



Non-materialism matters (not)

What makes some rebel groups more
militarily effective than others?

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Abstract

What makes some rebel groups more militarily effective than others? Research on intrastate armed conflicts indicate that the military strength of rebel groups may affect everything from conflict outcome and duration to levels of civilian victimization. However, the same studies often make little effort to understand what constitutes rebel military strength, electing to represent the dynamic relationship between rebel groups and governments using simple, often material measurements. This study seeks to rectify this by borrowing the idea of military effectiveness—the ability to destroy hostile forces while preserving one's own—from the interstate conflict literature.

I argue that rebel militarily effectiveness primarily is determined by non-material rather than material factors. The results of my analysis indicate that this argument is incorrect, as neither strictly non-material nor strictly material factors appear to determine rebel military effectiveness. However, the findings suggest that the ability to control territory is associated with greater rebel military effectiveness, while the ability to mobilize fighters is associated with a decrease in effectiveness. There also appears to be a correlation between high rebel military effectiveness and shorter conflicts. While the findings may not revolutionize our understanding of intrastate armed conflict as a phenomenon, the thesis nevertheless displays the viability of rebel military effectiveness as an alternative to the current forms of measurement.

Keywords: Intrastate armed conflict, civil war, capabilities, rebel strength, rebel military effectiveness.

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1 Introduction

In the public consciousness, the term “war” is probably most often associated with armed conflicts between states. Although the war in Ukraine, among other conflicts, shows that this remains a very present issue, many of today’s wars are intrastate armed conflicts—an armed conflict between a state government and at least one non-state actor, with or without foreign involvement and with a minimum of 25 battle-related deaths in a year (Uppsala Conflict Data Program 2024). A current example is the ongoing civil war in Sudan—a recent study suggests that more than 60 000 people have died in Khartoum state alone since it began in 2023 (Dahab et al. 2024)—but there are also a number of smaller, more limited conflicts going on all across the world.

A great deal of effort has been made to explain the causes and outcomes of intrastate armed conflicts. In the past, scholars have tended to treat such conflicts as a separate phenomenon to interstate conflicts, with political, social and economical explanations leading the way. As such, while multiple lines of inquiry have been pursued—including, but not limited to, income inequality, ethnic division, the presence of natural resources and the quality of the state bureaucracy—the military aspect of such conflicts has only recently begun to receive its share of the attention (DeRouen and Sobek 2004; Fearon 2004; Kalyvas 2004; Kalyvas and Balcells 2010; Buhaug et al. 2009).

In fact, despite the tendency among scholars to treat military matters as a symptom of other, supposedly more important factors, studies have found that the military aspect of intrastate conflict affects everything from conflict outcome and duration to levels of civilian victimization and the likelihood of external mediation. In particular, the military strength of rebels relative to the government has been highlighted as an important factor. Unfortunately, it is not clear what actually constitutes rebel military strength, as most studies featuring the concept operationalize it in overly simplistic ways, be it in terms of sheer numbers of fighters or as a function of a group’s access to advanced weapons. While there have been attempts to disaggregate the concept, it has thus far remained nebulous (Buhaug et al. 2009; Clayton 2013; Cunningham et al. 2009; Wood 2010; Balcells and Kalyvas 2014; Haer and Böhmelt 2016; Pamp et al. 2024).

In this study, I investigate the causes of rebel military strength more closely. I argue that the focusing on simple, material measurements is insufficient. Rather than relying on numbers or weapons, I employ the concept of *military effectiveness* as a way to understand how multiple inputs—including both the number of fighters in a rebel group and the group’s access to weapons among other things—may come together to create a sum greater than its parts. This study

uses Biddle and Long's definition of military effectiveness as "the critical military function of destroying hostile forces while preserving one's own" (2004, pp. 527–528). While the literature on intrastate armed conflicts contains few references to military effectiveness in this sense, there is nevertheless a wealth of previous research on the subject in relation to interstate conflicts, upon which I lay the foundation of my theoretical framework. For example, Biddle (2004) explores the tactics which militaries must employ in order to be effective on the modern battlefield. Biddle (2021) subsequently extends this to non-state actors, describing how non-state actors have successfully implemented such tactics. Newsome (2007) highlights the extrinsic nature of the skills, or combat personnel capabilities, required in a soldier. Brathwaithe (2018) argues that effectiveness requires both the skill as well as the will to fight. Following these works, this study primarily focuses on the tactical and operational levels of warfare.

The research question is thus as follows: What makes some rebel groups more militarily effective than others? My argument is that military effectiveness primarily is determined by non-material factors, like the quality of the rebel fighters, as opposed material factors like the number of rebel fighters or their access to advanced weapons. Rebel military effectiveness is operationalized as the inverse of a rebel group's *loss exchange ratio* (LER). The rebel LER is the number of rebel fighters who die during a conflict divided by the number of government fighters that are killed.

To test my argument, the study employs ordinary least squares regression using data on rebel groups from the Non-State Actor Dataset (Cunningham et al. 2013) and the UCDP Georeferenced Event Dataset (Sundberg and Melander 2013; Höglbladh 2024), with supplementary data on government actors from the World Bank (2024). The results indicate that my argument is incorrect—the analysis fails to establish a statistically significant correlation between rebel LER and the variables I use to represent non-material factors. Even so, the analysis does find that the ability to control territory appears to make rebel groups more militarily effective relative to the government, whereas the ability to mobilize new fighters in order to replace casualties seems to make them less militarily effective. The results also suggest that more effective rebels are associated with shorter conflicts.

The results of this study should be of interest to scholars researching intrastate conflicts on one hand, as well as policymakers, military personnel and other "practitioners" on the other. For policymakers and practitioners, gaining greater insight into what makes rebel groups militarily effective may be of use in the planning of counterinsurgency efforts. For scholars, the results may be a puzzle piece in the larger discussion on the military aspect of intrastate armed

conflicts. As mentioned above, previous research suggests that military matters affect everything from conflict outcome and duration to civilian victimization. Being able to explain what makes one rebel group more militarily effective than another could be of value when studying such topics. In this sense, the study aims to help expand the overarching literature on intrastate armed conflicts by explicitly connecting it to the literature on military effectiveness. Although this study's contribution to the field should not be overstated, it could perhaps serve as a starting point for a more extensive discussion on the nature of rebel military effectiveness and the factors which contribute to it.

The paper proceeds as follows: The next section begins by discussing the two main ways of defining military effectiveness that are present in the literature, as well as motivating why the chosen definition is preferable. It then provides an overview of the literature on military effectiveness, identifying the split between theories that focus on material explanations—numerical preponderance and technological advantages—and those that focus on non-material explanations. The subsequent section employs previous research on interstate military effectiveness to construct a theoretical framework seeking to explain how non-material factors could lead to more militarily effective rebels. By extension, this section also serves to generate testable hypotheses for the analysis. These hypotheses are then contrasted with predominantly materialist explanations derived from previous research on rebels, complete with their own testable hypotheses.

The following section presents the dataset and research design, going over each variable and how they relate to the hypotheses. The next section briefly repeats the various hypotheses before presenting the result of the analysis. This is followed by discussing the results and what they mean for each hypothesis in turn, as well as what the results could mean for the overarching literature on intrastate armed conflicts. The final section is a conclusion, summarizing the study and discussing its potential implications for both policymakers and scholars as well as proposing avenues of further research.

2 Literature review

There is currently no single definite definition of military effectiveness. In fact, various authors use the term to describe various different, and at times conflicting, concepts. Existing definitions can be sorted into those focusing broadly on the production of favourable military outcomes, and those which more narrowly focus on the characteristics or processes of a given military actor while seeking to exclude external factors which may affect a conflict's outcome (Biddle 2017; Biddle and Severini 2024). One influential definition of the latter type suggests that military effectiveness is “the process by which armed forces convert resources into fighting power” (Millett et al. 1986, p. 37). However, this definition has a significant flaw.

Completely divorcing effectiveness from outcome does not seem appropriate, because the ultimate purpose of a military *is* to produce favourable military outcomes. It would be strange to suggest that a military which consistently fails to do so is effective, regardless of their resource endowment, and so this definition is inadequate. Even so, it touches upon an important point—an armed group can be more or less efficient when it comes to utilizing available resources. A less endowed group could still be better at producing favourable military outcomes compared to one with abundant resources if the former is better at utilizing what they have.

At first glance, this still appears to run the risk of equating effectiveness with victory, being that the less endowed group was proven to be more militarily effective because they won. A definition of military effectiveness based on who wins lacks predictive power in and of itself, in the sense that it cannot, for example, be used to predict who will win or how long the conflict will last. Any definition centered on the production of favourable military outcomes must be able to divorce effectiveness from the end result of a conflict—even though the United States ultimately withdrew from Afghanistan, one would be hard-pressed to argue that the Taliban were more militarily effective by any definition.

Biddle and Long (2004) propose an outcome-adjacent definition which is not contingent on which side ultimately was victorious, where military effectiveness consists in “the critical military function of destroying hostile forces while preserving one's own” (p. 528). The greater an armed group's ability to do so, the more effective it is. This is the definition of military effectiveness that will be used in this study. For example, during the Winter War of 1939–1940, the Finns inflicted far more casualties on the Soviets than they suffered in return, even though Finland ultimately was defeated. While the outcome was a Soviet victory, this definition of military effectiveness makes it possible to illustrate that the Finns were highly effective without having to rely on obtuse resource-to-power conversions.

The proposed causes of military effectiveness are as varied as the definitions, but a number of overarching strands of research can be identified in the literature. The main fault line is between materialist and non-materialist theories. Theories belonging to the former category argue that military effectiveness is caused by material factors like numerical preponderance, technology and economy, whereas the latter attributes effectiveness to less tangible human factors.

Numerical preponderance theories ultimately suggest that the side with the biggest numbers wins. This does not have to be as crude as simply counting the number of troops, tanks or fighter jets, though this often is the case. For example, adherents of such theories may seek to adjust these raw numbers in order to account for differences in quality as well as local differences in preponderance in terms of force density—the argument goes that 100 000 troops evenly spread over an extended front would be at a disadvantage if attacked by a smaller, but more concentrated force. This often takes the form of conventional wisdom, for example the idea that a successful attack requires a local superiority of three to one (Liddell Hart 1960; Mearsheimer 1989). Even with such adjustments, however, the core logic remains the same in the sense that the key to producing favourable military outcomes is to have *more* than your opponent.

Technological theories argue that technology is the main determinant of military effectiveness. The most straight-forward of these treat technology as a dyadic phenomenon—if one side has a technological advantage over the other, they are more likely to emerge victorious from the conflict. This is popularly expressed using so called Lanchester models, which employ differential equations in order to predict conflict outcomes based on technological—and often numerical—differences. In Lanchester models, and for dyadic technological theories in general, it is the *relative* difference in technology which predicts success (Lanchester 1916; Bracken et al. 1996; Kress 2020). This is distinct from systemic technological theories, which argue that conflict outcomes are heavily influenced by the overall level of technology in the international system. Whereas dyadic technological theories would argue that the side with more advanced weaponry are more likely to win at any given point, systemic theories are more interested in the implications of technological advances on the nature of warfare in general.

This is perhaps best illustrated by offence-defence theory. This theory, or family of theories, suggests that at any point in time, technology will favour *either* offence or defence, regardless of the relative technological differences between the sides—when technology favours offence, the attacking side will have the advantage no matter who is doing the attacking, with the situation reversing when technology favours defence. Proponents of such theories might

argue that defence held the advantage for much of the First World War, and that this was illustrated by difficulties in sustaining offensive operations for both sides. Once the tank was introduced, they would argue, the balance shifted in favour of offence. In this view it does not matter which side has the better tanks, only that tanks shift the balance in favour of offensive operations (Jervis 1978; Lynn-Jones 1995; Biddle 2001).

Many economical theories have a similar rationale as preponderance theories. The very simplest forms of economical theories suggest a direct link between a country's military capabilities and its economy using standard economical measurements like GDP to predict the outcome of armed conflict, where a bigger GDP means a more effective military (Organski and Kugler 1980). Other scholars employ more specific measurements like defensive spending rather than GDP per se, while others still stray from sheer economical preponderance, suggesting that economic development leads to better soldiers and thus greater military effectiveness (Beckley 2010).

The latter idea seems to both agree and disagree with non-materialist theories—while it clearly remains fundamentally materialist in the sense that economy is the main determinant, it also acknowledges that there is more to military effectiveness than big numbers. Despite the problems stemming from divorcing military effectiveness from outcome, the process-focused definition of effectiveness presented above demonstrates its value by highlighting the need for a conversion mechanism which turns resources, which are at the heart of materialist theories, into something more.

While the economical development theory tries to open this black box from a materialist perspective, most theories to attempt this do so from a non-material point of view. One line of research argues that democracies are more militarily effective than non-democracies because democracy leads to better leadership and greater initiative by individual soldiers (Reiter and Stam 1998). Such claims have been met with criticism by proponents of materialist and non-materialist theories alike. The former argue that the correlation between democracy and effectiveness can be explained by democracies in general being wealthier than non-democratic states as opposed to any advantages inherent to democracy (Desch 2008; Beckley 2010; Henderson and Bayer 2013).

Non-materialist critics instead suggest that connection between democracy and military effectiveness may be spurious. In their opinion, democracy is associated with, but not necessarily the cause of other determinants which in turn lead to better soldiers—there is a wealth of research on other societal factors which could contribute to military effectiveness, ranging

from human capital to civil-military relations and political institutions. A related, albeit at times contentious, strand of thought attributes effectiveness, or a lack thereof, to inherent cultural characteristics (Rosen 1995; Pollack 2002; Biddle and Long 2004; Avant 2007; Brooks 2007a; Brooks 2007b).

While studies about regime type, human capital, civil-military relations and culture all operate on a societal level, another subset of non-materialist theories look closer at the individual and small group levels, seeking to explain military effectiveness through human qualities. Some of these, like leadership and personal initiative, may be related to societal level determinants. However, other scholars argue that the stark differences in nature between civil and military life minimize the effects that society has on military effectiveness. Accordingly, ideas like “born leaders” and the importance of civilian education are overstated at best. Military effectiveness is thus associated with its own set of traits which must be—and only can be—honed *in the military* (Newsome 2007).

One highly influential line of thought relates military effectiveness to group cohesion. While the importance of cohesion can be traced at least as far back as Machiavelli, it formally became a topic of study following the Second World War, as a way to explain the effectiveness of German soldiers. Even so it remains highly relevant to date—among other things, a study on American soldiers during the Iraq War argues that unit cohesion was their primary motivation for fighting. The logic is thus that more cohesive groups are more militarily effective. Traditionally, it has been suggested that cohesion is generated through the soldiers' interpersonal relations with the other soldiers in their most immediate environment, or their so called primary group. However, the primary group thesis of cohesion has been challenged in the last few decades by suggestions that interpersonal relations are less important and that *task cohesion*—generated through training and collective obligations, giving rise to a sense of professionalism and mutual trust—is more important (Janowitz and Shils 1948; Millett et al. 1986; Henderson 2002; Wong et al. 2003; King 2013; King 2016).

While cohesion certainly appears to play a large role in military effectiveness, some scholars argue that too narrow a focus on what motivates soldiers to fight means neglecting research on the skills needed to actually be successful on the battlefield. On one hand, this applies to the individual level—are soldiers trained to use their weapons effectively, manoeuvre as a group as well as coordinate and communicate with each other? Only when motivation is paired with the appropriate skills will soldiers, and by extension armed groups, be militarily effective (Talmadge 2015; Brathwaithe 2018).

On the other hand, this can be looked at from a wider perspective in terms of force employment. This circles back to the idea that what you *do* with your resources is more important than simply *having* the resources. Though this may seem obvious, there has been a tendency in international relations to explicitly assume that armed groups will use their resources “optimally” and that actually exploring force employment thus is irrelevant. This assumption has been subject to criticism as it has resulted in widely inaccurate predictions, perhaps most notably leading up to the 1991 Gulf War, where resource endowment alone completely failed to predict the overwhelming Coalition victory (Glaser and Kaufmann 1998; Biddle 2017). Indeed, the simple assumption that resources are used “optimally” is essentially at the core of materialist theories.

This section is only a short summary of the wealth of research on the topic of military effectiveness, but it serves to illustrate the main lines of thought brought forward by both scholars and military minds. As previously noted in the introduction, however, relatively little of this research seems to have made it into the literature on intrastate armed conflicts. The perhaps most common approach is to rely on numerical preponderance alone, often presented as the ratio of rebel fighters to government fighters, or on a combination of numerical preponderance and technology (Wood 2010; Gent 2011; Pamp et al. 2024). Even a study which seeks to explain how “rebel military capacity” interacts with geographical factors to determine conflict duration seemingly takes the matter for granted without questioning what actually makes one rebel group more militarily effective than another—the authors quite explicitly note that it “depends on some unspecified combination of troop size, military budget, technological sophistication, etc” (Buhaug et al. 2009, p. 548).

This serves to illustrate some shortcomings in the current state of research on intrastate armed conflicts. First and foremost, there is an issue with the way military effectiveness is treated in research on intrastate armed conflict—more often than not, it is crudely defined and operationalized using simple forms of measurement and exclusively materialist explanations. In this study I seek to address this by introducing a new—to the field of intrastate armed conflict—way of measuring military effectiveness using loss exchange ratios. While this idea has been used to measure military effectiveness in interstate armed conflicts, it has to my knowledge not been employed in research on intrastate armed conflicts until now. I also hope to shift the focus from exclusively materialist theories by demonstrating how non-materialist theories from the interstate conflict literature can be employed in the intrastate literature as well. By doing so, I hope to pave the way for a more nuanced approach to military effectiveness in the literature on intrastate armed conflict.

3 Theory

The thesis statement of this study is that rebel military effectiveness—the critical military function of destroying hostile forces while preserving one's own—primarily is determined by non-material factors as opposed to material factors. In other words, I argue that non-material theories are more important than their material counterparts when it comes to determining why one rebel group is more militarily effective than another. Material theories have historically dominated discussions on military effectiveness among both scholars and practitioners because they are easier to measure, not because they have greater explanatory power (Newsome 2007; Biddle 2017).

Rebel groups are commonly thought of as guerrilla fighters relying on irregular, asymmetric forms of warfare such as ambushes, hit-and-run tactics and even indiscriminate acts of terror, yet there are examples of rebel groups using methods one could call “conventional”, like Hezbollah in 2006. However, one should be wary of focusing too much on the idea of irregular versus conventional tactics, as it risks obscuring a very important point: while there are differences between the two, these are differences in degree, not in kind (Biddle 2021).

The term “conventional” is in itself arguably misleading to the extent that it emphasizes the distinction between state and non-state warfare even though such differences, as far as they exist, are the result of factors beyond statehood—just as some rebel groups are capable of fighting conventionally, there are states which lack the ability to do so. Biddle (2021) instead seeks to replace the irregular-conventional dichotomy with a more fluid spectrum model. In this model, one end represents typical guerrilla warfare and an unwillingness to engage in pitched battles, while the other end represents a strong preference for the type of highly regimented, inflexible, large-scale engagements that dominated European battlefields up until the late stages of the First World War. Biddle argues that the optimal place for any modern armed group is in the middle of this spectrum.

Although he employs different terms in order to separate his spectrum model from the irregular-conventional dichotomy, I will nevertheless use the term *conventional* to refer to the middle of his spectrum. This preserves consistency between my thesis and the wider literature on intrastate armed conflict, allowing me to employ the language of the existing literature while incorporating novel theories. For the purposes of this thesis, conventional tactics thus refers to the kind of warfare one may expect to see in a conflict between two near-peer state actors. *Irregular* tactics refer to the “guerrilla”-style warfare expected from a rebel group striking at a much stronger state actor, for example the FLN during the Battle of Algiers.

Even so, while many rebel groups often do utilize so called irregular tactics, this is not because they are inherently predisposed to such an approach but rather because they lack alternative options—Bueno de Mesquita suggests that “[i]rregular tactics are used by rebel groups that believe they are capable of fighting the government but lack high levels of mobilization”, and that “successful government operations against rebel groups engaged in conventional war fighting can lead to increases in [...] irregular war fighting” (2013, pp. 324–325). The use of irregular tactics is a sign of weakness, not of strength. Rebels who have the ability to fight conventionally will do so. Accordingly, when rebels are weak relative to the government, they use irregular tactics as a way to survive, not because it is the optimal way to win. In fact, while irregular tactics serve to prolong a civil war by making it difficult for the government to defeat the rebels, they generally also fail to bring about any sort of decisive outcome (Balcells and Kalyvas 2014).

What, then, does it mean to fight “conventionally”? As a result of constraints brought on by technological advancements, being successful on the modern battlefield requires a particular set of skills. As technology improved in the late 19th and early 20th centuries, the killing potential of new weapons like machine guns and modern artillery caused the nature of combat to change radically. The massed formations and manoeuvring in the open that had dominated Napoleonic warfare was becoming unsustainable in the face of increasing lethality. This in turn led to the introduction of the *modern system*, a set of related tactical and operational methods which gave militaries a way to conduct missions while at the same time reducing their exposure to the increased lethality of modern weapons (Biddle 2004).

This means that the purpose of the modern system ultimately is to maximize one's own lethality while minimizing one's exposure to the enemy, or in other words, destroying hostile forces while preserving one's own. Put differently, it is quite simply the way to be militarily effective on the modern battlefield. With this in mind, I argue that it matters little how many fighters a rebel group has, or how many or advanced weapons they have access to—a rebel group that cannot employ the modern system will not be militarily effective. Any potential increases in effectiveness brought on by material factors are contingent on the successful implementation of the modern system, and thus it is primarily determined by non-material factors.

On the operational level of warfare, Biddle (2004) outlines a number of different offensive and defensive concepts. While interesting in and of themselves, the exact nature of these concepts is not necessarily important to the thesis. What is highly relevant, however, are the common elements that these concepts share: in order to shield formations from the extreme lethality

of modern weapons, they must be spread out over large distances. In order for them to remain effective, however, they must at the same time be able to coordinate with each other—if each unit does what it wants, when it wants, it can hardly be considered a single group. As such, I argue that the ability for a rebel group to exercise centralized command and control is vital to their military operations. This leads to the first non-material hypothesis:

H1a: Greater command and control leads to an increase in rebel military effectiveness.

However, military effectiveness is presumably not only limited by the degree of command and control exercised by a rebel group's leaders. There is an inherent risk in having too high a degree of central control, as it means that the people who are *in combat* have to rely on people who are not in combat for orders. A commander far removed from danger may have a better grip on the full picture, but cannot possibly keep up with the constantly changing nature of the battlefield, let alone multiple battlefields at once. As such, competent junior officers who can adapt to changes on the battlefield are required for success at the tactical level, as are soldiers who possess the skills needed to reliably carry out their orders (Newsome 2007; Sloan 2012; Brathwaithe 2018).

At the tactical level, the modern system relies on the usage of cover and concealment to minimize exposure, as well as combined arms to suppress the enemy and enable manoeuvre even when cover is not available. In other words, in order to employ the modern system, soldiers must be skilled enough to manoeuvre independently of each other while making use of cover and concealment, while also simultaneously retaining the ability to coordinate and communicate with each other. This is made even more difficult as formations are forced to disperse in order to take advantage of the cover that is available, meaning that even small units seldom operate within line of sight of each other (Biddle 2004; Brathwaithe 2018). In other words, in order to employ the modern system—and thus be militarily effective—a high level of skill is required. This leads to the second non-material hypothesis:

H1b: Better rebel fighters leads to an increase rebel military effectiveness.

In order to conclude whether or not non-material factors are more important than material factors, I also formulate two material hypotheses, derived from previous research. While the previous research on materialist theories in interstate conflicts was elaborated upon in the literature review, I nevertheless take the opportunity to discuss their use in intrastate conflicts. Many

earlier studies on the role of military matters in intrastate conflicts implicitly—or sometimes explicitly—embrace materialist theories without giving much thought to non-material factors. In fact, a number of studies are content with simply applying a theoretical label like “rebel strength” or “military capacity” to a single material variable—be it the number of fighters in a rebel group or the group’s access to weapons—leaving it to represent what is ultimately a dynamic interplay between two distinct actors (Wood 2010; Clayton 2013; Pamp et al. 2024). The perhaps most explicit argument given for the importance of numerical preponderance in the literature on intrastate conflicts suggests that “[t]he more forces a rebel has the more attacks it will be able to conduct and the larger those attacks will be” (Aronson et al. 2015, p. 12). Admittedly, this relates to conflict outcome rather than rebel military effectiveness, and is as such not a perfect example, but that only further highlights the lack of theorization in this particular field. In line with my thesis statement, I argue that materialist theories less, if at all, important than non-materialist theories. With this in mind, I present the material hypotheses:

H2a: Greater numbers of fighters has little or no effect on rebel military effectiveness.

H2b: Access to advanced weapons has little or no effect on rebel military effectiveness.

I also derive three additional hypotheses from previous research on intrastate armed conflicts. These are neither perfectly material nor non-material, and are thus hard to use in order to argue either for or against my thesis statement. There is nevertheless good reason to believe that they may have an effect on rebel military effectiveness, which warrants their inclusion. I previously noted the argument made by Bueno de Mesquita (2013) that a rebel group’s ability to employ conventional tactics stems from their ability to mobilize fighters.

I also previously argued that the successful use of conventional tactics requires the use of the modern system—the way to be militarily effective on the modern battlefield—suggesting that there may be a relationship between mobilization and rebel military effectiveness. On one hand, mobilization could be considered an extension of numerical preponderance arguments in that it could measure the number of fighters a rebel group has at its disposal. On the other hand, it is not only a numerical measurement, as it is a function of everything from public support to recruitment methods. As such I leave it outside of the strict material versus non-material dichotomy.

H3: Being able to mobilize fighters leads to an increase in rebel military effectiveness.

One recurring factor which multiple studies have identified as important in intrastate armed conflicts is the rebels' ability to control territory. The precise reasons for why territorial control is so important has to my knowledge not been studied, but previous researchers nevertheless suggest a number of reasons. For example, rebels who control territory have a place to seek shelter. This gives them a place to rest and tend to their wounded away from the threat of the government forces. It also provides them with a place to plan their attacks and coordinate their attacks, as well as train their fighters (Aronson et al. 2015). In other words, it clearly appears to help the rebels preserve their own forces, and given my arguments for the importance of both command and control as well as the quality of rebel fighters, it seems natural to think that rebels who control territory are more militarily effective than those who do not. However, while the proposed reasons for why territorial control may benefit rebels appear to be non-material, the territory itself is very much physical. As such it could fit into either, or indeed neither, category.

H4: Territorial control leads to an increase in rebel military effectiveness.

The final hypothesis concerns external support to rebels by foreign state actors. The most common form of external support is weapons, followed by training. In most cases, multiple forms of external support were provided simultaneously. Research suggests that conflicts where only the rebels receive external support increase the likelihood of a favourable outcome for the rebels, while conflicts where both sides receive external support tend to last longer. Conflicts featuring external support see a greater number of battle-related deaths compared to conflicts without external support (Karlén 2016).

Weapons and training, being the two most common forms of external support to rebels, already line up with previous hypotheses, and it thus seems natural to suggest that external support should lead to greater rebel military effectiveness. The likelihood of rebel victory increasing when only the rebels receive support also suggests that external support is beneficial. While external support leads to an increase in battle-related deaths, it is not clear which side benefits. On the other hand, this is precisely what this hypothesis seeks to answer.

H5: External support to rebels leads to an increase in rebel military effectiveness.

4 Research design

In this study, I perform an *ordinary least squares* regression using data from the Non-state Actor Dataset (Cunningham et al. 2013), the UCDP Georeferenced Event Dataset (Sundberg and Melander 2013; Högladh 2024) and the World Bank World Development Indicators (World Bank 2024). The dataset used in this study contains data on armed conflicts with at least one non-state actor from 1989 to 2012. Each conflict has a government actor, but a single conflict may have multiple non-state actors. In these cases, each non-state actor in the conflict forms a separate conflict dyad with the government, with each dyad having a unique dyad ID. However, conflict dyads are not static and in order to address changes over time, the unit of analysis is the conflict dyad *period*. This means that a new period begins every time a variable in a conflict dyad changes. A single conflict dyad can thus contain multiple periods. As such, the dataset features 325 unique observations. In order to avoid intra-group dependencies stemming from this, standard errors have been clustered on the dyad ID variable.

Table 1. Descriptive Statistics.

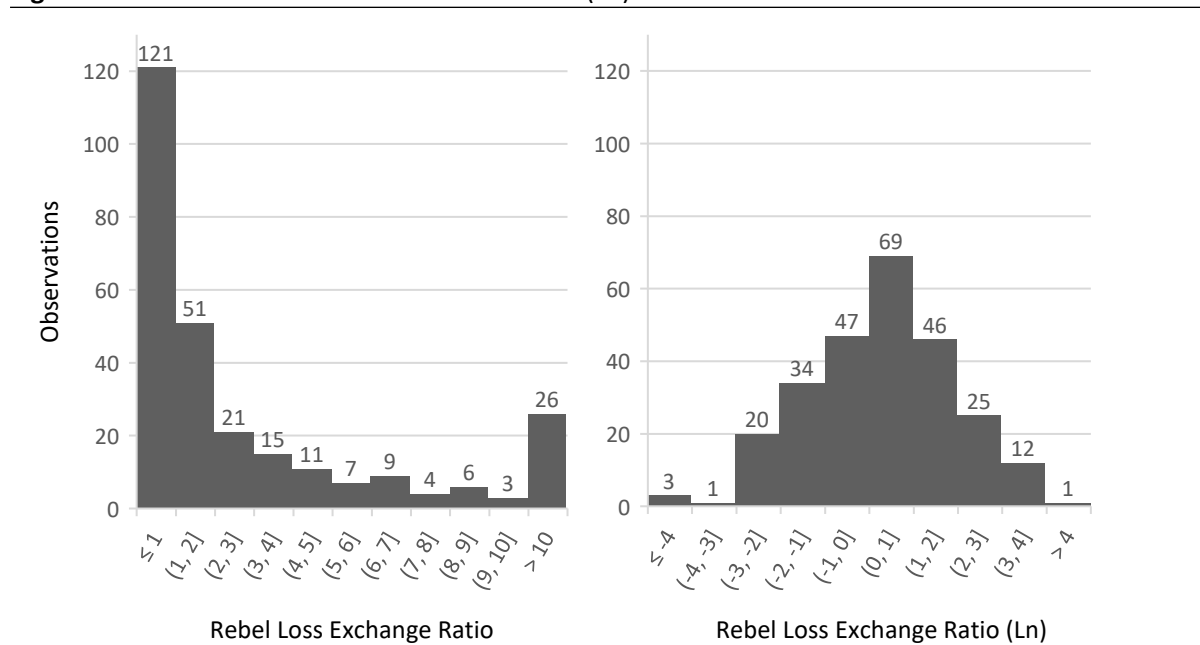
| Variable | Obs | Mean | SD | Min | Max |
|---------------------------------|-----|-------|-------|--------|--------|
| Rebel Loss Exchange Ratio | 274 | 3.914 | 7.763 | 0.000 | 73.000 |
| Rebel Loss Exchange Ratio (Ln) | 258 | 0.267 | 1.645 | -4.658 | 4.290 |
| Central Control | 324 | 1.808 | 0.904 | 0.000 | 3.000 |
| Fighting Capacity | 324 | 0.340 | 0.474 | 0.000 | 1.000 |
| Rebel Group Size (Ln) | 266 | 8.104 | 1.590 | 4.605 | 12.176 |
| Arms Procurement | 324 | 0.290 | 0.454 | 0.000 | 1.000 |
| Mobilization Capacity | 324 | 0.389 | 0.488 | 0.000 | 1.000 |
| Territorial Control | 324 | 0.676 | 1.015 | 0.000 | 3.000 |
| Rebel Support | 324 | 0.478 | 0.500 | 0.000 | 1.000 |
| Government Support | 308 | 0.552 | 0.498 | 0.000 | 1.000 |
| GDP per capita (Ln) | 304 | 6.562 | 1.342 | 3.133 | 10.743 |
| Military Expenditure (% of GDP) | 244 | 3.486 | 3.311 | 0.089 | 32.497 |
| Conflict Duration (Ln) | 318 | 6.252 | 1.694 | 0.000 | 9.036 |

4.1 Dependent variable

The study's dependent variable is *Rebel Loss Exchange Ratio (Ln)*. Following the theoretical definition of military effectiveness as the ability to destroy hostile forces while preserving one's own, rebel military effectiveness is operationalized as the inverse of the rebels' loss exchange ratio, meaning the number rebel deaths divided by the number of government deaths in a single conflict dyad period. As such, a lower LER is favourable for the rebels—the lower the LER, the fewer rebel fighters died relative to the number of government fighters that they killed. A higher LER conversely means that more rebel fighters died. In other words, a low LER indi-

icates high rebel military effectiveness. Conversely, a high LER means low rebel military effectiveness. The natural logarithm of the rebel LER is used in order to address the skewed distribution of ratios, as illustrated in Figure 1.

Figure 1. Distribution of rebel LER and rebel LER (Ln).



As the left chart in Figure 1 shows, the distribution of the rebel LER is heavily right-skewed. This is an issue as OLS regression assumes a normal distribution. There are two reasons for why the LER is so heavily skewed. The intuitively obvious issue is that most conflict dyad periods have roughly the same amount of battle deaths on each side. This means that without using the natural logarithm, most periods will have a LER close to 1. As such, a number of outlying observations with a far higher LER would have a disproportionately large effect on the results of the analysis.

The second, and arguably bigger, issue is that for every period where fewer rebel fighters died relative to the number of government fighters that they killed, the ratio will be less than 1 but greater than 0. These observations would thus have a disproportionately small effect on the results of the analysis relative to their number. As illustrated in the right chart of Figure 1, using the natural logarithm leads to an approximately normal distribution and thus solves this problem. Now a conflict dyad period with an equal amount of deaths would have a LER (Ln) of 0, and periods where fewer rebel fighters died will have a negative LER (Ln).

4.2 Non-material independent variables

Following Cunningham et al. (2013), the dataset features a number of indicators seeking to measure a non-state actor's ability to challenge the government militarily, many of which correspond to factors identified in the theoretical framework or by previous research. The theoretical framework argues for the importance of non-material factors. In particular, it highlights the importance of training as well as command and control. Two of the indicators in the dataset directly correspond to these non-material factors. The *Central Control* variable seeks to measure to what extent a rebel group's leaders are able to exercise command and control over their subordinates. It is an ordinal variable with 0 indicating an absence of central control, and 1, 2 and 3 indicating a low, moderate or high degree of central control, respectively. This will permit the testing of theories that highlight command and control as factor for rebel military effectiveness, and it thus corresponds to H1a.

The *Fighting Capacity* variable seeks to measure how capable a rebel group is in combat relative to the government they are fighting, without taking into account the number of fighters they have at their disposal—a small group could consist of well-trained fighters with extensive combat experience and thus have high fighting capacity, while a much larger group could consist of poor fighters and as such have low fighting capacity. The data for this variable indicates whether a rebel group's fighting capacity is lower, at parity or higher than the government's. However, due to the limited number of observations featuring high fighting capacity, this is a binary variable which takes the value of 0 when the rebels have a lower fighting capacity than the government, and 1 if it is at parity or higher. For robustness checks, an ordinal variable with values ranging from 1 to 3 is also available, with 1 indicating a lower fighting capacity than the government, while 2 and 3 indicate parity and higher, respectively. This variable corresponds to H1b.

The Fighting Capacity variable is seemingly the one which corresponds to the theoretical framework most closely, but it is not without flaws. Even when compared to other variables in this study, fighting capacity is particularly difficult to measure without reference to some type of performance indicator like LER. It should also be highlighted that this is relative to the government they are fighting—rebel groups in different conflicts should not be directly compared with each other as the government forces they are fighting against vary in capacity. This means that a poorly trained rebel group could be at parity with equally bad government forces, while a highly competent rebel group nevertheless could have lower fighting capacity than an exceptionally well-trained government. While this does not mean that the variable should be completely excluded from the analysis, one should still be aware of these shortcomings.

4.3 Material independent variables

I argue for the importance of non-material factors, but in order to isolate their effects, the effects of material factors must also be examined. However, rather than treating them exclusively as control variables, I use this as an opportunity to test the two materialist hypotheses from the previous section. Material factors are thus represented in the dataset using three different variables. The *Rebel Group Size (Ln)* variable is an estimate of the number of fighters that are part of a particular group. The majority of groups in the dataset number in the thousands, but a significant portion of them have over ten thousand fighters. A handful of groups even number in excess of 100 000 fighters. As such, the natural logarithm is once again used in order to address the skewed distribution. This variable thus serves to test numerical preponderance theories which argue for the importance of troop numbers, corresponding to H2a.

The second material variable is *Arms Procurement*, which seeks to measure a rebel group's ability to procure weapons, again relative to the government. For the same reasons as Fighting Capacity, this is a binary variable, with 0 indicating that the rebels are less capable of procuring weapons compared to the government, and 1 indicating that they are at parity or more capable—and subsequently better armed—than the government. For robustness checks, an ordinal variable with the same parameters as the binary version of the Fighting Capacity variable is also available. This variable could reflect both numerical preponderance and technological theories. Numerical preponderance theories suggest that the ability to procure large quantities of weapons would be valuable in itself, while technological theories highlight the importance of being able to procure advanced weaponry, for instance precision strike weapons such as long-range rockets. As such this variable corresponds to H2b.

4.4 Additional independent variables

In addition to the material and non-material variables, there are three additional explanatory variables which do not perfectly fit into the material versus non-material dichotomy. The *Mobilization Capacity* variable measures a rebel group's ability to attract new fighters relative to the government. It should be noted that being able to mobilize fighters is not the same thing as the number of fighters in a rebel group. It is “an estimate of an organization's ability to mobilize support [...] and not whether the organization actually mobilizes potential supporters. Many rebel groups [...] have a much smaller number of actual troops than potential troops” (Cunningham et al. 2009, p. 580). This is a binary variable, with 0 indicating that the rebels are less capable of mobilizing troops compared to the government, and 1 indicating that they are at parity or more capable. An ordinal version is available for robustness checks, using the same

parameters as the previous two ordinal variables. This variable corresponds to H3. However, as previously noted, mobilization capacity could possibly be viewed as an extension of the numerical preponderance argument in the sense that it effectively measures a group's ability to replenish their numbers in the face of losses. If this is the case, it would also correspond to Hypothesis 3. Ultimately, however, it does not truly measure something material and thus it would not be entirely appropriate to list it among the material variables.

Territorial Control measures to what extent a rebel group controls physical territory. It is an ordinal variable ranging from 0, meaning that the rebels do not control any territory, and 3, meaning that they exercise a high degree of control over their territory. Controlling territory may improve a rebel group's material conditions as they gain access to supporters who can supply them. However, it also gives them access to a secure base where they can rest, train their fighters and plan their attacks, which would count as a non-material factor. This variable corresponds to H4.

The final variable is *Rebel Support*, which indicates whether or not the rebel group is supported by a foreign government. This is a binary variable, taking the value of 0 if there is no evidence for foreign support and 1 if there is alleged or explicit support. The reason that this is not considered part of either the material or non-material category is because external support can come in the shape of both material and non-material factors—weapons and training, for example—and often does so simultaneously. An ordinal variable is also available, taking the value of 0 if there is no external support, 1 if there is non-military support, 2 if there is military support and 3 if the supporting country has troops on the ground. This variable corresponds to H5.

4.5 Control variables

It should be noted that the definition of military effectiveness used in this study clearly is dyadic in nature—an armed group's ability to destroy hostile forces can only be measured relative to the hostile forces in question. As such, there is reason to believe that factors which affect the government troops are likely to impact the loss exchange ratios as well. For that reason, three control variables focusing on the government are introduced. Each of these variables is derived from previous research on military effectiveness and should be associated with greater government effectiveness. If statistically significant, these variables should have a positive relationship with the dependent variable. This would indicate that they contribute to a greater number of rebel fighters dying for each government fighter that is killed, meaning a higher—that is to say worse—rebel LER and lower rebel military effectiveness.

The first of these is *Government Support*, indicating whether or not the government is receiving support from a foreign government. As with the Rebel Support variable, this is a binary variable taking the value of 0 if there is no foreign support and 1 if there is alleged or explicit foreign support. There is also an ordinal version using the same parameters as the Rebel Support variable. The second government-focused control variable is *GDP per capita (Ln)*. This is measured at the midpoint of a conflict dyad period—a conflict taking place between 2002 and 2004 will thus use the GDP per capita for 2003. Following the arguments laid out by economic theories, this should control for the possibility that a greater degree of economic development may have an effect on their attempts to defeat a rebel group. The third government-focused variable is *Military Expenditure*, also at the midpoint of a conflict dyad period, expressed as a percentage of a state's GDP. It could be argued that these variables are two different operationalizations of the same theoretical concept, which is why both are used in separate models as well as together.

A final control variable is *Conflict Duration (Ln)*, which is the natural logarithm of the number of days a conflict dyad period lasted. Unlike the other control variables, this variable does not seek to control for factors which may contribute to more effective government fighters, but it also should not directly contribute to greater rebel effectiveness. Even so, it seems reasonable to think that the rebel LER may vary across the length of a conflict as both rebels and the government adapt to changing circumstances, and thus it makes sense to control for conflict duration even though it is not expected to directly affect either side. Again, the natural logarithm is used to address potential issues caused by skewedness of the variable.

5 Analysis

What makes some rebel groups more militarily effective than others? Rebel military effectiveness is represented as the inverse of the rebels' loss exchange ratio. Once again, a low LER is preferable for the rebels as it indicates that there were fewer rebel casualties for every government fighter that was killed. In other words, a statistically significant negative relationship between the dependent variable—rebel LER—and one of the independent variables indicates an increase in rebel military effectiveness, while a statistically significant positive relationship indicates a decrease in rebel military effectiveness.

In the theory section, I argued for the primacy of non-material factors—for instance training, command and control as well as the quality of soldiers—over material factors like technology and numerical preponderance. More specifically, I presented two testable hypotheses for the non-material factors identified by the theoretical framework, H1a and H1b. These hypotheses both suggest that non-material factors should lead to an increase in rebel military effectiveness. As a counter claim to previous research featuring rebel military effectiveness as an independent variable, I also presented two testable hypotheses for the material factors, H2a and H2b.

Studies that rely on material factors as a proxy for measuring the strength of a rebel group either explicitly or implicitly give such factors a degree of primacy which I believe is unwarranted. As such, the purpose of these hypotheses is to serve as a counter for the simple materialist view. These hypotheses thus suggest that material factors should have no effect on rebel military effectiveness. Three additional hypotheses inspired by previous research—H3, H4 and H5—which are difficult to place squarely in either the material or the non-material category, suggest that mobilization capacity, territorial control and external support to rebel groups all should increase rebel military effectiveness.

The analysis employs ordinary least squares regression and contains five separate models, with the natural logarithm of the rebel LER as the dependent variable. Model 1 contains all of the variables which directly apply to rebel groups, with the only control variable being *Conflict Duration*. Model 2 adds additional controls for *Government Support* and *GDP per capita*, while Model 3 substitutes GDP per capita for *Military Expenditure*. Model 4 controls for both GDP per capita and military expenditure. Model 5 contains the same variables as the previous model, but uses the ordinal forms of variables where available, making it possible to investigate whether greater variation within a variable affects the results.

Table 2. Determinants of Rebel Military Effectiveness (LER).

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Central Control | -0.098 (0.139) | -0.126 (0.140) | -0.097 (0.136) | -0.098 (0.138) | -0.096 (0.162) |
| Fighting Capacity | -0.167 (0.293) | -0.231 (0.334) | 0.106 (0.367) | 0.062 (0.371) | -0.000 (0.331) |
| Rebel Group Size (Ln) | -0.122 (0.095) | -0.136 (0.109) | -0.160 (0.120) | -0.162 (0.119) | -0.107 (0.114) |
| Arms Procurement | 0.238 (0.279) | 0.273 (0.307) | 0.378 (0.343) | 0.358 (0.350) | 0.302 (0.316) |
| Mobilization Capacity | 0.490** (0.240) | 0.561** (0.248) | 0.544** (0.273) | 0.586** (0.265) | 0.478** (0.192) |
| Territorial Control | -0.397*** (0.108) | -0.382*** (0.113) | -0.468*** (0.139) | -0.467*** (0.139) | -0.523*** (0.129) |
| Rebel Support | -0.070 (0.213) | -0.142 (0.214) | -0.225 (0.262) | -0.244 (0.264) | -0.157 (0.141) |
| Government Support | | 0.505** (0.248) | 0.450* (0.271) | 0.419 (0.274) | 0.144 (0.116) |
| GDP per capita (Ln) | | 0.033 (0.087) | | 0.021 (0.100) | 0.087 (0.098) |
| Military Expenditure (% of GDP) | | | -0.013 (0.042) | -0.016 (0.041) | -0.017 (0.041) |
| Conflict Duration (Ln) | 0.207*** (0.072) | 0.169** (0.081) | 0.189** (0.076) | 0.183** (0.076) | 0.159** (0.074) |
| Constant | 0.110 (0.800) | 0.157 (1.123) | 0.335 (0.971) | 0.325 (1.174) | -0.506 (1.438) |
| N | 217 | 193 | 160 | 159 | 156 |
| R2 | 0.126 | 0.152 | 0.158 | 0.159 | 0.179 |

Note: Clustered standard errors in parentheses.

p < 0.1, **p < 0.05, *p < 0.01*

5.1 Central control and fighting capacity

H1a suggests that a greater degree of command and control should lead to an increase in rebel military effectiveness. This is represented by the *Central Control* variable in the regression table. H1b suggests that that better trained and more skilled rebel fighters should lead to an increase in rebel military effectiveness. This is represented by the *Fighting Capacity* variable. Neither of these two variables appear to be statistically significant when controlling for conflict duration and the other independent variables. This result remains the same even when additional control variables are added, as well as when employing the ordinal forms of variables in place of the binary forms.

This means that neither a rebel group's fighting capacity nor a high degree of command and control seem to contribute to rebel military effectiveness, and as such it does not seem like non-material factors are the primary determinant of rebel military effectiveness. If taken at face value, this would imply that the quality of soldiers and central control is irrelevant to military effectiveness. Put differently, it indicates that a rebel group that is little more than an armed mob without any sort of leadership should be equally effective as a highly trained group of battle-hardened veterans.

From an intuitive point of view, and with the theoretical framework in mind, this is highly unexpected. However, as noted in previous sections, non-material factors in general, and a rebel group's fighting capacity in particular, are inherently difficult to measure, and perhaps this is the reason why it does not appear to be statistically significant. On the other hand, the actual results of the study should certainly not be ignored—based on the available data, there does not appear to be any correlation between rebel military effectiveness and either of the non-material variables. As such, the results of the analysis indicate that both of the non-material hypotheses are incorrect.

5.2 Rebel group size and arms procurement

The hypotheses focusing on material factors are a somewhat different matter. H2a suggests that the number of fighters in a rebel group should lead to an increase in rebel military effectiveness. This is represented by the *Rebel Group Size (Ln)* variable. H2b suggests that a rebel group's access to weapons should lead to an increase in rebel military effectiveness. This is represented by the *Arms Procurement* variable. Neither Rebel Group Size (Ln) nor Arms Procurement are statistically significant in any of the models, which indicates that the both of the material hypotheses are correct.

Unfortunately, this finding alone is not sufficient to prove the argument that non-material factors are more important than material factors when determining rebel military effectiveness. In order to give credence to the argument, the result would have to suggest that non-material factors *are* important in the first place—the result merely indicate that material factors appear to be unimportant. In other words, since both of the non-material hypotheses appear to be incorrect, both of the material hypotheses being correct does not make a difference for the argument.

5.3 Mobilization

H3 suggests that a rebel group's ability to mobilize fighters should lead to an increase in rebel military effectiveness. This is represented by the *Mobilization Capacity* variable. This variable is significant in each of the five models, but the relationship between Mobilization Capacity and rebel LER is positive. Because a higher LER means that a rebel group is less militarily effective, the positive relationship between the variables suggests that a greater ability to mobilize fighters in fact leads to a lower degree of rebel military effectiveness. This indicates that the hypothesis is incorrect.

At first glance, this might seem rather odd, but perhaps it is not so strange when you consider its wider implications. A rebel group's LER depends both on the number of government fighters killed and on the number of casualties taken by the rebels. Earlier I proposed that mobilization capacity could be used as a measurement of a rebel group's ability to replace fighters who are killed in battle. If interpreted in this way, it could potentially indicate that a rebel group's leaders may be more willing to expose their fighters to risk in order to accomplish their goals if the group is able to replace its fighters. By extension, this could mean the rebel fighters suffer a greater number of casualties when their mobilization capacity is high, which in turn would lead to a lower degree of military effectiveness even though they are more likely to achieve their intended goals.

Groups that do not have a reliable flow of replacements may instead elect to minimize their exposure and only strike when they have a great advantage, even if it means missing out on opportunities. As noted in the theory section, "irregular" tactics are associated with weakness, not with strength, and the idea of an overly cautious rebel group which only engages in heavily lopsided ambushes in order to minimize their own casualties seems to line up well with this logic. As such, this inevitably raises the question of whether or not military effectiveness always should be considered something beneficial—can a rebel group be too effective for its own good?

5.4 Territorial control

H4 suggests that controlling territory should lead to an increase in rebel military effectiveness. This is represented by the *Territorial Control* variable. This variable is statistically significant in all of the models. The negative relationship between the variables indicates that controlling territory appears to be strongly correlated with a greater degree of rebel military effectiveness. This result remains the same even when control variables and ordinal forms of variables are added in the four additional models. This indicates that the hypothesis is correct.

As noted in the previous sections, the ability to control territory can conceivably have a number of both material and non-material benefits, and as such it is difficult to use it to argue in favour of either type of theory. Furthermore, although controlling territory is related to a greater degree of military effectiveness, this could be the result of a number of different things. Since LER is defined as the number of rebel fighters who die relative to the number of government fighters that are killed, this means that territorial control either leads to fewer rebel casualties, more government casualties or both. The first alternative may seem more likely at first glance as controlling territory gives the rebel fighters a place to seek shelter. It seems reasonable to think that this would help shield rebel fighters from government attacks and thus lead to a decrease in rebel casualties.

Even so, taking into account the possibility that territorial control also gives the rebels a place to train and plan their attacks, it does not seem implausible to suggest that it also could lead to more government casualties. This particular explanation should presumably be related to a rebel group's fighting capacity—if territorial control makes for more better rebel fighters, there should be a positive relationship between territorial control and fighting capacity. Looking at previous research by Haer and Böhmelt (2016), this does not seem to be the case—their study on rebel fighting capacity finds no correlation between the variables.

However, no matter the reasons, a rebel group's ability to control territory is clearly a part of the answer to the question of what makes some rebel group more effective than others. This finding also reflects the results of previous studies, which find that territorial control broadly appears to be a beneficial thing for rebel groups, in the sense that it is associated with favourable outcomes and a greater degree of survivability for the rebel group as a whole (Cunningham et al. 2009; Aronson et al. 2015).

5.5 Rebel support

H5 suggests that rebels receiving support from an external state actor should lead to an increase in rebel military effectiveness. This is represented by the *Rebel Support* variable. This variable is not statistically significant, which indicates that the hypothesis is incorrect. On one hand, this is quite unexpected as the theory section argued that external support generally is beneficial for rebel groups. However, it is also in line with the other hypotheses—I previously proposed that external support to rebels could come in the form of both weapons and training, but the results of the analysis suggest that neither a rebel group's ability to procure arms nor their fighting capacity have an impact on rebel military effectiveness. It is perhaps not so strange that any additional fighting capacity or ability to procure arms brought on by external support has no effect if neither of these affect a rebel group's effectiveness in the first place.

However, it is not impossible to think that there may be other reasons which could explain the result. The most obvious of these is that there is a problem with how external support to rebels is measured in the data. The Rebel Support variable is quite unspecific—even in the ordinal version, all types of military support short of boots on the ground are conflated into a single category—and does as such not necessarily capture the all of the different kinds of support which may be present in an intrastate armed conflict. Using data which separates training and weapons, for example, may lead to a different result.

5.6 Control variables

Government Support appears to be statistically significant when first introduced as a control variable in Model 2, but this effect disappears when also controlling for Military Expenditure. Neither Military Expenditure nor GDPPC per capita (Ln) are statistically significant. However, Conflict Duration is statistically significant across all five models. Although it was included as a control variable and has no corresponding hypothesis, the fact that it is significant suggests that it nevertheless deserves some attention. The positive relationship between Conflict Duration and the rebel LER suggests one of two things.

The first possibility is that rebel military effectiveness decreases over time—the longer a conflict lasts, the higher the LER becomes. There are several potential answers as to why rebels might become less militarily effective over time. Perhaps it could be attributed to some sort of skill degradation for the rebels as veteran fighters die and are replaced by less experienced recruits, or some type of institutional learning as the government fighters becomes more adept at counterinsurgency.

However, it is also possible that the causal relationship between the two variables goes the other way, in the sense that low rebel military effectiveness, or high rebel LER, leads to longer conflicts. While the intuitively straightforward conclusion may be that a rebel group with a low degree of military effectiveness should be quickly defeated by the government, this may not be the case. In fact, a number of scholars already associate weaker, less capable rebels with longer conflicts (Buhaug et al. 2009; Cunningham et al. 2009; Balcells and Kalyvas 2014; Aronson et al. 2015). With the literature in mind, this may in fact be the preferable interpretation. Either way, there seems to be a clear relationship between conflict duration and rebel military effectiveness, even if more extensive analysis must be left to future research.

5.6 Discussion

Although the results of the analysis do not support the argument that non-material factors are more important than material factors for rebel military effectiveness, they nevertheless have some highly interesting implications. Testing these implications unfortunately falls outside the scope of this particular paper, but that does not mean there is not room for some discussion. In particular, the findings inevitably lead to the question of how rebel military effectiveness affects the outcome of intrastate armed conflicts. On one hand, this is ironic as I previously have emphasized the importance of not conflating outcome and effectiveness. On the other hand, separating the two is what makes it possible to ask how one affects the other in the first place.

The positive relationship between a rebel group's mobilization capacity and their military effectiveness suggests that groups become less militarily effective as their ability to mobilize fighters increases. Based on what is known about interstate armed conflicts, it is entirely possible for one side to be far more effective than the other and still lose, as seen in the Winter War between Finland and the Soviet Union. In other words, an actor in an interstate conflict does not have to be more militarily effective than their opponent in order to achieve the desired outcome. It seems reasonable to suggest that this applies to intrastate conflicts as well.

If a rebel group able to achieve their goals despite a lower degree of military effectiveness, this would suggest that military effectiveness is not an important factor for explaining the outcome of intrastate armed conflicts. If this is the case, it implies that the correlation between high military effectiveness, operationalized as the rebel LER, and a desirable outcome for the rebels should be weak or even nonexistent. This would be easy to test in a follow-up study, using outcome as the dependent variable and the rebel LER as an independent variable alongside other variables identified as significant to the outcome by the previous research.

Along the same lines, I previously posed the question of whether or not it is possible for a rebel group to be too effective for their own good, in the sense that they sacrifice opportunities to achieve their desired outcomes in order to preserve the lives of their fighters. This is not to say that they deliberately prioritize military effectiveness over their goals, but rather that their inability to replace casualties forces them into being more risk averse. Recall that a rebel group being able to conduct conventional warfare is considered a clear sign of strength, whereas reliance on irregular warfare instead is a sign of weakness. Bueno de Mesquita (2013) even goes so far as to explicitly connect a rebel group's mobilization capacity with their choice between conventional and irregular tactics, finding that the latter signals that the rebels lack the ability to mobilize fighters (p. 324).

Things become even more interesting when they are tied to previous research on both conflict outcome and duration in intrastate armed conflicts. For instance, Cunningham et al. (2009) find that conflicts featuring rebels who are strong enough to challenge the government militarily on average last for a shorter period of time, and that strong rebels are more likely to gain concessions from the government. Clayton (2013) similarly argues that stronger rebels are more likely to reach a settlement with the government. Along the same lines, Balcells and Kalyvas (2014) suggest that conventional civil wars are shorter and more likely to result in victory for the rebels, whereas irregular wars are longer and tend to be won by the government.

Based on the aforementioned literature and the results of my analysis, a connection appears to emerge. My results indicate that rebel groups appear to be at their most effective in short conflicts, which also happens to be the type of conflict in which they are most likely to either gain concessions from the government or win outright. As such, this finding seemingly ties the concept of rebel military effectiveness closer to the wider literature on intrastate armed conflicts—there seems to be a connection between effective rebel groups that fight shorter conflicts and rebel groups that achieve a favourable outcome.

However, as Balcells and Kalyvas (2014) note, there is a clear overlap between short conflicts won by rebels on one hand, and the use of conventional tactics on the other hand. And as Bueno de Mesquita (2013) argues, rebel groups employ conventional tactics when they are able to mobilize fighters. My results indicate that rebel military effectiveness decreases when a rebel group's mobilization capacity is at parity with the government. Following Bueno de Mesquita (2013), this could imply that the use of conventional tactics should be associated with lower rebel military effectiveness when compared with the use of irregular tactics.

Whether or not there is a negative relationship between conventional tactics and rebel military effectiveness could easily be investigated with the right data. However, there appears to be a contradiction in this line of reasoning. Short conflicts that are won by rebels tend to be conventional in nature—indicating higher mobilization capacity—which should mean a lower degree of rebel military effectiveness. This goes appears to go against my finding that high rebel military effectiveness leads to shorter conflicts, as when taken together, it would imply that both short and long conflicts are associated with a lower degree of effectiveness.

It could be as simple as both being present with one effect dominating the other, but it does not seem wise to speculate too much without any analysis to back it up. Nevertheless, I am intuitively inclined to believe that more militarily effective rebels lead to shorter conflicts, and that this effect weighs more heavily than any decrease in military effectiveness caused by greater mobilization capacity. As such, I believe that the aforementioned connection between effective rebel groups that fight shorter conflicts and rebel groups that achieve a favourable outcome is valid.

However, in the event that low effectiveness is present both in conflicts that are short, conventional—indicating high mobilization capacity—and are won by rebels, as well as conflicts that are long, irregular—low mobilization capacity—and are won by governments, this may indicate that there is little correlation between rebel military effectiveness and the outcome and duration of an intrastate conflict. This could in turn imply two things for the wider literature. In the introduction I spoke of how the military aspect of intrastate armed conflicts historically was neglected in favour of other types of explanation, but if rebel military effectiveness truly is irrelevant to matters like outcome and duration, it could indicate that scholars were not entirely unjustified in their neglect. This would in turn serve to counter arguments in the vein of Aronson et al. (2015), which suggest that the distinction between intrastate and interstate conflict has been overemphasized in the literature.

On the other hand, it could also imply that the military effectiveness concept is inappropriate when it comes to intrastate conflict, even though scholars seeking to “conventionalize” intrastate conflict may be on the right track in general—after all, previous studies have found correlations between conflict outcome and other military-centered variables (Gent 2011; Clayton 2013; Aronson 2015). If this is the case, perhaps I am incorrect in when I argue that the simple variables usually employed by scholars are insufficient to measure the military aspect of intrastate armed conflict.

6 Conclusion

What makes some rebel groups more militarily effective than others? The argument I presented at the outset of this thesis was that non-material factors are more important than material factors for rebel military effectiveness. The results indicate that my argument is incorrect. I presented two sets of hypotheses inspired by previous literature, representing different material and non-material factors respectively. In order for the argument to be true, both sets of hypotheses would need to be correct. However, although the material hypotheses appear to be correct, the non-material hypotheses are not, which by extension indicates that my argument is incorrect. More specifically, the results suggest that a rebel group's ability to procure arms, the number and quality of their fighters, as well as their level of command and control have no effect on the group's military effectiveness.

Even though this thesis failed to conclusively settle the question of whether non-material or material factors are more important for rebel military effectiveness, I would nevertheless argue that it has made a handful of contributions to the overarching literature on intrastate conflict. Because the results indicate that neither material nor non-material factors appear to have an effect on rebel military effectiveness, this may suggest that theories on the topic should be revisited. On the other hand, there is a possibility that these results are misleading, particularly when it comes to the non-material factors, owing to the difficulty of measuring things that are as subjective as the quality of a rebel group's fighters. This naturally applies to strictly material factors as well, but things like weapons and fighters are far easier to quantify and thus they may be less problematic.

In addition to the results directly related to my argument about non-material primacy, I found that a rebel group's ability to control territory and mobilize fighters, as well as the duration of a conflict, are related to rebel military effectiveness. Territorial control is associated with an increase in rebel military effectiveness. Unfortunately, because territorial control has a large array of potential benefits—including shelter from government forces as well as the ability to train fighters and plan attacks—it is difficult to say what it is about territorial control that makes it so significant. More research is clearly needed on this matter. Even still, this at the very least provides us with one very clear factor which helps answer the research question—rebel groups that control territory are on average more effective than rebel groups that do not control territory.

The ability to mobilize fighters, however, appears to be associated with a decrease in rebel military effectiveness. I propose that this is because rebel groups that are able to mobilize fight-

ers are more willing to expose their fighters to risk in order to accomplish their goals. Conversely, groups that lack the ability to mobilize fighters may be more risk averse and thus only engage with the government when the risk of taking casualties is low, even if it means missing out on opportunities. Although it is pure speculation, this could imply that the correlation between a rebel group's military effectiveness and a desirable conflict outcome is not perfect.

With regard to conflict duration, I argue that conflicts featuring more militarily effective rebel groups on average are shorter than those with less effective rebels. This finding is supported by previous research and thus indicates a connection between rebel military effectiveness and the wider intrastate conflict literature. Even so, further research is needed in order to firmly establish whether or not there is a correlation between outcome, duration and military effectiveness in intrastate armed conflicts.

While the debate on material versus non-material factors is far from over, and while the findings require further elaboration, I would argue that this thesis makes a key contribution to the literature by demonstrating the viability of rebel military effectiveness as a way to measure how rebel groups perform in armed conflicts. This provides an alternative to simply counting weapons or fighters, and while I do not suggest such forms of measurement should be replaced entirely, I also see no reason why rebel military effectiveness could not be used alongside them.

With all of this in mind, this thesis has provided a number of interesting questions and implications for both scholars and practitioners. First and foremost, the debate on material versus non-material requires more research—when it comes to my results in particular, it would be highly interesting to see if they hold up when scrutinized by someone more methodologically adept, or when using different data. For the factors that do appear to affect rebel military effectiveness, a few questions emerged. With regard to territorial control, the main question is what it is about territorial control that has such a large effect on rebel military effectiveness. I proposed a few reasons, such as shelter and a place for rebel fighters to train, but this is little more than an educated guess.

The perhaps most puzzling result of the analysis is that a rebel group's ability to mobilize fighters is associated with a decrease in rebel military effectiveness. While I once again provided some educated guesswork, this is a matter which certainly deserves further attention. The final area for further research identified in this thesis is the matter of tying rebel military effectiveness to the wider literature on intrastate armed conflict. Based on my results and previous research, I argue that there appears to be a connection between rebel military effectiveness and the outcome and duration of intrastate conflicts. This should be examined more closely.

While it would be absurd to suggest that my findings should be at the forefront of a policymaker's mind while they are devising a way to defeat a rebel group or quell an insurgency, it nevertheless contains some potentially valuable, albeit perhaps not very extraordinary, insights. Most notable is just how important the ability to control territory appears to be—depriving a rebel group of territorial control thus appears to be a key part of any attempt to cripple them militarily.

While it remains speculation at this point, the idea that a rebel group with the ability to mobilize fighters is more willing to take risks may also have implications for how to prioritize counterinsurgency operations. For example, the government may not need to expend as much resources on a more risk averse rebel group even if they are more effective when they do act, whereas a seemingly less effective group nevertheless may command a great deal of attention due to their frequent attacks.

Ultimately, despite the recent reemergence of interstate armed conflicts, intrastate conflicts will likely remain a phenomenon as long as there are states to have conflicts about. This thesis has made an attempt to unravel this phenomenon by pulling at a—for intrastate conflicts—new string in the form of rebel military effectiveness. Whether this will prove fruitful remains to be seen, but my results seem to indicate that it is not entirely a fool's errand. While my suggestions for further research may serve as a starting point, there is still a great deal to learn, both about rebel military effectiveness in particular and about intrastate armed conflict in general.

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