Pre-Analysis Plan

Strengthening the Rule of Law through Community Policing

Evidence from Liberia

Revised PAP, Version 2, February 1 2020. Original version filed January 31, 2019.

1 INTRODUCTION

Note: This PAP was updated with minor revisions on February 20, 2022 at the request of the EGAP Meta-keta IV Steering Committee, roughly one year after the original PAP was filed on January 31st, 2019. For a full list of changes, see Section 6.

How can states with limited resources improve police effectiveness and reduce the incidence of crime? In this study, I partner with the Liberia National Police (LNP) to experimentally evaluate their community policing program, which aims to improve security through two interrelated strategies. First, the program aims to address the barriers that prevent citizens from cooperating with the police by deploying small teams of officers into communities to host town-hall meetings on a semi-regular basis. During these meetings, officers educate residents about the criminal justice system, brainstorm strategies to address security threats, and provide citizens with the opportunity to ask questions or express concerns. Alongside these meetings, officers conduct foot patrols in which they interact with citizens in small groups and distribute informational pamphlets that reinforce the content communicated during the town hall meetings. Through these efforts, the police hope to build trust and provide residents with the knowledge, familiarity, and confidence they need to cooperate with the police.

Second, the program aims to help address police capacity constraints by mobilizing communities to engage in lawful, 'coproductive' forms of security provision that complement the efforts of police. To this end, officers use the town hall meetings to introduce the "Community Watch Forum" initiative, which calls for communities to assist the police by forming groups whose members i) meet regularly with the police to design proactive, collaborative strategies to combat crime; ii) proactively seek out information about security threats to share with the police; iii) help the police investigate crimes in their communities; and iv) monitor their communities at night during periods of peak crime.

This study is part of the Evidence in Governance and Politics (EGAP) network's Metaketa Initiative, which seeks to foster knowledge accumulation by supporting clusters of coordinated

studies across multiple countries and contexts. As part of this collaboration, the data from this study will be merged with data from evaluations of similar programs in Brazil, Colombia, Pakistan, Uganda, and the Philippines, and used to conduct a meta-analysis of the impact of community policing across these various settings. This component of the project is not covered in this pre-analysis plan.[1]

2 BACKGROUND ON COMMUNITY POLICING

Community policing programs are premised on the idea that citizen cooperation is essential for effective policing (Moore 1992; Tyler and Fagan 2008; Skogan and Frydl 2004). Because police cannot be everywhere all of the time, they must rely on citizens to learn about crimes that have occurred, identify potential suspects, and gather evidence to bring wrongdoers to justice. Recognizing the central role that citizens play in crime prevention, proponents of community policing have called for a shift in traditional policing strategy, from one oriented around the exercise of coercive law enforcement power, to one oriented around building and sustaining relationships with citizens, community leaders, and civil society organizations (Gill et al. 2014). The hope is that, as residents' confidence and familiarity with the police improves, they will become more cooperative and more willing to provide information to the police. And as the police become more familiar with the communities they serve, they will tailor their strategies to more effectively address the drivers of crime. Together, greater cooperation from citizens and greater local knowledge among rank and file officers will improve the police's overall ability to prevent, detect, and solve crimes (Ferreira 1996).

A wide range of interventions have been implemented under the auspices of community policing, from town hall meetings and beat patrols, to door-to-door canvassing and pamphlet distribution, to education programs in schools, churches, and mosques. Despite their varied form, these interventions all share the overarching goal of increasing citizen cooperation with the police. Viewed through the lens of costs and benefits, this may occur either because these programs in-

[1] For further details on EGAP's Metaketa Initiative, see http://egap.org/metaketa/metaketa-iv-community-policing.

crease the expected benefits of cooperation (e.g. by building trust in police intentions or confidence in their ability to investigate crimes), lower the expected costs (e.g. by increasing knowledge of how to contact the police or the functioning of the criminal justice system), or do a combination of both.

Community policing programs came to prominence in the U.S. and UK during the 1970s and 1980s, but in recent years they have become popular in fragile and conflict-affected states as policymakers search for cost-effective strategies to improve police legitimacy and strengthen the rule of law. Major donors such as the World Bank, DFID, USAID and others now spend millions of dollars annually to promote community-oriented policing programs (Denney and Jenkins 2013). The UN, for its part, has made community policing a mainstay of its peacekeeping strategy, calling for "community-oriented policing and intelligence-led policing to guide all operational activities of the United Nations police in their support to host state police" (United Nations 2016, 7).

To a significant degree, support for community policing in fragile states is based on the same premise that undergirds support in developed countries — namely, that greater cooperation from citizens will lead to greater effectiveness on behalf of the police. The UN's manual on community policing, for example, describes the logic behind community policing as follows: "greater public trust and confidence in the police leads to an enhanced flow of quality information from the public, which in turn fosters increased police effectiveness" (United Nations 2018, 10). And greater police effectiveness, in turn, creates a more positive public perception of the police, precipitating a "virtuous cycle" of trust and police effectiveness (United Nations 2018, 11).

Yet scholars and policymakers have increasingly begun to question whether this optimistic logic holds in fragile, low-capacity states, where security forces often face shortages of personnel, vehicles, and even basic supplies such as batons, radios and stationary (Downie 2013; Baker 2009). From a theoretical perspective, the same premise that motivates community policing — that citizen cooperation and police capacity are 'close complements' in the production of security — also implies that greater cooperation will be of little benefit when the police cannot reliably respond to incidents, investigate reported crimes, or follow-up on crime tips. Absent broader, more

comprehensive reforms addressing police capacity constraints, community policing programs may be bound to fail.

The irony of promoting reliance on police who remain fundamentally unreliable is not likely to be lost on ordinary citizens, whose everyday interactions with the police often involve acts of incompetence or corruption — experiences which research suggests tend to have an outsize influence on citizens' perceptions of the police (Sahin et al. 2017; Brunson 2007). Positive interactions during town hall meetings and foot patrols are unlikely to outweigh these experiences, and may be ignored altogether if citizens view these overtures as "cheap talk" or "bluffing", with potentially lasting damage to police credibility (Steinberg 2008, 36).

Even if these programs do prove persuasive, building citizens' trust and increasing their reliance on police, emerging research suggests these effects could prove counterproductive in the long-run. Blair, Karim and Morse (2016), for instance, find that reoccurring "Confidence Patrols" by the police in rural Liberia increased crime reporting but decreased victims' satisfaction with how reported crimes were handled, a finding they interpret as evidence that the intervention raised expectations beyond the police's capacity to meet them, with ambiguous implications for reliance in the long run. Officials in the UN's Peacekeeping Office reached a similar conclusion after reviewing a decade of UN support for community policing in host-states, warning that:

> Newly introduced community-oriented policing initiatives are all too frequently too quick to promise much and deliver little of tangible benefit to the recipient communities; which with time and repetitiveness are likely to undermine confidence, trust and respect in the police and can leave police-community relations in a worse position than before. (United Nations 2018, 9)

In addition to concerns about the ability of the police to follow-through on their promises, observers have also expressed concerns about the fact that traditional models of community policing tend to view security in the Weberian sense, as "a non-negotiable state monopoly" (Wisler and Onwudiwe 2008, 435), when in reality communities pursue security through a variety of avenues, ranging from private security firms, to vigilante groups, to mob violence (Hills 1999; Rose-Ackerman 2004). Though these actors often operate outside the law, they are often viewed as legitimate in the eyes of ordinary citizens, and they remain important providers of security,

deterring crimes when the police are too weak or ineffective to do so themselves (Baker 2009; OECD 2008). In such settings, encouraging reliance on the police at the expense of local sources of security could exacerbate problems of crime and violence if the police prove to be 'imperfect substitutes' for non-state security providers, with potentially negative consequences for long-term efforts to promote reliance on formal-sector justice and security institutions.

COMMUNITY POLICING AND 'MULTI-LAYERED' MODELS OF SECURITY REFORM

In many ways, concerns about the viability of community policing programs in fragile states are emblematic of what Andrews, Woolcock and Pritchett (2017) refer to as the problem of "premature load bearing" in the field of development, which occurs when "institutions and organizations are required to perform tasks before they are actually capable of doing them" (Andrews, Woolcock and Pritchett 2017, 54). The result, they argue, is akin to "putting too much weight on a structure before it is able to support it ... not only does this not accomplish the task at hand, it also sets progress back" (54).

Premature load bearing is common in many sectors of states undergoing reform, but it may be especially common in the justice and security sectors because of the premium placed on the state's role as the *sole* legitimate provider of these services. In line with Weberian notions of state authority, efforts to improve security and strengthen the rule of law typically focus exclusively on *state* security institutions, and very much depend on citizen cooperation and reliance for success. Yet because these reforms take decades to materialize, policymakers often find themselves in the uncomfortable position of promoting reliance on security institutions which are still very much in the process of reform.

This contradiction is not lost on policymakers, however, and in recent years many have begun to advocate for a more "multi-layered approach" to security sector reform that builds on local networks and institutions in order to supplement police capacity and ease the demands placed on under-resourced police (OECD 2008; Baker and Scheye 2007; Chirayath, Sage and Woolcock

2005; Denney 2014). This approach calls for policymakers to recognize that "first-best" solutions involving state delivery of security and justice services may be unrealistic when the state faces significant capacity deficits and lacks legitimacy in the eyes of large segments of its population (OECD 2008, 67). Rather than focus exclusively on state institutions, reforms should focus on developing partnerships between police and local leaders and communities, and empowering these actors to contribute to the provision of their own security within the confines of established rules and guidelines. In this way, the multi-layered approach to security reform aims to direct the collective action potential of communities towards activities which "complement rather than undermine the state's ability to provide security," and thereby help "respond to the short-term needs of enhanced security and justice service delivery, while also building the medium-term needs of state capacity" (OECD 2008, 11).

In practice, multi-layered security reforms involve a degree of the delegation on behalf of the police, as well as a corresponding amount of 'coproduction' by communities (Wisler and Onwudiwe 2008; Ostrom 1996). For example, police may delegate authority over misdemeanor crimes to local leaders or chiefs, encouraging them to adjudicate these cases while referring more serious ones to the police. Similarly, police may delegate responsibility for nighttime patrols to community watch groups, asking members of these groups and the communities that support them to coproduce nighttime security.

Among those involved in tailoring traditional community policing programs to meet the needs of fragile states, the concept of multi-layered policing has been influential (Baker 2009; United Nations 2018). Increasingly, these programs focus not only on building trust and compliance with the police, but also on encouraging communities to take ownership over their security and form coproductive partnerships with police. In urban settings, one of the principal ways that this approach has been put into practice is through community watch programs, wherein communities elect volunteers who, after being trained and vetted by the police, are tasked with keeping watch over their communities at night, assisting with police investigations, and providing information about potential criminal activity. More generally, members of these groups may serve as

advocates for the police in their communities, encouraging their fellow citizens to remain vigilant, to contribute to community-wide efforts to combat crime, and to rely on and cooperate with the police.

This 'coproductive' approach to community policing holds the potential to address the risks and pitfalls of more traditional models of community policing in several important ways. First, by harnessing the collective action potential of communities to serve as a "force multiplier" for the police, the coproduction approach to community policing helps address the manpower constraints that so often prevent police from responding effectively to crime, and thereby may help reduce the risk that greater reliance will prove either ineffective or counterproductive in combatting crime. Second, coproduction stands to be a more effective way to manage expectations in the process of building trust and confidence: rather than focus exclusively on improving citizens' expectations of police competence and trustworthiness, only to risk being unable to meet them, the coproduction model requires that police openly acknowledge their constraints in their bid to elicit coproduction from citizens. And finally, the coproduction model recognizes that communities living in the shadow of the state will invariably seek to self-provide protection, and that, in the absence of lawful alternatives, these efforts risk being directed towards practices that serve to *substitute* for the state, such as vigilantism and mob violence. Whereas traditional models largely ignore local forms of security, and thus do little to remedy their more problematic aspects, the coproduction model seeks address extra-legal practices through diversion — i.e. by directing communities towards lawful, rights-respecting activities which complement, rather than substitute for, the police.

While coproduction may help address some of the risks and pitfalls of traditional community policing programs, the strategy is not without risks of its own. Delegating security is an inherently risky strategy, and could conceivably increase rights abuses if watch groups do not abide by established rules and guidelines. Even when accompanied by careful vetting and training to ensure that members obey the law and respect suspects' rights, these risks cannot be ruled out entirely. Alternatively, the level of collective action from communities required to sustain these groups may prove difficult to achieve in practice. Prior research has shown that efforts to empower

communities through "community-driven development" programs have largely been unsuccessful, particularly in countries recovering from conflict (King and Samii 2014). Communities may view watch groups as nonviable and therefore not worth their effort, or they may lack the collective action capacity to sustain them overtime. Police, for their part, may lack the organizational capacity to mobilize, track, and manage these groups; they may find them to be difficult to manage or 'illegible', with constantly shifting memberships and unclear leadership structures; or they may view them as a threat to their authority. In light of these barriers, the coproduction approach to community policing may well fail to engender meaningful levels of coproduction or collective action from citizens.

While coproductive models of community policing have become increasingly common in fragile states — and increasingly popular among the donors that support them — support for this approach is based almost entirely on evidence from case studies (Denney and Jenkins 2013), and there remains little rigorous evidence to inform whether the potential benefits of this approach indeed outweigh the risks.

3 SETTING

Liberia is a small West African nation of approximately 4 million people. Between 1989 and 2003, the country experienced two devastating civil wars that killed over two hundred thousand civilians, displaced a large majority of the population, and left the country's government in a state of collapse. Efforts to reform the security sector began in 2004 under the direction of the UN peacekeeping mission (UNMIL). Since then, the government and its international partners have invested hundreds of millions of dollars to train and equip Liberia's police force. Yet after more than a decade and a half of intensive reform, Liberia's police force still lacks the ability to protect most neighborhoods and the country remains plagued by rampant crime and insecurity. This is especially true in Monrovia, Liberia's capital city and home to roughly 70% of the country's residents, many of whom live in densely populated slums. According to Afrobarometer data collected

in 2016, 65 percent of the city's residents reported that they or someone they knew was a victim of theft in the past year, 35 percent reported that they or someone they knew was physically assaulted, and 78 percent said they felt unsafe in their neighborhood "several times", "many times", or "always" in the past year. Across all three sets of questions, these figures are the highest of any of the 36 capital cities covered by Afrobarometer's Round 6 Survey.

While there are many factors that contribute to Monrovia's crime rate, capacity constraints and management issues within the Liberian National Police (LNP) are widely viewed as playing a central role. In 2009, the International Crisis Group described the LNP as "an institution that has serious management deficiencies, few working vehicles and scant communications equipment, often lacks even handcuffs or [flashlights] and still suffers from a widespread perception of malpractice" (International Crisis Group 2009, 17). Nearly a decade later, this remains an accurate description of the state of the force. Despite improvements to the capacity of elite units (Caparini 2014), the rank and file officers with whom residents interact most often continue to lack essential equipment such as handcuffs, batons, rain gear, and even stationary (Downie 2013). This lack of support, combined with low salaries and limited oversight by commanders, has created a "culture of impunity" within the force that permits absenteeism, petty corruption, and the practice of "hustling" at ad-hoc checkpoints — practices which not only erode trust, but also draw resources away from crime prevention (Human Rights Watch 2013).

Among citizens, the police are widely perceived as "insufficiently motivated to adequately respond to crime," and "lacking the resources to patrol or be proactive in crime prevention" (Reeve and Speare 2012, 8). This lack of confidence, in turn, has made many citizens reluctant to cooperate with the police through activities like crime reporting, information sharing, and evidence provision, further hindering their ability to combat crime. According to survey data collected in 2012, fewer than half of crimes that occur are actually reported to the police. Among those that are reported, attending officers often complain of difficulty persuading citizens to come forward with information or evidence. As a result, only a small fraction of reported cases are ever solved or prosecuted in court (Human Rights Watch 2013).

In addition to lacking confidence in the capacity of the police, many citizens are unfamiliar with the law, the criminal justice system, and the procedures and costs associated with reporting crimes to the police. For victims of crime, this lack of awareness means they must spend considerable time and effort to learn about police procedures before reporting crimes.

Local Security Groups

Exasperated by a lack of security and frustrated with the police, many communities have elected to self-provide security by organizing informal security groups. The origins of these groups date back to the period of crime and lawlessness that followed the end of the civil war, when communities formed vigilante groups to protect themselves from criminal gangs and armed robberies. Initially, these efforts were encouraged by the government as it sought to deliver on its campaign promise to crackdown on lawlessness (Rennie 2006), though it provided little in the way of oversight or regulation.

Informal security groups continued to operate independently until 2009, when the government sought to establish greater control over their activities as part of a larger effort to crackdown on mob violence and strengthen community/police partnerships (Zanker 2017). With support from the UNDP, the Community Services Section of the LNP established the "Community Watch Forum" initiative, which outlined a set of rules and guidelines to govern the conduct of community security groups, developed a formal application process to ensure that members are properly trained and vetted, and assigned local commanders with responsibility for managing and overseeing their activities.

This initiative has not proven to be sustainable overtime, however, and today most Community Watch Forums are no longer active. In their place, informal security groups with little or no connection to the LNP have again emerged. Supported by donations of tea, food, and sometimes money from community members, these groups tend to be very loosely organized and to become active only in response to specific incidents or during periods of peak criminal activity (e.g. during the holiday season).

Despite their lack of affiliation, these groups do not necessarily function as vigilante groups prone to violence, as in years past. To the contrary, many officers view them as an important source of support for the police — and an important alternative to extra-legal actions such as mob violence. Officers credit this shift in part to the Watch Forum Initiative, which although unsustainable, succeeded in widely publicizing that local security groups — whether affiliated with the police or not — must never engage in violence and always immediately report suspects to police.

COMMUNITY POLICING IN URBAN LIBERIA

Recognizing the need to build trust, educate citizens about the criminal justice system, and provide an alternative to informal security groups, the LNP with support from its international partners recently initiated a significant expansion of its community policing program. In Monrovia, two activities have been central this expansion. First, in each of Monrovia's ten police zones, the LNP created outreach offices staffed by Community Policing Officers (CPOs) with special training in community outreach. In addition to their regular duties as patrol officers, the CPOs are responsible for organizing town hall meetings in communities on a semi-regular basis. During these meetings, officers educate residents about the criminal justice system, solicit information about security threats and brainstorm strategies to address them, and provide citizens with the opportunity to ask questions or express concerns. Alongside these meetings, officers conduct foot patrols in which they interact with citizens in small groups, solicit additional information about security concerns, and distribute informational pamphlets that reinforce the content communicated during the town hall meetings.

In the second component of the program, the CPOs use the town hall meetings as a gateway to (re)introduce community leaders and residents to the police's Community Watch Forum initiative. The CPOs explain that Community Watch Forums are composed of groups of concerned citizens who assist the police by sharing information about security threats; by meeting regularly with the police to design proactive, collaborative strategies to combat crime; by facilitating police

investigations in their communities; and by conducting nighttime security patrols during periods of peak crime.

The LNP's support for this two-pronged approach to community policing is founded on the hope that town hall meetings, foot patrols and educational pamphlets will provide residents with the knowledge, familiarity, and confidence they need to rely on the police, while encouraging communities to form Watch Forums will help to direct them towards lawful, coproductive forms of security provision that strengthen rather than undermine state authority and help address police capacity constraints. This model remains untested, however, and comes with several potential limitations and caveats, as discussed in Section 2.

4 Research Design

4.1 Sampling & Randomization

Monrovia is divided into ten police zones, each composed of between 15 and 40 communities. Within each zone, research staff worked with the CPO to identify any 'high priority' communities they wanted to nominate for the intervention based on their assessment of existing crime rates, police-community relations, or other factors. This process identified 35 'high priority' communities. Because this sample size was smaller than anticipated and would have resulted in an under-powered study, an additional 65 communities were randomly sampled from the remaining population of communities to yield a target sample size of 100 communities. Half of the communities within each zone were then randomly assigned to treatment via block randomization.[2] During the baseline survey, two communities were found to be duplicates of other communities and were dropped; during the implementation phase of the project, staffing constraints within the research team required that the smallest police zone be dropped. These two changes resulted in a

[2] In zones with an odd number of communities, I randomly assigned $(N_b - 1)/2$ communities to treatment, where N_b denotes the number of communities in block b, resulting in a slightly less or slightly higher than .5 probability of assignment to treatment, depending on rounding. I account for this in the analysis by weighting observations by the inverse of the probability of assignment to treatment/control, following Gerber and Green (2012, p. 117), and as described in Section 5.3, below.

final sample size of 93 communities, 45 of which were assigned to treatment.

Each community is further divided into anywhere from three to six 'blocks', which are akin to small neighborhoods or street blocks in the United States. Because many communities as a whole are very large, with populations of up to roughly 5000 residents, the intervention was focused on the most central block in each community plus the largest two adjacent blocks. Within each community, respondents for the baseline and endline surveys were randomly sampled from the selected blocks following a random walk procedure.

4.2 IMPLEMENTATION

Implementation began in February 2018 and continued for a period of ten months. In each of the 45 communities, town hall meetings were held approximately every other month, usually on weekend afternoons, and were followed by foot patrols during the week in which officers distributed informational pamphlets. In total, each community hosted between 5 and 6 town hall meetings and foot patrols.

The town hall meetings covered a variety of topics, including: the Watch Forum Initiative; the 'concept' of community policing and the importance of police/community partnerships; the procedure for reporting a crime to the police; the Professional Standards Division of the LNP and its role in handling incidents of police misconduct; the Women and Children Protection Services division of the LNP and its role in handling domestic disputes and child endangerment; and the names and phone numbers of 'key contacts' at the local police station. Attendance at the meetings ranged from as little as 10 residents to as many as 60, but most meetings were attended by between 20 and 30 residents.

Implementation of the program was monitored by research assistants from Parley Liberia, a Liberian NGO, who worked in close collaboration with the CPOs and accompanied the police on all meetings and foot patrols, taking detailed notes on the proceedings, including the topics covered during the meetings and the questions raised during the Q&A sessions. Research assistants also collected information on the number of residents and officers attending each meeting.

4.3 HYPOTHESES

In generating hypotheses about the program's potential impacts, I assume that citizens decide whether to cooperate with the police based on the expected costs and benefits, and that these decisions in turn influence police effectiveness and crime. The expected benefits are determined by perceptions of the effectiveness, benevolence, and fairness of the police. The expected costs of cooperation are determined by perceptions of the time, money, and effort required to contact the police, register a crime, or navigate the criminal justice system. In some instances, citizens may also consider the cost of social sanctions for reporting or cooperation, or the coordination costs of collective forms of cooperation (e.g. organizing watch forums).

Within this framework, I hypothesize that the program will reduce the costs of cooperating with the police by improving familiarity with the police (H1), increasing knowledge of the criminal justice system (H2), and reducing mistrust of police intentions (H3). I hypothesize that the program will increase the expected benefits of cooperation by improving perceptions of police capacity (H4) and police responsiveness to citizen concerns (H5). Within communities, I expect the program to reduce the social costs of cooperation by creating consensus about the appropriateness of reporting crimes to the police (H6) and reducing support for extra-legal alternatives such mob violence (H7); and by improving coordination and collective action in coproductive forms of security provision (e.g. Community Watch Forums (CWFs)) (H8). In addition to influencing beliefs about the expected costs and benefits of cooperation, the intervention should strengthen police presence in communities (H9).

As a result of these changes, I expect information sharing and reliance to improve (H10), reporting of crimes that occur to the police to increase (H11), and willingness to report acts of police abuse to the police to increase (H12). As cooperation through information sharing and crime reporting improves, I expect the police to become more effective, leading to lower crime (H13), improved perceptions of security (H14), and greater satisfaction with police performance (H15).

Finally, the intervention holds the potential to have positive, downstream impacts on trust in government and trust within communities as a result of greater police responsiveness and lower crime. Though I view these impacts as somewhat less likely than the primary hypotheses listed above, I include them here as secondary hypotheses S1 and S2, respectively. A concise summary of the hypotheses tested in this study and how they correspond to the hypotheses developed in Blair et al. (2018)'s meta-analysis PAP can be found in Table 1. [3]

5 Empirical Analysis

5.1 Data

This study will rely primarily on data from baseline and endline surveys administered to a random sample of 20 adults in July 2017 and January 2019, respectively, in each of the 93 study communities. In addition to background information on demographics, the surveys measure outcomes pertaining to each of the fourteen hypotheses, as detailed below. These data will be complemented by administrative data on crime reporting from the LNP. However, because administrative data capture only a fraction of crimes that are actually reported to the police,[4] and because they do not allow us to distinguish between crimes that occur and crimes that were reported, the focus of the analysis will be on measures of crime and crime reporting from the large-N survey.

[3] In the meta-analysis PAP, Blair et al. (2018) posit two additional hypotheses: that the intervention will improve the police's perceptions of civilians and attitudes towards accountability (meta-analysis Hypothesis 3a), and that the intervention will improve police behavior and accountability, thereby reducing reports of police abuse and bribery (meta-analysis Hypothesis 3b). Hypothesis 3a is excluded from the Liberia analysis in this study as well as in meta-analysis because the intervention was randomized within rather than across police jurisdictions, precluding an experimentally-controlled comparison of police officers. Hypothesis 3b will be tested in meta-analysis and in the country-chapter of the book. However, it is excluded from the paper(s) published exclusively by the Liberia research team because the theoretical justification for the hypothesis is weakened by randomization within rather than across jurisdictions, in the sense that residents of treatment and control communities interact with the same set of officers, with any potential impacts on officers' attitudes or behaviors held constant across treatment and control groups. Section 5.5 discusses this issue in further detail.

[4] Fieldwork conducted prior to the baseline survey revealed that incidents reported to the police are usually only recorded in a station's Occurrence Book if the complainant or attending officer anticipates that the case might merit court action. Furthermore, while official protocol calls for stations to forward a summary of each incident in the Occurrence Book to the LNP Statistics Division at the end of each month for inclusion in the national database, field interviews suggest Commanders usually only forward summaries for the most notable and high-profile incidents.

5.2 Outcome variables

Table 1 summarizes the main hypotheses to be tested in this study. Each hypothesis pertains a cluster of between two and fourteen dummy variables. To mitigate the risk of false positives, I test each hypothesis using a single composite index constructed by i) recoding each variable within a given cluster so that higher values correspond to 'better' outcomes, ii) standardizing each variable by its baseline mean and standard deviation, and then iii) taking the mean across the individual variables in the cluster for each respondent.[5] Appendix A.2 provides further details on the construction of the composite indices and the corresponding variables and survey questions.

Table 1 organizes the hypotheses and corresponding outcomes into three categories — mechanism hypotheses, primary hypotheses, and secondary hypotheses. When testing the primary hypotheses, I will use the procedure outlined in Benjamini and Hochberg (1995) to adjust my p-values and control the risk of false discovery to 5% (this procedure will not be used when testing hypotheses about mechanisms and secondary outcomes, however). I will also report results individually for all the variables within each cluster, using the procedure outlined in Benjamini and Hochberg (1995) to control the within-cluster false discovery rate to 5%.

5.3 Estimation

The estimand in this study is the average treatment effect of the intervention on the sample communities (i.e. the SATE). To estimate this, I will use weighted least squares (OLS) regression of the outcome on a dummy variable indicating whether or not the community was assigned to the treatment group, with weights constructed as the product of i) the inverse of the probability of assignment to treatment/control, and ii) the inverse of the probability that an individual was selected for the endline survey. The former accounts for the fact that the probability that a community is assigned to treatment or control varies across randomization blocks (i.e. police zones) (see Gerber

[5] Some variables are only available at endline. Here, I will standardize the variables by the control group mean and standard deviation at endline rather than by the baseline mean and standard deviation pooled across treatment and control communities.

Table 1: Hypotheses and Outcome Indices

Mechanisms	Index name	Meta-Analysis Hypothesis
Costs of cooperation		
Increase familiarity with the police (H1)	know_pol_idx	NA
Increase knowledge of the criminal justice system (H2)	know_idx	M1b
Improve perceptions of police intentions (H3)	intentions_idx	M1a
Benefits of cooperation		
Improve perceptions of police capacity (H4)	police_capacity_idx	M2a
Improve perceptions of police responsiveness (H5)	responsive_act	M2b
Community coordination, collective action, and norms		
Reduce social sanctions for reporting (H6)	norm_idx	M1c
Reduce support for mob violence (H7)	sup_mobviol_idx	NA
Increase contributions to the coproduction of security (H8)	ca_sec_idx	NA
Increase police presence (H9)	compliance_idx	C
Primary Hypotheses	Index name	Meta-Analysis hypothesis
Cooperation with police		
Increase reporting of crimes to the police (or courts) (H10)	crime_reporting_idx	4a
Increase crime tips & information sharing (H11)	tips_idx	4b
Increase willingness to report police abuse (H12)	police_abuse_idx	4c
Security		
Reduce the incidence of crime (H13)	crime_victim_idx	1a
Improve perceptions of security (H14)	future_security_idx	1b
Improve satisfaction with police performance (H15)	satis_idx	2
Secondary Hypotheses	Index name	Meta-Analysis hypothesis
Improve trust in the state (S1)	legit_trust	S1
Improve communal trust (S2)	trust_community	S2

Notes: Each index is a composite index constructed from several individual variables. For full details on the construction of the indices, see Appendix A.2. Column 3 indicates how the labels for the hypotheses listed in this study correspond to those of the EGAP Meta-analysis PAP.

and Green (2012), Section 3.4.3); the latter accounts for the fact that individuals from relatively large communities have a lower likelihood of being included in the endline sample compared to those from relatively small communities.[6]

Standard errors will be clustered at the community level to account for the cluster-randomized design, and all specifications will include block fixed effects. For outcomes measured at both baseline and endline, I will also include the community-level average outcome at baseline as a control variable (because the surveys constitute a community-level but not individual-level panel, I cannot control for baseline outcomes at the individual level).

ANALYSIS OF ADMINISTRATIVE CRIME DATA

We will also collect and analyze administrative crime data from the LNP (see Section A.2 for a full list of administrative crime variables). However, these data will not be used to directly test any of the above hypotheses, because in addition to being very noisy, they reflect both the incidence of crime and the rate of crime reporting, making interpretation of any effects on these outcomes ambiguous. Rather, they will be used to help inform and corroborate effects on outcomes for the survey. For instance, if results from the survey-based outcomes suggest no change in the incidence of crime but an increase in crime reporting, then a positive effect on crime as measured by administrative data could be interpreted as corroborating evidence.

This analysis will be conducted at the community-level using weighted least squares regression to account for variation in the probability of assignment to treatment/control across blocks. Specifically, I will estimate:

$$y_{vb} = \beta_0 + \beta_1 T_{vb} + \gamma_b + \epsilon_{vb}$$

where y_{vb} indicates the outcome for community v in randomization block (i.e. police zone)

[6] Sampling probabilities will be constructed using community-level population estimates. Recall that communities are subdivided into anywhere from three to six blocks, and that the intervention and survey covered the three most central blocks within each community. I make the simplifying assumption all blocks within a community are of the same size, and calculate the sampling probability for individual i in community c as: $\frac{20}{3 \times \frac{Town\_Pop_c}{Num\_Blocks_c}}$.

b, γ_b denote randomization block fixed effects, and T_{vb} denotes community-level treatment assignment.

5.4 SUPPLEMENTARY ANALYSES

PATTERNS OF CRIME REPORTING IN TREATMENT AND CONTROL COMMUNITIES

Testing the hypothesis that the intervention will increase crime reporting poses a special set of challenges because of the possibility that treatment alters the type or nature of crimes that occur, such that crimes in treatment communities differ from those in control communities in terms of their potential reporting outcomes.

To see this more formally, let Y_i denote whether crime i was reported to the police (or courts); C_i denote whether the crime occurred in the first place; and T_i denote the treatment status of the respondent reporting crime i.[7] A simple OLS regression of Y_i on T_i conditional on $C_i = 1$ yields

$$\mathbb{E}[Y_i|C_i = 1, T_i = 1] - \mathbb{E}[Y_i|C_i = 1, T_i = 0]$$

Using $Y_i(1)$ to denote potential reporting outcome for crime i under treatment and $Y_i(0)$ denote potential reporting outcome under control, and defining $C_i(1)$ and $C_i(0)$ analogously, we can rewrite this expression as:

$$\begin{aligned}&\mathbb{E}[Y_i|C_i = 1, T_i = 1] - \mathbb{E}[Y_i|C_i = 1, T_i = 0] \\ &= \mathbb{E}[Y_i(1)|C_i(1) = 1, T_i = 1] - \mathbb{E}[Y_i(0)|C_i(0) = 1, T_i = 0]\end{aligned}$$

[7] This exercise follows the explanation of post-treatment bias in Angrist and Pischke (2008), Section 3.2.3.

which, by virtue of the fact that T_i is independent of $\{Y_i(1), Y_i(0), C_i(1), C_i(0)\}$, is equal to:

$$\mathbb{E}[Y_i(1)|C_i(1) = 1] - \mathbb{E}[Y_i(0)|C_i(0) = 1]$$

Subtracting and then adding $\mathbb{E}[Y_i(0)|C_i(1) = 1]$ to this expression illustrates the potential for bias:

$$\begin{aligned}
&\mathbb{E}[Y_i(1)|C_i(1) = 1] - \mathbb{E}[Y_i(0)|C_i(0) = 1] \\
&= \mathbb{E}[Y_i(1)|C_i(1) = 1] - \mathbb{E}[Y_i(0)|C_i(1) = 1] + \mathbb{E}[Y_i(0)|C_i(1) = 1] - \mathbb{E}[Y_i(0)|C_i(0) = 1] \\
&= \underbrace{\mathbb{E}[Y_i(1) - Y_i(0)|C_i(1) = 1]}_{\substack{\text{Causal effect on crime reporting} \\ \text{for crimes that occur when treated}}} + \underbrace{\mathbb{E}[Y_i(0)|C_i(1) = 1] - \mathbb{E}[Y_i(0)|C_i(0) = 1]}_{\text{Bias}}
\end{aligned}$$

Intuitively, this exercise shows that difference in crime reporting between treatment and control communities is equal to the causal effect of treatment on crimes that occur when treated, plus a bias term which reflects the fact treatment may change the composition of crimes that occur. Because $\mathbb{E}[Y_i(0)|C_i(1) = 1]$ and $\mathbb{E}[Y_i(0)|C_i(0) = 1]$ are never observed, it is impossible to assess the magnitude of this bias.

There is no clean solution to this problem within the potential outcomes framework. **?**, addressing this issue in the context of audit studies in which treatment may influence both response and the quality of response, recommends redefining the outcome so that crimes that occur and are reported take a value of 1 and 0 represents either that a crime did not occur or occurred and was not reported. This outcome is well-defined for the entire population, and thus not subject to post-treatment bias, but it is of ambiguous interpretation — a positive effective could indicate either an increase in crime, an increase in reporting, or a combination of both.

The approach proposed in Blair et al. (2018)'s Meta-analysis PAP is to interpret the effect on the crime reporting index (*crime_reporting_idx*), which is constructed as the sum of crimes that occurred and were reported, alongside the effect on the crime victimization index (*crime_victim_idx*), on the intuition that examining the two in tandem allows one to draw conclusions about the pro-

gram's impact on crime reporting. For instance, a null effect on crime victimization and a positive effect on crime reporting would suggest the intervention increased the rate of crime reporting. This approach is not perfect, however, because it requires making an assumption about the true effect on *crime_victim_idx*, and thus is only viable if the these effects are precisely estimated and effects on crime reporting are relatively large.[8]

Here, I outline an alternative approach that yields results which cannot be interpreted causally but are unambiguous and substantively meaningful. The approach follows the logic of balance tests in selection-on-observables designs, and starts from the observation that the bias term will zero whenever $\mathbb{E}[Y_i(0)|C_i(1) = 1] = \mathbb{E}[Y_i(0)|C_i(0) = 1]$. While it is not possible to verify this equality empirically, I can test whether $\mathbb{E}[X_i|C_i(1) = 1] = \mathbb{E}[X_i|C_i(0) = 1]$ — that is, whether crimes in treatment and control communities are similar to one another along observable characteristics, such as the age, ethnicity, level of education, and gender of the victim. If the results suggest that crimes in treatment and control communities are similar along these dimensions, the assumption that they are also comparable in terms of their potential reporting outcomes becomes more plausible. If the opposite is true, then this assumption becomes less plausible.

With this background in mind, the approach proposed in this pre-analysis plan is to communicate these inferential threats to the reader, report results from the balance analysis, and proceed with a comparison of crime reporting between treatment and control communities, making sure to emphasize that while informative, the results do not have a causal interpretation.

More specifically, this analysis will employ a crime-level specification given by

$$y_{civb} = \alpha + \beta T_{vb} + \gamma_b + \mathbf{X}_{ivb}\theta + e_{civb} \tag{1}$$

[8]There are other problems with the approach outlined in the Blair et al. (2018) as well. First, *crime_victim_idx* and *crime_reporting_idx* are measured on difference scales — the former is measured as the sum of continuous variables constructed from questions phrased as "how many times did [x] type of crime occur in the past month," whereas the latter is measured as the sum of dichotomous variables constructed from "the last time crime [x] occurred, was it reported to the police?" As a result, the average treatment effects on *crime_victim_idx* and *crime_reporting_idx* are not comparable. In addition, the *crime_reporting_idx* includes a sub-index of questions about whether a respondent would report hypothetical crimes to the police, further reducing our ability to draw conclusions about crime reporting by comparing the two effects.

where y_{civb} indicates whether crime c reported by individual i in community v of randomization block b was reported to the police or courts. T_{vb} denotes community-level treatment assignment, $\mathbf{X}_{ivb}$ denotes the individual-level controls for age, gender household size, religion, education, and literacy, and γ_b denotes block fixed effects. Standard errors will be clustered at the community level.

5.5 THREATS TO INFERENCE

The main threat to inference in this study derives from two potential sources of spillover. The first is the risk that treatment spills-over into nearby control communities, partially treating control residents and potentially leading me to underestimate the effect of the intervention. Because the sample size is small, there is not a lot that can be done to diagnose or mitigate this risk. However, I believe this risk to be relatively low, because communities are large and no two communities are adjacent.

The second source of spillover derives from the randomization scheme, which randomizes within but not across police zones/jurisdictions. This means that officers who participate in the intervention will also be interacting with residents of control communities in the course of their regular, everyday responsibilities. If the intervention alters officers' behaviors in a way that in turn influences residents' perceptions and behaviors in control communities, then this could lead me to underestimate the program's impact. For instance, the program could in theory make officers more empathetic or caring, which in turn could improve residents perceptions in control communities.

My study design cannot account for these kinds of 'general equilibrium' dynamics. For this reason, my results should be interpreted as the 'partial equilibrium' effects of changing citizens' attitudes of and exposure to the police while holding constant any resulting changes in police behavior, which influence both treatment and control communities equally.[9]

[9]This study includes a baseline and endline survey of officers involved and not involved in the intervention, which could in theory allow me to detect changes in officers' attitudes or behaviors via a difference-in-differences analysis. The sample size (100) is small and includes only 18 clusters, and the survey is limited in scope, so any such analysis must be interpreted with caution. Nevertheless this is an avenue I may pursue at a later point in time.

5.5.1 OTHER, SMALLER THREATS TO INFERENCE

Outliers: To deal with outliers, we will investigate retrospectively by contacting field managers to assess whether the outlier is plausible and whether transcription, training, or enumeration errors could have led to it. If there are plausible reasons of this nature for the error, the outlier will be deleted or recoded. The same procedure will be conducted with the same intensity in treatment and control. If no plausible error is found, we will retain these outliers without modification, given that these issues should be parallel across treatment and control.

Missing endline data: Following Blair et al. (2018), we will handle missing endline outcome data as follows: First, for all of the constituent items in our indicies, we will assess whether treatment status affects missingness by running a regression that follows the main specification exactly. The results of this analysis will be reported in the Appendix. Second, for variables without differential attrition (p-value $>$ .05), missing data will be imputed using the other constituent variables of the index. These imputed outcome variables will be used to construct the composite indices for the main analysis.[10] Lastly we will report Lee bounds for the average treatment effect on the outcome indices constructed using the original, unimputed constituent variables in the appendix, following Lee (2009).

[10] If all constituent items are missing, then the composite index will remain missing.

6 CHANGE LOG

The following list of changes to the original PAP were made on February 20, 2022 at the request of the EGAP Meta-keta IV Steering Committee, roughly one year after the original PAP was filed on January 31st, 2019. The changes were made as part of a broader effort to more closely coordinate analysis plans across the Meta-keta study sites.

Category	**Description**	**Justification**	**Sections amended**
Hypothesis testing	Add MK4 Hypothesis 3b to analysis plan for meta-analysis and Liberia country-chapter	Request from MK4 Steering Committee	Section 4.3
Hypothesis testing	Clarify which indices will be used when harmonized index varies from Liberia-specific index	Request from MK4 Steering Committee	Appendix A.1
Hypothesis testing	Modify index for hypotheses 1a to include violentcrime_num, nonviolentcrime_num, cviolentcrime_num, and cnonviolentcrime_num instead of crime_num, violentcrime_num, ccrime_num, and cviolentcrime_num	Avoid double counting of crimes in both crime_num and violentcrime_num	Appendix A.3
Hypothesis testing	Clarify which variables will be included in violentcrime_num, nonviolentcrime_num, cviolentcrime_num, and cnonviolentcrime_num	Meta-PAP now includes extended set of crime variables that were measured in most, but not all countries. Previously, only variables measured in all countries were included.	A.3
Hypothesis testing	Construction of the crime_victim_idx changed from the sum of all types of crimes (violentcrime_num, nonviolentcrime_num, cviolentcrime_num, and cnonviolentcrime_num) to the average of all types of crime	Request from MK4 Steering Committee	Appendix A.3

Hypothesis testing	Minor revisions to index used to test Hypothesis 4a (crime reporting) to be harmonized with newly-revised MK4 index	Request from MK4 Steering Committee	A.3
Hypothesis testing	Minor revisions to index used to test Hypothesis 4b (reporting of police abuse) to be harmonized with newly-revised MK4 index	Request from MK4 Steering Committee	A.3
Estimation strategy	Specify procedure for handling missing endline outcome data	Request from MK4 Steering Committee	5.5.1
Estimation strategy	Omit individual-level controls from main specification, to be consistent with the Meta-PAP	Request from MK4 Steering Committee	5.3
Estimation strategy	Clarify procedure for handling outliers	Procedure for handling outliers was omitted from the original PAP and Meta-PAP	5.5.1
Estimation strategy	Clarify procedure for calculating sampling weights: Numerator of equation in footnote 6 changed from 1 to 20.	Reflects the fact that 20 people are surveyed per community, not 1.	5.3

Table 2: Change log

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Can Community Policing Build Trust and Improve Police Effectiveness? Evidence from Liberia

Appendix

A.1 HARMONIZATION WITH BLAIR ET AL. (2018)'S METAKETA IV META-PAP

Many of the outcomes below are harmonized with with Blair et al. (2018)'s Metaketa IV meta-PAP. This means that a common set of items were measured for each index across each country. However, in many cases, the Liberia team (as well as other teams) decided to include additional questions and include these items in the index, on the grounds that there are certain Liberia specific contextual factors that merit specific questions, and in recognition that how best to measured a particular concept is likely to vary across countries (e.g. questions pertaining to "knowledge of the law" will obviously vary across country's according to each country's laws and common sources of confusion among citizens). In other instances, the Liberia team placed greater importance on certain indices, and accordingly allocated more survey time to measuring component variables.

The main analyses presented in the meta-analysis (in its article and book formats) as well as in the country chapters in the book rely on the harmonized outcome items and indices, as registered in the metapap and noted below. Liberia-specific indices will be reported in the paper(s) published by the Liberia team.

A.2 MEASUREMENT OF MECHANISMS

FAMILIARITY WITH THE POLICE

I measure *familiarity with the police* using the following nine questions:

1. The police have special officers responsible for dealing with issues of sexual assault and child abuse. True or False?
2. IF YES: What is the name of the unit to which these officers are assigned? [ANSWER: Women and Child Protection Services (WACPS). ENUMERATOR: IS THE RESPONDENT CORRECT?]
3. The police have a special unit responsible for handling citizen complaints about police misconduct or abuse. True or false?
4. What is the name of this unit? [ANSWER: Professional Standards Division. ENUMERATOR: IS THE RESPONDENT CORRECT?]
5. The police have a special unit responsible for investigating crimes and gathering evidence. What is the name of this unit? [ANSWER: Crime services division. ENUMERATOR: IS THE RESPONDENT CORRECT?]
6. Do you know where the nearest police station is? [ENUMERATOR: IS RESPONDENT CORRECT?]
7. Do you know the name of the COMMANDER at the police station that is nearest to you? [ENUMERATOR: IS RESPONDENT CORRECT?]
8. Do you know the name of any police officer at the police station that is nearest to you?
9. Do you know the PHONE NUMBER of any police officer at the police station that is nearest to you?

For each question, I construct a dummy variable indicating whether the respondent answered affirmatively or correctly, as appropriate. Endline responses will be standardized by the baseline mean and standard deviation; the composite index *know_pol_idx* will take the average of these nine standardized variables.

KNOWLEDGE OF THE CRIMINAL JUSTICE SYSTEM

To measure *knowledge of the criminal justice system*, I ask the following nine questions:

1. *know_law_suspect*: If you see a dead body lying in the street and you report it to the police, Liberian law says the police must hold you as a suspect. True or false?
2. *know_law_lawyer*: If you take your case to court and you don't have money to pay a lawyer, Liberian law says the government must provide a lawyer for you. True or false?
3. *know_law_fees*: If you take a case to the police, Liberian law says the police can charge a fee to register the case. True or false?
4. *know_report_station*: Do you know where the nearest police station is? [ENUMERATOR: IS RESPONDENT CORRECT?]
5. *know_law_statrape*: If a man does man-woman business with a woman under age 18, Liberian law says that is rape, even if the woman consents. True or false?
6. *know_law_childsup*: According to Liberian law, a man does not have to provide for his children if he never married the mother and they are seperated. True or false?
7. *know_law_habeasc*: If the police put someone in jail and no one comes to carry a case against that person, Liberian law says the police have to let him go free. True or false?
8. *know_law_bondfee*: If you take a case to court, Liberian law says the Judge can charge you a fee before he can hear the case. True or False?
9. *know_law_complain*: If you report a serious crime to the police like murder or rape and the police fail to take it seriously or investigate, Liberian law says you have the right to file a complaint against the police. True or False?

Questions 1 - 4 were harmonized across all studies in Blair et al. (2018)'s meta-analysis; Questions 5 - 9 are unique to Liberia and address issues that were to be emphasized in the intervention.[11] The meta-analysis will report results on the harmonized index, *know_idx*, which will be constructed from questions 1 - 4; this study will report results on the more-extensive, Liberia-specific index, *know_idx_lbr*, which will be

[11] There is also one question that was included in the meta-PAP but not collected in Liberia: *know_report_followup*: If a crime is reported to the police using the hotline, an officer must follow up with the complainant in person in order for the crime to be recorded by the police. True or False?. This question was not included because there is not a functioning police hotline system in Liberia.

constructed from all 9 questions. For each question, I construct a dummy variable indicating whether the respondent answered correctly; endline responses will be standardized by the baseline mean and standard deviation, and each of the composite indices will take the average of the relevant standardized variables.

PERCEPTIONS OF POLICE INTENTIONS

To measure *perceptions of police intentions*, the survey included the following ten questions:

1. *polint_corrupt*: The police are corrupt or eating money. Agree or disagree?
2. *polint_quality*: The police treat all citizens equally. Agree or disagree?
3. *polcaseserious*: Imagine someone is the victim of armed robbery in your community. The police will take the case seriously and investigate. Agree or disagree?
4. *polcasefair*: Imagine someone is the victim of armed robbery in your community. The police will be fair to all sides in the investigation. Agree or disagree?
5. *pol_care*: The police care about the safety and well-being of people in my community. Agree or disagree?
6. *polint_digresp*: Police treat citizens with dignity and respect. Agree or disagree?
7. *polint_decfact*: Police make their decisions based upon facts, not their personal biases or opinions. Agree or disagree?
8. *polcaserespect*: Imagine someone is the victim of armed robbery in your community. The police will treat the victim with dignity and respect. Agree or disagree?

Questions 1 - 4 were harmonized across all studies participating in Blair et al. (2018)'s meta-analysis; Questions 5 - 8 are unique to Liberia. Accordingly, the Meta-analysis will report results on the harmonized index, *intentions_idx*, which will be constructed from questions 1 - 4; this study will report results on the more-extensive, Liberia-specific index, *intentions_idx_lbr* , which will be constructed from all 8 questions.

Response options range from "strongly agree" to "strongly disagree" including a neutral "neither agree nor disagree" option, in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with "Do not know" and "Refuse to answer" treated as missing. At endline, these variables will be standardized by the baseline mean and standard deviation, and each of the composite indices will take the average of the relevant standardized variables.

PERCEPTIONS OF POLICE CAPACITY

To measure *perceptions of police intentions*, I ask:

- The police have the ability to respond to incidents of crime in a timely manner. Agree or disagree?
- The police have the ability to investigate crimes and gather evidence effectively and professionally. Agree or disagree?

Response options range from "strongly agree" to "strongly disagree" including a neutral "neither agree nor disagree" option, in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with "Do not know" and "Refuse to answer" treated as missing. At endline, these variables will be standardized by the baseline mean and standard deviation, and the composite index, *police_capacity_idx*, will take the average of the standardized variables.

PERCEPTIONS OF POLICE RESPONSIVENESS

To measure *perceptions of police responsiveness*, I ask:

1. *responsive_listen*: The police give people in my community a chance to express their views before making decisions. Agree or disagree?
2. *responsive_act*: The police act upon citizen comments and complaints about security in my community. Agree or disagree?

Question 2 was harmonized across all studies in Blair et al. (2018)'s meta-analysis; Question 1 was unique to Liberia. The meta-analysis will report results on *responsive_act* alone, while this study will report results on the more-extensive, Liberia-specific index, *pol_responsiveness_lbr* , which will be constructed from both questions.

Response options range from "strongly agree" to "strongly disagree" including a neutral "neither agree nor disagree" option, in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with "Do not know" and "Refuse to answer" treated as missing. At endline, these variables will be standardized by the baseline mean and standard deviation, and the *pol_responsiveness_lbr* index will take the average of the relevant standardized variables.

NORMS OF CITIZEN COOPERATION WITH POLICE

To measure *norms of citizen cooperation with the police*, I ask:

1. *reportnorm_theft*: If there is a BURGLARY in your community, people can get angry if you take it to the police. Agree or disagree?
2. *reportnorm_abuse*: If a MAN BEATS HIS WIFE in your community, people can get angry if you take it to the police. Agree or disagree?
3. *obeynorm*: You should do what the police tell you to do even when you do not understand the reasons for their decisions. Agree or disagree?
4. *reportnorm_land*: If there is a LAND DISPUTE in your community, people can get angry if you take it to the police. Agree or disagree?
5. *helppolnorm_armedrob*: If a member of the community provides the police with information that helped catch the perpetrator of the [ARMED ROBBERY], other people can get angry with him. Agree or disagree?
6. *helppolnorm_domviol*: If a member of the community provides the police with information that helped catch the perpetrator of the [DOMESTIC VIOLENCE], other people can get angry with him. Agree or disagree?
7. *helppolnorm_moto*: If a member of the community provides the police with information that helped catch the perpetrator of the [MOTORBIKE THEFT], other people can get angry with him. Agree or disagree?
8. *helppolnorm_childabuse*: If a member of the community provides the police with information that helped catch the perpetrator of [CHILDABUSE], other people can get angry with him. Agree or disagree?

Questions 1 - 3 were harmonized across all studies in Blair et al. (2018)'s meta-analysis; Questions 4 - 8 are unique to Liberia. The meta-analysis will report results on the harmonized index, *norm_idx*, which will be constructed from questions 1 - 3; this study will report results on the more-extensive, Liberia-specific index, *norm_idx_lbr*, which will be constructed from all 8 questions.

Response options range from "strongly agree" to "strongly disagree" including a neutral "neither agree nor disagree" option, in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with "Do not know" and "Refuse to answer" treated as missing. At endline, these variables will be standardized by the baseline mean and standard deviation, and each of the composite indices will take the average of the relevant standardized variables.

SUPPORT FOR MOB VIOLENCE

To measure *support for mob violence*, we ask respondents to judge whether mob violence would be justified in the following three scenarios:

1. Let's say somebody bust into a lady's house and tries to rape her in the night. As he is running away, the community people catch the man and say they want to flog him rather than carry him to the police because they know the police do not have enough manpower to investigate and prepare the case for court. Would you say the actions of the community people are justified, somewhat justified, or not at all justified?
2. Let's say somebody bust into a man's house with a gun, terrorizes his family, and runs away with a his TV and generator. As he is running away, the community people catch the man and want to flog him rather than carry him to the police because they know the police will just release him. Would you say the actions of the community people are justified, somewhat justified, or not at all justified?
3. Let's say somebody busts into another man's home and steals a bag of rice. As he runs away, the community people catch the man and want to flog him rather than carry him to the police because they know the police will not take the case seriously. Would you say the actions of the community people are justified, somewhat justified, or not at all justified?

Response options include "justified", "somewhat justified", and "not at all justified", in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("Not at all justified ") to 2 ("Justified"), with "Do not know" and "Refuse to answer" coded as missing. At endline, these variables will be standardized by the baseline mean and standard deviation, and the composite indices will take the average of the three standardized variables.

COPRODUCTION OF SECURITY

Contributions to the coproduction of security will be measured through three sub-indices. The first will focus on *knowledge of rules governing Community Watch Forums*, as measured by the following three questions:

1. *know_cwt_arrest*: Members of the Community Watch Forum may arrest someone provided they carry them to the police and do not physically harm them. True or false?
2. *know_cwt_risk*: If members of the Watch Forum encounter a gang of violent criminals, they are required to engage the criminals even if it puts them at risk. True or false?
3. *know_cwt_checkpoint*: Members of the Community Watch Forum may put up checkpoints if they deem in necessary for security. True or False?
4. *know_cwt_jurisdiction*: Members of the Community Watch Forum may patrol in communities other than their own if they think it is necessary. True or false?

5. *know_cwt_violent*: If a VIOLENT crime is reported to the Community Watch Forum, they are required by law to report it to the police. True or False?
6. *know_cwt_beat*: If a criminal is resisting arrest, the Community Watch Forum has the right to flog him until he can no longer resist. True or False?
7. *know_cwt_cutlass*: Members of the Community Watch Forum have the right to carry cutlasses for protection at night. True or false?

For each question, a dummy variable indicating whether the respondent answered correctly will be constructed. Endline responses will be standardized by the baseline mean and standard deviation, the composite index, *know_cwt_idx* will take the average of these seven standardized variables. The second sub-index is the degree to which residents *contribute to the coproduction of security*, measured using the following eight questions:

1. In the past month, have you seen or heard of members of your commnunity organizing a security meeting?
2. In the past month, have you attended any security meetings organized by members of your community?
3. In the past month, have you seen or heard of members of your community conducting security patrols at night?
4. In the past month, have you or a member of your family participated in a security patrol organized by members of your community?
5. In the past month, have you or a member of your family donated money, tea, bread, or any other thing to help members of your community conduct security patrols?
6. Does your community currently have an community watch team or community watch forum?
7. (IF YES): Does the watch team/forum conduct nighttime patrols on a regular basis?
8. (IF YES): Does the watch team/forum organize community meetings on a regular basis?

For each question, an indicator variable taking a value of one if the respondent answered affirmatively and zero otherwise will be constructed. Endline responses will be standardized by the baseline mean and standard deviation, and the composite index, *ca_sec_idx*, will take the average of these eight variables. The final sub-index measures the degree to which residents say they would be *willing to contribute to the coproduction of security*. To measure this, I ask:

1. Suppose a leader in your community asked you to attend a 2 hour long meeting to discuss security issues in your community. How likely would you be to attend?

2. Suppose a leader in your community asked you to donate 100 LD to the community watch team. How likely would you be to agree to donate the money?
3. Suppose a leader in your community asked you to donate tea and bread to the community watch team. How likely would you be to agree to donate the bread and tea?
4. Suppose a leader in your community asked you to lend your torchlight to the community watch team. How likely would you be to do agree to donate the torchlight?
5. Suppose a leader in your community asked you to serve on the watch team and spend several nights a week on patrol. How likely would you be to agree to do it?

For each question, an indicator for affirmative responses will be constructed. Endline responses will be standardized by the baseline mean and standard deviation, and the composite index, *ca_sec_hyp_idx*, will take the average of these five variables.

POLICE PRESENCE

Police presence will be measured using three questions:

1. *compliance_patrol*: About how often do you see police officers patrolling your area on FOOT?
2. *compliance_freq*: About how often do you see police officers patrolling your area while in a vehicle or on a motorbike?
3. *compliance_meeting*: In the past 6 months, have you HEARD ABOUT, SEEN, OR ATTENDED community meetings with police officers in your area?

Responses for each question will be standardized by the baseline mean and standard deviation and used to construct *compliance_idx*, which will take the mean of these three standardized variables.

A.3 MEASUREMENT OF PRIMARY OUTCOMES

INCIDENCE OF CRIME

The survey asked the following questions about crime:

1. *armedrob_any*: In the past 6 months, were you or anyone in your family the victim of any ARMED ROBBERY? [ROBBERY WITH ANY KIND OF WEAPON, INCLUDING GUNS, CUTLASSES, STICKS, ETC.]

2. *burglary_any*: In the past 6 months, besides any armed robbery, were you or anyone in your family the victim of BURGLARY or THEFT OF PROPERY? [ROBBERY WITHOUT WEAPON]

3. *aggassault_any*: In the past 6 months, has anyone attacked you or a member of your household WITH A WEAPON? [INCLUDING GUNS, CUTLASSES, STICKS, ETC.]

4. *simpleassault_any*: In the past 6 months, has anyone attacked you or a member of your household WITHOUT a weapon?

5. *sexual_any*: In the past 6 months, have you or anyone in your household been forced or coerced to engage in unwanted sexual activity?

6. *domestic_phys_any*: Apart from what you have told me, in the past 6 months, has anyone in your household ever PHYSICALLY ABUSED you or another person in your household? [INCLUDING PUSHING, SLAPPING, PUNCHING, KICKING, CHOKING, ETC.]

7. *domestic_verbal_any*: Besides any physical abuse, in the past 6 months, has anyone in your household ever been VERBALLY ABUSED by another person in this household? [INCLUDING SHOUTING, CUSSING, THREATS OF ABUSE, ETC.]

8. *land_viol_any*: In the past 6 months, did you or a member of your household have a dispute over land or property that involved THREATS OR VIOLENCE? This include disputes that are still ongoing up to now.

9. *land_nviol_any*: In the past 6 months, did you or a member of your household have a dispute over land or property that did not involve threats or violence? This include disputes that are still ongoing up to now.

10. *other_any*: In the past 6 months, have you or a member of your household been a victim of any OTHER CRIME that we haven't mentioned already?

11. *carmedrob_any*: In the past 6 months, was anyone you know in this community a victim of ARMED ROBBERY? [ROBBERY WITH ANY KIND OF WEAPON, INCLUDING GUNS, CUTLASSES, STICKS, ETC.]

12. *cburglary_any*: In the 6 months, was anyone you know in this community a victim of BURGLARY or THEFT? [ROBBERY WITHOUT WEAPON]

13. *caggassault_any*: In the past 6 months, was anyone you know in this community attacked WITH A WEAPON? [INCLUDING GUNS, CUTLASSES, STICKS, ETC.]

14. *csimpleassault_any*: In the past 6 months, was anyone you know in this community attacked WITHOUT a weapon? [SIMPE ASSAULT]

15. *csexual_any*: In the past 6 months, was anyone you know in this community SEXUALLY ABUSED? [INCLUDING RAPE]

16. *cdomestic_phys_any*: In the 6 months, was anyone you know in this community been PHYSICALLY ABUSED by someone in their own household? [INCLUDING PUSHING, SLAPPING, PUNCHING, KICKING, CHOKING, ETC.]

17. *cdomestic_verbal_any*: In the past 6 months, was anyone you know in this community VERBALLY ABUSED by someone in their own household? [INCLUDING SHOUTING, CUSSING, THREATS OF ABUSE, ETC.]

18. *cland_viol_any*: In the past 6 months, did anyone you know in this community have a LAND DISPUTE over their house land or farm land involving THREATS OR VIOLENCE? This includes disputes that started in the past and have been resovled or ones that are still ongoing up to now.
19. *cland_nviol_any*: In the past 6 months, did anyone you know in this community have a LAND DISPUTE over their house land or farm land that did not involve threats or violence? This includes disputes that started in the past and have been resovled or ones that are still ongoing up to now.
20. *cmurder_any*: In the past 6 months, was anyone you know in this community MURDERED?
21. *cchildabuse_any*: In the past 6 months, was any CHILD you know of in your community a victim of CHILD ABUSE? [INCLUDING LACK OF FOOD, LACK OF SUPPORT, HITTING, BEATING, CHILD LABOR, OR SEXUAL ABUSE?]
22. *cmob_any*: In the past 6 months, were there any acts of MOB VIOLENCE in your community?
23. *cother_any*: In the past 6 months, was anyone you know in your community a victim of any OTHER CRIME that we haven't mentioned already?

For each affirmative response, a follow-up question asked "How many times did this happen in the past 6 months?"

Not all of these questions were included in the harmonized list of questions. Therefore, for the meta-analysis, *violentcrime_num*, denoting the total number of a subset of types of violent crimes a respondent reports occurred in their community in the past 6 months, will be constructed from questions on armed robbery, simple assault, and violent crimes in the "other" category. Questions on burglary and non-violent crimes in the "other" category will be used to construct *nonviolentcrime_num*, denoting the total number of non-violent crimes a respondent reports occurred in their community in the past 6 months. For others' victimization, questions on armed robbery, aggravated assault, simple assault, sexual violence, domestic physical violence, murder, and violent crimes in the other category will be used to construct *cviolentcrime_num*, and questions on burglary and non-violent crimes in the other category will be used to construct *cnonviolentcrime_num*. All of these indices will be averaged and standardized by the baseline mean to construct *crime_victim_idx*, the composite index for this cluster.

Some of the country teams included in the meta-analysis recorded a more extensive list of crimes, including this study. Therefore, a second set of expanded versions of *violentcrime_num*, *nonviolentcrime_num*, *cviolentcrime_num*, and *cnonviolentcrime_num* using the full set of recorded crimes will also be reported in the meta-analysis. For *violentcrime_num*, these include: armed robbery, aggravated assault, sexual violence, domestic physical violence, simple assault, and violent crimes in the other category. For *nonviolentcrime_num*, these include burglary, domestic verbal disputes, non violent land conflicts, and non violent

crimes in the other category. For *cviolentcrime_num*, I include armed robbery, aggravated assault, sexual violence, domestic physical violence, simple assault, murder, and violent crimes in the other category.

For this study, I will report effects on *crime_victim_idx_lbr*, a means index denoting the total number of crimes reported across all categories measured in Liberia except collective violence, i.e. mob violence, which is analyzed as a stand-alone hypothesis. In addition, I will report effects on each of the following individual categories of crime: burglary, armed robbery, simple assault, aggravated assault, sexual violence, domestic violence, domestic abuse, and land conflict (violent). For each category, a continuous variable will be constructed as the sum of i) crimes against the respondent or their family members and ii) crimes that occurred to other people the respondent knows in their community.

CRIME REPORTING

For each affirmative response to the crime questions listed below, a follow-up question asked (with respect to the most recent time the crime occurred): "Where did you report this case?" with answer options: nowhere, police, courts, town leader, elders, community watch group/forum, settled directly with perpetrator, and other.[12] Following the meta-analysis PAP, these questions will be used to construct *violentcrime_report_num*, the total number of self-victimization violent crimes reported to the police; *nonviolentcrime_report_num*, the total number of self-victimization non-violent crimes reported to the police; *cviolentcrime_report_num*, the total number of others' victimization violent crimes reported to the police; and *cnonviolentcrime_report_num*, the total number of others' victimization non-violent crimes reported to the police.

The survey also asked the following questions about *support for crime reporting* in hypothetical scenarios:

1. *landres*: If there's a dispute over LAND OR PROPERTY in your community, where do you think the case should be reported, if anywhere?
2. *landresviol*: If there's a PROPERTY DISPUTE in your community and somebody threatens to set fire to another man's house. Where do you think the case should be reported, if anywhere?
3. *burglaryres*: If there's a BURGLARY in your community, where do you think the case should be reported, if anywhere?

[12]For questions about crimes against other people they know in their community, the crime reporting question is phrased "As far as you know, where was this case reported?"

4. *dviolres*: If a MAN BEAT HIS WOMAN in your community, where do you think the case should be reported, if anywhere?
5. *armedrobres*: If there's an ARMED ROBBERY in your community, where do you think the case should be reported, if anywhere?

with response options: nowhere, police, courts, town leader, elders, community watch group/forum, and other. For each scenario, we code a dummy variable that takes a value of one for "police" responses and zero otherwise. The index *crimeres_idx* takes the average of these five variables.[13] The primary outcome index for crime reporting, *crime_reporting_idx*, will be constructed as the average of: *violentcrime_report_num*, *nonviolentcrime_report_num*, *cviolentcrime_report_num*, *cnonviolentcrime_report_num* and *crimeres_idx*, with each outcome standardized by their baseline mean and standard deviation.

I will also complement the meta-analysis approach to analyzing effects on crime reporting with a crime-level analysis of crime reporting, as outlined in Section 5.4. In particular, for each affirmative response to the 22 categories of crime listed above, I will construct an indicator variable for whether or not the crime was reported to the police or courts, using Equation 1 to compare rates of crime reporting in treatment versus control communities for i) all crimes, ii) felonies,[14] and iii) misdemeanors.[15]

ADMINISTRATIVE CRIME DATA

Administrative data from the LNP will be used to construct the following variables:

1. *armedrob_num* : Total number of armed robberies in community in past 6 months
2. *aburglary_num* : Total number of burglaries in community in past 6 months
3. *aaggassault_num* : Total number of aggravated assaults in community in past 6 months
4. *asimpleassault_num* : Total number of simple assaults in community in past 6 months
5. *asexual_num* : Total number of sexual violence incidents in community in past 6 months
6. *adomestic_phys_num* : Total number of domestic violence incidents in community in past 6 months
7. *adomestic_verbal_num* : Total number of verbal domestic violence incidents in community in past 6 months

[13] For the meta-analysis and Liberia country chapter, only questions 3-5 will be used, since these were the only questions harmonized across all studies.

[14] Following Liberia's penal code, I will classify the following as felonies: armed robbery, aggravated assault, sexual assault, domestic violence, murder, violent land disputes, and incidents of child abuse involving violence.

[15] Following Liberia's penal code, I will classify the following as misdemeanors: burglary/petty theft, simple assault, domestic abuse (verbal), and incidents of child abuse not involving violence.

8. *aland_num* : Total number of armed robberies in land conflicts in community in past 6 months
9. *aland_violent_num* : Total number of violent land conflicts in community in past 6 months
10. *amob_num* : Total number of mob violence incidents community in past 6 months
11. *ariot_num* : Total number of riots in community in past 6 months
12. *amurder_num* : Total number of murders in community in past 6 months
13. *aother_any* : Total number of other crimes in community in past 6 months

Primary outcome indices *aviolentcrime_num* and *anonviolentcrime_num* will be constructed from these variables.

CRIME TIPS AND INFORMATION SHARING

I measure *information sharing* with four questions:

1. *contact_pol_susp_activity*: In the past 12 months, have you ever contacted the police to alert them to suspicious or criminal activity in your community?
2. *give_info_pol_investigation*: In the past 12 months, have you ever given information to the police to assist with an investigation?
3. *contact_pol_find_suspect*: In the past 12 months, have you ever contacted the police to help them find a suspected criminal in your community?
4. *testify_police_investigation*: In the past 12 months, have you ever served as a witness or provided testimony as part of a police investigation?
5. *name_witness*: Suppose there was a robbery in your community. You didn't see the crime occur, but you know someone in your community who did. How likely would you be to give that person's name to the police?
6. *identify_hideout*: Suppose there is a suspect accused of car jacking hiding in your community and the police are looking for him. Let's say you happen to know where that person is hiding. How likely would you be to give that information to the police?
7. *identify_ghetto*: Suppose there is an area of your community where people take drugs and plan petty crimes. How likely would you be to report that information to the police?
8. *guide_police*: Suppose a police officer wants to familiarize himself with your community. How willing would you be to spend a day showing him around your community?
9. *give_testimony*: Suppose you witness a crime in your community and the police ask you to give written testimony at the police station. How likely would you be to go to the station to give written testimony?

Questions 1 - 2 were harmonized across all studies participating in Blair et al. (2018)'s meta-analysis; Questions 3 - 9 are unique to Liberia. The meta-analysis will report results on the harmonized index, *tips_idx*, which will be constructed from questions 1 - 2; this study will report results on the more-extensive, Liberia-specific index, *tips_idx_lbr* , which will be constructed from all nine questions, with each input variable standardized by the baseline mean and standard deviation.

WILLINGNESS TO REPORT POLICE ABUSE

1. *checkpoint_report*: Suppose you see a group of police officers running an illegal checkpoint just to take money from motorists. How likely would you be to report that situation?

2. *dutydrink_report*: Suppose you see a uniformed police officer drinking alcohol in your community. How likely would you be to report that situation?

3. *policebeating_report*: Suppose you see a group of officers beating someone in your community. How likely would you be to report that situation?

Questions 2 - 3 were included in all studies participating in Blair et al. (2018)'s meta-analysis; Question 1 is unique to Liberia. For the meta-analysis *police_abuse_report_idx* will be constructed from questions 2-3 as well as from *police_abuse_report*, an indicator for whether the respondent witnessed police abuse and reported it to the police.[16][17]

In the Liberia only study, *police_abuse_report_idx* will be constructed as above, but with the additional variable *checkpoint_report*, which was only measured in Liberia.

PERCEPTIONS OF SECURITY

To measure *perceptions of security*, I ask:

[16] See Section A.5, below, for details on the questions that are used to construct *police_abuse_report*.

[17] For other countries in the meta-analysis, *police_abuse_report_idx_lbr* also includes apolvtm_hline (Number of incidents of victimization by the police reported via hotline), apolvtm_cmt (Number of incidents of victimization by the police reported via comment boxes) and apolvtm_station (Number of incidents of victimization by the police reported to nearest station). None of these variables are applicable in Liberia. They are therefore excluded from this study.

1. *fear_violent*: How worried are you that you or a member of your household will be the victim of a VIOLENT CRIME in the coming year? [INCLUDING ARMED ROBBERY, ASSAULT WITH A WEAPON, ASSAULT WITHOUT A WEAPON, ETC.]
2. *fear_nonviolent*: How worried are you that you or a member of your household will be the victim of a NON-VIOLENT CRIME in the coming year? [INCLUDING BURGLARY, THEFT, ETC.]
3. *feared_walk*: In the past 6 months, how often, if ever, have you or anyone in your family felt unsafe walking in your neighbourhood?
4. *feared_home*: In the past 6 months, how often, if ever, have you or anyone in your family feared crime in your own home?
5. *hssecure*: How sure are you that the boundaries of your house spots are secure? That is, no one can leave from his side to come and sit down on your side?
6. *hsitemssecure*: How sure are you that the valuable items in and around your house are secure? (e.g. generators, phones, computers, TVs, furniture)

Questions 1 - 3 were included in all studies in Blair et al. (2018)'s meta-analysis; Questions 4-6 were unique to Liberia. The meta-analysis will report results on the harmonized index, *future_security_idx*, which will be constructed from Questions 1 - 3; this study will report results on the more-extensive, Liberia-specific index, *future_security_idx_lbr*, which will be constructed from all six questions, with each input variable standardized by the baseline mean and standard deviation.

SATISFACTION WITH POLICE PERFORMANCE

To measure *satisfaction with police performance*, I ask:

1. *satis_trust*: In general, I trust the police. Agree or disagree?
2. *satis_general*: I am satisfied with the service that police provide. Agree or disagree?

Response options range from "strongly agree" to "strongly disagree" including a neutral "neither agree nor disagree" option, in addition to options for "Do not know" and "Refuse to answer." Responses will be coded on an ordinal scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with "Do not know" and "Refuse to answer" treated as missing. At endline, these variables will be standardized by the baseline mean and standard deviation; the composite index *satis_idx* will take the average of these two standardized variables.

A.4 Measurement of Secondary Outcomes

Trust in government

To measure *Trust in government* (S1) I ask: "Currently, how much do you trust the government?", with response options: "Not at all", "2-Just a little", "Somewhat", "A lot", "Do not know", and "Refuse to answer". Responses to these questions will be standardized by the baseline mean and standard deviation.

Communal trust

To measure *communual trust* (S2), I ask:

1. *trust_community*: Most people in my community can be trusted. Agree or disagree?
2. *days_comm_work*: In the past 30 days, how many days did you spend doing community work, like cleaning dirt or brushing the road?
3. *cgroups*: How many community groups that meet regularly do you participate in?
4. *trust_keys*: Would you be willing to leave one of your neighbors the keys to your home while you went away for the afternoon?
5. *comm_help*: Most members of [COMMUNITY NAME] are willing to help me when I'm in need. Agree or disagree?

Questions 1 was included in all studies participating in the meta-analysis; Questions 2-5 were unique to Liberia. The Meta-analysis will report results on the harmonized index, *trust_community*; this study will report results on a more-extensive, Liberia-specific index, *comm_cohesion*, which will be constructed from all five questions, with each input variable standardized by the baseline mean and standard deviation.

A.5 Measurement of Other Outcomes

Police abuse

Hypothesis 3b of Blair et al. (2018) Metaketa project is that the intervention will improve police behavior and accountability, thereby reducing reports of police abuse and bribery. This hypothesis will be tested in

Blair et al. (2018)'s meta-analysis and in the Metaketa IV country chapter for Liberia, but not in the paper(s) published exclusively by the Liberia team. Following Blair et al. (2018), this hypothesis will be tested using the following questions:

1. *policeabuse_phys_any*: In the past 6 months, have you ever witnessed or heard about police officers PHYSICALLY ABUSING people from your community? [INCLUDING PUSHING, SLAPPING, PUNCHING, KICKING, CHOKING, ETC.]
2. *policeabuse_verbal_any* : Besides any incidents of physical abuse, in the past 6 months, have you ever witnessed or heard about police officers VERBALLY ABUSING people from your community? [INCLUDING SHOUTING, CUSSING, ETC.] This includes verbal abuse against you or someone in your family.
3. *policeabuse_phys_num* : In the past 6 months, have you ever witnessed or heard about police officers PHYSICALLY ABUSING people from your community? (INCLUDING PUSHING, SLAPPING, PUNCHING, KICKING, CHOKING, ETC.) [IF YES:] How many times did this happen in the past 6 months?
4. *policeabuse_verbal_num*: Besides any incidents of physical abuse, in the past 6 months, have you ever witnessed or heard about police officers VERBALLY ABUSING people from your community? [INCLUDING SHOUTING, CUSSING, ETC.] This includes verbal abuse against you or someone in your family. [IF YES:] How many times did this happen in the past 6 months?
5. *bribe_freq*: How many times in the past 6 months have you made an unofficial payment to the police?
6. *bribe_amt*: [IF ANY:] The last time you made an unofficial payment to the police, how much was it?

policeabuse_phys_any and *policeabuse_verbal_any* will be aggregated into *policeabuse_any*, taking a value of 1 if any abuse is reported and a value of 0 otherwise. *policeabuse_phys_num* and *policeabuse_verbal_num* will be summed to construct *policeabuse_num*. To construct the *police_abuse_idx*, *policeabuse_any*, *policeabuse_num*, bribe_freq and *bribe_amt* will be standardized by baseline mean and aggregated additively, following the procedure outlined in Blair et al. (2018).