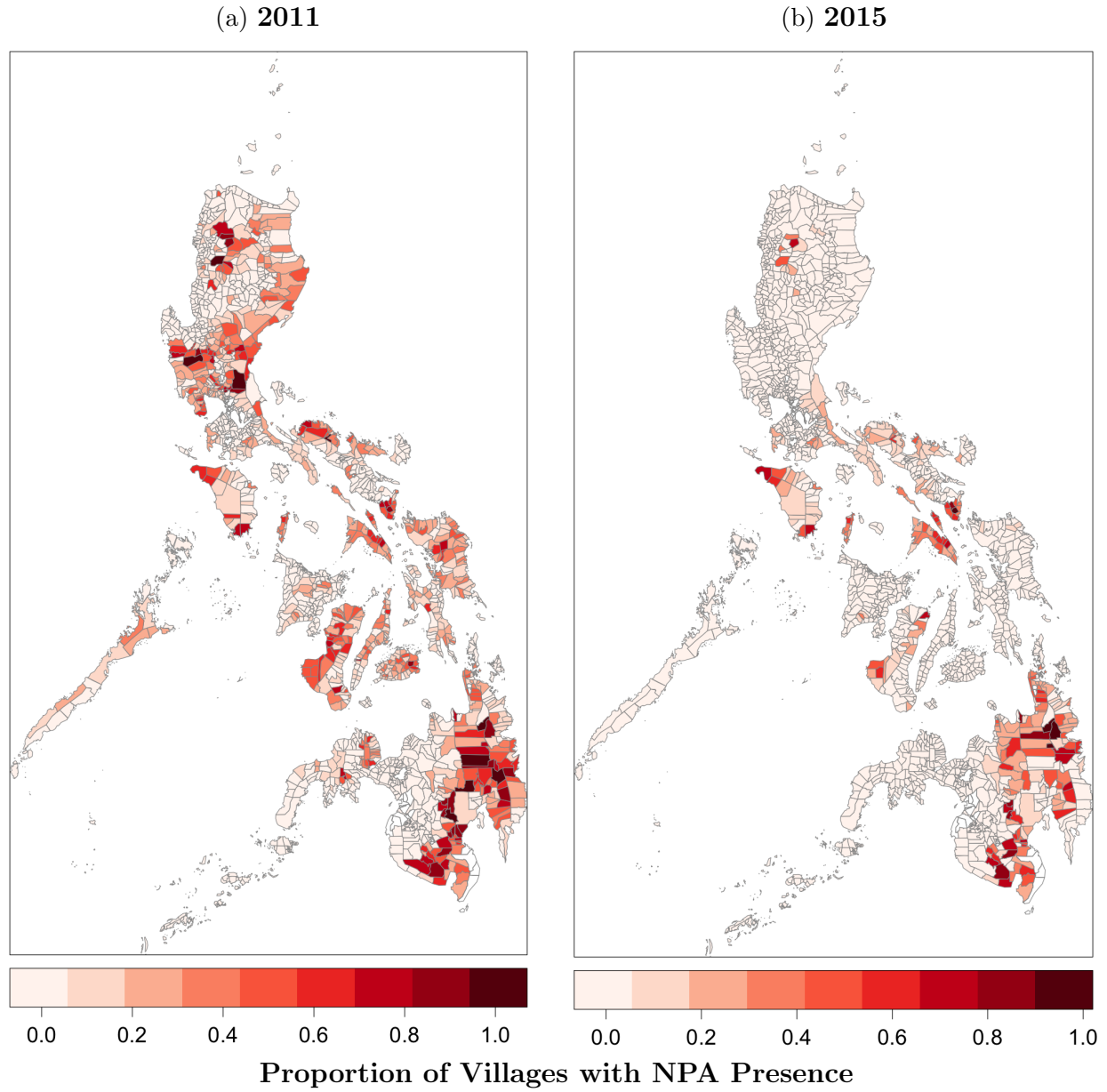
Because my theory relates to changes in military control, I operationalize this concept as NPA presence in a village relative to the previous year by controlling for a lagged measure of NPA presence. While the overall trend suggests largely successful counterinsurgency operations, there were also many instances where the NPA gained ground. Of the villages with NPA presence in 2015, 22% were newly-affected villages where the rebels were not present in 2011.¹⁶

It is important to note that a focus on changes to rebel *presence* diverges from how most other papers operationalize counterinsurgency effectiveness. Most papers investigating empirical patterns of counterinsurgency use changes in *violence* as the dependent variable. While this is certainly an important outcome in its own right, governments are generally willing to sacrifice some violence in exchange for reducing rebel presence. Consequently, defining the success of counterinsurgency based on levels of violence is problematic due to the non-linear relationship between control and violence (Kalyvas 2006).

One potential concern of using military-coded levels of NPA presence is that the data may be manipulated for political purposes. As noted in the theory section, the military has an incentive to show they are “winning” the conflict in order to persuade civilians to cooperate. Two factors mitigate this concern. First, because these intelligence assessments are internal to the military and not intended for public dissemination, there is less risk that the numbers are intentionally manipulated to shape public perceptions of military strength. For internal planning purposes, the military has a strong incentive to accurately assess local insurgent presence. Second, while the study period of this paper shows a significant reduction in rebel presence, the military has been collecting these data since at least the 1970s. From the period from 1995-2010, the number of rebel-affected villages steadily increased according to these same intelligence assessments, mitigating concerns that the reports are only used to show positive results for the government (Felter 2006).

¹⁶SI Figure B.1 shows the distribution of village-years where the NPA either gained or lost control.

Figure 3. National NPA Presence, 2011-2015



Geographic units in the maps are municipalities and cities. On average, these encompass 26 villages. Shading represents the proportion of villages in each municipality that is either influenced or threatened by the NPA.

Economic Development Programs

In order to assess the hypothesis relating to economic development (H3), I use project-level data from the two flagship economic development programs implemented by the Philippine government in areas of conflict and poverty. The first program, PAMANA, constitutes development spending that is specifically earmarked to conflict zones. The program consolidates development projects implemented by a wide variety of government agencies and is overseen by the Office of the Presidential Advisor on the Peace Process (OPAPP).

Table I. Summary of Development Projects

Project Type	Count	%	\$\$
Roads, Pathways and Bridges	8132	25.8	2.41
Agricultural and Fishing Facilities	6252	19.8	0.47
School and Daycare Buildings	3457	11.0	0.84
Environmental and Disaster Protection	2917	9.2	0.78
Community Buildings	2530	8.0	0.76
Water and Sewage	2391	7.6	0.79
Electrification	1706	5.4	0.61
Livelihood Trainings and Support	1182	3.7	0.60
Health Facilities	1052	3.3	0.71
Uncategorized CDD	784	2.5	0.33
Agriculture Reform	557	1.8	0.33
Community Protection and Capacity	446	1.4	3.43
Other	151	0.5	8.63

Values shown are combined KALAHY and PAMANA development projects from 2010-2015. Average project costs (\$\$) are reported in millions of Philippine Pesos (PHP).

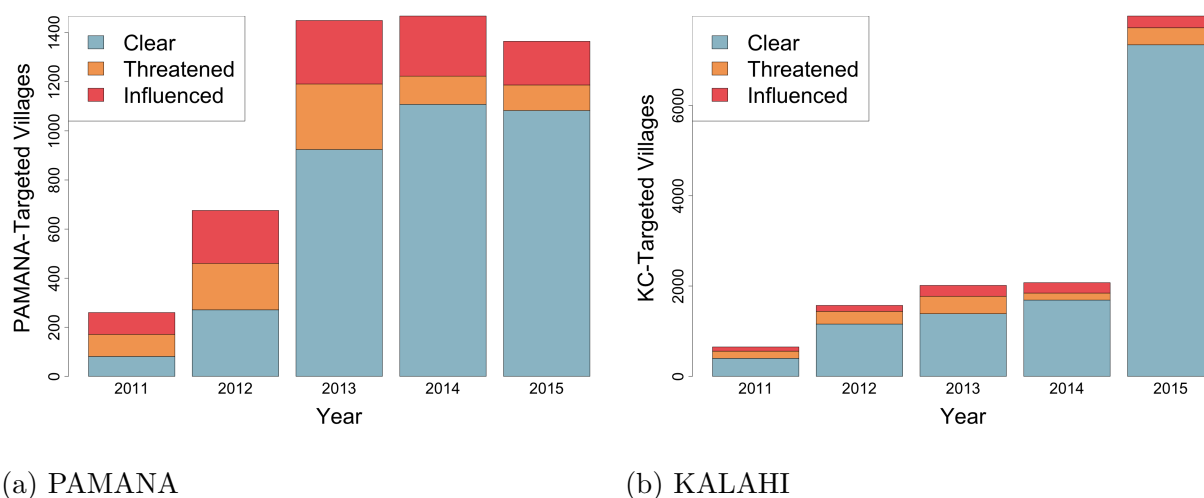
The types of projects funded by PAMANA all broadly aim to connect hard-to-reach communities to basic government services (Table I). Projects include new “farm-to-market” roads and other public infrastructure. A smaller portion of projects target individual recipients with trainings and livelihood assistance. To allocate projects, OPAPP representatives, military officers, and elected Provincial officials coordinated to select municipalities affected by conflict. OPAPP and the military then conferred with municipal leadership to select critical villages and coordinate with the village leadership to determine project types.¹⁷ Finally,

¹⁷A central goal of PAMANA was to incorporate “conflict-sensitive and peace-promoting” processes outlined in the World Bank’s 2011 World Development Report. In practice, this translated to extensive community consultations to identify potential adverse effects before projects were determined and implemented.

OPAPP channels funds to one of 13 government agencies that implement the projects. Over the 2011-2015 period, 5,847 projects were targeted at 2,185 villages (2.7 projects per selected village) and most projects were implemented in less than a year. About one-third of projects were implemented in villages with concurrent rebel presence (Figure 4, left panel), though more than 90% of projects were targeted at *municipalities* with rebel presence.

The second program, KALAH-CIDSS (henceforth KALAH), is the Philippine government's flagship community-driven-development program, implemented by the Department of Social Welfare and Development (DWSD). In contrast to PAMANA, which is explicitly targeted at conflict-prone areas, KALAH is targeted primarily for the purpose of poverty alleviation. In order to be eligible for KALAH, a village must be in a municipality that is in upper quartile of poverty as estimated by a national poverty census. While the types of projects implemented by KALAH are relatively similar to PAMANA (see SI Table B.2), their targeting profile is quite different. Only 10.7% of KALAH projects are targeted directly at villages with NPA presence.

Figure 4. PAMANA and KALAH Targeting Based on NPA Affection



The above figures show the distribution of PAMANA and KALAH project targeting based on the level of village-level NPA affection (by year).

Family Networks

The last key piece of data is a measure of social network connections between villages. To measure these inter-village ties, I adapt the methods pioneered by Cruz, Labonne and Querubin (2017) to identify family relationships between individuals in neighboring villages from the names of over 55 million individuals on voter registration lists.¹⁸ This is possible because of the structure of the Spanish naming convention (where surnames pass down from both the mother and the father), along with the fact that Spanish colonizers in the 1800s assigned surnames to families across the Philippines in a highly arbitrary manner. Provincial Colonial leadership assigned a new set of surnames from the Spanish ‘Catalogo Alfabetico de Apellidos’ (the Alphabetical Catalog of Surnames) to family heads in each village. Each village was assigned a different set of names, making it so that more than a century later one can accurately determine who is related to whom by kinship and marriage ties based purely on shared surnames (Scott 1998).

Using this method, I calculate the density of family ties connecting pairs of villages. I start at the individual level by denoting a family tie between any pair of individuals who share a surname. These individual ties are then aggregated to the village level. For each pair of villages (i and j), I calculate the raw number of cross-village family relationships ($ties_{ij}$). This value is then standardized by the number of possible family ties between that pair of villages, which is the product of the two village populations (N_i and N_j).

$$FamilyNetworkDensity_{ij} = \frac{ties_{ij}}{N_i * N_j}$$

I limit the analysis to villages within ten kilometers of each other for the main specifications because as the distance between villages increases, there is a reduced likelihood that individuals sharing a surname are actually related. Cruz, Labonne and Querubin (2017) show

¹⁸Voter registration rates in the Philippines are over 80%, which allows for a fairly representative picture of the full inter-village network.

that the family network measure is highly accurate for villages within the same municipality, which roughly equates to a 10km radius.¹⁹

Research Design

To test my three hypotheses, I draw from spatial analysis methods to calculate each village's social exposure to rebel presence and development projects in nearby villages. The unit of analysis is the village-year, based on approximately 40,000 Philippine villages and the five years between 2011-2015.²⁰ The baseline spatial-OLS specification is shown below.²¹

$$\begin{aligned}
NPA_{i,t} = & \alpha + \beta_1 \sum_j W_{ij}(Family) * NPA_{j,t-1} + \beta_2 \sum_j W_{ij}(Distance) * NPA_{j,t-1} \\
& + \beta_3 \sum_j W_{ij}(Family) * NPA_{change_{j,t-1}} + \beta_4 \sum_j W_{ij}(Distance) * NPA_{change_{j,t-1}} \\
& + \beta_5 \sum_j W_{ij}(Family) * Dev Project_{j,t} + \beta_6 \sum_j W_{ij}(Distance) * Dev Project_{j,t} \\
& + \beta_7 NPA_{i,t-1} + \beta_8 Dev Project_{i,t} + \delta_i + \delta_t + \epsilon_{i,t}
\end{aligned}$$

The dependent variable ($NPA_{i,t}$) represents year-end NPA insurgent presence in village i and year t . I include the lagged dependent variable ($NPA_{i,t-1}$) so the other coefficients identify factors that predict year-to-year changes in military control. Errors are clustered at the municipality level (one level of administrative aggregation above the village), and the results are robust to spatially adjusting the errors using the method in Conley (1999).²²

¹⁹SI Table B.6 shows that the models are robust to using a 30km radius.

²⁰For the main specification, I exclude villages in municipalities where the NPA was *never* present over the 2009-2015 period, leaving an effective sample of 24,159 villages. I do this to account for Boehmke's (2009) insight that estimates of diffusion can be biased by including units that do not plausibly have the opportunity to adopt different values of the dependent variable. The results are robust to including the full sample of 40,154 villages (SI Table B.5).

²¹Franzese and Hays (2007) and Plumper and Neumayer (2010) show that S-OLS (which is more conducive to including high dimensional fixed effects) produces very similar results to S-MLE for spatial-x models and cases of modest interdependence strength, conditions that are met in this paper.

²²I view municipal-level clustering as a more neutral choice because Conley standard errors only take into account *spatial* error correlations rather than *social-network* correlations. Results using Conley errors are shown in SI Table B.3.

To operationalize my hypotheses, I create three variables that I refer to as “social lags,” which are similar to spatial lags but rely on a weight matrix of family ties rather than geographic distance. The social lags utilize an $n \times n$ weight matrix, $W_{ij}(Family)$, in which each element is the family network density between a pair of villages (i,j) . The weight matrix is multiplied by three features of nearby villages to create a weighted sum of each village’s exposure to these features. To operationalize **H1**, the social lag is calculated by multiplying the family network weight matrix by the level of NPA presence in each nearby village j in the previous year ($NPA_{j,t-1}$).²³ A higher value on this metric represents villages that have denser family ties to other villages where the NPA was strong. For **H2**, I multiply the family network weight matrix by the *change* in NPA presence each village j experienced in the previous year ($NPA\ change_{j,t-1}$). This is calculated by subtracting the level of NPA presence in the year beforehand ($t-2$) from the level of NPA presence in year $t-1$, producing values that range from -2 to 2. For example, a value of -1 on this measure represents a village where, in the previous year, the NPA lost ground – either from control (2) to threatened (1) or from threatened (1) to cleared (0). Finally, for **H3**, the social lag is calculated using the number of development projects completed in village j . Because the dependent variable is a year-end measure of NPA presence, I use development projects completed in the same year t leading up to the measurement of the DV. I control for whether the village in question received a development project itself ($Dev\ Project_{i,t}$) to control for the traditional “hearts and minds” story.

In addition to the social lags, I include three conventional *spatial* lags. Previous studies find that violence in civil conflicts diffuses geographically, either through escalation or relocation (Weidmann and Ward 2010, Schutte and Weidmann 2011, Zhukov 2012), and policymakers often focus on the “oil spot” logic of geographically expanding control from strategic locations (Galula 1964). Controlling for geographic spatial lags allows me to test whether the diffusion of military control through social networks occurs independently of

²³Including the temporal lag of the social lag variable, as suggested by Ward and Gleditsch (2018), deals with problems of simultaneity bias and Anselin’s (1988) critique that including a spatial lag results in OLS estimates that are biased and inconsistent.

these mechanisms. The spatial lags are calculated using the same three features of village j captured in the social lags (NPA presence, change, and development projects), but instead rely on a weight matrix of the inverse geographic distances between villages, $W_{ij}(Distance)$. Distance and family ties are positively correlated with each other ($\rho = 0.18$), but not to an extent that would introduce problematic collinearity.²⁴

The model includes village and year fixed effects (δ_i and δ_t) to account for what is commonly known as the “Galton problem” in spatial econometrics (Buhaug and Gleditsch 2008, Plumper and Neumayer 2010). In the absence of village effects, it would not be possible to distinguish diffusion from the social and spatial clustering of other village-level confounders. Village characteristics that affect military control – such as natural resources, mountainous terrain (Fearon and Laitin 2003), ethnic or religious composition (Cederman, Weidmann and Gleditsch 2011), economic marginalization (Collier and Hoeffler 2004), and civilian ideology (Sanin and Wood 2014) – certainly cluster in villages that are geographically and socially proximate. The majority of these village fundamentals are unlikely to change significantly over the relatively short timespan of this study (five years) and will thus be absorbed by the fixed effects. The year fixed effects account for common shocks that affect the likelihood of changes to military control across all units, such as increased government investment in counterinsurgency efforts in certain years.

One threat to inference is reverse causality: social networks may be shaped by conflict rather than vice versa. The present study is limited by the lack of an over-time measure of social networks, a limitation shared by much of the literature on social networks and conflict. That said, kinship networks (including in the Philippines) tend to be particularly resilient in the face of political upheaval (McCoy 2009a), and marriage patterns driven by conflict are unlikely to significantly affect aggregate inter-village family networks during the short 5-year period of the study. Conflict-driven migration, which could shape family networks, is also not a particularly salient concern in this context. In a 2017 survey of 4,500 civilians I ran in one of the most heavily NPA-affected provinces of the Philippines for a separate

²⁴See SI Figure B.2.

project, only 3% of people report having moved barangays in the previous six years, and the migration rate was not significantly different among the third of respondents who lived in villages where the NPA was present between 2010-2015 (See Figure C.1).

A threat to inference specific to the development hypothesis (H3) is that the military might provide additional security presence in places where projects are being implemented, confounding the development hypothesis with the security hypothesis. The concern is mitigated to an extent by evidence from interviews I conducted with development agency personnel. High-ranking agency officials as well as bureaucrats in charge of on-the-ground implementation consistently expressed to me that the military support in areas where projects were being implemented was spotty at best. This was corroborated by six in-depth qualitative case studies of PAMANA project implementation commissioned by a UNDP-funded evaluation of the program (on which I was the Principal Investigator). If anything, government development projects appear to draw military targeting by the NPA (Crost, Felter and Johnston 2014), which biases against finding support for my hypothesis. A related concern is that the government might target development projects at areas where it is easier for them to win military control due to unobserved factors. In this regard, one advantage of these models is that they account for military control in nearby villages where projects are implemented. Still, due to these limitations, I advise some additional caution when it comes to interpreting causality in the results relating to H3.

Results

The results relating to the three main hypotheses are shown in Table II. The dependent variable in Models 1-3 is NPA presence, meaning that positive coefficients represent variables that are associated with the government being *less* able to establish military control.

The results show support for both security hypotheses, regardless of whether the variables are included separately (Models 1-2) or together in the same model (Model 3). Government efforts to establish or maintain military control were significantly less effective

Table II. Spatial Regression

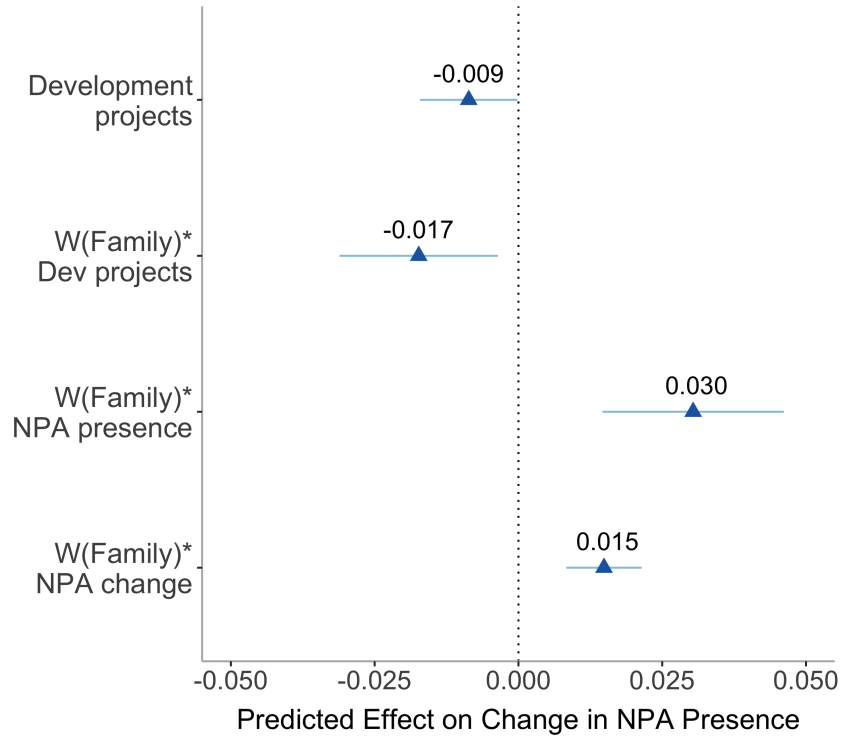
Dependent Variable:	NPA presence	NPA presence	NPA presence	NPA gained	NPA lost
	(1)	(2)	(3)	(4)	(5)
W(Family)*NPA presence	.006** (.002)		.008*** (.002)	.004* (.002)	-.0007 (.0009)
W(Family)*NPA change		.129*** (.026)	.117*** (.026)	.037** (.014)	-.049** (.015)
W(Family)*Dev projects	-.107* (.053)	-.067* (.027)	-.070* (.028)	-.050** (.016)	-.011 (.012)
W(Distance)*NPA presence	-.026*** (.004)		-.040*** (.005)	-.004 (.004)	.031*** (.003)
W(Distance)*NPA change		-.00001 (.0001)	.0004** (.0001)	-.0005*** (.00008)	-.0006*** (.00007)
W(Distance)*Dev projects	.0002 (.0001)	.0001 (.0001)	.0001 (.0001)	.0002*** (.00006)	.0001 (.00009)
Development projects	-.018* (.008)	-.018* (.008)	-.016* (.008)	.003 (.003)	.017*** (.004)
NPA presence (lag)	.256*** (.016)	.220*** (.018)	.244*** (.017)	-.216*** (.010)	.326*** (.009)
<i>Fixed-effects</i>					
Village fixed effects	✓	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓	✓
R ²	.74372	.74425	.74582	.34447	.36756
Observations	120,795	120,795	120,795	120,795	120,795

*p<0.05; **p<0.01; ***p<0.001. Standard errors clustered by municipality.

in villages where civilians had strong family ties to areas where the rebels were strong (H1) or had recently gained ground (H2). The results also show support for the development hypothesis (H3) – counterinsurgency was more effective when civilians had social ties to nearby villages that received development projects.

The social lag variables predict substantively meaningful changes to military control. Figure 5 shows the predicted marginal effect of a one standard deviation change in each of the key independent variables in Model 3. As a reference point, the average village-level change in military control across all observations is a .025 point decrease in NPA presence. The -.017 marginal effect of the development projects social lag ($W*Dev Projects$) indicates that when a village is one standard deviation above the mean in terms of social ties to villages that receive development projects, there is an additional 70% predicted reduction in NPA presence compared to the average village. This is nearly double the predicted effect

Figure 5. Predicted effect magnitude of a 1-SD change in independent variables



Displayed marginal effects with 95% confidence intervals were calculated from Model 3 in Table II while holding all other variables at their mean, using the *marginalEffects* R package (Arel-Bundock 2022).

of a village receiving a development project of its own (-.009). On the other hand, the effect of a village being one standard deviation above the mean in terms of its social ties to other villages with NPA activity (.030) fully counterbalances the average counterinsurgency success the government experienced across the rest of the country. The change to military control predicted by this security social lag is also approximately twice the magnitude of change predicted by the development social lag, consistent with the idea that security is civilians' primary concern.

While the NPA presence dependent variable in the main specification captures shifts in military control towards both the government and the rebels, it is possible that social networks affect these two processes differently. To explore this, I separately look at whether the social lags are associated with the probability of NPA gains (Model 4) and NPA losses

(Model 5).²⁵ All three social lags remain significant in the expected direction when it comes to predicting the rebels' ability to gain territory. When it comes to the government's ability to clear NPA presence, the most important factor appears to be the recent trend in military control in socially connected villages (H2).²⁶ Notably, social exposure to development projects appears to help the government maintain military control of villages but not gain control of new villages. This result is consistent with a "Clear, Hold, Build" model of counterinsurgency in which exposure to government development projects can help consolidate control in already-cleared villages but may not be enough to increase civilian cooperation in areas with active rebel presence (Sexton 2016).

Mechanisms and Alternative Explanations

The above results suggest that the spread of territorial control follows a pattern of diffusion along civilian social networks. This pattern is consistent with the mechanisms of active and passive horizontal information flows outlined in the theory section, but there exist several alternative mechanisms that might be driving the results. When receiving initial feedback on the quantitative component of the project, the most commonly-mentioned alternative mechanisms related to 1) diffusion of ideology, 2) diffusion of material goods, 3) military targeting based on networks, 4) other types of networks aside from family ties, and 5) rebel services.²⁷ To investigate the extent to which these alternative mechanisms could be driving the results, as well as to further unpack the horizontal information mechanism, I returned to the Philippines for an additional three months to conduct interviews. Section C of the SI provides a detailed discussion of the evidence I collected on these mechanisms, which I briefly summarize here.

²⁵The dependent variable in these models is a dummy variable indicating whether there was an increase (Model 4) or a decrease (Model 5) in NPA presence relative to the previous year. SI Table B.4 shows that these results remain relatively consistent in a logit model.

²⁶Unlike in Models 1-4, a higher value of the DV in Model 5 represents *more* effective counterinsurgency efforts, meaning that a negative coefficient on the NPA change social lag is consistent with H2.

²⁷The sixth commonly-mentioned alternative explanation was reverse causation, which is discussed in the research design section.

First, perhaps civilian behavior is shaped by *ideology* (rather than information) that spreads through social networks. This explanation could confound the results if rebels or the military use their presence in nearby villages to spread their ideology through social networks, or if the government pairs development projects with ideological propaganda that spreads through networks. My interviews with civilians and local experts on the conflict revealed that this alternative mechanism is unlikely to shape the results in the specific empirical context of this study. Put simply, after 50 years of ongoing conflict, ideological appeals have largely lost their effectiveness for both the NPA and the government. Families have heard similar appeals for generations, and they tend to have entrenched opinions when it comes to the communist ideology. Relative to the early stage of the conflict, both sides' recruitment efforts have largely shifted to focus on peoples' interests instead of ideology. The historical role of networks in the diffusion of ideology means that ideology certainly still *clusters* in social networks today, but this cross-sectional clustering of ideology would be absorbed by the fixed effects in the statistical model. It is unlikely that the dynamic *spread* of ideology through social networks during the five-year period represented in my data meaningfully affected the results.²⁸

A second alternative specific to the development hypothesis (H3) is that the results are driven by the spread of *material goods* through networks. If government development projects increase civilians' material resources, they may transfer a portion of those resources to family members in nearby villages, which may in turn reduce their grievances against the government or increase their opportunity costs for participating in the conflict. My interviews suggested that this mechanism was unlikely to confound the results. PAMANA and KALAH-CIDSS focused on helping rural populations become more self-sufficient at providing their own income. Beneficiaries of these programs tend to be experiencing high levels of poverty, so whatever material benefits they gain are highly unlikely to be transferred to other relatives. Furthermore, the social lag variable is constructed using development

²⁸Although it is unlikely that this alternative mechanism explains the results in the present study, an important extension of my theory is that social networks likely facilitate the spread of territorial control through this mechanism during earlier periods of a conflict when ideological appeals are more effective.

projects in the year immediately leading up to the assessment of NPA control. Government development projects tended to have relatively limited impacts on surplus income within this short timeframe, even in directly targeted villages.

Third, rather than information flows between civilians, it may be the case that counterinsurgents sequentially target military efforts at sets of villages that are socially connected to each other. This concern is mitigated by interviews I conducted with high-level AFP and OPAPP officials suggesting that counterinsurgency targeting (both in terms of troops and development services) is largely shaped by geography, not social networks – their directives focus on targeting resources in locations that are geographically proximate to areas where they already have military control.²⁹ In addition, to support government infrastructure projects, the military increases its presence in areas that are geographically proximate to where the projects are implemented. These processes should be largely captured by the geographic spatial lag controls. To the degree that village-level military targeting is shaped by social networks rather than geography, the only mechanism mentioned by interview subjects as driving this pattern was the active use of social networks to win the trust of new informants. Tips received from these informants allow the government to expand counterinsurgency operations to areas where they previously did not have a foothold. Because the active use of networks to spread information is one of my hypothesized mechanisms, this process is better viewed as an implication of my theory rather than as a confounder.

Fourth, although my empirics focus on family networks, information that shapes insurgency surely spreads through other types of networks as well. My interviews confirmed that family members were a particularly important source of information about the conflict for most respondents. That said, other networks based on interpersonal ties also played a role, especially those formed through church, school, work, civil society and neighborhood. I view the spread of information through these networks to be consistent with my theory. From an empirical standpoint, other interpersonal networks could contribute to my results

²⁹This is consistent with [Berman, Downey and Felter \(2016\)](#), who find that conflict displacement in the Philippines followed consistent geographic patterns.

to the extent that they are correlated with inter-village family ties, which is likely to be the case. On the other hand, my interviews suggested that online social networks likely did not contribute to the specific type of information spread outlined in my theory. Because social media posts are publicly available and identifiable, it was exceedingly rare that people would share information about local details of the conflict online, which could put them in danger of retaliation.

Fifth, one could argue that the spread of information about *rebel* services is driving the results. I view it as an extension of my theory that, in contexts where service provision is an important source of rebel legitimacy, the spread of information about rebel services should also shape territorial control. However, my interviews revealed that this mechanism is unlikely to contribute to the results in the present study because, at the current stage of the conflict, NPA service provision is very limited.³⁰ This is consistent with Stewart's (2018) finding that rebels tend to provide relatively few services in asymmetric conflicts. Where the NPA does still provide services, interviews suggested that they focus on areas where government public good provision is improving, in an attempt to prevent a loss in their legitimacy.³¹ If NPA services are indeed helping the insurgents maintain legitimacy among the population of areas targeted with government projects, then the location and timing of rebel services should bias against my results.

Discussion and Conclusion

Civil conflicts famously suffer from significant information and commitment problems between governments and rebels. In this paper, I highlight another, previously underappreciated, crisis of credibility that governments and rebels face with *civilians*. In order to peacefully end a conflict, combatants need to convincingly signal to civilians that they will follow through on promises to protect their security and economic interests, even when

³⁰When the NPA was stronger, it provided a more robust suite of services. Remaining NPA services are small in scale and include basic dispute resolution, intimidation of landlords, and rudimentary health services.

³¹This pattern is consistent with the strategy of non-state groups trying to "outbid" government services (Blattman et al. 2021).

they no longer depend on civilian cooperation to win the conflict. This strategic dynamic between conflict actors and civilians is particularly important in asymmetric insurgencies, where civilians play a crucial role in determining military outcomes. In these conflicts, the paradigmatic COIN model underestimates civilians’ capacity to interpret the strategic actions of conflict actors. My paper challenges this conventional wisdom by arguing that civilians “look down the game tree” and are acutely aware of conflict actors’ incentives to win their support by any means necessary, generating skepticism about whether directly observable counterinsurgent behavior is genuine.

In addition to highlighting the core uncertainty civilians face regarding government credibility, this paper provides an answer to how civilians overcome this uncertainty: information they receive through their social networks. Civilians in conflict zones, who are confronted with a life-or-death choice about whether to cooperate with combatants, face a dearth of reliable information when making this fateful choice. I contend that word of mouth from family and friends, who have direct experiences with the government and rebels in other villages, becomes the most readily available and trustworthy source of information in this context. The spread of information between civilians is an inherently micro-level process, but the aggregation of individual social relationships into networks that connect many villages to each other illuminates how seemingly small development projects and shifts in military control can cascade into much larger conflict trends.

The dynamics described in this study are most likely to be salient in contexts where multiple groups compete over territorial control, operate in close proximity to each other, and use some combination of inducements and threats to win civilian cooperation. In addition to asymmetric insurgency, this scenario is common to criminal politics (Barnes 2017), the formation of new violent organizations (Lewis 2020), and competition between formal and informal political authorities (Malejacq 2020). Although the relevant types of social networks and the relevant content of information certainly varies in different contexts, the central point remains: civilians are likely to use the information that spreads through networks to decide

whether they believe the credibility of promises and threats made by state and non-state authorities regarding their future actions. This perspective provides a structured framework to understanding the role of “rumors” that are widely recognized to be important for shaping political outcomes in these contexts.

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Supporting Information (SI)

Social Terrain and Conflict Diffusion: Civilian Networks and the Spread of Territorial Control in the Philippines

Table of Contents

A Qualitative Fieldwork Details	SI 2
A.1 Fieldwork Goals and Overview	SI 2
A.2 Site Selection	SI 4
A.3 Research Ethics	SI 4
A.4 Positionality and Interpreter Selection	SI 7
A.5 Table of Interviews	SI 9
A.6 Transcription and Coding	SI 13
 B Supplemental Quantitative Analyses	 SI 13
B.1 Summary Statistics	SI 13
B.2 Robustness	SI 17
 C Mechanisms and Alternative Explanations	 SI 21
C.1 Unpacking the horizontal information mechanism	SI 22
C.2 Alternative 1: Reverse Causation	SI 26
C.3 Alternative 2: Diffusion of ideology	SI 27
C.4 Alternative 3: Diffusion of material resources	SI 29
C.5 Alternative 4: Military targeting correlated with networks	SI 29
C.6 Alternative 5: Non-family social networks	SI 31
C.7 Alternative 6: Rebel service provision	SI 31

A Qualitative Fieldwork Details

A.1 Fieldwork Goals and Overview

The development of the theory presented in this manuscript relies on approximately four months of inductive fieldwork conducted in the Philippines in 2016 and 2017. In addition, my assessment of the mechanisms driving the quantitative results relies on an additional three months of fieldwork conducted in 2018 and 2019. The fieldwork proceeded in three main phases:

1. *Preparatory Phase*: $\approx$ 3 weeks
 - September 8, 2016 - September 28, 2016
2. *Inductive Theory Building Phase*: 24 interviews conducted over $\approx$ 4 months.
 - January 5, 2017 - April 8, 2017
 - June 9, 2017 - June 26, 2017
3. *Mechanism Testing Phase*: 14 interviews conducted over $\approx$ 3 months.
 - January 9, 2018 - March 3, 2018
 - January 2, 2019 - February 3, 2019

During the preparatory phase, I traveled to the field site (Sorsogon Province of the Philippines), discussed safety and ethical considerations with local personnel who were knowledgeable about the conflict, and interviewed potential interpreters. These initial connections were established in consultation with two US-based academics who had conducted several previous research projects in Sorsogon, one of whom grew up in the region.¹

The goal of the inductive theory building phase of the field work was to further develop a (nascent at the time) theory about the interaction between civilian social networks, electoral politics, and conflict dynamics. My initial theoretical inclinations stemmed from reading secondary sources on insurgent conflict in various countries and time periods, including the New People's Army (NPA) conflict in the Philippines. Because the goal of the inductive fieldwork was to develop a theory rather than test one, the interviews were loosely structured and included mostly open-ended questions and follow-ups that were relevant to the subjects' roles in society.

Interspersed with the interviews described below, I conducted background discussions with over 40 local academics, government personnel, and particularly knowledgeable civilians identified by colleagues who had experience in the area. The goal of these discussions was to clarify my understanding of broad dynamics relating to the national NPA conflict, the history of the conflict in Sorsogon, the grievances that were most relevant to civilians in Sorsogon, and other broad-strokes issues. The distinction between what I refer to as "interviews" and "background discussions" is based on whether I guided the conversation based on my current understanding of the conflict dynamics. In the interviews, I wanted as much as possible to

¹At the time, I was also working on a separate research project in collaboration with these researchers.

allow the subjects to guide the conversation towards what they felt were the most important aspects of their personal experiences and the factors that shaped local conflict dynamics. In contrast, I used the discussions to gain background knowledge and bounce ideas off people that would help me gain clarity about the right questions to ask formal interview subjects.

After my initial discussions allowed me to build the core of a local network, I worked with individuals in this network to identify interview subjects. These subjects fell into three broad categories: civilians (16 interviews), government security personnel (6 interviews), and former rebels (2 interviews). In my interviews with civilians, one area of focus was how they developed perceptions of various government and non-state actors, and the information/experiences they relied on as part of this process. After asking a few non-sensitive details about the individual's personal background, I turned to questions about the perceptions and behaviors of "civilians in their area" relating to electoral politics, government agencies, and the NPA conflict. I only asked questions about subjects' *personal* views and experiences if subjects voluntarily turned the conversation towards these topics. Fifteen (out of sixteen) civilian respondents turned to discussing personal experiences during the course of their interviews, as did all of the government security personnel and former rebels. Slightly more than half of the civilian subjects I interviewed were local elites, such as elected village captains and councilors, political campaign managers, and civil society leaders. Most civilian respondents I spoke with lived in areas that were currently under government control but had been places with regular NPA activity within the last five years and/or were directly adjacent to areas under NPA control. I avoided conducting interviews with civilians who lived in the most heavily NPA-controlled areas because I did not have sufficient information to determine with certainty whether doing so would put civilians' security (as well as my own security) at risk.

The second and third categories of interview subjects were government security personnel and former rebels. In total, I interviewed one senior official in the Armed Forces of the Philippines (AFP), one junior AFP soldier, one senior official in the Philippines National Police (PNP), one junior PNP officer, and two members of a local Citizen Armed Force Geographical Unit (CAFGU). CAFGUs serve as the most ground-level component of counterinsurgency efforts and play a crucial role in recruiting civilian informants. Like with my interviews with civilians, I only discussed broad-level counterinsurgency and rebel strategies unless the interview subject brought up personal experiences on their own. I interviewed two former members of the NPA, one of whom was a former mid-level leader in the region and another of whom was a junior member.

In addition to the qualitative interviews, I spent part of my time in the field during this phase collecting the administrative data I used in the quantitative portion of this study. I was given access to the barangay-level NPA control data (based on AFP intelligence reports) and project-level PAMANA data by the Office of the Presidential Advisor on the Peace Process (OPAPP). KALAHI-CIDSS data were given to me by the Department of Social Welfare and Development (DSWD), voter registration lists from the Philippines Commission on Elections (COMELEC) and additional administrative data from a variety of other government agencies.

The third phase of my qualitative fieldwork was devoted to investigating mechanisms and alternative explanations in further depth. After returning from the initial inductive

fieldwork, I conducted a version of the quantitative analyses presented in the manuscript. I presented these results and shared a draft of the paper with colleagues in my department, and I received feedback on several possible alternative explanations for mechanisms that might be driving the empirical results. I returned to the field after approximately six months at my home institution in order to probe the explanatory power of these alternative explanations. I also used this time to further trace the process underlying the horizontal information flows mechanism that was the focus of my paper. During this phase, I conducted an additional 14 interviews (11 with civilians and 3 with government security personnel), half of which were re-visits of previous interviewees and the other half of which were first time interviews, along with additional background discussions. The findings from this phase of the research are presented in Section C.

A.2 Site Selection

I conducted the majority of my field research in Sorsogon Province, which is located in the Bicol Region on the southernmost tip of Luzon, the Philippines largest island and population center. Sorsogon itself is home to a population of approximately one million people, most of whom live in rural or semi-urban areas. The Bicol Region (and Sorsogon in particular) was one of the original NPA strongholds starting in the late 1960s and it remains one of the areas of the Philippines where the NPA is most active today (See Figure A.1). Like many other areas of the Philippines outside of the Bangsamoro region of Mindanao, traditional identity divides are not particularly salient in Sorsogon.² The vast majority of the population is Roman Catholic and it is ethnically homogeneous.

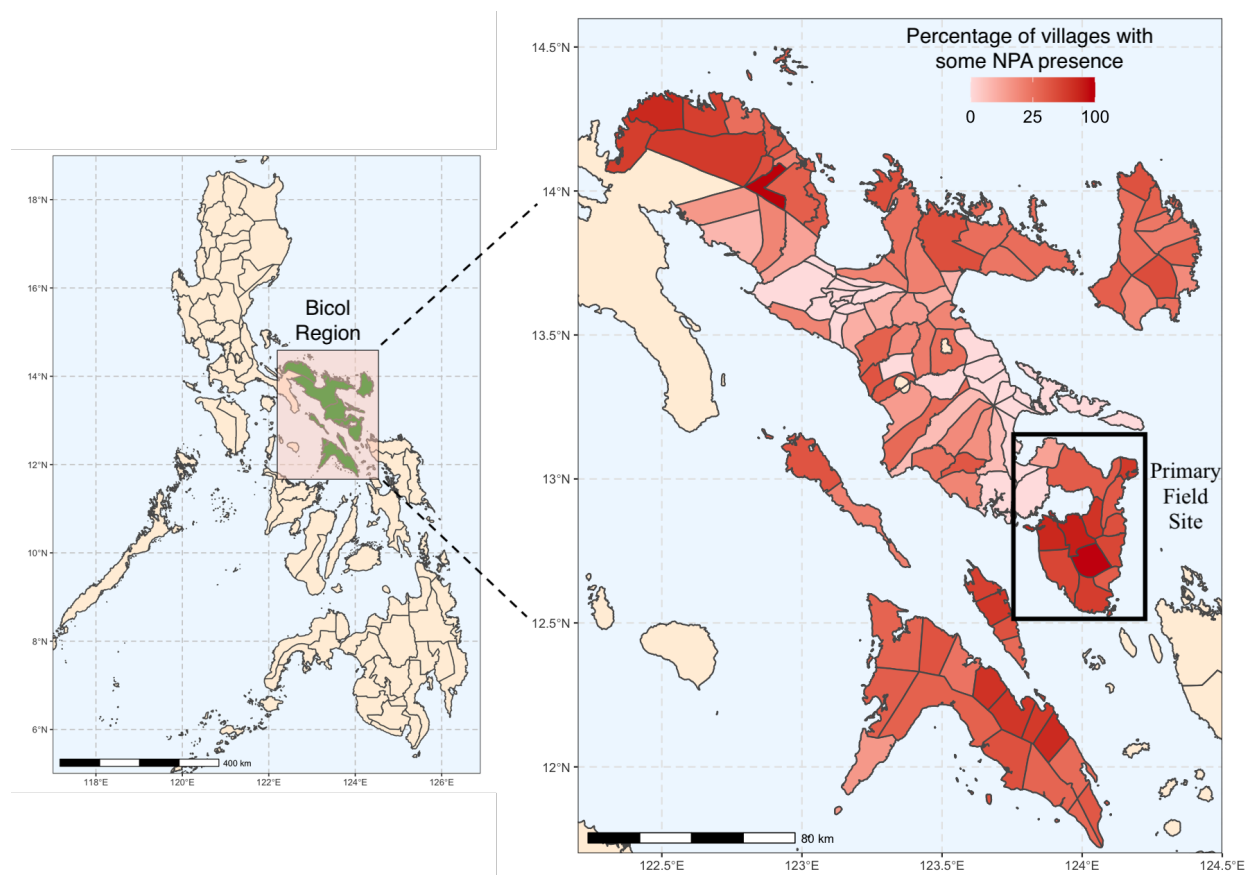
Sorsogon Province was selected primarily based on ethical and practical considerations. My colleagues' extensive connections in Sorsogon allowed me to plug into a well-established network of trusted local informants who were knowledgeable about local politics and the NPA conflict. These connections also allowed me to quickly identify high-quality interpreters. Although I recognize that starting with a pre-existing network of this nature introduced bias into my subject selection as well as subjects' views of me as an interviewer, I considered this to be a necessary tradeoff with my ability to safely and ethically conduct the fieldwork. I knew that I likely only had the funding necessary to spend four months in the field and my local language skills were fairly limited at the time. In addition, the ability to have in-depth discussions about my interview questions and techniques with knowledgeable local informants was an essential aspect of my efforts to adopt ethical research practices. In addition to my time in Sorsogon, I occasionally traveled to Manila to engage in informational discussions with individuals knowledgeable about the conflict and to collect administrative data.

A.3 Research Ethics

The fieldwork was approved by the Institutional Review Board at [INSTITUTION REDACTED], and is in line with APSA's *Principles and Guidance* on research ethics. In light of important insights on ethical research practices in conflict zones, I view IRB approval be a necessary but insufficient condition for the ethical conduct of the type of fieldwork I was

²The other areas where identity divides are salient are areas with large indigenous populations. The NPA also traditionally has a strong presence in these indigenous communities in other areas of the country.

Figure A.1. NPA Presence in Bicol Region



Municipalities are shaded by the percentage of villages with some New People's Army (NPA) presence in any year from 2009-2015.

conducting (Fujii 2012, Wood 2006). In order to identify potential ethical concerns relating to my research practices, I first had extensive conversations with American academics with experience conducting field research in the Philippines and other contexts with ongoing conflict. Three of my most important mentors in this process had conducted several years of prior research in Sorsogon, and one of them grew up in the area. I then used my time in Sorsogon during the preparatory phase to identify additional concerns with the help of local contacts. One especially valuable aspect of the preparatory phase was the ability to speak with individuals who lived in Sorsogon about which areas of the province I should avoid due to safety concerns.

Some of the most important steps to mitigate risks I identified during this preparatory phase related to 1) ensuring that both the government and the NPA were aware (and approved) of my presence as a researcher, 2) protecting the anonymity of interviewees, 3) obtaining informed consent, and 4) avoiding re-traumatization of interview subjects. Making sure that both the NPA and the government in Sorsogon were aware of my presence and goals as a researcher was crucial to my ability to protect my own safety and the safety of my interviewees. I feared that word of me speaking to people about the NPA would create the perception among the government security forces that I was speaking to NPA sympathizers

or insurgents, creating a risk of my respondents facing government intimidation, coercion, or arrest. At the same time, I did not want NPA personnel to think that I was cultivating government informants, which could put me and my interview subjects at risk of retaliation. After my scoping interviews, I determined that the best way to mitigate these risks specific to the Sorsogon context was to make all sides aware of my research plans. On the government side, I spoke with AFP and PNP leadership in the area about my goal to better understand the conflict and about my procedure for identifying subjects. On the NPA side, I could not speak directly with current NPA leaders or personnel, making it more difficult to explain my activities and motives. Instead, I relied on a trusted contact who knew some of the local leaders of the NPA. This contact communicated my research topic and planned activities to the relevant personnel, who then informed me that my research would be perceived as non-threatening to the NPA.

Maintaining subjects' anonymity remained a crucial aspect of my attempts to mitigate risks. I promised subjects that I would not release any of my field notes because I could not be entirely certain that these notes could not later be used to identify subjects. I agreed not to record interview subjects' names, addresses, villages, business names, affiliations, or any other obviously identifying information, including in my field notes. The demographic information I noted about subjects, such as their age, was recorded in vague categories (e.g. man in his 50s). All the people I spoke with were identified through my existing support network, though I tried to avoid interviewing individuals who were close friends of my direct contacts. Through this network, I contacted all potential subjects via SMS or phone call with the help of an interpreter before meeting them in person. Although I could not entirely ensure that nobody would see me speaking with the subject, I made sure that I met subjects in a place where they suggested they would feel comfortable speaking about sensitive topics. In some cases, subjects felt they would be more comfortable speaking in private, while other subjects preferred to meet at public locations with background noise, such as a coffee shop or park.

Once I met with subjects in person to begin the interview, I proceeded with an informed consent procedure. I obtained subjects' verbal (rather than written) consent in order to avoid risking their identity later being revealed, or the perception that it might be. I promised respondents that everything they told me was confidential and that they could let me know at any time if something they said should not be included, as a quotation or paraphrased, in my research. At the end of each interview, I asked all respondents whether they were ok with me using material from the interview for my research or whether they would instead like me to exclude any information. I did not record any of the interviews with an audio-recording device, choosing only to take notes by hand. I worked extensively with my interpreters to practice making the discussion with interviewees surrounding consent as conversational as possible. The goal was to make subjects feel at ease with expressing any concerns or questions they had about the interview process. I wanted to minimize the perceived power disparity between the interviewee and myself (a foreign researcher) in order to reduce the risk of inadvertently coercing interview subjects into consenting.

Another ethical concern was the possibility of re-traumatizing individuals who experienced violence (Wood 2007, Cronin-Furman and Lake 2018). When discussing this risk during the preparatory phase of my field research, I made the decision not to independently raise questions about subjects' personal experiences with violence. I planned each interview

to start with broad question about how “civilians,” “soldiers,” “officers,” or “fighters” in the area think about conflict and only asked follow-up questions about personal experiences if the subjects raised these experiences themselves. I also started by asking broad questions about the types of activities that civilians, rebels, and government security personnel engage in, allowing subjects to decide whether to bring up instances of violence. This allowed subjects to navigate the conversation in a way in which they could avoid bringing up personal episodes of violence that left them traumatized. As mentioned, most subjects turned to personal experiences on their own after building trust with me and my interpreter, and many expressed a sense of empowerment about being able to tell their stories – similar to the experience described by Wood (2006). A few subjects, on the other hand, kept the conversation focused on broad issues in a way that allowed them to sidestep conversations about personal experiences.

A.4 Positionality and Interpreter Selection

My experiences in the field, and the insights I gathered from these experiences, were undoubtedly shaped by various aspects of my positionality. Four of the most important factors of this nature were my language proficiency, gender expression, nationality, and my training as a social scientist. In thinking about these topics, I drew ideas from the discussion in the Appendix of Gade (2020).

In terms of language, the vast majority of the population in Sorsogon speaks either *Tagalog*, which is the basis for the national language of the Philippines, or *Bicol*, a local dialect with several variants spoken across the region. Most people speak both of these languages. English is also widely spoken among people who live in municipal centers, have higher levels of education, and who work for the government, in large part due to the American colonial legacy. At the time that I started my fieldwork, I spoke some rudimentary Tagalog, having taken two introductory semesters of college-level classes in the language. I did not speak any Bicol upon arrival in Sorsogon, but picked up some basic phrases during my time in the field. These rudimentary language skills allowed me to introduce myself to interviewees and engage in some basic small-talk. While I was unable to conduct in-depth interviews myself, I found that these basic language skills helped signal that I was serious about understanding the local situation, which tended to foster some initial trust. Among interview subjects with a higher level of educational attainment (especially those employed by the government), many preferred to conduct at least a portion of the interview in English without the use of an interpreter.

All of my interviews were conducted with the help of an interpreter. I worked with two interpreters, both of whom lived in Sorsogon and previously worked as survey enumerators for academic surveys in the province. I worked with local enumerators in order to avoid “buying access” to the local community by arriving with professional translators (Parkinson 2013b). Except in a couple cases, I chose not to rely on the interpreters’ personal networks to identify interviewees so as to avoid the risk that subjects would feel compelled to speak to me because they felt a sense of obligation to the person I was employing (Parkinson 2013b). The fact that I conducted interviews with the help of an interpreter came with certain disadvantages, which included limitations to my ability to earn subjects’ trust, the risk that important context was lost in translation, and the fact that respondents may have answered questions in a “performative” way that was inauthentic to parts of their lived

experiences (Parkinson 2022, Schulz 2020). With this in mind, I acknowledge that there exist important limits to the takeaways from the interviews. On the other hand, I found that most respondents were incredibly open about their experiences and opinions, wanting to talk for long periods of time in order to share their story and get me to understand their point of view (Wood 2006).

I recognize that my role as an outsider who did not fluently speak the local language also played a part in fostering increased access. I often got the sense that people wanted to speak with me because it gave them a platform to express their stories and opinions to someone who they viewed as being in a position of prestige. Unlike some other oft-studied conflict zones, subjects frequently expressed to me that I was one of the first researchers who came to hear the stories of people experiencing conflict in Sorsogon. I acknowledge that this position also created a significant power asymmetry between myself and the interviewees (Mitchell 2013). I took several steps to try to reduce that asymmetry and not abuse my position, such as careful, repeated attempts to make sure respondents fully understood what it meant to consent to the interview. I tried to reduce respondents' expectations that I had the power to do things like change US policy towards the Philippines, which was a common sentiment expressed to me.

Another important aspect of my positionality that affected my experience in the field was my male gender expression. Of my two interpreters, one was also a man and the other was a woman. Although there is no strong taboo around men speaking alone to women in Sorsogon, many women felt less comfortable speaking to me in the absence of men in their community, especially their husbands in cases where they were married (in large part due to the expressed preference by men to be present). Men were also more likely to hold positions as village leaders and government security officers involved in counterinsurgency. As a result, the majority of my interviews were conducted with men. Twelve out of the sixteen civilians I interviewed were men, all six government security officials I interviewed were men, and one of the two former rebels I interviewed was a man. I recognize that this leaves a substantial hole in my understanding of how local networks affect conflict, especially in light of research showing how important women are to these conflict-supporting networks (Parkinson 2013, Viterna 2006). Although the perspectives of the women I was able to interview reflected many of the perspectives shared in my interviews with men, I view this as an important limitation to the scope of my theory building, and one that I hope future research will further explore. I also did not face disruptions due to inappropriate sexual behavior directed towards me in the field, which is a common experience for researchers who are women.

Third, my background as an American researcher certainly shaped my experience in the field, as well as the lessons I was able to take from it. The United States had an extended period of colonial presence in the Philippines, and the US has taken an important role in counterinsurgency efforts in the country, both during and after the colonial period. Despite my attempts to express that my goal was simply to understand the conflict, I got the sense that many people viewed me as trying to aid counterinsurgency efforts, at least initially. When I originally arrived in the field, I was approaching my research from the perspective of trying to "reduce conflict," which I now recognize to be a complicated concept that is, in itself, a form of foreign intervention (Malejacq and Mukhopadhyay 2016). The perception that I was in the Philippines to aid counterinsurgency efforts was strongest among the military and police officials I interviewed. I found that this misconception led government

officials to view me as a particularly trusted interviewer because they viewed me to be “on their side.” I also got the sense that many civilians started the interviews with this perspective, only sharing with me the good features of the government and the bad features of the rebels in an attempt to signal that they were pro-government. To combat this sense, I made a conscious effort to appear less like a military advisor over time, by letting my hair grow to a medium length and wearing facial hair (a tip shared with me by a trusted contact during my preparatory phase in the field). Over the course of the civilian interviews, I found that my line of questioning often eventually led civilians to be more open about sharing their views that painted the government in a bad light or the NPA in a good light.

Finally, my experience in the field, and the perspectives I developed during that time, were undoubtedly shaped by the nature of my social science training. I was trained in a graduate program that focused heavily on quantitative methodology and a positivist understanding of the world. Although I tried to remain as open as possible to developing a theory that was true to interviewees’ lived experiences, I was also consciously motivated to develop a theory that could feasibly be tested using quantitative data. This likely led me to develop significant blind spots in my understanding of local conflict dynamics. Another way in which my training affected my experience in the field had to do with the techniques I employed in the conduct of my research. I read several books on qualitative field research and passed my ideas by scholars with experience in the area, but the fact that these methods were not core to my training likely led me to make choices that were different from other scholars who might have addressed the same research question but coming from a different background. For example, the interview technique I employed started with broad concepts and only turned to personal experiences if subjects independently raised them, a choice made primarily based on discussions about ethics I had with local contacts during the preparatory phase. This technique differs in important ways from “life-story” interviews that start by asking respondents about their personal history in a way that is broader than just the conflict (Gade 2020, Shesterinina 2016). In retrospect, I think this alternative technique may have unveiled important concepts and insights that my interview procedure did not allow. Still, I felt that subjects self-directed the conversation towards extensive discussions about their own personal experiences, allowing me to capture at least a partial understanding of their life stories.

In summary, my positionality, and the methods I employed in this project, certainly shaped the theory I developed and the conclusions I draw. With that in mind, I view these conclusions to be one important *part* of the story of how civilian social networks shape patterns of military control in civil conflict.

A.5 Table of Interviews

The following pages present a table of interviews I conducted in Sorsogon that covered topics explicitly connected to this project. In addition to the interviews listed, I engaged in several discussions with experts on the NPA conflict in both Sorsogon and Manila, though these were primarily focused on obtaining background information. References who are listed as “civilian contacts” are a number of individuals with connections to a) my colleagues who previously conducted research in the area or b) members of the local survey team with whom I was working on a separate project.

#	Month	Subject	Gender	Reference	Length	Location	Bystanders	Language	Notes
Inductive Theory Building Phase									
1	Jan 2017	Civilian (Local Leader)	Man	Civilian contact	1 hour	Village hall	None	Bicol/ Tagalog	
2	Jan 2017	Civilian (Local Leader)	Man	Civilian contact	1.5 hours	Walking in village	None	Tagalog/ Bicol	
3	Jan 2017	Civilian	Man	Subject 2	45 mins	Home	Wife and family	Bicol/ Tagalog	
4	Feb 2017	AFP Soldier (Senior)	Man	Civilian contact	2 hours	Military Base	None	English/ Tagalog	
5	Feb 2017	Civilian	Man	Subject 1	2.5 hours	Home	Wife	Tagalog/ Bicol	
6	Feb 2017	Civilian (Local Leader)	Man	Civilian contact	1 hour	Outside near village hall	None	Bicol/ Tagalog	
7	Feb 2017	PNP Officer (Senior)	Man	Civilian contact	5 hours	Police station	Secretary and junior officer	English	Split over 3 sessions
8	Feb 2017	Civilian (Local Leader)	Woman	Civilian contact	1 hour	Village hall	Village officers (in and out)	Bicol/ Tagalog	
9	Feb 2017	Civilian (Local Leader)	Man	Civilian contact	2.5 hours	Outside near municipal hall	None	Bicol/ Tagalog	
10	Feb 2017	PNP Officer (Junior)	Man	Subject 7	1.5 hours	Outside near police station	None	Tagalog/ English	
11	Feb 2017	Civilian	Woman	Civilian contact	1.5 hours	Home	Husband and family	Bicol/ Tagalog	
12	Feb 2017	Civilian	Man	Civilian contact	3 hours	Park bench	None	Bicol/ Tagalog	
13	March 2017	Civilian	Man	Subject 8	1 hour	Walking in village	None	Bicol/ Tagalog	
14	March 2017	Civilian (Local Leader)	Man	Civilian contact	2 hours	Walking in village	None	Tagalog/ English	

#	Month	Subject	Gender	Reference	Length	Location	Bystanders	Language	Notes
15	March 2017	Civilian (Local Leader)	Man	Civilian contact	1 hour	Outside near chapel	None	Bicol/ Tagalog	
16	March 2017	Civilian	Man	Civilian contact	1.5 hours	Park bench	None	Bicol/ Tagalog	
17	March 2017	CAFGU	Man	Translator	3 hours	Restaurant (outside)	Other patrons (out of earshot)	Bicol/ Tagalog	
18	March 2017	Former Rebel (Senior)	Woman	Translator	1.5 hours	Park bench	None	Bicol/ Tagalog	
19	March 2017	Civilian	Woman	Civilian contact	1.5 hours	Home	Husband and family	Bicol/ Tagalog	
20	March 2017	Civilian (Local Leader)	Woman	Civilian contact	1 hour	Village hall	Village officers (in and out)	Bicol/ Tagalog	
21	March 2017	Former Rebel (Junior)	Man	Subject 18	3 hours	Park bench	Passersby (out of earshot)	Bicol/ Tagalog	
22	April 2017	Civilian (Local Leader)	Man	Subject 19	45 mins	Outside near village hall	None	Tagalog/ English	
23	June 2017	AFP Soldier (Junior)	Man	Military contact	2 hours	Restaurant	Other patrons (out of earshot)	Tagalog	
24	June 2017	CAFGU	Man	Civilian contact	1.5 hours	Coffee shop	Other patrons (out of earshot)	Bicol/ Tagalog	
Deductive Mechanism-Testing Phase									
25	Jan 2018	PNP Officer (Senior)	Man		1 hour	Police station	Secretary and junior officer	English	Re-visit w/ subject 7
26	Jan 2018	Civilian (Local Leader)	Woman		2 hours	Village hall	Village officers (in and out)	Bicol/ Tagalog	Re-visit w/ subject 20
27	Jan 2018	Civilian	Man		1.5 hour	Walking in village	None	Bicol/ Tagalog	Re-visit w/ subject 5
28	Jan 2018	AFP Soldier (Senior)	Man		2 hours	Military Base	None	English/ Tagalog	Re-visit w/ subject 4

#	Month	Subject	Gender	Reference	Length	Location	Bystanders	Language	Notes
29	Jan 2018	Civilian	Man	Subject 26	45 mins	Walking in village	None	Bicol/ Tagalog	
30	Feb 2018	Civilian	Man	Civilian contact	1 hour	Walking near main road	None	Bicol/ Tagalog	
31	Feb 2018	CAFGU	Man		2 hours	Restaurant (outside)	Other patrons (out of earshot)	Bicol/ Tagalog	Re-visit w/ subject 17
32	Feb 2018	Civilian (Local Leader)	Man		1.5 hours	Coffee shop	Other patrons (out of earshot)	Bicol/ Tagalog	Re-visit w/ subject 9
33	Feb 2018	Civilian (Local Leader)	Man	Civilian contact	1 hour	Outside near village hall	None	Tagalog/ English	
34	Feb 2018	Civilian (Local Leader)	Woman	Civilian contact	3.5 hours	Home	Family and friends	English/ Tagalog	
35	Feb 2018	Civilian	Woman	Subject 34	1 hour	Subject 34's home	Friends and family	Tagalog/ Bicol	
36	Feb 2018	Civilian (Local Leader)	Man		1.5 hours	Bus station bench	None	Tagalog/ English	Re-visit w/ subject 22
37	Jan 2019	Civilian (Local Leader)	Man	Civilian contact	1.5 hours	Village hall	None	Bicol/ Tagalog	
38	Jan 2019	Civilian (Local Leader)	Man	Civilian contact	1 hour	Park bench	Passersby (out of earshot)	Bicol/ Tagalog	

A.6 Transcription and Coding

During each interview, I took notes exclusively by hand, with the permission of subjects. On certain occasions when the subject said something that I thought was especially noteworthy, I attempted to write down the exact phrasing conveyed to me by the translator. I then paused to repeat the quote back to the translator to ask whether it was accurate. Even in these instances, I recognize that I likely did not capture the exact wording originally spoken by the subject, which I urge the reader to keep in mind when reading the quotes I included in the manuscript.

When I returned to my apartment in Sorsogon after each interview, I typed up an annotated version of my handwritten notes and saved them in a password-protected Dropbox file on my password-protected laptop. My annotations focused on making notes to myself about key concepts, broad takeaways, new research ideas, and my own feelings during the interviews. While I was in the field reflecting on these interviews, the core ideas presented as the theory in the manuscript began to take shape. When I returned from the Philippines to the US, I reviewed my annotated notes in order to sharpen my theory. At the time, I was also processing and merging the quantitative administrative data I acquired in the Philippines, though it took several months before I was ready to run any statistical models.

B Supplemental Quantitative Analyses

B.1 Summary Statistics

Table B.1 displays summary statistics for the primary village-level measures used in the models in the manuscript, along dyadic variables capturing villages' relations to each other. Variables in Table B.1 that are labeled *Dynamic* are ones that change year-to-year, and they are aggregated for all village-years from 2011 to 2015. *Static* variables are time-invariant and are not included in the spatial analyses due to the inclusion of village fixed-effects. The *Dyad-level* variables describe the relationship between villages. The family ties and distance measures are used to calculate the social and spatial lags; the rest of the dyadic variables are relevant for understanding other ties between villages that may be correlated with family ties.

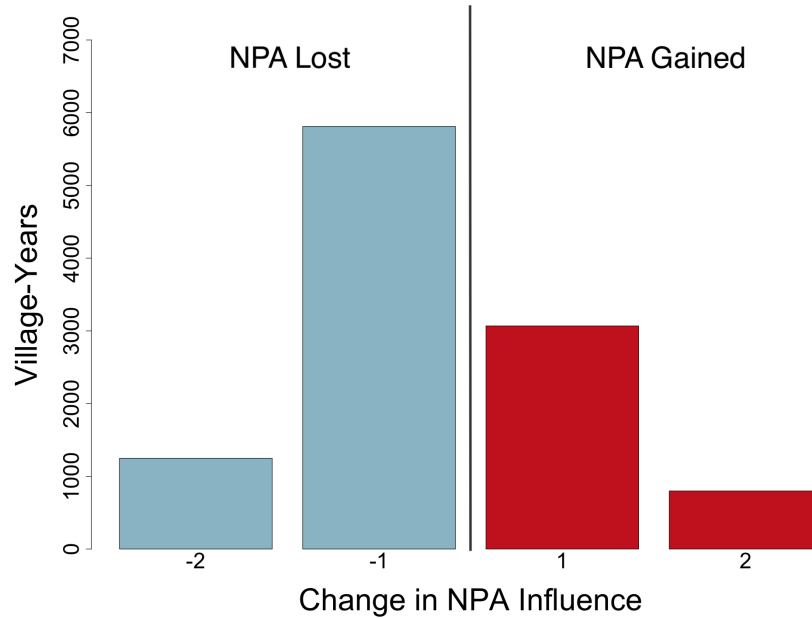
Figure B.1 displays additional detail on the distribution of the main dependent variable used in the paper, which is the year-on-year change to NPA presence. This measure is also a component of the social and spatial lag independent variables that pertain to changes in NPA presence. This figure displays important variation masked in Figures 2 and 3 in the manuscript. The aggregate pattern in NPA presence over time hides the fact that both the government and the NPA gained territory in certain village-years included in the analysis, despite the aggregate counterinsurgency gains across the country. For ease of interpretation, the plot does not include the approximately 134,000 village-years that did not see a change in NPA presence.

Table B.2 provides additional details on the data underlying the development projects independent variable. The table displays a summary of the projects implemented by PAMANA and KALAH-CIDSS. The "All Projects" columns replicate Table I from the main paper that aggregate all PAMANA and KALAH projects together. The remaining columns show the disaggregated project types and investments implemented by the two programs.

Table B.1. Summary Statistics

Variable	N	Mean	SD	Min	Max
<i>Village-level variables - Dynamic</i>					
NPA presence	201610	0.122	0.397	0	2
NPA change	201610	-0.014	0.254	-2	2
NPA gained	201610	0.014	0.119	0	1
NPA lost	201610	0.026	0.159	0	1
NPA ever in municipality	201610	0.601	0.49	0	1
Development projects	201610	0.204	0.558	0	60
PAMANA projects	201610	0.079	0.352	0	57
KALAHY projects	201610	0.125	0.386	0	7
<i>Village-level variables - Static</i>					
Urban	40322	0.206	0.404	0	1
Area	40220	0.001	0.001	0	0.08
Population	40235	1174	2040	3	63944
Household Size	40229	3.616	0.937	1	15
Education	40235	1.802	0.388	0.055	3.069
Religion - Catholic	40235	0.777	0.288	0	1
Religion - Islam	40235	0.078	0.256	0	1
Indigenous People	40235	0.182	0.339	0	1
Home Quality - Good	40235	0.368	0.038	0.169	0.667
Overseas Foreign Worker	40235	0.023	0.025	0	0.716
Aquino Voteshare	28340	0.394	0.177	0.002	1
<i>Dyad-level variables - Dynamic</i>					
Imitation (exact)	14168850	0.013	0.114	0	1
Imitation (towards)	14168850	0.014	0.117	0	1
<i>Dyad-level variables - Static</i>					
Family ties (density)	2602444	0.007	0.01	0	0.466
Family ties (raw)	2602444	12069	42942	0	5675594
Distance (km)	2833770	3.819	2.536	0	10
Same municipality	2833770	0.383	0.486	0	1
Similarity - Indigenous	2820722	0.055	0.162	0	1
Similarity (religion)	2820722	0.095	0.145	0	1
Similarity (education)	2820722	0.284	0.248	0	2.649
Similarity (Aquino voteshare)	1450156	0.109	0.099	0	0.994

Figure B.1. Dependent Variable Distribution



The data used to create this plot were subset to village years that experienced a change.

Figure B.2 displays the Pearson correlation coefficients for the relationship between various village-dyad level variables. The figure suggests that the measure of family ties between villages is not simply capturing other aspects of the relationship between villages. One particularly salient problem would be if family ties were very strongly correlated with geographical distance, which could introduce problematic collinearity to the model estimates. The figure suggests that distance and family ties are indeed positively correlated with each other ($\rho = 0.18$), but not to a particularly strong extent. Family ties are correlated with villages being in the same municipality as each other, but this is also a relatively weak correlation ($\rho = 0.16$).

The figure also suggests that shared family ties between pairs of villages does not strongly correlate with ethnic or religious ties. To measure ethnic and religious similarity between pairs of villages, I calculated the difference between the proportion of the village populations that consisted of indigenous populations and that was Roman Catholic. Outside of the Bangsamoro region (which is excluded from the analysis in this paper), various indigenous groups constitute the most salient ethnic divides in the country (McMurry 2021). These ethnic identities are particularly relevant in several parts of Eastern Mindanao where the NPA regularly operates. Finally, family ties do not correlate strongly with pairs of villages that share similar levels of educational attainment or that voted for the elected President Aquino in the 2010 election.

Table B.2. Summary of Development Projects

Project Type	All Projects			PAMANA			KALAHI		
	Count	%	\$\$	Count	%	\$\$	Count	%	\$\$
Roads, Pathways and Bridges	8132	25.8	2.41	2587	17.0	5.70	5545	34.0	0.87
Agricultural and Fishing Facilities	6252	19.8	0.47	5467	35.9	0.45	785	4.8	0.61
School and Daycare Buildings	3457	11.0	0.84	473	3.1	0.42	2984	18.3	0.91
Environmental and Disaster Protection	2917	9.2	0.78	425	2.8	0.57	2492	15.3	0.81
Community Buildings	2530	8.0	0.76	1636	10.7	0.80	894	5.5	0.70
Water and Sewage	2391	7.6	0.79	1124	7.4	0.66	1267	7.8	0.91
Electrification	1706	5.4	0.61	669	4.4	0.82	1037	6.4	0.48
Livelihood Trainings and Support	1182	3.7	0.60	864	5.7	0.61	318	1.9	0.58
Health Facilities	1052	3.3	0.71	185	1.2	0.77	867	5.3	0.70
Uncategorized CDD	784	2.5	0.33	784	5.1	0.33	0	0.0	0.00
Agriculture Reform	557	1.8	0.33	557	3.7	0.33	0	0.0	0.00
Community Protection and Capacity	446	1.4	3.43	411	2.7	3.69	35	0.2	0.37
Other	151	0.5	8.63	66	0.4	19.43	85	0.5	0.25

Average project costs (\$\$) are reported in millions of Philippine Pesos (PHP)

Figure B.2. Correlation between dyadic variables



Values shown are the Pearson correlation coefficients between each pair of dyadic variables.

B.2 Robustness

The following section shows robustness of the main results presented in Table II to alternative specifications.

Table B.3. Spatial Regression with Conley Standard Errors

Dependent Variable:	NPA presence	NPA presence	NPA presence	NPA gained	NPA lost
	(1)	(2)	(3)	(4)	(5)
W(Family)*NPA presence	.006* (.003)		.008*** (.002)	.004+ (.002)	-.0007 (.001)
W(Family)*NPA change		.129*** (.028)	.117*** (.027)	.037+ (.021)	-.049* (.021)
W(Family)*Dev projects	-.107+ (.065)	-.067* (.028)	-.070* (.030)	-.050** (.018)	-.011 (.013)
W(Distance)*NPA presence	-.026*** (.005)		-.040*** (.006)	-.004 (.004)	.031*** (.003)
W(Distance)*NPA change		-.00001 (.0001)	.0004* (.0002)	-.0005*** (.0001)	-.0006*** (.00009)
W(Distance)*Dev projects	.0002 (.0001)	.0001 (.0001)	.0001 (.0001)	.0002** (.00007)	.0001 (.0001)
Development projects	-.018* (.007)	-.018** (.007)	-.016* (.007)	.003 (.003)	.017*** (.004)
NPA presence (lag)	.256*** (.016)	.220*** (.018)	.244*** (.018)	-.216*** (.011)	.326*** (.010)
<i>Fixed-effects</i>					
Village fixed effects	✓	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓	✓
R ²	.74372	.74425	.74582	.34447	.36756
Observations	120,795	120,795	120,795	120,795	120,795

+p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table B.3 shows the results using spatially adjusted errors using the method in Conley (1999). The specification presented in the manuscript instead clusters standard errors at the municipal level, which I consider to be a more appropriate choice in this case. Conley standard errors are only designed to take into account spatial clustering rather than social clustering – the R code used to run these models uses villages' latitude and longitude. The results remain largely similar using this specification, with only a few variables moving from significant at the p<.05 level to the p<.1 level.

Table B.4. Spatial Regression - Logit

Dependent Variable:	NPA lost (1)	NPA gained (2)
W(Family)*NPA presence	-.150 (.206)	.340** (.112)
W(Family)*NPA change	-3.63 ⁺ (1.95)	1.84 ⁺ (.976)
W(Family)*Dev projects	.557 (.701)	-7.68** (2.70)
W(Distance)*NPA presence	2.12*** (.515)	-.048 (.316)
W(Distance)*NPA change	-.017** (.006)	-.008 (.006)
W(Distance)*Dev projects	.004 (.005)	.033*** (.008)
Development projects	.711*** (.211)	.296 (.242)
NPA presence (lag)	24.1*** (2.78)	-1.7*** (.818)
<i>Fixed-effects</i>		
Village fixed effects	✓	✓
Year fixed effects	✓	✓
Observations	25,655	13,865

⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table B.4 replicates the results in columns 4 and 5 of Table II using logistic regression instead of OLS. The dependent variables in these models (*NPA lost* and *NPA gained*) are binary outcomes. The original table uses OLS for consistency of presentation and because predicted values for the binary outcomes in columns 4 and 5 overwhelmingly fall within the [0,1] range. The logit models in the above table show very similar results, with only a few variables moving from significant at the p<.05 level to the p<.1 level.

Table B.5. Spatial Regression - Full Village Sample

Dependent Variable:	NPA presence	NPA presence	NPA presence	NPA gained	NPA lost
	(1)	(2)	(3)	(4)	(5)
W(Family)*NPA presence	.005* (.002)		.006*** (.002)	.003* (.002)	-.0005 (.0007)
W(Family)*NPA change		.135*** (.029)	.127*** (.029)	.043** (.015)	-.050*** (.015)
W(Family)*Dev projects	-.077* (.034)	-.051** (.017)	-.052** (.017)	-.027** (.008)	.003 (.007)
W(Distance)*NPA presence	-.016*** (.004)		-.026*** (.004)	-.002 (.003)	.022*** (.002)
W(Distance)*NPA change		-.00002 (.0001)	.0002+ (.0001)	-.0005*** (.00008)	-.0005*** (.00007)
W(Distance)*Dev projects	.0001** (.00005)	.0001*** (.00003)	.0001*** (.00003)	.00007*** (.00001)	-.00001 (.00001)
Development projects	-.010* (.004)	-.009* (.004)	-.009* (.004)	.003+ (.002)	.010*** (.002)
NPA presence (lag)	.256*** (.016)	.229*** (.018)	.245*** (.018)	-.216*** (.010)	.326*** (.009)
<i>Fixed-effects</i>					
Village fixed effects	✓	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓	✓
R ²	.75482	.75594	.75658	.34545	.36213
Observations	200,770	200,770	200,770	200,770	200,770

+p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table B.5 replicates the results from Table II using the full sample of 40,154 villages in the Philippines outside of the Bangsamoro Provinces (where I do not have data on the dependent variable). The main specification excludes villages in municipalities where the NPA was *never* present over the 2009-2015 period, leaving an effective sample of 24,159 villages. I did this to account for Boehmke's (2009) insight that estimates of diffusion can be biased by including units that do not plausibly have the opportunity to adopt different values of the dependent variable. For example, it makes little sense to study the diffusion of a rural insurgency in Metro Manila. That said, the models using the full sample show very similar results to the main specification, with all variables that were significant at p<.05 remaining significant at this level.

Table B.6. Spatial Regression - 30km Radius

Dependent Variable:	NPA presence		
	(1)	(2)	(3)
W(Family)*NPA presence	.007*** (.002)		.007*** (.002)
W(Family)*NPA change		.083*** (.020)	.075*** (.021)
W(Family)*Dev projects	-.084* (.035)	-.054* (.023)	-.055* (.023)
W(Distance)*NPA presence	-.019*** (.003)		-.020*** (.003)
W(Distance)*NPA change		-.00003*** (.000008)	-.00002* (.000008)
W(Distance)*Dev projects	.00002** (.000007)	.00002* (.000007)	.00002** (.000007)
Development projects	-.019* (.008)	-.020* (.008)	-.018* (.008)
NPA presence (lag)	.245*** (.016)	.231*** (.017)	.240*** (.017)
<i>Fixed-effects</i>			
Village fixed effects	✓	✓	✓
Year fixed effects	✓	✓	✓
R ²	.74326	.74318	.74391
Observations	120,605	120,605	120,605

⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table B.6 replicates the results from columns 1-3 of Table II but instead uses social and spatial lag variables that were calculated using a W matrix of all villages within a 30-kilometer radius of each other. In the main specification, I limited the W matrix to villages within ten kilometers of each other because there is a reduced likelihood that individuals sharing a surname are actually related as the distance between villages increases (Cruz, Labonne and Querubin 2017). The results from models that use the 30-kilometer social and spatial lags are very similar to the main specifications, with all variables that were significant at $p<.05$ remaining significant at this level.

Table B.7 replicates the results from columns 3 of Table II but instead uses social and spatial *Development* lag variables that were separately calculated using ties to villages that received PAMANA and KALAH-CIDSS projects. I do this to account for the fact that the aggregate effect of ties to all development projects may be hiding substantial heterogeneity between the effects of PAMANA and KALAH-CIDSS. When the PAMANA and KALAH lags are included separately (columns 1-2), the coefficients on both social lags are significant in the expected direction. When included together (column 3), it appears that social ties to PAMANA projects were driving the increased counterinsurgency success predicted by the main specification. There are several possible explanations for this pattern. For example, PAMANA was specifically designed for conflict zones and its implementation more closely followed the recommendations of the “conflict-sensitive and peace-promoting” (CSPP) development plan outlined by the World Development Report. This included extensive consultation between local leaders and military officials. PAMANA’s project profile also

Table B.7. Spatial Regression - Separating PAMANA and KALAH

Dependent Variable:	NPA presence		
	(1)	(2)	(3)
W(Family)*NPA presence	.008*** (.002)	.005* (.002)	.009*** (.002)
W(Family)*NPA change	.112*** (.026)	.121*** (.031)	.112*** (.027)
W(Family)*PAMANA	-.173** (.062)		-.178** (.065)
W(Family)*KALAH		-.060+ (.035)	.013 (.030)
W(Distance)*NPA presence	-.041*** (.005)	-.034*** (.004)	-.041*** (.005)
W(Distance)*NPA change	.0004** (.0001)	.0004** (.0001)	.0004** (.0001)
W(Distance)*PAMANA	-.0001 (.0002)		-.0002 (.0002)
W(Distance)*KALAH		.0001 (.0001)	.0002+ (.0001)
PAMANA projects	.002 (.016)		.005 (.016)
KALAH projects		-.031*** (.009)	-.021** (.008)
NPA presence (lag)	.243*** (.018)	.237*** (.016)	.243*** (.017)
<i>Fixed-effects</i>			
Village fixed effects	✓	✓	✓
Year fixed effects	✓	✓	✓
R ²	.74597	.74048	.74618
Observations	120,795	144,954	120,795

+p<0.1; *p<0.05; **p<0.01; ***p<0.001

differed substantially from KALAH (See Table B.2). For example, roads projects implemented by PAMANA tended to be much smaller in scale, focusing more on farm-to-market roads, which differs from KALAH's larger-scale infrastructure developments. Based on this, greater PAMANA effectiveness might have been consistent with a logic that smaller projects tend to work better at reducing conflict (Berman et al. 2013) or may attract less NPA subversion (Crost, Felter and Johnston 2014). Because the research design limits my ability to convincingly distinguish between these mechanisms, I chose to use the social and spatial lags based on ties to all development projects in the main paper.

C Mechanisms and Alternative Explanations

Although the quantitative results largely support the theory I developed inductively based on my time in the field, there exist several possible alternative mechanisms that might be driving the results. In this section, I discuss several of the most prominent alternatives, relying primarily on qualitative interviews I conducted during three additional months of fieldwork in Sorsogon Province of the Philippines, outlined in SI Section A. After concluding the

inductive theory-building phase and presenting an early version of the quantitative analyses, I received feedback from colleagues on five main alternative mechanisms. I then returned to the field with the goal of illuminating the extent to which these alternative mechanisms could be driving the results. My evidence from this phase is based on 14 formal interviews in Sorsogon as well as additional background discussions with civilian and government contacts in Sorsogon and Manila.

This section proceeds as follows. I begin by providing additional details on how the horizontal information flows mechanism works in practice. This discussion focuses on the specific methods that civilians use to share information relevant to the conflict, how it shapes their behavior, and the role of passive vs. active information flows. I then turn to six alternative mechanisms: 1) reverse causation - conflict shaping networks, 2) diffusion of ideology, 3) diffusion of material goods, 4) military targeting based on networks, 5) other types of networks aside from family ties, and 6) rebel services. Overall, my analyses point to the fact that horizontal civilian information flows between villages do indeed play an important role in the spread of military control in this context. When the other mechanisms also play a role, they usually complement the effect of horizontal information flows rather than fully explain the results.

C.1 Unpacking the horizontal information mechanism

A key goal of my second round of fieldwork was to shed more light on how information related to conflict spreads between civilians and how that information shapes behavior. I did this because although the quantitative analyses revealed patterns that are consistent with the theory, the data are not fine-grain enough to directly observe the information flows that I contend are driving these patterns. I begin by discussing the *passive* spread of information between civilians and then turn to the *active* spread of information instigated by rebels and the military.

C.1.1 Passive information diffusion

To probe the passive informational mechanism, I asked civilians about their understanding of military strength and public goods provision in the surrounding area, and then followed up with a series of questions about how they came to develop those understandings. Nearly everybody I interviewed mentioning hearing relevant information from their friends and family members who lived in nearby villages.³ When it came to rebel and military presence, subjects asserted that the majority of this information was acquired through in-person conversations. People regularly travel outside their own barangays and see friends and family members at work, church, meals, festivals and ceremonies, political events, and a variety of other occasions. In these instances, the status of the conflict occasionally came up in private conversations with the individuals who they most trusted. These seeds of information then spread through rumor chains both across and within villages. People mentioned that some of the information was based on first-hand accounts of their friends and family members, but it was also frequently based on second-hand accounts their contacts heard from *their* friends and family. For example, I often heard things like: “When my wife’s friend was talking

³Interviews 26-27, 29-30, 32-35, 36-38

to her cousin after church a few weeks ago, she heard that people weren't seeing the NPA anymore in several barangays in [their municipality]."⁴

Most commonly, conflict came up as a topic of conversation when changes to status quo military or rebel operations seemed to be taking place. For example, a village councilor mentioned to me that she heard from her nephew in a nearby village that NPA personnel had been approaching more people than usual in the last few months.⁵ Another civilian told me that he heard from his wife that her family members who lived in the area were scared because they noticed a lot of AFP personnel milling about recently, which signaled that they might be preparing a major military operation.⁶ Conflict also regularly came up as a conversation topic with friends and family was when discussing the safety of traveling to certain areas. For example, a barangay official from an area that recently experienced successful counterinsurgency operations said several of his friends warned him about traveling to the villages where they lived because the NPA was still strong there.⁷

Phone calls were another common method of information spread that came up in my interviews, though only about half of the subjects I interviewed said they would ever mention specific details about the conflict over the phone. One subject I interviewed said she would sometimes ask her sister and cousin who lived in neighboring barangays over the phone if they had heard about any military and rebel operations, because she was concerned for the safety of another family member who had ties to the NPA.⁸ Of the people who said they sometimes discussed the conflict over the phone, everyone said they used coded language in case they happened to be overheard. For example, one civilian mentioned asking a trusted contact via SMS if "our friends had been by for a visit recently" as a way of asking about NPA presence in the area.⁹ NPA members and counterinsurgents are both known to ask to see peoples' phones to check their phone history and SMS messages for any conversations that might imply they are helping the other side.

The spread of information about government public goods provision in nearby villages occurred much more openly. When talking with their family or friends at the functions mentioned above, subjects told me they would often openly discuss the progress of infrastructure projects and livelihood programs in their villages. In addition to discussing these projects with people in their social network, a lot of information about government infrastructure projects in nearby villages was attained through direct observation when traveling to these areas. Most PAMANA and KALAHI-CIDSS infrastructure projects were accompanied by large billboards with information including the nature, cost, and timeline of the project. Many of the subjects I interviewed mentioned getting information about government service projects from these billboards. Direct observation of projects in nearby villages is not exactly a story of horizontal information spread between civilians, but it is also strongly shaped by the structure of social networks. Although nearly all subjects mentioned seeing these billboards in areas near the municipal center when going to work or the market, many people who lived in rural areas said that the projects that had the biggest impact on their percep-

⁴Interview 30.

⁵Interview 34.

⁶Interview 29.

⁷Interview 37.

⁸Interview 34.

⁹Interview 35.

tions of the government were the ones they saw in other rural areas that were similar to their own villages. The most frequent reason for traveling to these other rural villages was to visit friends or family who lived there. In short, social networks shaped patterns of day-to-day travel that then shaped direct observations of government service delivery in comparable villages. Direct observation was more rarely mentioned as a method through which people got information about military or rebel presence. Interview subjects mentioned it was very rare that they could identify people associated with the NPA outside the area where they lived because they wear civilian clothing.

My initial theory focused on the positive effects of government development projects on peoples' attitudes, but my interviews during the mechanism-testing phase revealed that the diffusion of information about government development projects also led some subjects to develop negative opinions of the government. One subject in particular told me that he lost all trust in the government because of the negative experiences of his brother in a nearby village, whose family was forced to leave their long-time home in order to make room for a road widening project.¹⁰ In addition to not wanting to move in the first place, his family faced constant delays when it came to receiving government compensation that was promised. Several other subjects were also clearly left with a bad taste in their mouth about the quality of government service delivery based on a combination of their own experiences and the experiences of friends and family members who experienced poor implementation of promised development projects. The most common implementation failures I heard about were delays in infrastructure projects and failure to follow up with livelihood beneficiaries after they received the initial round of services. Local leaders were especially exasperated about these implementation failures because their own legitimacy within their communities was tied to their ability to successfully connect people to government services.¹¹

In addition to information that spread between civilians about instances of implementation failure, several subjects expressed frustration and anger when they perceived that their villages and the villages where their family lived were not being allocated government services at all. Many subjects expressed the view that the allocation of projects was determined in large part by patronage politics.¹² Because patterns of patronage are strongly affected by family networks (Fafchamps and Labonne 2017), the experiences of subjects' family members in nearby villages was seen as a strong indicator of whether their family was currently being excluded from government services. One subject mentioned to me that people were far more likely to look to the NPA for help when their extended families were systematically excluded from government service delivery.¹³ At the same time, he mentioned that he thought local politicians had far less power to use PAMANA projects as patronage compared to other government projects. Even though his own village had not yet received a PAMANA project, his friends and family in the neighboring municipality who were normally excluded from patronage networks had received several projects in the last year, giving him hope that his village would also receive help in the near future.

To summarize, my interviews revealed that government service delivery programs shaped peoples' views of whether the government was there to help them or not. The ex-

¹⁰Interview 27.

¹¹Interviews 26, 34, 37.

¹²Interviews 26, 29-32, 34, 37-38.

¹³Interview 36

periences of people in their social networks seemed to be just as important as their own experiences because it helped them develop a fuller picture of the quality of governance. Although interviewees were hesitant to express their own sympathies towards the NPA, several mentioned that they think a lot of the NPA's support derives from people's negative perceptions of government public service delivery. Instances where there is poor implementation or clientelist allocation of government development programs can lead these programs to backfire and undercut government legitimacy. That said, on net, the total lack of service provision contributed more to negative perceptions of the government than poor implementation of projects. This last observation suggests an explanation for the relatively small substantive effects of development projects on security outcomes. Some government development projects lead to the spread of positive information, some lead to the spread of neutral information, and some lead to the spread of negative information about the government. On average the former type of information seems to outweigh the latter, but the net effect is reduced by these negative implementation issues.

C.1.2 Active information diffusion

I now turn to the *active* use of social networks. Of the civilians I interviewed during the mechanism-testing phase, one subject mentioned being introduced to a member of the NPA nearly a decade ago through a social contact from another village and another mentioned being introduced to a military intelligence officer through this method.¹⁴ The rest of the civilians I interviewed did not mention this practice. The majority of the information on this mechanism came from my interviews with government security personnel.¹⁵ The counterinsurgent personnel I spoke with maintained that the active use of civilian social networks was a central part of their efforts to recruit new informants. Although I did not interview anybody associated with the NPA during the mechanism-testing phase of my fieldwork, the former rebels I spoke with during the inductive theory building phase mentioned that the active use of social networks was a key component of their recruitment strategy as well.¹⁶

The specific strategies of active information diffusion mirror the strategies discussed with me during the inductive theory building phase. Counterinsurgents and rebels both use civilian social networks as a way of facilitating effective introductions to civilians in nearby villages. Counterinsurgents ask trusted civilian informants in one village to introduce them to friends and family members in nearby villages who they think might also be open to joining their informant networks. Counterinsurgents sometimes offer cash payments to both the civilian introducing them to a contact as well as to the civilian being newly recruited, similar to referral bonuses for a new product or service.

According to all three counterinsurgent personnel I spoke with about this topic during the mechanism-testing phase, the single most important piece of information counterinsurgents want their existing informants to share with newly recruited informants is that their identity will be protected from the NPA.¹⁷ This is crucial for their claim that informants will not risk being subjected to retributive violence. The general sense among counterinsurgents was that a lot of the civilian population was already “on their side” and that the main thing

¹⁴Interviews 26 and 34.

¹⁵Interviews 25, 28, 31.

¹⁶Interviews 18, 21.

¹⁷Interviews 25, 28, 31.

they needed to convince them was that they would not face violence by the NPA if they acted on their hidden preferences. In accordance with the anecdotes shared in the main paper, counterinsurgents mentioned that they usually waited several months or even years before asking civilians to approach one of their friends or family members so that their promises to be able to keep informants safe would appear more credible. One of the counterinsurgents I interviewed also mentioned that they consciously approach beneficiaries of government development projects in villages already cleared of NPA presence and ask them to introduce them to their social contacts in areas where the NPA is still active. The development agency personnel I spoke with in background informational discussions were ambivalent about this practice because they feared it might undermine the legitimacy of the programs.

The former NPA members and the government personnel I interviewed both accused the other side of using social networks to facilitate credible *threats* of retaliation in addition to credible *promises* of protection, though both sides denied that they engaged in this practice themselves. For example, a counterinsurgent I spoke with accused the NPA of hinting to civilians that they knew the identities of their social contacts who were government informants in an effort to intimidate them and generate fear among all the people in their social network.¹⁸ A former NPA member I interviewed during the theory-building phase accused the government of using a similar practice.¹⁹ According to one civilian subject, the government engaged in strategic threats of arrest against family and friends of suspected NPA members as a form of collective intimidation.²⁰

A broad takeaway of the interviews was that that some combination of the horizontal information flows mechanisms described above played an important role in the spread of military and rebel control across villages over time. Most commonly, people mentioned that these mechanisms shaped military control by affecting the likelihood that civilians would act as government informants.²¹ Specifically, the PNP and AFP refer to their network of local-level informants as their “barangay information networks” (BIN). Information from these networks is crucial to counterinsurgent operations because of the protocols for initiating attacks. When security forces receive a tip about NPA activity in a village (barangay), they usually only initiate operations when they can verify the information with three other members of the BIN.²² This protocol is in place to prevent officers and soldiers from being drawn into ambushes.

C.2 Alternative 1: Reverse Causation

As mentioned on page 28 of the main paper, one possible threat to inference is reverse causation: conflict may shape social networks rather than vice versa. One possible mechanism through which this might occur is if migration rates between villages were high, or if they differed between villages that experienced high vs. low rates of NPA presence. As a first cut to examine whether this is likely to be the case, I rely on a survey of 4,437

¹⁸Interview 25

¹⁹Interview 18.

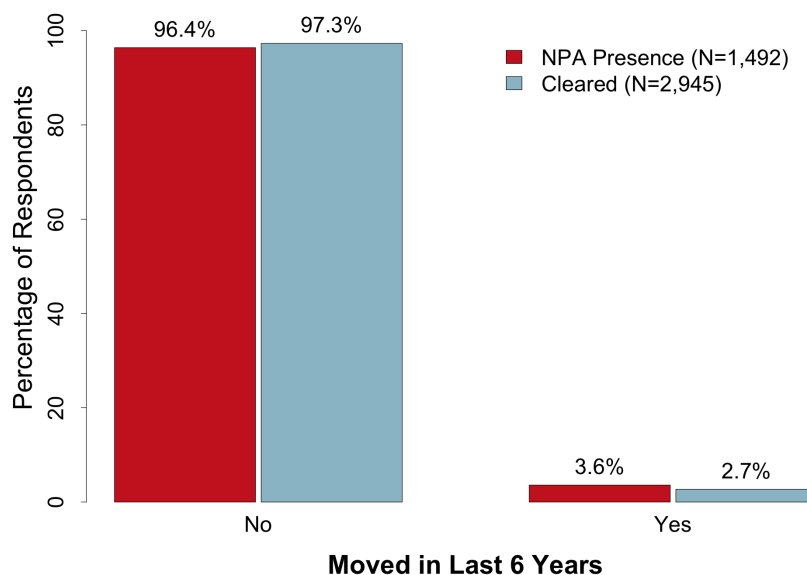
²⁰Interview 34.

²¹Though one subject also described how this process affected the NPA’s ability to recruit new members: parents were less likely to support one of their children joining the NPA if they believed the NPA was not going to survive in the area. Interview 35.

²²Interview 25, 28.

civilians I conducted for a separate project in 2017. The survey was representative of Sorsogon Province, which is also the location where I conducted qualitative fieldwork. Of those surveyed, approximately one-third of respondents (1,492) lived in villages where the NPA was present for at least one year between 2010-2015. The rate of migration in this context was very low – only 3.0% of respondents report having moved barangays during the previous six years. The rate of migration in barangays where the NPA was present during that six-year period was not significantly higher than in government-controlled barangays ($p=0.44$). If these patterns are generally representative of what happens across the country, reverse causation is not a likely confounder.

Figure C.1. Survey data suggest few people migrated in a six-year period



Observations are individual respondents from a representative survey of 4,437 civilians in a conflict-affected province of the Philippines.

Even if this survey is not representative of the situation nationally, the most likely pattern of conflict-driven migration should bias against the hypotheses. When people flee conflict, they are most likely to migrate to areas where they do not expect conflict to spread in the future. In other words, people are more likely to flee from conflict-affected areas to other areas that are already under the strong military control of the government. To the extent that conflict-driven migration creates social network connections between 1) areas affected by insurgents and 2) government strongholds through this process, this would bias against the finding that socially connected villages tend to be correlated with control by the *same* conflict actor (the rebels or the government) over time.

C.3 Alternative 2: Diffusion of ideology

A second alternative explanation is that the diffusion of territorial control could be driven by the spread of ideology (rather than information) through civilian social networks. This explanation could confound the results if rebels or the military use their presence in

nearby villages to spread their ideology through social networks, or if the government pairs development projects with ideological propaganda that spreads through social networks. Although citizens' ideology affects their behavior towards the government and the NPA, the interview evidence does not suggest that the patterns revealed by my empirical analysis are likely to be driven by the spread of ideology. Ideology certainly *clusters* in social networks during the period of my study (which would be captured by the fixed effects in the spatial regression model), but ideology relating to the NPA conflict did not actively *spread* along social networks during this five-year period.

Because the conflict has been ongoing for over half a century, ideological positions tend to be entrenched; NPA and CPP personnel have a difficult time spreading communist ideology and it is similarly difficult for the government to spread an anti-communist ideology. Interview subjects expressed that everyone they knew had entrenched opinions on the ideological divides in the conflict. For example, one village leader told me, "everyone in [my village] made up their mind on communism a long time ago. Do you know how long the NPA has been in Sorsogon? 50 years at least!"²³ Another civilian expressed, "people used to attend communist meetings, but they don't do that anymore. When people hear [ideological appeals] nowadays, they nod but they don't listen."²⁴

In response, the government and the NPA no longer invest significant resources into changing peoples' ideology. A government CAFGU I spoke with told me, "people don't want to hear about [ideology]. Does anyone believe there's a revolution coming? Of course not. They think about feeding their family and they think about their kids' safety. We have to convince them that we will help them more than the NPA. And the NPA, they do the same thing as us. They used to talk about their ideals. Now? They just try to convince the kids that if they join the movement they can get back at the bullies who pick on them."²⁵

With all that said, during earlier periods of the conflict the spread of ideology through social networks was absolutely seen by both sides of the conflict as a key determinant of military control. For example, Jones (1989) describes how, during the height of their power, the NPA actively used social networks to recruit people to attend sessions in which they would "educate" people about the ideals of communism and how to implement them in the Philippines. Corpus (1989) describes a similar process on the government side. Moreover, we know from extensive research in other contexts that peoples' ideology is strongly influenced by the ideology of other people in their social network, including in civil conflict settings (Kalyvas 2006, Petersen 2001). The key implication of the historical role social networks played in the spread of ideology is that ideological perspectives cluster in networks. This was reflected in the way my interviewees often described "NPA families" and "Government families."

In fact, I view this process of the passive and active spread of ideology to be a crucial factor driving the spread of territorial control during the earlier stages of insurgent conflicts, when peoples' ideals are more easily changed. Although material incentives and security are likely to always be an important component of peoples' decision to cooperate with one side or the other, a direct extension of my theory is that ideology can play a role

²³Interview 37.

²⁴Interview 26.

²⁵Interview 31.

as one of the mechanisms of the diffusion of territorial control through networks in other contexts. However, in terms of my empirical results, assuming that ideology is relatively unchanged during the 2011-2015 period, the clustering of ideology in social networks (due to this historical process), will be picked up by the fixed effects in the spatial regression model.

C.4 Alternative 3: Diffusion of material resources

One might argue that the empirical results reflect the diffusion of material goods through social networks, rather than the spread of information about government/rebel credibility. This concern relates to the hypothesis regarding government development projects: If these projects successfully make people richer, they may transfer a portion of their material resources to family members in nearby villages. To the extent that an influx of resources could reduce peoples' grievances against the government or increase the opportunity costs for participating in the conflict, this spread of wealth could facilitate the spread of government military control.

When I asked subjects questions pertaining to aspects of this mechanism, they mentioned that the transfer of money between relatives was widespread, but that it was very unlikely to stem from beneficiaries of the types of government development projects in my data.²⁶ The relatives that people in rural areas tend to rely on to provide supplemental income are Overseas Foreign Workers (OFWs), or work in Manila or provincial population centers. On the other hand, the type of development programs implemented by PAMANA and KALAH-CIDSS focus primarily on helping rural populations become more self-sufficient at providing their own income. Beneficiaries of these programs tend to be experiencing high levels of poverty, so whatever material benefits they gain from these programs are highly unlikely to be transferred to other relatives.

Moreover, in order for the effects to be picked up by the statistical model, these development programs would have to result in very short-term increases to wealth that were subsequently transferred between villages. The independent variables measure development projects in the year immediately leading up to changes in military control in socially connected villages. Training programs, agricultural infrastructure, or farm-to-market roads may increase wealth over a sustained period of time, but they are unlikely to generate enough short-term wealth to give people the leeway to immediately send that wealth to their relatives in nearby villages.

C.5 Alternative 4: Military targeting correlated with networks

A fourth pattern that could confound the results would be if the military targeted its efforts in a way that is correlated with peoples' social networks. This would be an important confounder to the various hypotheses under a number of circumstances: 1) if the military simultaneously sent troops to villages that were socially connected to each other, 2) if the military gained control of villages and then subsequently refocused its efforts on nearby socially connected villages, or 3) if the military sent additional troops to socially connected villages in the area where the government was implementing development projects. The same categories of issues would be a problem for inference if these dynamics shaped where the rebels focused their efforts.

²⁶Interviews 27-29, 31, 34, 38.

Unfortunately, I do not have access to finer grain data on military operations or troop movements beyond the catch-all measure of military control, which would be necessary to definitively rule out these mechanisms. I relied on interviews with military officials as well as background discussions with experts on the conflict to consider this alternative mechanism.²⁷ These interviews and discussions revealed two key points. First, to the extent that military targeting “spills over” from areas where the government already has control or is implementing development projects, the pattern is shaped primarily by geography rather than by social networks. Second, when inter-village social networks do play a role in military targeting, this process is consistent with the “active” diffusion of information described in my theory.

In regards to the first point, military officials described to me a targeting process that is similar to the “oil spot” strategy common to counterinsurgency doctrine across the world (Galula 1964). The military attempts to gain control of strategically important locations and then works outward from these locations to target *geographically* proximate villages and municipalities. In addition, when the military increases its presence to support development projects, it focuses on the areas that are *geographically* proximate to where the projects are being implemented. For example, a high ranking military official described how troops conducted additional patrols in all the barangays that were in the same municipality where a large road-building project was being implemented. Both of these patterns suggest that when considering its targeting strategies, the military is primarily focused on geography rather than social networks. Although social networks and geography are correlated, controlling for the geographic spatial lag variables should account for this process in the regression analysis.

My interviews did reveal one way in which social networks shaped more micro-level aspects of military targeting: through the active use of social networks by government intelligence officers. This process is entirely consistent with the mechanism described in the manuscript and in section C.1 above. Military intelligence officers try to recruit new members to join the Barangay Information Networks (BIN) whose family members live in nearby villages and whose trust they have already won. Targeting these individuals as potential informants is more fruitful because intelligence officers can more effectively communicate that they have the capacity to protect their security and provide economic benefits. When new informants are recruited into the BIN in socially connected villages, it gives the military the information necessary to target counterinsurgency efforts at these villages. They can be more confident that their operations in these villages will not lead them into ambushes, that they are likely to be targeting arrests at real rebel supporters, and that they will be able to intercept NPA personnel. As one PNP officer put it, “We avoid going to areas where there isn’t a trustworthy BIN, at least if we don’t have an AFP escort. It isn’t worth the risk to our officers. Step one is recruiting people to the BIN. Only then can we make out presence known in insurgent infiltrated areas.”²⁸ This specific process of military targeting based on social networks is best viewed as being consistent with my original theory, rather than being an alternative mechanism that confounds the results.

²⁷Interview 28. In addition to this formal interview, I discussed this point at length with high-ranking AFP personnel stationed in Manila, along with leadership at the Department of Social Welfare and Development in the Bicol Region.

²⁸Interview 25.

C.6 Alternative 5: Non-family social networks

Another aspect of the mechanism I aimed to examine with the qualitative fieldwork was the role of social networks based on interpersonal ties other than family relationships. To do this, I asked all subjects about what types of people they were most likely to talk with about a number of subjects, including politics and the conflict, though I asked them not to share any specific names with me. Family members were the most commonly mentioned ties. Still, many subjects also relied heavily on information from non-familial friendship ties, often based in common schooling, occupation, churches, and other civil society groups. I view the spread of information through these non-family social networks to be entirely consistent with my theory. Although my methodology only allows me to measure family ties between villages at a wide scale, the theoretical concept applies to any trusted social networks through which information about the conflict is likely to flow. I then followed up to ask the places where these different contacts lived, finding that the places where subjects had family members tended to overlap strongly with the places where people had other interpersonal ties. In other words, other types of interpersonal networks could be contributing to the empirical results in the regression models to the extent that they are correlated with inter-village family ties. The results should be interpreted as the collective effect of family ties and other social ties that are correlated with family ties.

Another category of networks I wanted to investigate were online social networks. The use of online social media is highly prevalent in the Philippines, including in many rural areas, where a large percentage of the population uses a low-bandwidth version of Facebook that comes with even the most basic cell plans (including those that do not otherwise include mobile data). All the subjects I asked about this topic, civilian and military, stated that it was exceedingly rare that people would share information about local details of the conflict online. Because social media posts are publicly available and identifiable, doing so would put a target on peoples' back, either by the government or the NPA. Thus, it is highly unlikely that the local diffusion patterns picked up in my empirical results reflect the effects of information spread on social media.

C.7 Alternative 6: Rebel service provision

A final mechanism that I investigated was the role of rebel public goods provision. To my knowledge, there exist no disaggregated measures of NPA service provision, leaving me unable to account for rebel services in the statistical models.²⁹ The provision of rebel services could affect the interpretation of the main results in two ways. First, one could argue that the NPA is able to expand its territory from areas where it has an active presence because of information about peoples' experiences with rebel service delivery that spreads through networks, rather than because of the logic about civilians' security considerations outlined in H1 and H2. Second, NPA services could contribute to the results pertaining to H3 if the NPA systematically delivered more services in areas where the government was not delivering services.

From a theoretical standpoint, the spread of information about the quality of rebel services is a direct extension of H3. In contexts where rebel services are more robust, I

²⁹Keister (2011) measured the provision of services by groups involved in the Moro Conflict in the Philippines at a higher level of aggregation, but Muslim Mindanao is not included in my sample.

would expect the spread of information about rebel governance to shape territorial control. However, my interviews suggested that NPA services were very limited from 2011-2015, making it unlikely that they contributed to the empirical results in the present study. For example, one subject said, “many years ago, when we could not go to government clinics, the NPA used to give us lots of medicine. They also helped us find criminals and thieves. But now the NPA is too poor, and we rely on [the government in] our barangay or the municipality.”³⁰ Across all subjects, the most commonly mentioned NPA services were 1) dispute resolution, 2) coercing landlords to redistribute land or provide favorable rent terms and 3) medical services. I mostly heard about these services in the historical context of the Ferdinand Marcos Sr era. Even the NPA personnel I spoke with during the inductive theory building phase admitted that they did not have the resources to provide substantial services anymore.

A few subjects mentioned that they still heard of occasions where the NPA provided very rudimentary versions of the services they used to provide. When I asked where the NPA provided these services, one subject said, “I think maybe they try to go to places where there are road projects and other building planned. They want to convince people that it is still more important to keep land owners in line rather than build a road.”³¹ This pattern of trying to maintain legitimacy in areas where the government is also expanding services is consistent with the logic of “outbidding” described in Blattman et al. (2021). To the extent that the NPA engages in this practice, this would bias against the results pertaining to H3. If NPA services are indeed helping the insurgents maintain legitimacy among the population of areas targeted with government projects, then the location and timing of rebel services should make it appear that government service delivery is a less effective means of establishing military control.

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³⁰Interview 34.

³¹Interview 34.

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