

Target Hardening and Non-State Armed Groups' Target Selection: Evidence from India

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Abstract

This study explores the variation in the non-state armed group (NSAGs) 's behavior concerning target selection. Scholars of transnational terrorism have investigated transnational NSAGs' target selection. However, we are still missing out on the most common form of terrorism, terrorism perpetrated by domestic NSAGs involved in civil conflicts. This paper's novel contribution is to the understanding of domestic NSAGs' strategic logic. I argue that hardening makes soft targets, including civilians, attractive targets when hard targets are no longer attractive. NSAGs tactically adapt to hardening by switching to soft targets or by displacing attacks to adjacent locations within their home country. The empirical results from data on relevant state-group dyads in India between 2004-2016 show that domestic NSAGs (1) switch to soft targets when faced with hardening, (2) less frequently target soft targets when more of their attacks against hard targets have been logistically successful, and (3) commit more attacks in their primary area of operation when more of their attacks in that location have been logistically successful. These findings emphasize a variety of ways through which domestic NSAGs adapt their tactics and underscore potential costs for target hardening.

Keywords: hardening, target selection, non-state armed groups, terrorism in civil conflicts, targeting of civilians, domestic terrorism

Word Count: 11010

Introduction

Political actors frequently find themselves treading a delicate path, strategically evaluating the potential gains and drawbacks associated with their actions. This intricate calculus is particularly pronounced for contentious political actors as they navigate the complex arena of legal, illegal, peaceful, and violent forms of political engagement. Contentious political actors are compelled to not only further their agendas but also meticulously consider the ramifications of their contentious strategies. Of paramount significance to how domestic contentious opponents shape their actions is the actions of governments: measures ranging from appeasement to crackdowns influencing the demands, tactics, and modus operandi of contentious opponents.

Delving into the rationale that underpins the decision-making processes of political actors regarding their contentious behavior offers insights into the broader context of contentious politics as well as into the trajectories of domestic extremism, civil conflict, and terrorism. Scholars of civil conflict typically acknowledge that non-state armed groups (NSAGs) are strategic political actors. However, some elements of strategic NSAG behavior have yet to receive enough scholarly attention.

On November 20, 2003, Al Qaeda had orchestrated an attack against the British Consulate General in Istanbul, Turkey, killing and injuring dozens. A bomb-laden truck drove through the security gates and detonated in close proximity of a well-defended consulate building. In countless other occasions, however, Al Qaeda chose to perpetrate attacks against much more vulnerable targets, most importantly civilians in public places. What accounts for such differences in target selection for violent attacks? This study uses subnational data from India to study the subnational variation in domestic NSAGs' target and venue selection and how NSAGs' strategic choices are influenced by government measures hardening potential targets.

The hardness of potential targets for NSAG attacks is a function of the level of security provided to them. Hard targets (e.g., the security forces, embassies, consulates, and airports) are well-defended. Soft targets (e.g., civilians, schools, places of worship) are soft because they are unlikely to be defended through military means. Although hard targets are always "harder" than

soft targets, governments might take hardening measures by increasing the resources they allocate to counterterrorism and counterinsurgency. For example, installation of screening devices in US airports in 1973 was a hardening measure intended to deter attacks against airports.¹ How do NSAGs that use terrorism within the context of a domestic armed conflict adapt their tactics when governments take hardening measures?

Consider the United Liberation Front of Assam (ULFA) of India, which seeks to establish an independent state of Assam. As shown in Figure 1, the ratio of ULFA attacks against soft targets to the total number of ULFA attacks annually fluctuates. Between 1992-1994, ULFA exclusively targeted soft targets. From 1996 to 2003, however, ULFA shifted its attention to hard targets. Although ULFA aspires to establish an independent Assam, where ULFA attacks were concentrated between 1988-1996, the group diversified its area of operation by occasionally perpetrating attacks in the states of Meghalaya, Manipur, and Arunachal Pradesh after 1996. ULFA's separatist ethno-nationalist ideology or ultimate goal of independence has remained the same from 1998 to 2018, whereas its target and venue selection seems to be periodically changing. What explains such periodic changes in domestic NSAGs' tactics?

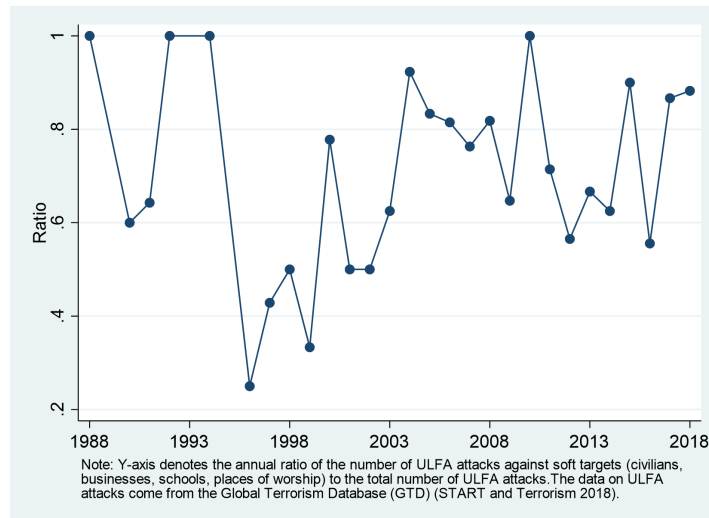


Figure 1: ULFA's soft target selection

¹ Walter Enders and Todd Sandler, "What Do We Know about the Substitution Effect in Transnational Terrorism?," In *Research on Terrorism: Trends, Achievements, and Failures*, edited by Andrew Silke. Routledge, 2004.

Scholars of transnational terrorism showed that transnational terrorists tactically adapt to hardening measures by shifting the venue of their attacks and switching to other target types.² Although the literature on target selection has made tremendous advancements in our understanding of how transnational NSAGs operate, in our theoretical and empirical discussions of target and venue selection, we are still missing out on the most common form of terrorism, terrorism perpetrated by domestic NSAGs involved in civil conflicts (i.e., about 80 percent of terrorist incidents identified in the Global Terrorism Database (GTD) are incidents of domestic terrorism).

It is essential to study the domestic NSAG's target and venue selection separately from that of transnational NSAGs because domestic NSAGs will likely have different strategic logic.³ First, domestic NSAGs' armed activity is often confined to a single country. As a result, they have less freedom to shop for venues for their attacks than transnational NSAGs operating in several countries. Still, domestic NSAGs also may diversify their venue selection by displacing attacks to different parts of their home country. Secondly, domestic NSAGs often recruit militants and draw on financial resources in a single country. Thus, their military capacity to diversify their tactics may be more limited than that of transnational NSAGs.

Hypotheses of target selection, such as the shift between hard and soft targets, were tested with transnational NSAGs.⁴ However, considering the differences mentioned above between domestic and transnational NSAGs, there is a need to re-test these hypotheses with domestic NSAGs. Thus, this paper's novel contribution is to the understanding of domestic NSAGs' strategic logic. I argue that hardening alters domestic NSAGs' cost-benefit calculations. By increasing the resources allocated to counterterrorism and counterinsurgency, governments

² Patrick T. Brandt and Todd Sandler, "What Do Transnational Terrorists Target? Has It Changed? Are We Safer?," *The Journal of Conflict Resolution* 54, no. 2 (2010): 214–236; Walter Enders and Todd Sandler, "Distribution of Transnational Terrorism among Countries by Income Class and Geography after 9/11," *International Studies Quarterly* 50, no. 2 (2006): 367–393.

³ Joseph K. Young and Michael G. Findley, "Promise and Pitfalls of Terrorism Research," *International Studies Review* 13 no. 3 (2011): 411–431.

⁴ Brandt and Sandler 2010.

increase security around hard targets, thereby augmenting armed groups' expected costs in attacking them. However, hardening does not necessarily increase the security around soft targets because it is not feasible to screen all individuals with access to each soft target. While hardening has a proclivity to deter NSAGs from attacking hard targets, it still leaves soft targets attractive when hard targets are no longer attractive. Then, the tactical adaptation of NSAGs is to switch to soft targets or displace their attacks to adjacent locations where targets are not hardened. However, if NSAGs' past attacks against hard targets have been successful despite hardening measures, the logical thing for NSAGs to do is to continue attacking hard targets rather than transferring their attacks to soft targets.

In explaining the domestic NSAG's target selection logic, the paper offers three primary sources of originality. First, in contrast with previous studies that aggregate the count of terrorist incidents over all transnational NSAGs, I use a group-year unit of analysis. This unit of analysis allows me to document that the shift from hard to soft targets is driven by existing groups changing their targeting behavior rather than the emergence of new groups whose preferences favor soft targets. Secondly, this paper extends the literature on the transference of attacks by offering empirical evidence for a non-transference from hard to soft targets when past attacks against hard targets have been successful. Finally, the paper's findings broaden our understanding of NSAGs' venue selection by pointing out a within-country non-transference of attacks as long as domestic NSAGs are operationally successful in their primary area.

In examining domestic NSAGs' strategic logic vis-à-vis target and venue selection, I focus on NSAGs that use terrorism within the context of a civil conflict in India. Though an often-overlooked case in subnational studies of non-state armed group behavior, India has the highest number of civil conflicts worldwide. Moreover, the frequency of terrorist activity in India is comparable to that in Afghanistan.⁵ Despite the intensity of insurgency and terrorism-related

⁵ START, National Consortium for the Study of Terrorism, and Responses to Terrorism. *Global Terrorism Database*, 2018 (accessed April 27, 2021). <https://www.start.umd.edu/gtd/>

violence, India's electoral democracy proved to be resilient, making the India case a pertinent one for scholars exploring contentious politics and conflict management in democracies.

The list of NSAGs is obtained from the Global Terrorism Database (GTD).⁶ A substantial portion of the incidents in the GTD are attacks against hard targets such as the police or military. Some scholars consider terrorist attacks to only be against civilians, but others do not. For this study, all attacks in the GTD⁷ -including those against civilians and those against the government/military- are considered to be incidents of terrorism. The GTD identifies 6033 attacks perpetrated by 137 domestic NSAGs in India between 2004–2016. I converted GTD's event data into Indian state-group dyad data and identified relevant dyads of Indian states and NSAGs. Using several Heckman selection and Negative Binomial Models on a dataset of 11037 relevant state-group dyad-years, I find support for my hypotheses that domestic NSAGs (1) switch to soft targets when faced with hardening, (2) less frequently target soft targets when more of their attacks against hard targets have been logistically successful and (3) commit more attacks in their primary area of operation when more of their attacks in that location have been logistically successful.

Furthermore, my findings suggest that even ethno-nationalist and leftist groups turn to soft targets to overcome the increased costs imposed by hardened target environments. This insight contributes to our understanding of how ideology plays into NSAGs' violent strategies. From a policy perspective, my findings underscore potential costs for enhancing security around

⁶ Ibid.

⁷ The GTD defines a *terrorist attack* as “the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation” (p.10). To be included in the GTD, an incident must (1) be intentional, (2) entail some level of violence, and (3) be perpetrated by a non-state actor. In addition to these three criteria, at least two of the following three criteria must be present: “the act must be aimed at attaining a political, economic, religious, or social goal”, “there must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims”, and “the action must be outside the context of legitimate warfare activities” (p.11). If the incident meets the first two criteria, it is included in the GTD even if it is within the context of legitimate warfare activities. Thus, GTD includes some attacks that target combatants.

hard targets like the military and police. Hardening targets potentially increases the risk of attacks being relocated to softer targets and adjacent locations.

The rest of this paper is organized as follows: the second section reviews the extant works on the effects of target hardening. The third section outlines the theoretical expectations by focusing on how domestic NSAGs respond to hardening. The fourth section justifies the case selection and describes the subnational variation in NSAGs' target selection in India. In the fifth and sixth sections, I introduce the novel data used to test the study's hypotheses and present the findings along with the additional analyses conducted to address endogeneity concerns. Finally, I discuss the findings and their implications for the study of strategic armed group behavior.

Target Hardening

Previous research has reported a general global increase in attacks against soft targets.⁸ Transnational terrorists targeted private parties and people more frequently after the 1990s.⁹ Moreover, these trends are still visible when we move from global terrorism to local insurgencies.¹⁰

Scholars have cited the cost-related strategic explanations of armed group behavior and attributed the shift to soft targets to the effectiveness of defensive counterterrorism measures.¹¹ Preference for certain targets over others is a tactical adaptation to hardening. Counterterrorism and counterinsurgency efforts to deter attacks may transfer attacks to (1) other modes of attack

⁸ Todd Sandler, "The Analytical Study of Terrorism: Taking Stock," *Journal of Peace Research* 51 no. 2 (2014): 257–271; Sebastian Jackle and Marcel Baumann, "New Terrorism" = Higher Brutality? An Empirical Test of the "Brutalization Thesis", *Terrorism and Political Violence* 29 no. 5 (2017): 875–901; Victor Asal and Justin V. Hastings. "When Terrorism Goes to Sea: Terrorist Organizations and the Move to Maritime Targets," *Terrorism and Political Violence* 27 no. 4 (2015): 722–740.

⁹ Brandt and Sandler 2010.

¹⁰ Khusrav Gaibullov, Todd Sandler and Charlinda Santifort, "Assessing the Evolving Threat of Terrorism," *Global Policy* 3 no. 2 (2012): 135–144.

¹¹ Asal and Hastings 2015; Brandt and Sandler 2010.

that are less costly (e.g., switching from skyjacking to suicide missions), to (2) other countries where targets are relatively softer, or to (3) other target types that are by nature softer.¹²

Transference may involve switching between attack modes both for transnational and domestic non-state armed groups (NSAGs). If government actions increase the costs associated with an attack mode, armed groups may substitute for some less costly attack mode.¹³ For example, NSAGs may adopt suicide tactics to penetrate the defenses of hard targets.¹⁴

For transnational attacks, transference may involve countries defecting potential attackers to other countries by hardening their targets¹⁵. For example, wealthier countries with strong militaries are known to be more likely to experience suicide attacks because they can better harden their military targets.¹⁶ In response, perpetrators adopt suicide tactics to breach hardened targets.¹⁷

Finally, transference may involve the relocation of attacks to other target types. Scholars of transnational terrorism documented that hardening interventions had led attackers to switch to harder-to-defend targets.¹⁸ Studies focusing on the target selection trends in incidents of domestic terrorism across the globe find indirect evidence that certain globally influential events,

¹² Walter Enders and Todd Sandler, "The Effectiveness of Antiterrorism Policies: A Vector-Autoregression-Intervention Analysis," *The American Political Science Review* 87 no.4 (1993): 829–844; Todd Sandler and Walter Enders, "An Economic Perspective on Transnational Terrorism," *European Journal of Political Economy* 20 no.2 (2004): 301–316; Todd Sandler, "Collective Action and Transnational Terrorism," *The World Economy* 26 no.6 (2003): 779–802; Daniel G. Arce and Todd Sandler, "Counterterrorism: A Game-Theoretic Analysis," *Journal of Conflict Resolution* 49 no.2 (2005): 183–200.

¹³ Enders and Sandler 2004.

¹⁴ Eli Berman and David D Laitin, "Religion, Terrorism and Public Goods: Testing the Club Model," *Journal of Public Economics* 92 no.10 (2008): 1942–1967; James A. Piazza, "Suicide Attacks and Hard Targets: An Empirical Examination," *Defence and Peace Economics* (2018): 1–18.

¹⁵ Enders and Sandler 2006; Arce and Sandler 2005; Gaibullov, Sandler, and Santifort 2012.

¹⁶ Berman and Laitin 2008.

¹⁷ Justin V. Hastings and Ryan J. Chan, "Target Hardening and Terrorist Signaling: The Case of Aviation Security," *Terrorism and Political Violence* 25 no.5 (2013): 777–797.

¹⁸ Brandt and Sandler 2010; Enders and Sandler 2004.

such as the takeover of the US embassy in Tehran that had hardening effects on hard targets, are associated with a rise in domestic incidents of terrorism against soft targets.¹⁹

Target hardening literature relies on cost-strategic explanations of target selection and expects to observe a transference of attacks across space and between attack modes and target types after hardening measures. The previously cited extant works that focus on the target selection of transnational terrorism²⁰ use annual time-series data that aggregate the count of terrorist incidents over all transnational NSAGs. Similarly, extant works focusing on the target selection of domestic armed groups²¹ rely on similar aggregate data that do not distinguish between perpetrator groups or conduct NSAG-level analysis. Since the unit of analysis of previous studies is not group-year, we do not know if the patterns documented are driven by existing groups changing their targeting behavior or the emergence of new groups whose targeting preferences favor soft targets. The second possibility is also plausible because extant works show that religious-fundamentalist groups that might be ideologically predisposed to target civilians gained prominence in the 2000s.²² In this study, I use NSAG-level analysis to identify perpetrator groups, gain insights into how a given domestic NSAG's targeting behavior vis-à-vis (1) the selection of soft targets and (2) the selection of targets located in adjacent regions in the same country responds to hardening, and empirically show that hardening leads a given group to alter its targeting behavior.

Non-State Armed Groups' Tactical Adaptation

Response to hardening vis-à-vis target selection

The first possible NSAG response to hardening is to transfer attacks to soft targets. The underlying assumption behind the hard vs. soft target distinction is that different targets impose

¹⁹ Charlinda Santifort, Todd Sandler and Patrick T Brandt, "Terrorist Attack and Target Diversity: Changepoints and their Drivers," *Journal of Peace Research* 50 no.1 (2013): 75–90.

²⁰ Enders and Sandler 2006; Brandt and Sandler 2010; Brandt and Sandler 2012.

²¹ Gaibullov, Sandler and Santifort 2012; Santifort, Sandler and Brandt 2013.

²² Gaibullov, Sandler and Santifort 2012.

different costs. The choice-theoretic model of rational armed group behavior posits that NSAGs allocate scarce resources to maximize the expected utility of their attacks, which is a function of the costs and benefits of attacking a particular type of target.²³ Intuitively, they prefer maximizing benefits while minimizing costs.

NSAGs face several types of costs when launching an attack. Their members might get killed or captured. Captured members might expose the rest of the organization during interrogation.²⁴ Finally, repeated failed attacks might reduce their ability to recruit new members or maintain cohesion among current members. Hard targets impose higher costs because they are well-defended.²⁵ Protection around hard targets increases the risk that the attack will fail or that members perpetrating the attack will get killed or caught. On the other hand, NSAGs may pursue a variety of payoffs when launching attacks. These payoffs include, but are not limited to, signaling resolve²⁶, demonstrating organizational capacity²⁷, provoking government retaliation²⁸, and attracting media attention (Persson 2004).²⁹

If hard targets impose high costs, why do NSAGs attack them in the first place? Successful attacks against hard targets might help NSAGs realize significant benefits, such as signaling their

²³ William M. Landes, "An Economic Study of U. S. Aircraft Hijacking, 1961-1976," *The Journal of Law and Economics* 21 no.1 (1978): 1–31; Enders and Sandler 1993; 2004.

²⁴ Berman and Laitin 2008.

²⁵ Piazza 2018.

²⁶ Max Abrahms and Justin Conrad, "The Strategic Logic of Credit Claiming: A New Theory for Anonymous Terrorist Attacks," *Security Studies* 26 no.2 (2017): 279–304.

²⁷ Justin George, "State Failure and Transnational Terrorism: An Empirical Analysis," *Journal of Conflict Resolution* 62 no.3 (2018): 471–495.

²⁸ Ilayda Onder, "Signaling Resolve Through Credit-Claiming," *International Interactions* (2023). doi:10.1080/03050629.2023.2216352

²⁹ Veronica Persson, "Framing Mediated Terrorism before and after 9/11: A Comparative Study of 'Framing' Kenya and Tanzania in 1998 and Madrid 2004 in the Swedish Broadsheet of Dagens Nyheter, " Master's Thesis (2004), Stockholm University.

resolve, organizational capacity, military capability, and provoking government retaliation.³⁰ In contrast, soft targets are usually not well-defended through military means. Thus, executing successful attacks against soft targets is logistically easier for armed groups, but the attractiveness of soft targets is not limited to the lower costs they impose. For example, successful attacks against soft targets like businesses or multinational corporations might disrupt economic activities, diminish government revenues, and impair the government's reputation. In addition, attacks against civilians might receive more media coverage, which may help NSAGs spread their message to the broader public. On the other hand, soft targets might impose different kinds of costs. For example, targeting civilians, schools, or places of worship might trigger a significant public reaction and alienate potential supporters from the political goals of armed groups³¹ and public anger associated with civilian victimization may enhance public support for crackdown on the group.³²

Civilian preferences and reaction to attacks against soft targets may prevent NSAGs from reaping the benefits of their attacks. Therefore, soft targets are not necessarily inherently more attractive. However, the expected costs and benefits of attacking hard or soft targets depend on the logistical success of the attack. Hardening decreases the perceived probability of logistical success in an attack against a hard target, reducing the expected payoffs.

Governments harden targets by increasing the resources they allocate to security expenses. These expenses may include increasing the number of police officers, devoting more attention to intelligence operations, or enhancing the surveillance of potential threats. These hardening measures increase security around hard targets, making hard targets less attractive.

³⁰ Todd Sandler and Daniel G. Arce M., "Terrorism & Game Theory," *Simulation & Gaming* 34 no.3 (2003): 319–337; Daniel G. Arce and Todd Sandler. "Terrorist Signaling and the Value of Intelligence," *British Journal of Political Science* 37 no.4 (2007): 573–586.

³¹ Abrahms and Conrad 2017.

³² Wayne, Carly, "Terrified or Enraged? Emotional Microfoundations of Public Counterterror Attitudes," Working Paper, (2022). Accessed 22 May 2023. Available at <https://www.carlywayne.com/terrorism-counterterrorism>

Hardening does not necessarily increase security around soft targets.³³ The typical problems with hardening soft targets are threefold. First, there is a tremendous number of soft targets diffused around urban and residential areas, and not every location in every urban area can be equally protected.³⁴ Second, screening all individuals with access to soft targets is not feasible. Third, trying to screen all individuals with access to soft targets could radically alter everyday life, especially for civilians in urban centers. Even if the resources devoted to police, intelligence, and counterterrorism operations are enhanced, it will not be possible to protect each soft target actively. As a result, hardening does not alter the perceived probability of logistical success in an attack against a soft target.

Assume that NSAGs choose from five outcomes: no attack, successful attack against a hard target, failed attack against a hard target, a successful attack against a soft target, and failed attack against a soft target. The strategic implications of target selection and the logistical success of these five outcomes are shown in Table 1.

Table 1: Costs and Payoffs of Different Outcomes

Outcome	Costs	Payoffs
No attacks	No costs	No payoffs
Failed attack against hard target	High	No payoffs
Failed attack against soft target	Low	No payoffs
Successful attack against hard target	High	High*
Successful attack against soft target	Low	Low**

* Payoffs exceed costs no matter how high costs are.

** Payoffs exceed costs no matter low payoffs are.

³³ Sandler and Arce M. 2003.

³⁴ Robert Powell, "Defending against Terrorist Attacks with Limited Resources," *The American Political Science Review* 101 no.3 (2007): 527–541.

Hardening is expected to increase the costs of successful and failed attacks against hard targets, whereas it is not likely to affect the costs of no attack and successful/failed attacks against soft targets. It is also expected to increase the risks of failure in an attack against a hard target. To avoid the increased costs of attacks against hard targets and the no payoffs situation in failed attacks against hard targets, NSAGs should pursue a successful attack against a soft target. A successful attack against a soft target does not necessarily provide NSAGs with the highest payoffs. However, it offers more payoffs than no attack or failed attack against a hard target and avoids the increased costs of a successful attack against a hard target due to hardening. Choosing not to attack avoids the costs as well. Bolstering defenses around hard targets can potentially dissuade and prevent certain forms of attacks by deterring NSAGs from launching attacks at together. However, a permanent no-attack strategy may be counter-productive in the long run. To preserve their audience, armed groups must maintain some level of violence.³⁵ Thus, when governments utilize hardening measures, attacks against soft targets -assuming they are successfully executed- provide NSAGs with the optimum outcome. While hardening may effectively deter certain attacks, it can also inadvertently prompt NSAGs to redirect their efforts towards less fortified alternatives.

H1 [Hardening Hypothesis]: Armed attacks against soft targets as a percentage of total attacks will increase with hardening measures.

THE ROLE OF GROUP IDEOLOGY

Whether hardening substantially increases a given NSAGs' reliance on attacking soft targets may depend on the group's initial proclivity to attack soft targets. If, for example, the group already favors attacking soft targets, hardening interventions may not substantially increase the group's tendency to attack soft targets, which was already high. If, on the other hand, the group initially considers soft targets a last resort, hardening may prompt the group to pursue the last resort.

³⁵ Bruce Hoffman and Gordon H. McCormick, "Terrorism, Signaling, and Suicide Attack," *Studies in Conflict & Terrorism* 27 no.4 (2004): 243–281.

The group's initial proclivity to attack soft targets is likely to be informed by group ideology and goals. There is empirical evidence that transnational Islamic groups have a growing tendency to target civilians to inflict higher casualties.³⁶ On the other hand, groups that fight against foreign occupations and military interventions favor attacking military targets.³⁷ A center-seeking revolutionary group may initially have more proclivity to attack hard targets as they want a concession directly from the government. Similarly, an ethno-nationalist secessionist group may initially have more proclivity to attack hard targets as they strive to drive government forces out of the territory they want to control. Ethno-nationalist and leftist groups that initially prefer hard targets may consider soft targets a last resort, and hardening may prompt them to pursue the last resort. On the other hand, hardening may not substantially impact religiously motivated groups' cost-benefit analysis of attacking soft targets as they frequently target civilians even in the absence of hardening interventions.

H1a [Ideology Hypothesis]: Ethno-nationalist and leftist NSAGs are more likely than religious NSAGs to respond to target hardening by shifting attacks to softer targets.

THE ROLE OF PAST LOGISTICAL SUCCESS IN TARGET SELECTION

Since hardening is expected to increase the risks of failure in attacks against hard targets, a critical implication of the theoretical framework relates to the armed groups' expected probability of logistical success in an attack against a hard target. NSAGs may judge their expected probability of logistical success by relying on several signals. For example, closely scrutinizing government measures is one way of assessing the probability of success in future attacks. One other signal that might inform NSAGs is the logistical failure they encountered in the recent past. Existing studies show that insurgents display an increased propensity to carry out subsequent attacks following a

³⁶ Hoffman, Bruce. *Inside Terrorism*. Columbia University Press, 2006; Jackle and Baumann 2017.

³⁷ Seung-Whan Choi and James A Piazza, "Foreign Military Interventions and Suicide Attacks," *Journal of Conflict Resolution* 61 no.2 (2015): 271–297.

prior successful one.³⁸ For example, the Naxal conflict-related attacks in India follow a temporal clustering logic where insurgent attacks cluster together in time.³⁹

Repeated failure in attacks against hard targets may motivate NSAGs to switch to soft targets, which present them with a higher probability of logistical success. Visa versa, repeated success in infiltrating the security around hard targets may increase their expected probability of success in the future and motivate them to pursue more attacks against hard targets.

H2 [Logistical Success Hypothesis]: NSAGs that have had past success against hard targets will conduct a lower proportion of their current attacks against soft targets.

Given that not every NSAG is successful against hard targets, one may question why the government would bolster security around hard targets when faced with an NSAG whose past success rate against hard targets is low. However, the government could select the target to be secured more because it was chosen by an NSAG as a target before.

The impact of hardening on venue selection

The second possible NSAG response to hardening is to switch locations or transfer attacks to another venue.⁴⁰ The Hardening, Ideology, and Logistical success hypotheses assume that NSAGs will stay in the same area but adapt their target selection. However, groups may pursue higher payoffs -from attacking hard targets- by relocating their attacks to surrounding geographic areas, which apply fewer hardening measures.⁴¹ Repeated failure in attacks against hard or soft targets in a location may motivate NSAGs to displace their attacks to adjacent locations, which may

³⁸ Michael Townsley, Shane D. Johnson and Jerry H. Ratcliffe, "Space Time Dynamics of Insurgent Activity in Iraq," *Security Journal* 21 (2008): 139–146.

³⁹ Peter Baudains, Jyoti Belur, Alex Braithwaite, Elio Marchione and Shane D. Johnson, "The Exacerbating Effect of Police Presence: A Multivariate Point Process Analysis of the Naxal Conflict," *Political Geography* 68 (2019): 12–22.

⁴⁰ Sandler and Arce M. 2003; Nancy A. Morris, "Target Suitability and Terrorism Events at Places Terrorism Target Suitability: Special Essay," *Criminology Public Policy* 14 (2015): 417.

⁴¹ Todd Sandler and Harvey E. Lapan. "The Calculus of Dissent: An Analysis of Terrorists' Choice of Targets," *Synthese* 76 no.2 (1988): 245–2614.

present them with a higher probability of logistical success. Visa versa, repeated success in attacks against hard or soft targets in a location may increase their expected probability of success in that location and motivate them to pursue more attacks there.

H3 [Location hypothesis]: A NSAG's attacks in its primary area of operation will increase with the group's past success rate in that area.

Given that NSAGs will likely be able to compel citizens to cooperate with them in their primary areas of operation when they are logistically successful, one may question why NSAGs would need to strike in that area again. However, NSAGs may repeatedly strike in a particular area even after success because success implies that the NSAG can operate with impunity in that area. Moreover, as discussed above, NSAGs, to preserve their audience, need to remain relevant by maintaining some level of violence. Therefore, NSAGs, even after compelling civilians to cooperate with them, may keep committing acts of violence to sustain the compliance of civilians, and they do so in areas where they operate comfortably.

Subnational Variation in Non-State Armed Groups' Target Selection in India

Though an often-overlooked case in subnational studies of non-state armed group behavior, India offers many opportunities to gain insights into NSAG's strategic behavior. India, occupying a unique position, is not merely as one of the globe's largest countries, but also as conceivably its largest democracy. India is the largest country globally that has constantly experienced armed civil conflict since its independence. For example, roughly 10 percent of the civil conflicts identified in the UCDP/PRIO Armed Conflict Dataset are in India. In addition, approximately 6.5 percent of the terrorist attacks identified in the Global Terrorism Database (GTD) occurred in India. Thus, the frequency of terrorist activity in India is comparable to that in Afghanistan, which hosted 7 percent of the GTD attacks, and in Pakistan, which hosted 8 percent of the GTD attacks. India's electoral democracy has proved to be resilient even in the face of persistent insurgencies and terrorism spanning decades. This feature of the country beckons the attention of scholars

dedicated to improving conflict management outcomes. Moreover, a close analysis of the trajectories of insurgency, terrorism, counterinsurgency, and counterterrorism in India can also bring insights into the effectiveness of counterterrorism policing within democratic frameworks.⁴²

Besides the level of terrorist and insurgent activity, the diversity of armed conflicts is another factor that makes India a pertinent case to study non-state armed groups' target selection. First, NSAGs in India fight for several goals, ranging from independence to the Marxist revolution. Secondly, India has a quasi-federal government with officials at the union (central), state, and local levels. Given the localized nature of governance in the country, the security environment differs significantly across states.

As shown in Figure 2, India has been experiencing three main clusters of armed conflicts since the 1950s. Kashmir insurgency is contained in the far-north Jammu & Kashmir state of India that borders Pakistan. Maoist/Naxalite conflict started in the late 1960s in West Bengal and spread to neighboring districts. Finally, the northeast region of India experiences several ethno-nationalist conflicts.

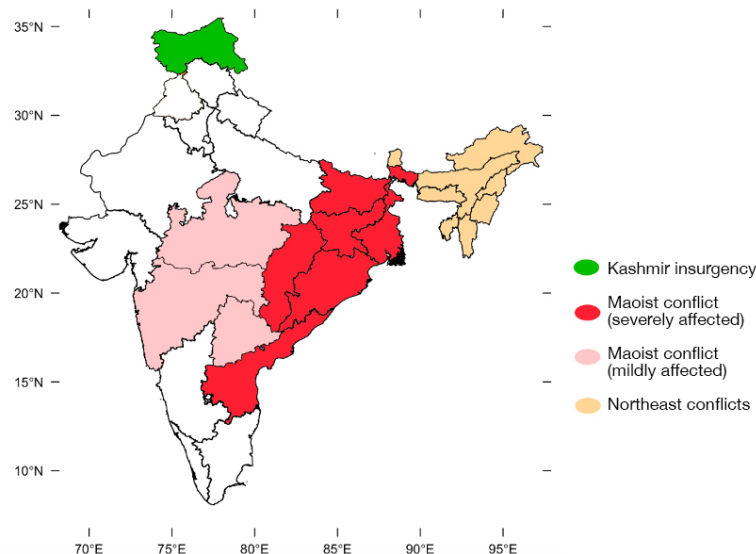


Figure 2: Armed conflicts in India

⁴² Arie Perliger, Badi Hasisi and Ami Pedahzur, “Policing Terrorism in Israel,” *Criminal Justice and Behavior* 36 no.12 (2009): 1279-1304.

Despite the differences in their goals, several Indian NSAGs have survived for decades. Although attacks against both target types have increased over time, particularly after 2008, soft targets have become the preferred target type in recent years. However, NSAGs in different states/union territories follow different patterns of target selection⁴³. For example, NSAGs in Kashmir predominantly target hard targets, whereas those in Assam predominantly target soft targets. Finally, the security environment differs across states. The key independent variable used to test the Hardening hypothesis, which the next section explains in detail, significantly varies across states⁴⁴.

Data and Estimation Strategy

To test the study's hypotheses, I use data on domestic attacks in India between 2004–2016. The event-level data on attacks are derived from the Global Terrorism Database (GTD).⁴⁵ The analysis dataset is aggregated from a total of 6033 incidents⁴⁶. Approximately 56% of all attacks targeted a soft target type⁴⁷, and 29% targeted civilians. About 44% of all attacks targeted a hard target type⁴⁸, and 7% targeted military personnel or property⁴⁹.

I converted GTD's event-level data into state-group dyad-level data. Attacks in the analysis dataset have been perpetrated by 137 domestic NSAGs. Given that there are 36 states/union territories in India, my dyadic data include 4932 unique state-group dyads over 14

⁴³ Figures showing the annual patterns of soft target selection across states are in Appendix 5.

⁴⁴ Figures showing the annual patterns of hardening across states are included in Appendix 5.

⁴⁵ START 2018.

⁴⁶ For the purposes of this study, I only rely on domestic NSAGs in India. GTD's *INT_ANY* indicator includes information on whether an attack was a domestic or transnational attack.

⁴⁷ Target types are aggregated using GTD's *targettype1* indicator. Incidents are considered attacks against soft targets if *targettype1* is one of the following GTD categories: business, abortion-related, educational institution, food supply, journalists, maritime, NGO, other, private citizens, religious figures, telecommunication, tourists, transportation, utilities.

⁴⁸ Incidents are considered attacks against hard targets if *targettype1* is one of the following GTD categories: government (general), police, military, airports, government (diplomatic).

⁴⁹ Figures showing the distribution of attacks across all target types are included in Appendix 5.

years⁵⁰. However, my empirical analysis uses a relevant state-group dyads approach. I acknowledge that not all NSAGs are militarily capable of launching attacks wherever they desire. Thus, I expect the target and venue-switching mechanisms to be more profoundly realized in dyads of relevant state-group pairs. Here, I similarly define a relevant dyad that inter-state dispute literature defines relevant state-state dyads⁵¹. I start with the assumption that each NSAG has a primary area of operation, meaning that it is headquartered in one state/union territory of India. I contend that each state, which shares a land border with the state where the group is headquartered, is relevant to that group. In addition, Delhi, being the capital, is a relevant state to all groups.

To analyze relevant state-group dyads, I created a new dataset, the Indian Non-State Armed Group Origins Dataset (IGOD), that includes information on the primary area of operation of each NSAG in India⁵². Next, I identified the relevant states for each state/union territory. My relevant state-group dyads data include 849 unique dyads, which gives me 11037 relevant dyad years.

The dependent variable used to test the Hardening (H1), Ideology (H1a), and Logistical Success (H2) hypotheses is the ratio of the number of attacks against soft targets to the total number of attacks perpetrated in a given relevant state-group dyad in a given year⁵³. As Figure 3

⁵⁰ Telangana is included in the dataset for only four years, because it was separated from Andhra Pradesh in 2014.

⁵¹ Relevant state-state dyads are pairs of contiguous states or in which at least one of the states is a major power. For more on relevant-dyads approach, see Zeev Maoz and Bruce Russett, "Normative and Structural Causes of Democratic Peace, 1946-1986," *The American Political Science Review* 87 no.3 (1993): 624-638; Douglas Lemke and William Reed. "The Relevance of Politically Relevant Dyads," *Journal of Conflict Resolution* 45 no.1 (2001): 126-144.

⁵² The coding rules for the groups' primary area of operation are included in Appendix 3.

⁵³ To calculate the ratio of the number of attacks against soft targets to the total number of attacks, I first aggregated the number of attacks against soft targets using the GTD's *provstate*, *group_txt*, *iyear*, and *targetype1* indicators. Then, I divided the number of attacks against soft targets by the total number of attacks + 0.1. 0.1 is added because the total number of attacks may take the value of zero.

(Panel A) shows, there is a significant variation in the ratio of the number of attacks against soft targets to the total number of attacks across states.

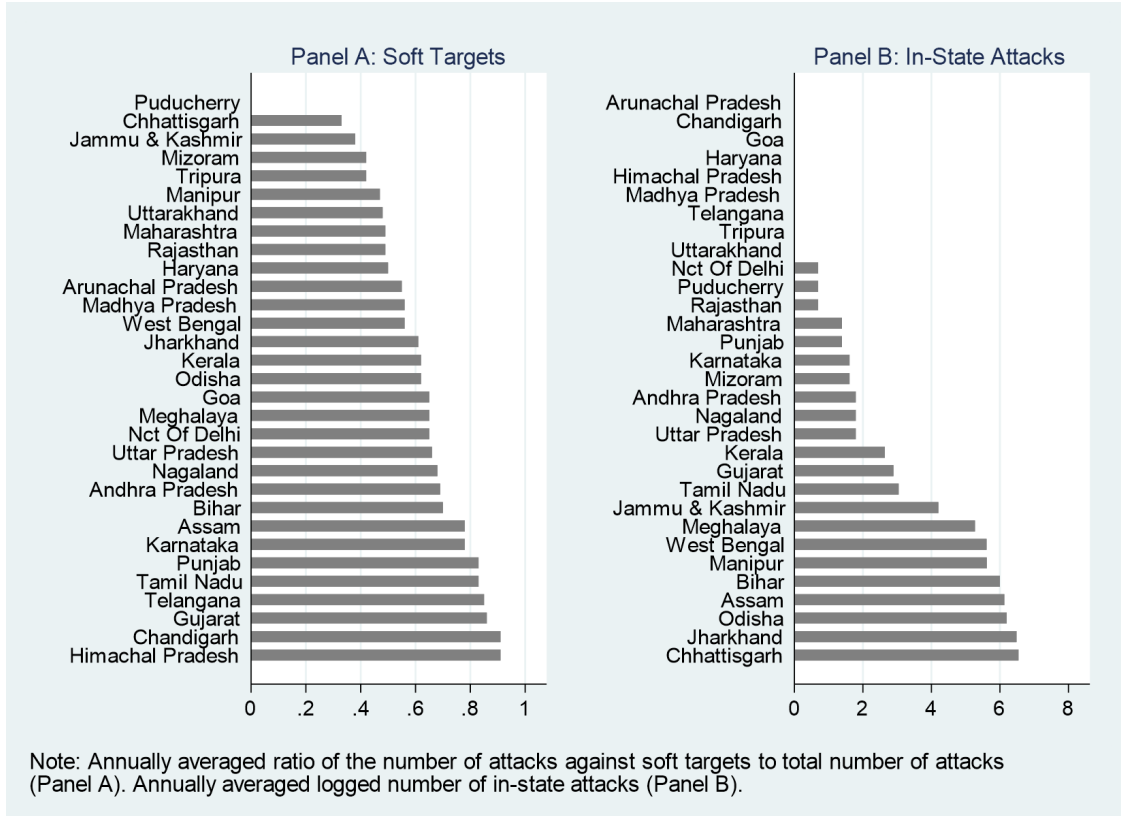


Figure 3: Regional averages

To test the Hardening (H1), Ideology (H1a), and Logistical Success (H2) hypotheses, I use Heckman selection models. Both theory and data structure inform the choice of Heckman selection models. First, as shown in Table 1, the theoretical expectations allow the possibility for the groups to not engage in any attacks. Secondly, the dependent variable used to test the Hardening, Ideology, and Logistical Success hypotheses -the ratio of the number of attacks against soft targets- has two types of zeroes: (1) zeroes of the "no attacks" outcome and (2) zeroes of the "zero attacks against soft targets" outcome. The study's hypotheses are more concerned with the second type of zeroes and explain why NSAGs deviate from the "zero attacks against soft targets" outcome. Thus, the zeroes and positive values of the ratio of the number of attacks against soft targets to

the total number of attacks need to be modeled separately from the "no attacks" zeroes. However, since dropping "no attacks" zeroes from the analysis dataset could result in biased estimates, I rely on the Heckman models to address the sample selection bias resulting from groups' not engaging in any attacks.

Heckman models simultaneously estimate the sampling probability of each observation (e.g., the selection equation) and the conditional expectation of the dependent variable (e.g., the outcome equation). Using Heckman estimation, I model each relevant state-group dyad-year's probability of selection (e.g., experiencing at least one attack) together with its outcome (e.g., the ratio of the number of attacks against soft targets to the total number of attacks). I cluster the standard errors on relevant-state group dyads.

The dependent variable used to test the Location (H3) hypothesis is the number of in-state attacks perpetrated in a given relevant state-group dyad in a given year. An attack is coded as an in-state attack if the state where the attack occurred is the primary area of operation of the group perpetrating the attack. For example, Lashkar-e-Islam's primary area of operation is Jammu & Kashmir. Thus, Lashkar-e-Islam attacks in Jammu & Kashmir are considered in-state attacks. Figure 3 (Panel B) shows the regional averages of in-state attacks. I use several Negative Binomial Models to test the Location (H3) hypothesis.

The main independent variable used to test the Hardening (H1) hypothesis is the strength of the special police branch dealing with intelligence, counterinsurgency, and counterterrorism in each Indian state and union territory. This variable comes from the annual "Data on Police Organizations" report published by the Indian Ministry of Home Affairs Bureau of Police Research and Development. It is only available for the period 2007-2016. The state-level nature of this police data allows me to explore the subnational variation in the security environment and NSAG target selection in each Indian state. The original data is a count measure of the number of police officers assigned to the special branch, and I use a logged measure of this count variable in my analysis.

The special branch of the Indian police forces is responsible for collecting security-related intelligence and protecting vital state installations and key subnational industries. The special

branch in each state also assumes an active role in counterterrorism and counterinsurgency. For example, the special branch of the Assam police force dealing with intelligence has apprehended 3621 cadres of different armed groups, recovered more than 2000 arms, and facilitated the Suspension of Operation agreements with 13 armed groups between 2011-2015.⁵⁴

Without fine-grained data on the level of hardening around every possible target, target hardening is a difficult concept to capture. Given the innumerable nature of potential targets, we lack publicly available data on the hardening of every target that groups can choose to attack⁵⁵. It is important to note that the number of police officers assigned for counterinsurgency used in this paper is a raw proxy for target hardening. Therefore, rather than a direct measurement of the hardening of specific targets, my hardening measure should best be understood as identifying the states in India that would be most likely to have hosted targets hardened against terrorist and insurgent attacks, given the special police branch's stated role in counterterrorism and counterinsurgency. Yet, this proxy measure is especially useful for testing hypotheses regarding the unintended consequences of hardening. Existing studies argue that police action can have different counterterrorism functions than military action and find that counterinsurgency actions by the police created a backlash effect, exacerbating non-state violence in India between 2000-2010.⁵⁶

The main independent variable used to test the Logistical Success (H2) hypothesis is the success rate against hard targets measured as the ratio of the number of logistically successful attacks against hard targets to the total number of attacks against hard targets perpetrated in a given state-group dyad in a given year. Logistical success data come from the GTD's success

⁵⁴ Assam Police, Govt. of Assam. Special Branch. Government of Assam. (accessed on May 18, 2021). Available at <https://police.assam.gov.in/portlet-innerpage/special-branch>.

⁵⁵ Another data limitation in target hardening is the lack of reliable data on the security expenditures of multinational corporations. MNCs operating in conflict zones may devote additional resources to bolster their security. These efforts are not captured by the police data used in this paper. However, this is unlikely to be a major problem. Most counterinsurgency and counterterrorism policing are not private in most countries but rather overseen by governments.

⁵⁶ Peter Baudains, Jyoti Belur, Alex Braithwaite, Elio Marchione and Shane D. Johnson 2019.

indicator⁵⁷ and is a dummy variable coded 1 for successful attacks. Approximately 80% of the attacks against hard targets were successful, whereas more than 90% against soft targets were successful. As expected, the success rate against hard targets is lower.

The main independent variable used to test the Location (H3) hypothesis is the ratio of the number of logistically successful in-state attacks to the total number of in-state attacks perpetrated in a given relevant state-group dyad in a given year. Approximately 59% of the incidents were in-state attacks. Moreover, 90% of the in-state attacks were successfully executed, whereas only 79% of the out-state attacks were successful. This statistic suggests that it is logistically more difficult for NSAGs to plan and execute out-state attacks away from their primary area of operation. Figure 4 shows the regional averages of key independent variables.

Finally, the main independent variable used to test the Ideology (H1a) hypothesis is group ideology and its interaction with the hardening variable. Using the Big, Allied, and Dangerous (BAAD) database and Stanford Mapping Militant Organizations database⁵⁸, I identified the ideological orientations of each group. There are 74 ethno-nationalist (54%), 19 religiously motivated (14%), and 28 leftist groups (20%) in the analysis dataset, whereas the remaining 17 adhere to another ideology that was coded as "other".

⁵⁷ The success of the attacks is not judged in terms of the broader goals of the perpetrator group. Instead, the GTD's key criterion is whether or not the attack took place. For example, a bombing is considered successful if the bomb exploded.

⁵⁸ Victor Asal and R. Karl Rethemeyer. "The Nature of the Beast: Organizational Structures and the Lethality of Terrorist Attacks," *The Journal of Politics* 70 no.2 (2008): 437–49; "Mapping Militants Project." n.d. Stanford University.

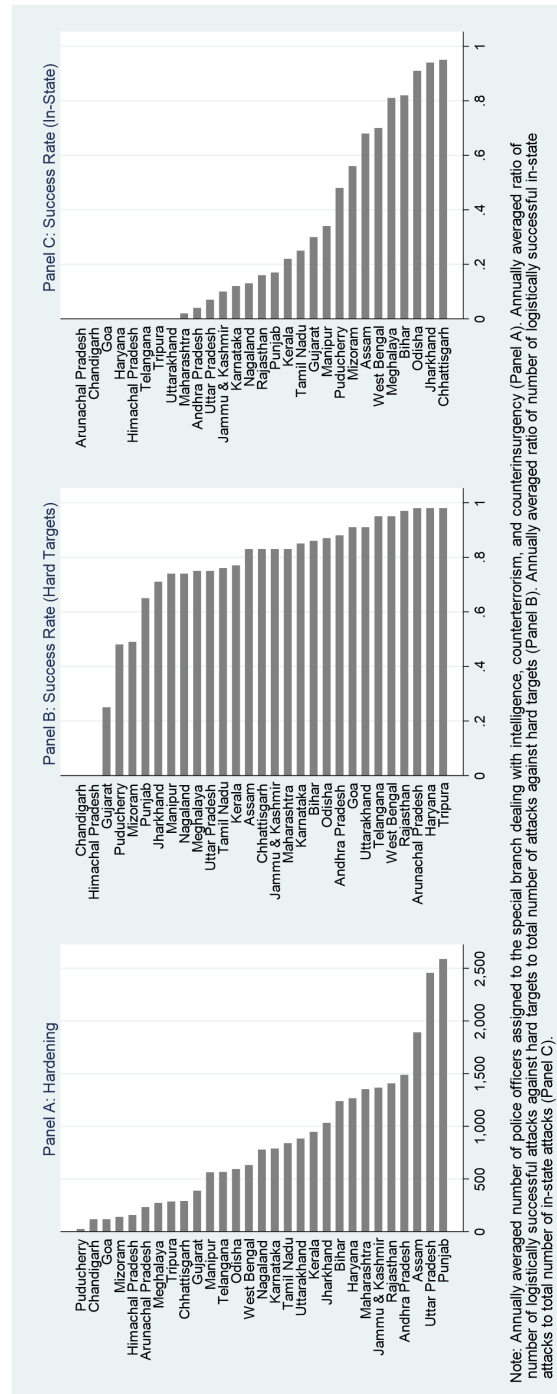


Figure 4: Regional averages of key independent variables

I include in my analysis several control variables that could affect NSAGs' target selection. These are suicide attacks⁵⁹, counterinsurgency (COIN) casualties⁶⁰, conflict intensity⁶¹, ethnic fractionalization⁶², group ideology, and state population. In addition, I present additional models in the Appendix 10 that include year dummy controls to account for unobserved time effects stemming from shifts in the Indian political system over the years. Detailed descriptions of data sources and coding rules for each control variable are presented in Appendix 4.

Findings

The results of the empirical analysis, summarized in Table 2, Table 3, and Table 4, provide strong support for the Hardening, Ideology, and Location hypotheses and partial support for the Logistical Success hypothesis. These findings are robust across different model specifications and robustness checks presented in the Appendices.

Hardening measures, past logistical success, and selection of soft targets

The first set of results from the Heckman selection model estimations investigate the effect of hardening measures on the selection of soft targets and are presented in Table 2. All models are run on relevant state-group dyads. The columns titled "Selection" present estimations of the selection equation. The selection criteria are whether a given relevant state-group dyad experienced at least one attack in a given year. The columns titled "Outcome" model the prevalence of attacks against respective target types and test the Hardening, Ideology, and Logistical Success Hypotheses. The selection equation includes three variables that also appear in

⁵⁹ NSAGs that can frequently utilize suicide tactics may be more likely to attack hard targets.

⁶⁰ I use COIN Casualties as a proxy for Indian states' militarization against NSAGs. Militarization of civil conflicts can tip the balance of power against NSAGs, thereby altering NSAGs' calculations regarding costs and payoffs of attacking soft targets.

⁶¹ Stronger groups involved in intense conflicts could utilize the resources required to launch successful attacks against hard targets.

⁶² In more ethnically fragmented states, ethno-nationalist groups may be tempted to target members of other ethnic groups.

the outcome equation (e.g., Hardening, Success rate against hard targets, COIN casualties) and an additional variable that does not appear in the outcome equation: State population⁶³.

The dependent variables are the ratio of the number of attacks against respective target types to the total number of attacks committed in a given relevant state-group dyad in a given year. The key independent variable -hardening- is measured as the logged number of police officers assigned to the special branch dealing with intelligence, counterterrorism, and counterinsurgency. The variables hardening, success rate against hard targets, the ratio of suicide attacks, and COIN casualties are lagged by one year.

The outcome equations of Model 1 and Model 2 show that hardening leads to an increase in attacks against soft targets as a percentage of total attacks, as expected. Given that the soft targets measure is an aggregate measure that includes a variety of target types, I also consider

⁶³ It is suggested that Heckman models should include at least one variable in the selection equation that does not appear in the outcome equation (see Anne E. Sartori, "An Estimator for Some Binary-Outcome Selection Models Without Exclusion Restrictions," *Political Analysis* 11 no.2 (2003): 111–38). Such variables are known as exclusion restrictions. I picked State population as my exclusion restriction because it likely influences the probability that a state-group dyad experiences at least one attack in a given year, as most insurgencies are contained in India's relatively sparsely populated rural parts. However, I do not expect the state population to influence NSAGs' strategic logic significantly; thus, the population should not predict the prevalence of attacks against soft targets. One counterargument that can be made against using population as an exclusion restriction is that population captures the number of civilians, which is a soft target. This is unlikely to be a problem in India for three reasons. First, it should be noted that soft targets are always plentiful, even in sparsely populated areas. Secondly, the intuitive relationship between population and abundance of soft targets at least partially depends on urbanization levels since populations are thought to be concentrated in urbanized areas that host many soft targets. However, in India, state population and urbanization are not closely related. For example, according to 2011 census figures, state population and the rate of urbanization (MOSPI 2011) are negatively correlated (-0.21, $p = .26$). The most populated states, such as Uttar Pradesh, Maharashtra, Bihar, and West Bengal, had low urbanization rates (22, 45, 11, 32 percent, respectively). In contrast, the most urbanized states, such as Delhi and Chandigarh, were not as populated (Delhi's population was 16787000, which corresponds to 1.4 percent of the total country population, and Chandigarh's was 1161000, which corresponds to 0.1 percent of the country population). Finally, in India, the state population seems to be correlated with the abundance of hard targets rather than the abundance of soft targets. My dataset shows a strong positive correlation between state population and the number of police stations in a given state (0.84, $p = .000$).

whether the theoretical framework applies to the targeting of civilians. The model specification in Model 3 is run using attacks against civilian targets as a percentage of total attacks⁶⁴. Hardening is found to increase NSAGs' targeting of civilians too. On the other hand, the outcome equation of Model 4 shows that hardening leads to a decrease in attacks against hard targets as a percentage of total attacks, as expected. Furthermore, hardening is found to decrease the targeting of the military (Model 5), but this finding is not statistically significant.

Figure 5 shows a steady increase in the predicted attacks against soft targets as a percentage of total attacks (Panel A) and a steady decrease in the predicted attacks against hard targets (Panel C) as hardening increases. Moving from the minimum to maximum values of the logged hardening variable leads to a 39% increase in the predicted attacks against soft targets as a percentage of total attacks (Panel A). This effect is much larger than the effects of COIN casualties or ethnic fractionalization, which lead to about a 12% and a 9% decrease in the predicted attacks against soft targets, respectively.

The outcome equations of models in Table 2 show that NSAGs' past success rate against hard targets leads to a decrease in attacks against soft targets and an increase in attacks against hard targets as a percentage of total attacks (H2). However, since the success rate against hard targets is not significant even at the 0.1 level, I do not find strong empirical support for the Logistical Success hypothesis.

⁶⁴ Civilian targets are a subset of soft targets. While soft targets coding includes all incidents that targeted non-hard targets, civilian targets coding only includes incidents whose target type (GTD's *targettype1* indicator) is private citizens & property. For example, an attack that targeted a school building at night while students, teachers, or staff were not inside the building is not included in the civilian coding.

Table 2: Heckman Selection Models of Target Selection in Relevant State-Group Dyads in India, 2004-2016 [Hardening Hypothesis]

	Model 1 DV: Soft Targets		Model 2 DV: Soft Targets		Model 3 DV: Civilian Targets		Model 4 DV: Hard Targets		Model 5 DV: Military Targets	
	Outcome	Selection	Outcome	Selection	Outcome	Selection	Outcome	Selection	Outcome	Selection
Hardening	0.064** (0.027)	0.191*** (0.044)	0.064** (0.028)	0.205*** (0.045)	0.040* (0.022)	0.204*** (0.044)	-0.064** (0.028)	0.205*** (0.045)	-0.026 (0.019)	0.211*** (0.046)
Success rate against hard targets	-0.048 (0.068)	2.563*** (0.168)	-0.042 (0.061)	2.463*** (0.164)	-0.009 (0.045)	2.463*** (0.164)	0.065 (0.062)	2.464*** (0.164)	-0.003 (0.033)	2.467*** (0.165)
Ratio of suicide attacks	2.526** (1.208)		3.209* (1.803)		2.380 (1.632)		-2.937* (1.733)		-0.404 (0.918)	
COIN casualties			-0.021 (0.017)	0.127*** (0.024)	0.003 (0.014)	0.127*** (0.024)	0.022 (0.017)	0.127*** (0.024)	-0.001 (0.009)	0.129*** (0.024)
Conflict intensity			-0.022 (0.065)		0.014 (0.048)		0.046 (0.065)		-0.073 (0.046)	
Ethnic fractionalization			-0.020 (0.017)		-0.002 (0.014)		0.018 (0.018)		0.027** (0.013)	
Ethnonationalist group			0.237** (0.106)		0.137 (0.084)		-0.222** (0.106)		-0.026 (0.043)	
Leftist group			0.241** (0.105)		0.096 (0.084)		-0.209** (0.105)		-0.033 (0.040)	
Other ideology			0.292** (0.131)		0.336** (0.134)		-0.283** (0.130)		-0.025 (0.060)	
State population		0.005 (0.028)		-0.006 (0.029)		-0.006 (0.028)		-0.007 (0.029)		-0.012 (0.031)
Observations	6240		6240		6240		6240		6240	

Note 1: * p<1 ** p<0.05 *** p<0.01

Note 2: Heckman Selection Models are estimated using full maximum likelihood with Stata's heckman command. Robust standard errors clustered on relevant state-group dyads are in parentheses.

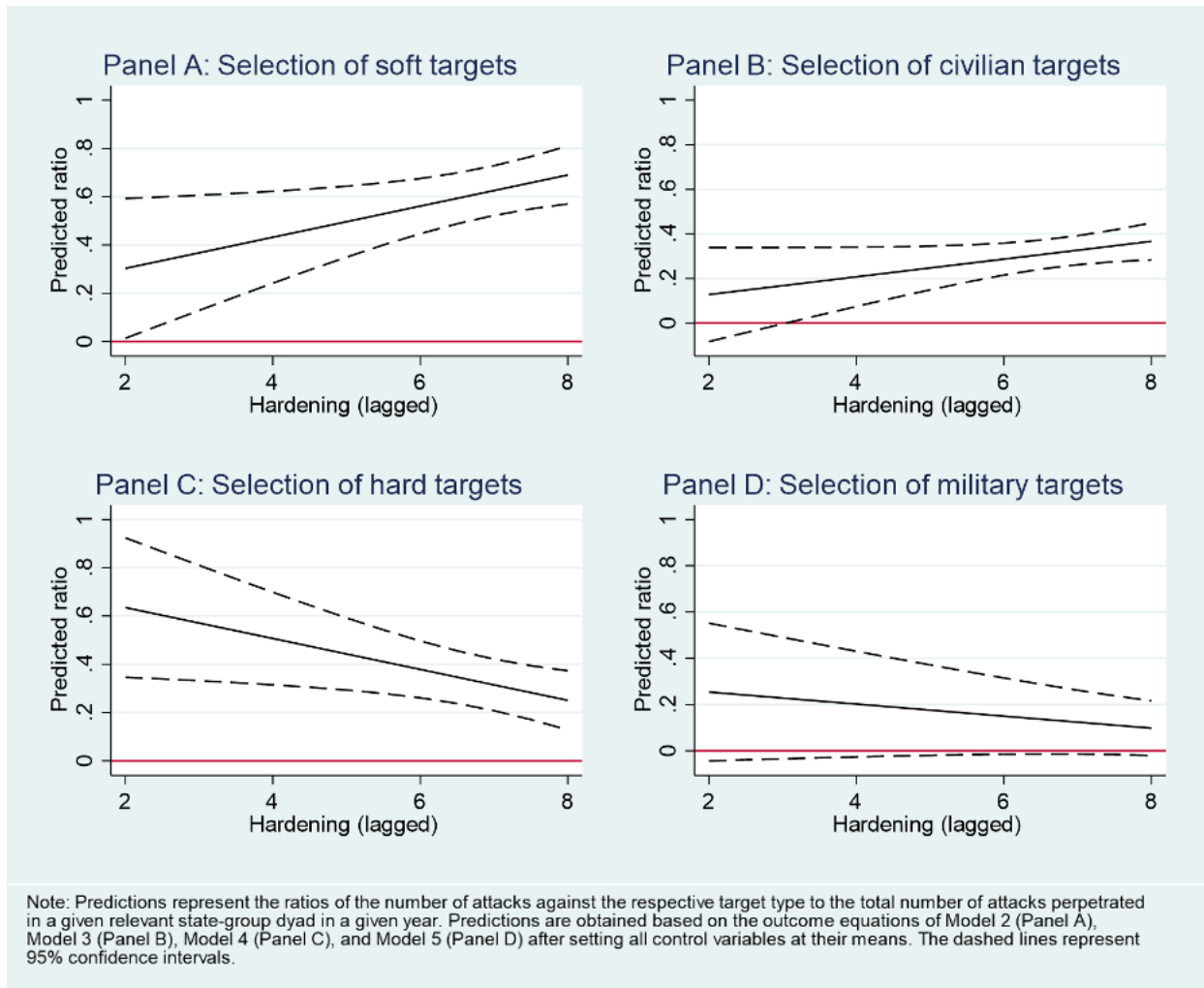


Figure 5: Predicted attacks against different target types as a percentage of total attacks in relevant state-group dyads [Hardening hypothesis]

Exploring the role of group ideology

The second set of results from the Heckman selection model estimations investigates the role that group ideology plays in mediating the relationship between hardening measures and the selection of soft targets. These results are presented in Table 3. The constituent terms of all interactions and control variables are included in the models but not reported here to save space. Full model specifications are included in Appendix 6.

In Model 6, I interact the hardening variable with group ideology. The reference category for the group ideology variable is religiously motivated groups. All interaction terms are significant, supporting the argument that group ideology mediates the relationship between hardening and the selection of soft targets.

Table 3: Heckman Selection Models of Target Selection in Relevant State-Group Dyads in India, 2004-2016 [Ideology Hypothesis]

	Model 6		Model 7	
	DV: Soft Targets		DV: Soft Targets	
	Outcome	Selection	Outcome	Selection
Hardening	-0.357*** (0.067)	0.204*** (0.044)	0.062** (0.028)	0.205*** (0.045)
Ethno-nationalist * Hardening	0.439*** (0.078)			
Leftist * Hardening	0.479*** (0.090)			
Other * Hardening	0.495*** (0.156)			
Past success rate against hard targets	-0.052 (0.054)	2.463*** (0.164)	0.105 (0.290)	2.463*** (0.164)
Ethno-nationalist * Success rate			-0.089 (0.299)	
Leftist * Success rate			-0.231 (0.294)	
Other * Success rate			0.000 (.)	
COIN casualties		0.127*** (0.024)		0.127*** (0.024)
State population		-0.006 (0.028)		-0.006 (0.029)
Observations	6240		6240	
Note 1: * p<1 ** p<0.05 *** p<0.01				
Note 2: The constituent terms of all interactions and control variables are included in the models but not reported here to save space. Full model specifications are in Appendix.				

To better illustrate the interaction effects, I evaluate the predictions based on Model 6. Figure 6 shows a steady increase in the predicted attacks against soft targets as a percentage of total attacks for ethno-nationalist and leftist groups as hardening increases, as expected. Moving from the minimum to maximum values of the logged hardening variable leads to a 49% and a 72% increase in the predicted attacks against soft targets perpetrated by ethno-nationalist and leftist groups, respectively. This finding supports the Ideology hypothesis, which posits that ethno-nationalist and leftist groups that initially prefer hard targets and consider soft targets the last resort would be prompted to pursue the last resort in response to hardening. However, hardening leads to a sharp decrease for religiously motivated groups. The Ideology hypothesis expected that hardening might not substantially impact religiously motivated groups' cost-benefit analysis of attacking soft targets but did not anticipate that hardening would lead to a decrease in their selection of soft targets.

In Model 7, I interact the past success rate with group ideology. Since the interaction terms are not significant, the findings do not suggest that group ideology mediates the relationship between past success rate against hard targets and the selection of soft targets.

Past success rate in the primary area of operation

The third set of results is Negative Binomial estimations of in-state attacks that investigate the effect of a group's past success rate in its primary area of operation on its future violent activities in the exact location and are presented in Table 4. The dependent variables are the number of in-state attacks perpetrated in a given relevant state-group dyad in a given year⁶⁵. An attack is coded as an in-state attack if the state where the attack occurred is the primary area of operation of the group perpetrating the attack.

⁶⁵ Before performing log transformation of the dependent variable, a constant value of 1 was added to each observation in order to handle zero values.

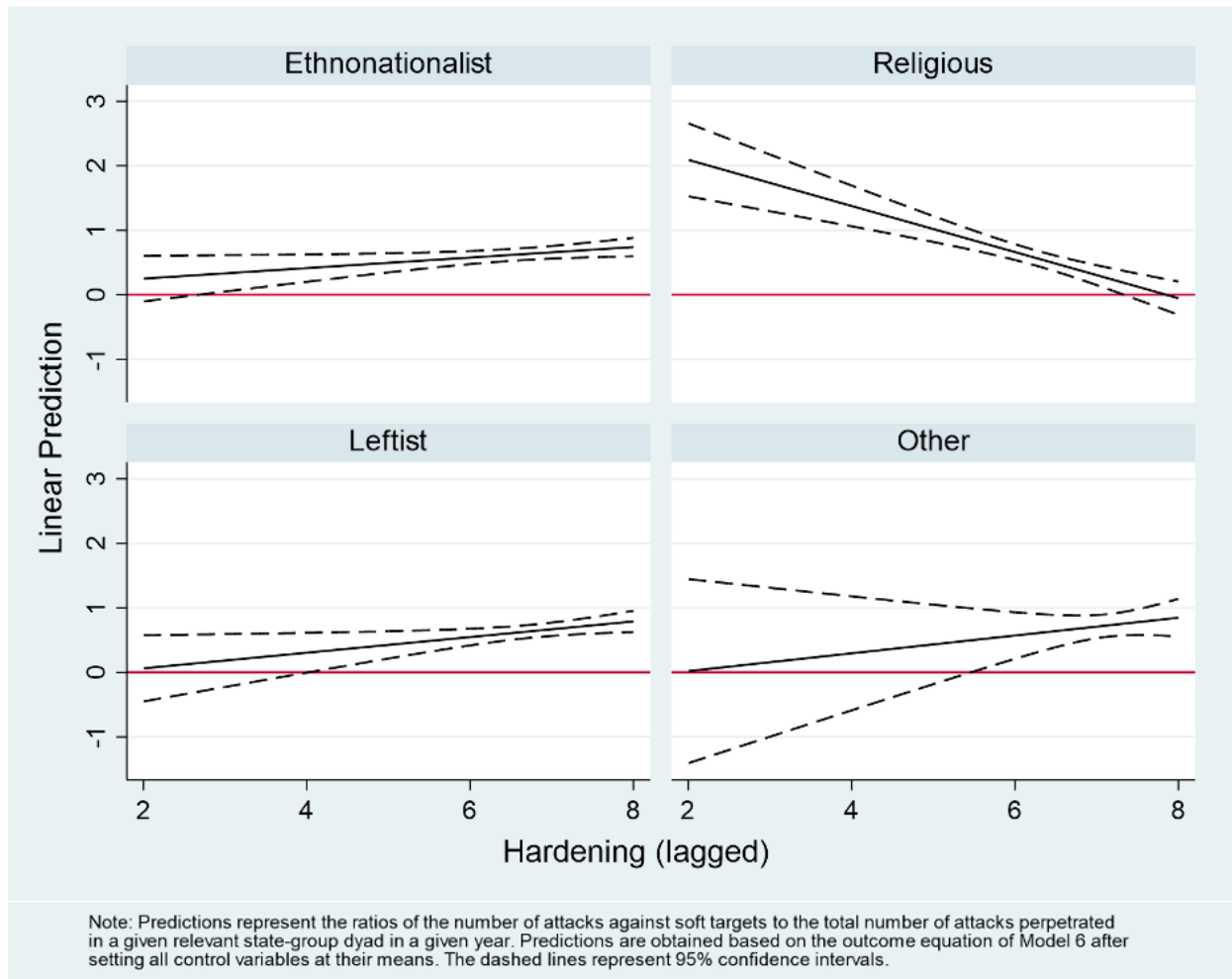


Figure 6: Predicted attacks against soft targets as a percentage of total attacks disaggregated by group ideology in relevant-state group dyads [Ideology Hypothesis]

In Model 8 and Model 9, past logistically successful attacks in a group's primary area of operation are found to lead to more attacks in that state, as expected (H3). Figure 7 shows a steady increase in the predicted number of instate attacks as a function of the past success rate of in-state attacks for all types of groups. However, the increase is particularly dramatic for leftist groups.

In the Appendix 11, I also explore whether this relationship is conditioned by hardening. The results suggest that the past success rate in groups' primary area of operation leads to subsequent increases in the number of attacks in that area even in the absence of hardening. However, as the level of hardening increases, the past success rate is associated with a less substantial increase in the number of instate attacks.

Table 4: Negative Binomial Models of In-state Target Selection in Relevant State-Group Dyads in India, 2004-2016 [Location Hypothesis]

	Model 8 DV: # of In-state Attacks	Model 9 DV: # of In-state Attacks
Past success rate of in-state attacks (lagged)	3.938*** (0.309)	3.489*** (0.259)
Hardening (lagged)	0.320*** (0.085)	0.222** (0.102)
Total number of attacks	0.082*** (0.016)	0.061*** (0.020)
Ratio of suicide attacks (lagged)		-46.389*** (17.394)
COIN casualties (lagged)		0.308*** (0.063)
Conflict intensity		1.995*** (0.628)
Ethnic fractionalization		0.212** (0.087)
Ethno-nationalist group		0.060 (0.296)
Leftist group		0.882*** (0.336)
Other ideology		-0.231 (0.383)
Observations	6260	6260
Note 1: * p<1 ** p<0.05 *** p<0.01		
Note 2: The reference category for the Group ideology variable is religious-fundamentalist groups.		

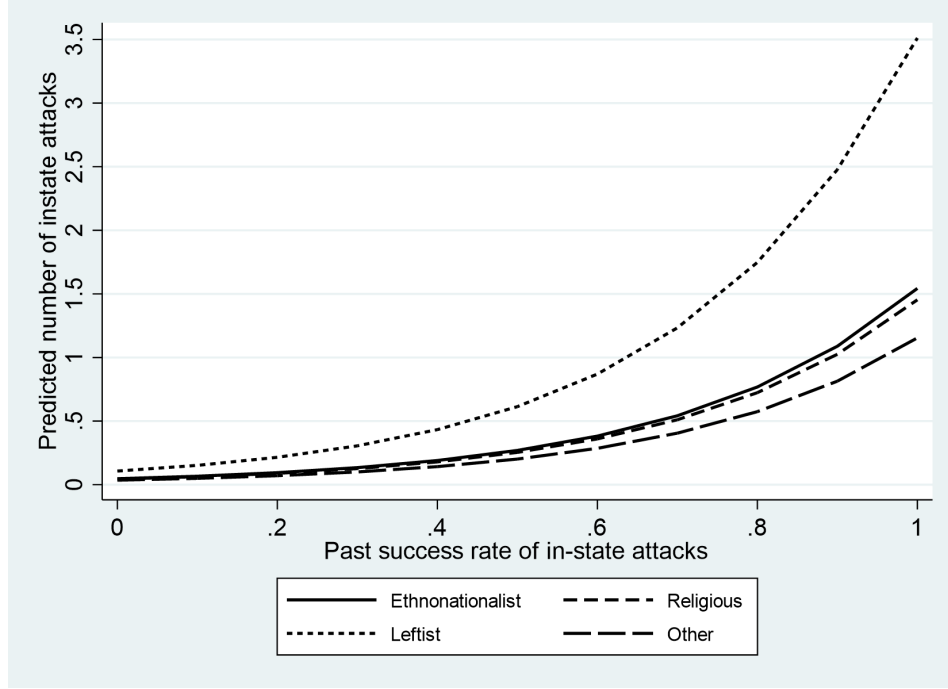


Figure 7: Predicted number of in-state attacks in relevant-state group dyads [Location Hypothesis]

Robustness checks, additional analyses, and addressing endogeneity concerns

The results presented in Table 2 are robust to an alternative measure of hardening. I replace the original hardening measure with the number of police stations tasked with intelligence operations. The primary findings do not change when models in Table 2 are estimated with this alternative measure of hardening (Table 3A of Appendix 7).

To ensure that the results are not driven by a sample selection bias induced by relevant state-group dyads, I estimate all models on all possible state-group dyads. The primary findings do not change (Tables 4A-5A of Appendix 8).

The theory implies that hardening will not necessarily harden soft targets but make them attractive targets for NSAGs. However, even if hardening does not provide soft targets with increased protection, hardening might indirectly increase the costs of attacking soft targets. The government's hardening measures are likely to increase the likelihood of detection and punishment of perpetrators following an attack against a soft target. Would this not deter attacks against soft

targets, at least temporarily? Although this is a theoretical possibility, further analysis shows that this is not the case. I test how hardening affects the number of attacks against soft targets rather than the proportion of attacks against soft targets. Models 25-28 in Appendix 9 show that hardening leads to an increase in the absolute number of attacks against soft targets rather than deterring them. More specifically, hardening leads to a decrease in the number of attacks against military targets, but it leads to an increase in the number of attacks against soft targets in general and civilian targets in specific.

While the analyses presented in Table 2 provide quantitative support for the hardening hypothesis -and this result is robust to alternative model specifications- there is an important question about the potential endogeneity of hardening measures and NSAGs' selection of soft targets. For example, decision-makers coordinating the counterterrorism efforts in Indian states might be particularly concerned about deterring attacks against soft targets. If NSAGs resort to violent tactics that more heavily target soft targets such as civilians, Indian states concerned about protecting civilians might increase hardening measures to deter future attacks against soft targets. In that case, a higher ratio of the number of attacks against soft targets to the total number of attacks would appear to be associated with hardening measures. Still, hardening would not lead to armed groups' decision to transfer their attacks between different target types.

The models in Table 2 and the robustness checks in the supplementary files use a one-year lagged measure of hardening to capture the effect of hardening in the previous year on the prevalence of attacks against soft targets. While this partially addresses the endogeneity concerns, it does not eliminate them. To further address the potential for endogeneity, I present evidence that the prevalence of attacks against soft targets does not significantly influence Indian states' allocation of police resources.

If strategic counterterrorism and counterinsurgency decisions of Indian states were driven by the prevalence of attacks against soft targets, we would observe a significant increase in police expenditure as a percentage of the state budget and total police training expenditure in the wake of increasing attacks against soft targets. However, the OLS models presented in Table 5 provide evidence for the opposite. The lagged ratio of the number of attacks against soft targets leads to

a decrease in police and training expenditures. These results provide evidence that the relationship between hardening measures and NSAGs' selection of soft targets is in the hypothesized direction.

Table 5: OLS Models of Police and Training Expenditures in Relevant State-Group Dyads in India, 2004-2016 [Endogeneity]

	Model 11 DV: Police Expenditure	Model 12 DV: Training Expenditure
Ratio of attacks against soft targets (lagged)	-0.055** (0.024)	-0.000 (0.007)
Success rate against hard targets (lagged)	0.498 (0.417)	-0.504*** (0.161)
Ratio of suicide attacks (lagged)	51.651*** (10.976)	-17.230* (9.572)
COIN casualties (lagged)	0.014 (0.051)	-0.568*** (0.054)
Conflict intensity	-0.524 (0.452)	0.462 (0.349)
Ethnic fractionalization	0.052 (0.062)	0.123** (0.056)
Ethnonationalist group	1.679*** (0.314)	-0.464** (0.222)
Leftist group	0.025 (0.358)	-0.256 (0.225)
Other ideology	0.206 (0.387)	0.167 (0.275)
Observations	5672	8223

Note 1: * p<1 ** p<0.05 *** p<0.01

Note 2: The dependent variables are the police expenditure as a percentage of the state budget (Model 11), only available for 2007-2016, and training expenditure per 10000 police officers (Model 12) in a given relevant state-group dyad a given year.

Discussion and conclusion

Empirical results support the Hardening, Ideology, and Location hypotheses. Domestic NSAGs, when they face hardening, are likely to transfer their attacks on soft targets. This finding is consistent with previous studies on transnational NSAGs' target selection and highlights that domestic NSAGs follow a similar target selection logic despite their differences from transnational NSAGs.

Furthermore, past logistically successful attacks in a domestic NSAGs' primary area of operation lead to more attacks in that state even when we account for hardening. In other words, domestic NSAGs do not transfer their attacks to alternative venues as long as they are logistically successful in their primary venue. Previous studies on transnational NSAGs' venue selection suggested that NSAGs change venues (e.g., countries) in response to hardening in a given venue. The findings of this study highlight that domestic NSAGs follow a different logic in that within-country transference of attacks only occurs when domestic NSAGs fail to perpetrate successful attacks in their primary area of operation.

Finally, empirical results indicate that ideology plays a vital role in how domestic NSAGs shape their target and venue selection strategy in response to hardening. Ethno-nationalist and leftist groups respond to hardening by switching to soft targets, but religious groups do not. Thus, hardening may prompt ethno-nationalist and leftist groups to target civilians more, even if they initially had an ideological predisposition to prefer hard targets.

These findings have implications for scholars seeking to understand strategic armed group behavior and policymakers concerned with deterring attacks. For the study of strategic armed group behavior, the findings underscore a variety of ways through which domestic NSAGs adapt their tactics to overcome the increased costs imposed by hardened target environments. As for policymaking, the findings underscore potential costs for enhancing the security around hard targets. Hardening targets potentially increases the risk of violent attacks being transferred to softer targets.

This work suggests other promising trajectories for future research. One noteworthy direction to explore is the diverse array of responses to the phenomenon of hardening, wherein spatial displacement of attacks emerges as a potential strategy. Notably, my findings underscore a strong correlation between NSAGs' attacks within their primary operational zone and the group's historical success in that area. Intriguingly, the converse is also plausible—a declining success rate could result in the displacement of NSAG attacks to adjacent regions. This shifting dynamic prompts further exploration into the interplay between NSAG success rates, and geographical diffusion of conflict.

Moreover, my study underscores the necessity for more fine-grained data, particularly in understudied regions like South Asia. These geographies are often rich with complex conflict dynamics that warrant scrutiny. The scarcity of fine-grained subnational data on these conflict presents a challenge and an opportunity for scholars to drive a more nuanced understanding of conflict dynamics.

Finally, in light of my findings, future studies can inquire the extent to which successful strategic and tactical shifts by militant groups influence their overall survival and prospects for achieving political objectives. Investigating these factors across different contexts and conflict scenarios can provide a more comprehensive understanding of the intricate relationship between strategic choices and the ultimate fate of militant organizations.

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