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Competence 2 Protect Civilians: State Capacity and Civilian Victimization in Civil Wars

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Abstract- Why do some civil war states commit more violence against civilians than others? The existing empirical literature on civilian victimization focuses on rebel groups' violence against civilians (e.g. Wood, 2010, 2014) and the role of third party actors (e.g. Wood, Kathman & Gent, 2012), but does not consider the effects that state capacity has on its propensity to use violence against civilians in civil wars. Drawing insights from the information and coercive model that are used to explain civilian victimization by states in the literature, I argue that while the stronger military capacity increases civilian killings by the state that involves in a civil war, the higher bureaucratic/administrative capacity decreases the level of violence directed against civilians by states. The better institutional capacity generates either incentives or disincentives to kill more civilians. By leaving standard measurements of state capacity, I find that using helicopters in civil wars strongly increases the number of civilians killed by government forces but having more motorized vehicles in the military does not have any effect on the civilian killings. Secondly, states with higher quality of providing public service kill less number of civilians but the higher state capacity to monitor the population does not have an impact on the use of violence against civilians by government forces in civil wars. These results provide some implications for policymakers at both strategic and tactical level to reduce civilian victimization in fighting rebel groups.

Keywords: Protect civilians, civil war, state capacity, civilian victimization

1. Introduction

Civilian victimization in civil wars is increasingly becoming a serious issue, given the large scale of killings of civilians in Rwanda and Bosnia, and the ongoing violence against civilians in Syria. The major portion of use of violence against civilians is committed by government forces since they have more capabilities to kill large number of civilians and more ability to access the adversary's civilians (Valentino, 2014). In counterinsurgency wars, civilians are more likely to be the target of state violence since the rebels should blend in the civilian population and take support from civilians to continue insurgency (Belge, 2016). Although civilians might be a potential target for government forces in civil wars, not all states kill large number of civilians during counterinsurgency operations. While the number of civilians killed by government forces in some civil wars is so high, such as civil war in Liberia (1250 in 1990), it is relatively much less in other civil wars, such as civil war in India (43 in 1990). In this paper, I focus on the puzzle of why

some states use more violence against civilians in civil wars.

The existing empirical literature on civilian victimization considers rebel violence against civilians more than state violence (e.g. Wood, 2010, 2014). The studies examining state violence emphasize the role of guerilla warfare (Valentino, Huth and Balch-Lindsay, 2004), regime type (Downes, 2007), and third party intervention on the use of violence against civilians (Wood, Kathman & Gent, 2012). Some studies also look at underlying motivations behind state violence against civilians (Kalyvas, 2006; Azam & Hoeffler, 2002). I build the literature by focusing on the internal functions of states that involve in civil war and their links to state violence against civilians. More specifically, I examine what roles military, bureaucratic and institutional functions have on using violence against civilians by government forces in civil wars. The central goal of this paper is to explore how these three different types of state capacity affect

governments involving in civil wars in terms of using violence against civilians.

Drawing the insights from the information and the coercive model in the literature, I argue that while states that have higher military capacity likely to use more violence against civilians in civil wars, the higher bureaucratic capacity decreases the civilian victimization by government forces. Regarding the role of institutional capacity on state violence against civilians, I have contrasting expectations. I argue that democracies and states with federal systems are more likely to commit either lower or higher degree of civilian victimization in civil wars. The statistical evidences that are generated by my empirical analysis for 1989-2004 provide, not full, but significant support for my arguments regarding the role of bureaucratic and military capacity on civilian victimization by government forces in civil wars. Namely, using helicopters in civil wars significantly increases civilian casualties caused by government forces. In addition, states with the greater monitoring capacity are less likely to use violence against civilians. On the other hand, democracies are no more likely to use violence against civilians, which is not a consistent finding with the literature. Finally, having a federal system has not a significant impact on the civilian victimization by government forces in civil war

This paper proceeds as follows. In the first section, I review the literatures on civilian victimization and state capacity in civil wars. The second section provides my theoretical arguments and hypotheses. In the third section, I provide a discussion on the operationalization of the variables and data sources. The fourth section reports the results that are generated by negative binomial analysis. The final section concludes the paper with the discussion of findings and some directions for future research.

2. Literature review

2.1 The Literature on State Capacity and Civil Wars

In this section, I discuss the previous studies on state capacity and civilian victimization as well. A great deal of research has been conducted by the scholars studying civil conflict regarding the role of state capacity. Fearon and Laitin (2003) in their seminal study point out the importance of structural factors in understanding civil war onset, instead of predominant grievance versus opportunity notion. State capacity is

one of those major structural factors affecting the likelihood of experiencing civil war (Fearon & Laitin, 2003). However, Fearon and Laitin (2003) have measured state capacity with gdp per capita as a proxy. Subsequent studies have improved our understanding of state capacity beyond gdp per capita and disaggregated this concept. In these studies, the different dimensions of state capacity are studied regarding their links to civil war dynamics.

DeRouen and Sobek (2004), for instance, investigate the role of state capacity on civil war duration and outcome. According to the results DeRouen and Sobek (2004) find, bureaucratic effectiveness serves to favorable outcome for the governments but strong military does not have any impact on that. Taydas, Peksen and James (2010) build in DeRouen and Sobek's (2004) study and look at how institutional quality affects the likelihood of civil war onset. Supporting the results of DeRouen and Sobek's (2004) study, their results show that states with less corruption, higher levels of bureaucratic quality and more respective to rule of law are less likely to experience civil war (Taydas, Peksen & James, 2010). Another study confirming the undermining impact of institutional quality on the likelihood of experiencing civil war is Fjelde and Soysa's (2009) study. They focus on three different types of capacity of governments in dealing with violent challenges: cooptation, cooperation and coercion. One of the major findings they have is that credible and reliable institutions reduce the likelihood of being prone to civil war (Fjelde & Soysa, 2009).

In addition to military and bureaucratic capacity, political capacity is also considered in the literature. Gurses and Mason (2010) critically examine the conventional wisdom suggesting that weak states are more prone to civil war. They argue that particular types of weak states are more prone to civil war than others. They address the role of political capacity and focus on how regime types differ on the likelihood of experiencing civil wars. Their results indicate that neopatrimonial and personalist regimes are more prone to civil war than other regime types (Gurses & Mason, 2010). In sum, the existing research converge on the notion that state capacity has a major impact on civil war dynamics and bureaucratic quality is more significant component of state capacity in terms of affecting the civil war dynamics. Despite this consensus, there are still a few exceptions contradicting with this general notion. Thies (2010), for instance, points out the endogenous relationship between state capacity and civil war onset. In contrast to most studies

in the literature, Thies (2010) finds that state capacity does not have any effect on civil war onset but onset of civil war undermines state capacity.

As the recent literature on state capacity and its link to civil war shows, the studies disaggregate state capacity concept and examine different aspects of state capacity is in order to explain various civil war dynamics, such as onset, duration or outcome of civil wars. However, state capacity is not examined with respect to the intensity of civil wars. The recent literature on civil war intensity covers various factors and conditions that potentially affect the severity of civil wars, such as democracy and ethnic homogeneity (Lacina, 2006); the size of ruling coalition (Heger & Salehyan, 2007); natural resources (Lujala, 2009); rebel capability (Balcells & Kalyvas, 2014) and sanctions (Hultman & Peksen, 2015). In this paper, I attempt to fill this gap by examining the role of state capacity on one of the major dimensions of civil war intensity, that is, civilian victimization. In the next two sections, I first review the existing research on civilian victimization and then, build in the literature by providing my theoretical framework regarding the effects of different aspects of state capacity on civilian victimization in civil wars.

2.2. The Existing Research on Civilian Victimization

In the previous research on civilian victimization, victimization by state or non-state actors are examined. Downes (2006, 2007) focuses on state-based violence against civilians. Downes (2007) investigates how the levels of civilian victimization differ by regime type. Unlike to conventional wisdom, he finds that democracies kill more civilians in interstate wars than autocratic countries. His results are consistent even in the recent wars (Downes, 2007). Downes (2007) provides detailed theoretical logic on why states use violence against civilians. According to Downes's (2006) desperation logic, states use violence against violence when they become desperate to win and to coerce the enemy. In similar to his study in 2007, Downes (2006) argues that democracies are more likely be vulnerable to such a desperation logic and, likely to use violence against civilians.

In the civilian victimization literature, the higher number of studies are made for the intrastate context with respect to civilian victimization than the interstate context. These studies address the role of different factors in civil war context on violence against civilians. Azam and Hoeffler's (2002) study, which is one of those studies examining civilian victimization

for the civil war context, establish two stage game theoretical model and also test their propositions deriving from the game theoretical model. They find that state violence against civilians are mostly for military reasons. States use violence to prevent the flow of support to rebel groups, not for looting the resources to augment its fighting capacity (Azam & Hoeffler, 2002). In different to the studies looking at state violence against civilians, some studies focus on the use of violence directed against civilians by insurgent groups. Wood and Kathman (2013) address the role of victimization on whether the civil conflict ends with a negotiated settlement. Instead of dichotomously looking at whether the rebel groups use violence against civilians or not, they pay attention to the variation in civilian victimization in a civil war and how it affects the achievement of a negotiated settlement. They find that negotiated settlement is possible when the rebel groups use moderate levels of violence against civilians (Wood & Kathman, 2013). In addition to the studies addressing the link between post-conflict outcome and civilian victimization, some studies consider the impact of various factors on use of violence against civilians in civil wars. Wood's (2010, 2014), which is one of them, focuses on the impact of insurgent group capability on civilian victimization. Wood (2014) addresses the conditioning effect of whether relying on local versus external support on the relationship between rebel group capability and civilian victimization. He finds that strong insurgent groups are less likely to use violence against civilians when they dependent on local civilian support (Wood, 2014). On the other hand, the rebel groups kill more civilians if they dependent on external resources as they become stronger (Wood, 2014).

In addition to the conditioning impact of type of support rebel groups get, Wood (2010) adds the warring state into equation and considers the warring government's strategy in terms of civilian victimization by the rebel group. Wood (2010) in that study finds that weak insurgent groups tend to kill more civilians when the government uses indiscriminate violence than stronger groups. Inter-rebel competition is also considered as a different dynamic affecting the violence against civilians by rebel groups. Wood and Kathman (2015) considers this factor and his findings indicate that the use of violence by rebel groups against civilians increase in the case of the involvement of new rival rebel groups and fighting between those rivals.

Other types of conflict dynamics, which are external to civilian victimization, are also examined in the scholarly research along with variables regarding both the warring rebel group and government. Salehyan, Siroky and Wood (2014) examine the effects that foreign state support to the rebel groups has on use of violence by those groups against civilians. Their results are parallel to Wood's (2014) findings that external support increases the levels of civilian victimization by the rebel group. But they also find that if the rebel groups get support from democratic countries or countries with strong human rights lobbies, they are less likely to kill civilians (Salehyan, Siroky & Wood, 2014). The role of armed intervention is another external factor in studying civilian victimization. Wood, Kathman and Gent (2012) looks at that factor and argues that armed intervention plays a crucial role in shifting the balance of power in civil conflicts. Based on this argument, they claim that the party to conflict is more likely to kill civilians if it is not supported by armed intervention because armed intervention will undermine its capability and it may turn to using violence against civilians not to lose ground and extract resources to rebuild. On the other hand, supported side with an armed intervention does not have an incentive to kill more civilians (Wood, Kathman & Gent, 2012). Their statistical analysis confirms those arguments.

In sum, the literature on civilian victimization includes studies in both interstate and intrastate context. As the discussion on the studies that focus on intrastate context shows, some of those studies considers variables regarding the warring state, such as the role of government strategies as in Wood's (2010) study. However, how the levels of capability of the warring state affect its use of violence against civilians during civil wars is not considered. In other words, state devices, such as military, bureaucratic or political devices, and the effects of those devices on civilian victimization in civil wars are not examined in the literature. I contribute to this literature by considering state capacity and how it influences civilian victimization by state forces during civil wars. In the next section, I formulate my theoretical framework explaining how a state's various devices affect its ability to reduce or increase civilian victimization during civil wars.

2.3. Theoretical Framework

The scholars in civil war literature has recently attempted to improve the conceptualization and

operationalization of state capacity. Hendrix (2010), who is one of those scholars, makes an extensive conceptualization and operationalization of state capacity in the civil war context. Three specific components of state capacity are noted by Hendrix (2010): military capacity, bureaucratic capacity, and quality of political institutions. Military capacity refers to states' coercive ability to intimidate or repel challenges to the regime (Hendrix 2010, 274). Bureaucratic capacity is a state's capability to monitor the population and follow dissidents (Hendrix 2010; Hendrix and Young 2014) and to get information from the local population. (Fearon & Laitin 2003). In addition to states' ability to know their population, bureaucratic capacity also refers to providing public service to citizens without discriminating certain groups of the population (Taydas, Peksen & James, 2010). The quality of political institutions is conceptualized as the extent to which democratic versus non-democratic qualities are intermingled in the political system (Hendrix, 2010, p.276). Based on the conceptualization of state capacity in the literature, I focus on how these three functions of state generate incentives leading to increase or decrease in civilian victimization by the government.

Expected Effects of Different Types of State Capacity on Civilian Victimization

Before I explore the links between those three components of state capacity and civilian victimization, I first review the current two models explaining civilian victimization by governments in the literature and, based on these two models in the literature, I turn to how the different functions of state that are emphasized above can explain civilian victimization by governments in civil wars. Two major explanations are provided by the literature for civilian victimization by government. According to the information model, some governments aim to use selective violence against rebels and active supporters of the rebel groups but they are not able to distinguish innocent civilians from rebels, which is called as "identification problem" (Kalyvas, 2006; Belge, 2016). According to the coercive model, some governments do not even prefer to use selective violence and intentionally target civilians for some reasons, such as to prevent rebels from being active in the territory in which the civilians live (Kalyvas, 2006, p.148; Belge, 2016, p.276). Inspiring from these two major explanations in the literature, I evaluate the role of three functions of state on state-based civilian victimization in civil war. More

specifically, I discuss the role of military, bureaucratic and institutional capacity, respectively.

Military capacity, as it has been emphasized above, refers to repressive ability of state against challengers and lower or higher military capacity is a function of the degree of investing in state military (Hendrix, 2010). In terms of information model, allocating more spending by state to military might undermine the ability of governments to extract information from local population. For one thing, since the WWI, states have begun to have more mechanized armies (Lyall & Wilson, 2009) and tended to increase their military spending to improve the levels of mechanization of their armies to deter external challengers. Since state militaries focus more on external threats (Lyall and Wilson, 2009), the tendency to invest in more mechanization still continue. One of the major disadvantages of mechanized armies in the counterinsurgency context is “information starvation” as Lyall and Wilson (2009) emphasize. Having a more mechanized military plays an inhibitory role to interact with the local population in counterinsurgency operations, which may undermine the ability of state forces to distinguish innocent civilians from active supporters and participants of rebel groups (Lyall & Wilson, 2009, p.75). In addition, since the modern mechanized armies are not supplied by the local population, this also reduces the ability of mechanized armies to interact with the local populace and to distinguish civilians from actual participants or supporters of rebel groups (Lyall & Wilson, 2009, p.75). Secondly, even when governments invest in counterinsurgency capabilities of armies, such as having more drones, having such an arsenal for better counterinsurgency do not still increase the information collection ability of armies. Drones, for instance, enhance the ability of militaries in counterinsurgency operations but there are still serious concerns about the collateral damage caused by use of drones (Boyle, 2013). In sum, according to information model, improving military capacity might undermine the capability of militaries to interact with the local population as well as getting information from them (Lyall & Wilson, 2009). This might increase the risk of not sifting insurgents from civilians and may lead to more civilian victimization.

In terms of the coercive model, enhancing military capacity might generate some incentives to use indiscriminate violence. Lyall (2009) argues that using indiscriminate violence might play a significant role in

manipulating the relationship between rebels and local populace. Exerting indiscriminate violence will undermine the military effectiveness of the insurgents as well as leading to drive a wedge between populace and insurgents (Lyall, 2009, p. 337). As the presence of rebel group and existence of indiscriminate violence by the government continue, the rebels might be unable to protect the local population because when they retaliate, more indiscriminate violence will be forthcoming for them and the local population. As the rebels become unable to protect the local population and the local populace continues to suffer from the state violence, the locals will not want the presence of rebels in their territory and even sides with the government due to fear of future indiscriminate violence (Lyall, 2009, p.337). The locals can take an action against the rebel groups when the presence of the rebel group bring more state violence. There are some examples showing that locals took an action against insurgents, such as in Vietnam (Elliot, 2003), Sudan (Daly, 2007), and WWII era insurgencies in France (Todorov, 1996) (Lyall, 2009, p.337). Hence, improving military capacity with the more brutal weapons might encourage the government to use indiscriminate violence because this might force the local population to side with the government and take an action against the insurgents as Lyall (2009) emphasized. Thus, in both models, increasing military capacity might generate some incentives to kill more civilians in civil wars. Following hypothesis summarizes this discussion:

H1: States with higher military capacity are more likely to use violence against civilians during civil wars.

In contrary to the effects of higher military capacity, bureaucratic effectiveness might help the government to avoid civilian victimization. In terms of the information model, since having a high bureaucratic capacity allows governments to be well-informed about going-on at the local level and track key dissidents (Hendrix, 2010), bureaucratic capacity might help the government to better distinguish innocent civilians from active rebels. The ability of getting information from the local populace can help the government forces to detect where the key dissidents and their active supporters are. In this way, the government forces can exercise violence discriminately and, this might lead to decrease in the number of civilian casualties in fighting insurgents.

One question that remained unanswered for this argument is that why should civilians provide

information for the government forces, but not for rebels? As it is mentioned above, bureaucratic quality also refers to the ability to provide public service without making discrimination and interruption (Taydas, Peksen & James, 2010). If the government involving in the civil war has high levels of bureaucratic capacity, which means providing satisfactory public service to its citizens, local population might be more likely to cooperate with the government at the expense of the rebel group to secure the government's service to the population. When they are not willing to cooperate, and help the rebel forces, they will endanger the future provision of the government service. Moreover, this even might lead to state violence against the local population to deter them from helping the rebels. Consequently, based on the information model, I expect that more bureaucratically effective states are less likely to use violence against civilians during civil wars.

In terms of coercive model, better bureaucratic quality may create disincentive for the government to coerce the civilians. Remembering Lyall's (2009) arguments on the use of indiscriminate violence, governments might exert such a violence to manipulate the relationship between the insurgents and the local population, and forcing the local people to side with the government. If the government provides public service to the people in an efficient, fair and timely fashion, its legitimacy on the eye of the citizens and public trust to the government will increase (Taydas, Peksen & James, 2010). In other words, the high levels of bureaucratic capacity might improve the relationship between the public and the government. Therefore, the government with higher bureaucratic capacity will not need to force the locals to side with the government because the people are already satisfied with the government's performance and they don't need to support the rebels. As a result, the better bureaucratic quality will obviate the need to coerce the local population in the first place, and makes use of indiscriminate violence unnecessary for governments with a high bureaucratic capacity. Since those states with the higher bureaucratic capacity will not need to use indiscriminate violence and already have a good relationship with the local population, inflicting harm to civilians by using violence will not be rational for the government, which might reduce the likelihood of using violence against civilians. Based on these arguments regarding the role of bureaucratic capacity on civilian victimization, I finalize this discussion with the following hypothesis:

H2: States with the higher bureaucratic capacity are less likely to use violence against civilians during civil wars.

In addition to military and bureaucratic functions of state, the capacity of political institution is one other dimension that might influence the use of violence against civilians during civil wars. Since Hendrix (2010) considers institutional capacity with democratic versus autocratic features, I first look at how democratic and autocratic institutions differ on gathering information from the local population and using coercive means against civilians. Regarding the information framework, it seems to be hard to differentiate democracies and autocracies from each other in terms of the information gathering from the local population because both institutions have such an ability to do that. On the one hand, democracies might be able to get information from the local populace because people are more involved in the political process and political representatives in democratic governments need to directly contact with the local people in order to get more votes. Therefore, more opportunity to interact with the local populace in democratic institutions might increase the democratic governments' ability to distinguish innocent civilians from the insurgents, and this eventually might reduce the civilian victimization by the government. On the other hand, if the rebel group has a political wing, elections in democratic countries might also provide an opportunity for the governments to identify the districts from which the rebel group's political wing gets large number of votes (Belge, 2016). In this way, the governments can identify civilians that vote for the rebel group's political wing and target those civilians (Belge, 2016, p.290-291). Consequently, democratic institutions might generate either incentive or disincentive to kill civilians in terms of information model.

For autocratic governments, they may also have the ability to get information from the local population despite the lack of such democratic features. In China, for instance, local village leaders are used to interact with the local population to ask them about their needs and complaints during their daily lives. Moreover, even some state officials hold individual visits for the local people to learn their needs and complaints (Xi, 2016). Such an ability of autocratic governments may help them to distinguish civilians from the insurgents and, this might reduce civilian casualties while fighting the insurgent group. However, since autocratic

governments confront relatively less political constraints and citizens are not allowed to question arbitrary governance due to small winning coalition (Bueno De Mesquita et al., 1999; Bueno De Mesquita, 2005), the agents of autocratic governments might abuse the information-gathering ability of autocratic governments. As in China example, local village leaders might target a particular group of innocent civilians in the case of a civil conflict because they know local populace very well and make discrimination against a subset of the society when they perceive a potential threat to the regime, which can be allowed by the central government. Even central governments in autocratic regimes may abuse information gathering activities to target specific segments of society because they feel much less political pressure than democracies (Bueno De Mesquita et al., 1999; Bueno De Mesquita, 2005). Thus, based on the information model, it is hard to argue that either democracy or autocracies are better off from each other in terms of committing the lesser degree of civilian victimization because either regime type has both incentive and disincentive to use violence against civilians.

In terms of the coercive model, since democratic executives have more political constraints from veto players in the government (Tsebelis, 1995) as well as they have a larger winning coalition (Bueno De Mesquita et al., 1999; Bueno De Mesquita, 2005), intentionally killing civilians might generate political pressure on the executive and reduce the popular support of constituents for the democratic leaders. This might be an important disincentive for democracies to kill civilians during civil wars. On the other hand, autocratic governments have smaller winning coalitions and do not rely on public support (Bueno De Mesquita et al., 1999; Bueno De Mesquita, 2005). Unlike to democracies, autocracies are not accountable to the public for the brutalities that they commit during civil wars due to the lack of political constraints and pressures on autocratic leaders (Bueno De Mesquita et al., 1999; Bueno De Mesquita, 2005). In that sense, autocratic governments might be more likely to decide to commit an intentional civilian killing if they perceive that it is necessary. To summarize the discussion on both information and coercive models, both democracies and autocracies are not sufficiently different from each other in terms of using violence against civilians, when we consider the information model. But these two regimes differ from each other in the coercive model and, while democracies are restrained to use intentional violence against civilians,

autocracies do not face the similar restraints that democratic governments confront because of the inability of opposition actors to pressure the autocratic governments. In that sense, I expect that democracies might be discouraged more than autocracies in killing civilians in civil wars because the overall discussion shows that the disincentives for democracies to use violence against civilians seem to outweigh the incentives and vice and versa for autocracies. This discussion leads to following hypothesis.

H3: Democracies are less likely to use violence against civilians in civil wars than autocracies

Additionally, specific political institutions might also affect the capacity of states with respect to using violence against civilians during civil wars. I argue that states with decentralized institutions can be more capable to better know their local population compared to unitary governments. For one thing, autonomous regions are responsible for relatively smaller areas and easier to know local populace better than the larger central governments. Secondly, the process of information gathering from the locals for government officials might be relatively easier and less laborious in smaller autonomous areas than central governments. In that sense, it might be possible to expect that states with federal institutions might know their population better than unitary governments and are less likely to use violence against civilians. As an alternative explanation, since the officials in autonomous regions know the local populace better, they also might discriminate some civilians from others because they have less restrictions from the federal government than the governments in unitary states. Therefore, the use of violence against civilians is even more likely in the states that have a federal system than unitary states. The following two hypotheses summarize my contrasting expectations regarding the impact of federal institutions on the use of violence against civilians in civil wars.

H4a: States with federal institutions are less likely to use violence against civilians in civil wars

H4b: States with federal institutions are more likely to use violence against civilians in civil wars.

3. Research Design

In order to test my arguments, I use time series cross-sectional data. Since I focus on the question of why

some countries involving in civil war use more violence against civilians, I include countries that experienced civil wars in 1989-2004. I use UCDP Armed Conflict data (Gleditsch, Wallensteen, Eriksson, Sollenberg & Strand, 2002) to identify countries experiencing civil conflict. In my sample, there are 80 countries involving in civil wars in those years. My unit of analysis is country-year because I consider how different forms of state capacity affect the use of violence against civilians by government forces in civil wars. Although the time range for the datasets on civil wars are usually larger than the time range I focus on (1989-2004) and have more countries than I have, the data availability on some variables significantly narrow my ability to examine large number of countries and the longer time range in my analysis. For one thing, the data on civilian victimization (Eck & Hultman, 2007) starts with 1989, which makes me lose large number of observations from the datasets on civil wars starting with 1946, such as UCDP or Fearon and Laitin's (2003) data on civil wars. Secondly, the data to measure military capacity and some control variables limit my time range to 2004 and exclude some countries for which the data is not available. The details on the measurement of variables are discussed below.

Dependent Variable

My dependent variable is use of violence against civilians by state forces in civil wars. I measure the dependent variable with Eck and Hultman's (2007) One-sided Violence Dataset. The dataset only includes direct and intentional violence against civilians (Eck & Hultman, 2007). I use the annual count of estimated number of civilians killed by government forces as a measurement of the dependent variable, and this measurement is consistent with the literature (e.g. Wood, 2014). It excludes indirect death of civilians from disease, extrajudicial killing, collateral damage or siege (Wood, 2010, p. 606). Number of civilian killings by state forces are reported in my data. Eck and Hultman (2007) do not report civilian killings by state forces for every country involving in civil wars. If Eck and Hultman (2007) do not report civilian killings for some countries involving in civil wars, I code "0" for these countries. In addition, they also do not report number of civilian deaths in some years of a given civil war. For those years, I also assign "0".

Independent variables

I have three main independent variables: military capacity, bureaucratic capacity and institutional capacity. I should note that the measurements I use for

state capacity do not necessarily indicate the overall state capacity. These measurements also indicate an ability of a given state in protecting civilians or the inability of a given state in preventing more civilian victimization. I use some non-standard measurements for state capacity, such as use of helicopters for military capacity; relative political reach for bureaucratic capacity and considering federal system for institutional capacity. Those measurements do not only measure the overall capacity but also capture the actions or the ability of states that can either prevent or cause more civilian killings by government forces in civil wars. Nevertheless, I also include standard measurements for state capacity, such as democracy for institutional capacity or bureaucratic quality for bureaucratic capacity. In sum, my measurements capture the capacity of states that may increase or decrease civilian victimization by government forces as well as the overall capacity of states that may increase or decrease civilian victimization by state forces in civil wars.

Although my independent variables are different forms of state capacity and Worldwide Governance Indicator might be an option to measure the independent variables, I do not use Worldwide Governance Indicators for two reasons. First, this dataset is not commonly used in studies examining the role of state capacity in civil wars or political violence. Instead, ICRG is the commonly used data in the literature (Hendrix & Young 2014; DeRouen & Sobek, 2004; Taydas, Peksen & James, 2010). Secondly, there is no variable in this dataset that can appropriately capture military capacity. In addition to these two reasons, the time range of this dataset is 1996-2015 but there is almost no data for majority of countries until 2004. For some countries, there is no data even until 2009. This might make me lose too much observations or lead to significant amount of missing data. Hence, I use measurements that can best capture my theoretical arguments, which leads me to use some non-standard measurements for some of the independent variables.

According to my arguments regarding the information model and the role of military capacity on the use of violence against civilians, I have argued that the design of modern militaries does not fit to interacting with the local population and the high levels of mechanization prevents the militaries experiencing insurgency from getting information from the local population (Lyll & Wilson, 2009). In that sense, I prefer to measure how modern and mechanized a state military is but I also include one variable that can capture the overall

military capacity. Although this type of operationalization might be more useful for my theory than other standard measurements, it is harder to find data on the levels of mechanization or the degree of the modernity of militaries. I use the number of motorized vehicles and whether a given state deployed more than 25 helicopters during counterinsurgency operations, in order to measure how mechanized and modern a given state military is. The data on these two variables comes from Lyall and Wilson (2009). For the number of motorized vehicles, he counts number of main and medium battle tanks, armored personnel carriers, scout cars, armored fighting vehicles and self-propelled artillery in a given state's arsenal (Lyall & Wilson, 2009). He uses several sources to code this variable in his data, such as the International Institute for Strategic Studies' Military Balance (2007); the Stockholm International Peace Research Institute's Arms Transfer Database (2007); Jane's Armor and Artillery (2007). For use of helicopters variable, he does not refer to a specific source. Lyall and Wilson (2009) provides cross-sectional time series data for number of motorized vehicles and use of helicopters for 1800-2005. I excluded the years before 1989. These variables might measure the levels of mechanization and how modern a given state military is. Additionally, these two variables can capture my arguments regarding both information and coercive model. It might be possible to expect that state militaries with more motorized vehicles and helicopters are more coercive. Also, motorized vehicles and helicopters are military weapons that might prevent military personnel involving in counterinsurgency from interacting with the local population and getting information from them. I can use these two variables together in my analysis because the correlation between these two is very low (0.259). I expect that both the number of motorized vehicles and use of helicopters increase the number of civilian killings by government forces in civil wars. In addition to using these two measures, I also use the log of military spending per soldier to better capture the coercive model in my theory because the coercive capacity of a state military does not limit to motorized vehicles and helicopters. The overall military spending might be used as a proxy to capture whether a state military has other types of military weapons that increase the coercive capability of the military. The data on military spending comes from COW National Military Capabilities dataset (Singer 1987). The correlation among these three variables are less than high correlation threshold, which is 0.7. The highest correlation is between use of helicopters variable and

military spending and it is 0.602. The correlation between helicopters and number of vehicles (0.255) or the correlation between number of vehicles and military spending variable (0.39) is even less than that.

My second independent variable is bureaucratic capacity. About the role of bureaucratic capacity on civilian victimization by government forces, I have emphasized two major arguments: in terms of the information model, states with higher ability to monitor the population and elicit information from the local population are less likely to use violence against civilians. In order to test this argument, I need to use a variable that can capture states' monitoring capacity. I measure monitoring capacity with relative political reach variable. The data comes from Hendrix and Young (2014). Hendrix and Young (2014) refers Kugler and Tammen (2012) as an actual data source for this variable. Relative political reach captures the proportion of actual participation in the formal economy to expected participation and its calculation is based on the structure, degree and size of social spending in the formal economy (Hendrix & Young 2014). The lowest value of RPR variable in my data is 0.022 and the highest one is 1.573. The underlying justification behind using this measurement is that states with larger population participating in the formal economy have more ability to monitor their population and get information from people in the society (Hendrix & Young 2014, p.341).

The second point I have emphasized regarding the impact of bureaucratic capacity on civilian killings by government forces is that states that provide public service in an efficient and timely fashion already have a good relationship with their citizens (Taydas et al., 2010) and neither citizens have an incentive to support extremist groups nor the state has an incentive to use intentional violence against civilians to deter them. To capture this argument and test that, I use bureaucratic quality variable. Bureaucratic quality variable captures whether a state bureaucracy is successful at governing without dramatic changes or interruptions in providing public service, and whether a given state has a strong system in training and recruiting public officials (Blankenship, 2016; Howell, 2011). International Country Risk Guide (ICRG) provides cross-sectional data in a time varying sense for bureaucratic quality variable. It is constructed as a five-point scale and 0 indicates the lowest level of bureaucratic quality and 4 represents the highest degree of bureaucratic quality. I expect that both Relative Political Reach and

bureaucratic quality should decrease the number of civilians killed by government forces in civil wars. My third independent variable is the capacity of political institutions. Because my hypotheses consider the effect of democracy versus autocracy on the use of violence against civilians, I use polity data to test those hypotheses. The measure is a 21-point scale variable (Marshall & Jaggers, 2006). I create a separate democracy dummy variable and it is coded as 1 if a given regime's score is six or higher and 0 if its score is five or less. Since I also specifically examine the impact of having federal institutions on civilian killings by government forces, I test my contrasting hypotheses with Institutions and Elections Project dataset (Regan, Frank & Clark, 2009). I use "government structure" under the "government centralization" section in the codebook of the dataset (Regan, Frank & Clark, 2009, Institutions and Elections Codebook). The data codes three government structures: unitary system, confederation system, and federal system. Since there is no country with confederation system in my sample, I dichotomously recode this variable. In my analysis, "federalism" variable is coded as 1 if a given state has a federal system and 0 is otherwise. I use "federalism" and "democracy" variables together because the correlation between two is not so high that leading to multicollinearity issue (0.305). In my analysis, I expect that the correlation between democracy variable and civilian victimization should be negative. For the federalism variable, however, I have contrasting expectations and the results in the analysis below will resolve the debate regarding the effect of federal institutions on the use of violence against civilians.

Control variables

I have included several control variables that are commonly used in the civilian victimization literature, and that might affect the relationship between state capacity and civilian victimization. These control variables are the characteristics of the rebel group, country and civil conflict. I control state repression because more repressive states might be more tolerant to civilian killings. The data comes from Political Terror Scale (Gibney, Cornell, Wood & Haschke, 2013, PTS scores constructed from State Department sources are used in the analyses.). It is an ordinal measure and 1 indicates the lowest level of state repression and 5 represents the highest level. The log of population is controlled since states with more population might have more difficulty in getting information from the local population and be more vulnerable to unintentional killing of civilians. States with higher economic

development might be better able to address grievances of civilians and dissuade them from supporting rebel groups (Wood, 2010), which might prevent civilians from being targeted in the first place and lead state forces to focus only on rebels. Therefore, I use the log of gdp per capita to measure economic development.

In terms of rebel group characteristics, I control the strength of rebel groups because as the asymmetry of military power between rebel forces and government forces becomes closer, the conflict becomes more severe and produces more battle related deaths (Balcells & Kalyvas, 2014), which might increase the number of civilian deaths in the civil conflict. I use Non-state actor data (Cunningham, Gleditsch & Salehyan, 2013) to measure rebel strength. It is an ordinal measure that captures how powerful a rebel group is compared to government forces. The categories are: "much weaker, much stronger, parity, stronger and weaker". In addition to the effect of rebel strength, I also control the age of insurgency. Because the counterproductive effects of using indiscriminate violence is recognized by politicians, states might be more likely to reduce using indiscriminate violence over time (Kalyvas, 2004; Wood, 2010). This variable is taken from Wood's (2010) data and he creates this variable by counting the number of years since the first battle related death that is caused by a given rebel group (Wood, 2010). He constructs the variable by using UCDP Dyadic Dataset (Harbom, Melander, & Wallensteen, 2008).

For conflict characteristics, I control the density of population in a conflict zone because the military operations in urban areas might be more damaging for civilian population than in rural areas (Wood, 2010). I use Wood's (2010) data to measure this variable. It captures the average number of people per square kilometer in a given conflict zone (Wood, 2010, p. 607). Wood (2010) generates this variable by using area and gridded population data, which is available in Colombia University Center for International Earth Science Information Network (Wood, 2010, 607). Conflict severity is included as a control variable since civilian victimization is more likely in more severe conflicts (Wood, 2010). It is measured as the log of the annual number of battle related deaths in the conflict in which a given country is involved. I use UCDP battle related death dataset (Melander, Pettersson & Themner, 2016). The conflict over a territory is also controlled because the government forces may intimidate or terrorize residents to make them avoid supporting the

rebel group (Wood, 2010). It is dichotomously measured and 1 is coded if the conflicts in which a given country is involved is for a territory and 0 is otherwise. The data comes from UCDP Dyadic Dataset (Harbom, Melander & Wallensteen, 2008). Finally, I also control whether a given country is involved in an ethnic civil conflict because those conflicts might lead to more brutality and dehumanization (Wood, 2010), such as in Rwanda. It is dichotomously measured and 1 if a given government fights against an ethnic minority group (s) in the civil war and 0 is otherwise. I use Non-

state Actor Dataset to measure this variable (Cunningham et al., 2013). The descriptive statistics information about each variable is presented in Table 1. In the next section, I report the results of negative binomial analysis and then, finalize the paper with a discussion on the implications of the findings and directions for future research.

Table 1 Descriptive Statistics*

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
The number of civilian killings	980	247.80	4831.9	0	150964
The number of motorized vehicles	748	3,804	11,555	1	82,550
The use of helicopter	748	0.484	0.500	0	1
Population	967	17.31	1.770	12.91	20.83
GDP	828	24.22	2.067	19.39	30.09
Military expenditure per soldier	885	8.808	1.149	0	12.370
Democracy	955	0.371	0.483	0	1
Intervention for government	982	0.087	0.282	0	1
Ethnic conflict	967	0.411	0.492	0	1
The number of battle deaths	967	6.128	1.813	3.219	10.78
Age of insurgency	967	1.977	1.105	0	4.007
Conflict density	967	106.5	122.9	0.0707	839.4
Relative political reach	864	0.958	0.311	0.0223	1.574
Repression	964	4.167	0.760	1	5
Conflict over territory	985	0.479	0.500	0	1
Federalism	952	0.353	0.478	0	1
Bureaucratic quality	779	1.770	1.268	0	4

*Dependent and independent variables are in bold.

Results

Because my dependent variable is a count variable and is not normally distributed, linear methods are not appropriate, even when the variable is log-transformed (Wood 2014). Also, the significant overdispersion (the variance is much larger than mean) in the dependent variable indicates that using negative binomial technique is the most appropriate technique for the statistical analysis (Wood, 2014, p. 472). The results on negative binomial models are presented in Table 2.

There are four models presented. In the first model, I include all independent and control variables and it represents the overall model. Other three models present the results on the effects each type of state capacity on civilian victimization along with the effects of the control variables. In the second model that the impact of military capacity on civilian victimization is analyzed and, the effects of institutional and bureaucratic capacity are not examined. In the third model, the variables capturing bureaucratic capacity and control variables are included and the variables measuring institutional and military capacity are

excluded. In the fourth model, only the effect of institutional capacity is examined. I report standard errors and incident rate ratio (IRR) for each model. IRR allows me to substantively interpret either increase or decrease in number of civilians killed by government forces in civil wars, based on one-unit increase in the independent variables (Findley & Young 2011). For dichotomous variables, such as federalism or democracy, incident rate ratios show the estimated number of civilians killed by government forces for countries with the value of 1 compared to those with the value of 0 (Findley & Young 2011, p.370). If the incident ratio is greater than 1, it indicates an increase in the expected count of number of civilian killings by government forces and if it is less than 1, it signifies the decrease in the expected counts. If it is 1, it points out no change in the expected counts of civilian killings (p.370). In addition to reporting IRRs, I also create four different coefficient plots corresponding to each model that reports the coefficients and the magnitude of the impacts of each variable.

For H1, it seems I find mixed support for the effects of military capacity on civilian victimization. While the military spending per soldier significantly increases the estimated number of civilians killed by government forces by 146 percent in the first model (from 26 killings to 64 killings), it does not even achieve significance in the second model. The effect of motorized vehicles is not significant in the first model but in the second model, it significantly increases civilian victimization by government, although it has a very low substantive effect (0.3 percent).

Unlike to the inconsistent impact of motorized vehicles and military spending per soldier on civilian victimization, the use of helicopters has a consistent and significant effect across two models, and strongly increases the civilian killings by state forces in civil wars. Substantively, the ability to deploy 25 or more helicopters increases the expected number of civilians killed by government forces in civil wars by 630 percent in the first model (from 8 killings to 59 killings), and 453 percent (from 17 killings to 94 killings) in the second model. Despite such a strong effect of use of helicopters on civilian killings by governments, the implications of this result should be interpreted with caution. It will be discussed in the limitation section.

For H2, the results on bureaucratic capacity in Model 1 and 3 show that relative political reach has not a

significant impact on the government killings of civilians in civil wars. On the other hand, the incident ratio for bureaucratic quality variable is statistically significant, and the substantive effect of this variable suggests that each unit increase in the bureaucratic quality signifies 74.5 percent decrease (from 433 killings to 110 killings) in Model 1 and 66.8 percent decrease (241 killings to 80 killings) in Model 2 on the expected count of number of civilians killed by government forces. These findings bureaucratic quality provide significant support for H2 but do not fully support this hypothesis because the variable capturing the degree of monitoring capacity of states does not significantly affect civilian victimization by state forces. One explanation for the results on the variables capturing bureaucratic capacity is that the higher monitoring capacity might not always help governments to use less violence against civilians, and it may even lead to more civilian victimization.

Although the relative political reach is not significant, it surprisingly increases civilian victimization in the analysis. However, when both two indicators of bureaucratic capacity, which are the greater capacity to monitor the population and providing satisfactory public service for citizens, are combined, it has a very strong reducing impact on civilian victimization. This implies that the higher monitoring capacity is not effective alone at reducing civilian victimization and states involving in civil wars should also be efficient in providing public service without interruption or discrimination in order to decrease civilian victimization by government forces. The further implications will be discussed in the conclusion section.

For the hypotheses regarding the impact of institutional capacity on civilian victimization by government forces in civil wars (H3, H4a, H4b), I did not find support for these hypotheses. Based on the results on democracy variable in model 1 and 4, democracy does not achieve significance, which means democratic regimes are not significantly less likely to use violence against civilians in civil wars than autocracies. This finding is not consistent with the literature (e.g. Valentino, Huth & Balch-Lindsay, 2004) Having a federal government structure also does not have a significant impact on civilian victimization, according to the results on model 1 and 4. The further discussion on the results on federalism and democracy as well as those on other independent variables are provided in the next section.

Table 2 Negative Binomial Models on Civilian Victimization with IRR

VARIABLES	(Model 1)	(Model 2)	(Model 3)	(Model 4)
Military expenditure per soldier	2.218*** (0.642)	1.218 (0.284)		
The number of motorized vehicles	1.000 (1.98e-05)	1.000** (1.36e-05)		
The use of helicopters	6.890*** (3.743)	5.398*** (2.395)		
Relative political reach	1.032 (0.762)		1.365 (0.760)	
Bureaucratic quality	0.256*** (0.0740)		0.334*** (0.0787)	
Democracy	3.837 (3.234)			0.571 (0.303)
Federalism	1.069 (0.614)			1.375 (0.468)
Population	0.916 (0.281)	1.089 (0.226)	0.707** (0.118)	0.885 (0.132)
GDP	0.686 (0.286)	0.556** (0.132)	1.521** (0.312)	0.969 (0.150)
Repression	5.588*** (1.679)	4.896*** (1.295)	5.848*** (1.578)	3.587*** (0.840)
Rebel strength	1.133 (0.148)	1.131 (0.129)	1.139 (0.145)	1.309*** (0.125)
Ethnic conflict	2.343** (1.003)	1.932* (0.683)	1.804 (0.725)	1.717* (0.545)
Conflict over territory	1.449 (0.597)	1.269 (0.521)	3.442*** (1.281)	2.167** (0.775)
The number of battle deaths	1.000 (9.54e-05)	1.000 (9.88e-05)	1.000* (0.000103)	1.000** (0.000101)
Conflict density	1.000 (0.00207)	0.997** (0.00127)	1.002 (0.00211)	0.998 (0.00136)
Age of insurgency	0.840 (0.149)	0.671** (0.113)	0.801 (0.128)	0.670*** (0.100)
Any intervention supporting the government	1.181 (0.654)	1.293 (0.652)	1.411 (0.808)	1.286 (0.693)
Constant	0.891 (5.825)	1,397** (4,039)	0.000578** (0.00189)	2.375 (7.392)
Observations	530	637	678	782

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

For the effects of control variables, only state repression has a consistent significant effect on civilian victimization. In all of four models, each one-unit increase in the degree of state repression increases the expected number of civilians killed by government forces by 427 percent in the first model, 389 percent in the second, 484 percent in the third and 258 percent in the last model. The size of the population is only significant in the third model, which indicates that states with more population tend to kill less number of civilians in civil wars. However, it has an opposite effect in other three models in which it does not achieve significance. The GDP per capita variable achieves significance in the second and third model. The finding in the third model shows that the higher GDP per capita increases civilian victimization whereas it decreases the estimated number of civilians killed by government forces in the second model.

For the rebel group characteristics, the strength of rebel groups does not significantly affect state violence against civilians, according to the results on this variable in the first three models. In the last model, the finding on the strength of rebel groups shows that the more powerful groups appear to encourage states to kill more civilians. Although rebel capability plays a crucial role in civilian victimization in civil wars (e.g. Wood, 2010), I did not find strong support for this seemingly important factor in terms of civilian victimization by government forces. For the age of insurgency, the results in the second and the fourth model are consistent with literature, which indicates that as states recognize the ineffectiveness of using indiscriminate violence, they tend to kill less number of civilians. But in the first and the third model, its effect on state violence against civilians is not significant. For the conflict characteristics, ethnic wars lead to more government violence against civilians, which is consistent with the general expectations in the literature. But this is only the case in the second and the fourth model and it has not a significant impact on the first and the third models. Similar to ethnic wars, the conflict over territory achieves significance in two models and do not achieve in other two models. Its substantive effect is higher than ethnic wars in terms of increasing the number of civilians killed by government forces. The more severe conflicts, unlike to expectations in the literature, do not necessarily lead to more government violence against civilians. The results on battle death show its statistical insignificance in the first two models. In the third and fourth model, it achieves significance but it has a very small effect on

civilian victimization by state forces (0.1 and 0.2 percent). The density of conflict does not have a significant impact in the first, third and fourth models on government violence against civilians in civil wars, which is consistent with Wood's (2010) study. It is only statistically significant in the second model and appears to decrease civilian victimization as the degree of density of the conflict area increases. But its significant effect is very small (3 percent). Finally, unlike to expectations in the literature (e.g. Wood et al., 2012), the effects that any intervention supporting the government side does not have a significant impact on the government violence against civilians in civil wars. In terms of the substantive effects of the statistically significant independent variables, they are presented in Figure 1. I set the military expenditure per soldier variable at mean and raised it by one standard deviation to see the change on the expected count of government killings of civilians. The figure suggests that one standard deviation increase above the mean of military spending per soldier is associated with 146 percent increase in the number of government killings of civilians. The figure also suggests that the number of civilian killings by government increases by 630 percent when the government uses at least 25 helicopters. Finally, as the bureaucratic quality variable moves from 0 to 1, the number of civilians killed by the government decreases by 74.5 percent.

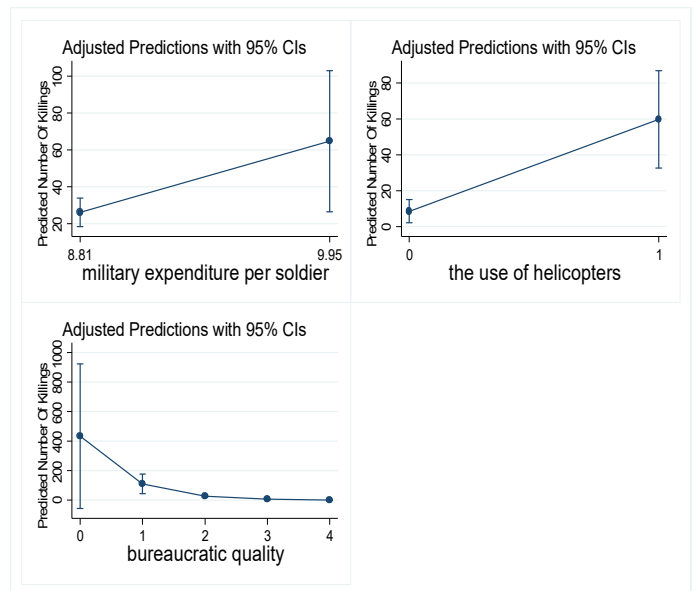


Fig. 1. The marginal effects graphs

4. Conclusion

In this paper, I have focused on the puzzle of why some states use more violence against civilians in civil wars than others. Considering some mass killings and genocides after the Cold War, such as in Bosnia and Rwanda, focusing on states and their internal functions, such as their military, bureaucracy or institutions, might be important to understand their ability to reduce civilian casualties in civil wars as well as their motivations to kill civilians. Because states involve in civil wars with their military, bureaucracy, institutions and other state functions, exploring the role of state functions during civil wars might provide significant insights to learn about what effects some state functions has on the warring governments in civil war in terms of reducing or increasing civilian casualties. Considering state capacity is also important in terms of providing policy implications for governments involving in civil war because the implications might be helpful for the states to improve some of their functions to reduce civilian casualties.

The existing empirical literature about this important issue in civil wars tend to consider rebel violence against civilians (e.g. Wood, 2010,2014; Salehyan et al. 2014). The studies examining state violence consider the effect of regime type (e.g. Downes 2007) or some specific motivations to kill civilians (Azam & Hoeffler, 2002). I build in the literature by focusing on the different forms of state capacity and their effects on state violence against civilians. Drawing the insights from the information and coercive model in the literature, I argue that while increasing military capacity leads to more state violence against civilians, the higher bureaucratic capacity can reduce civilian casualties caused by state forces. In terms of the capacity of political institutions, democracies are less likely to use violence against civilians. In addition, I have also examined the effect of having a federal system on civilian victimization and my argument was that federal systems generate either incentive or disincentive to kill civilians. My statistical analysis show that I find support for the effects of some aspects of military and bureaucratic capacity on civilian victimization. Namely, I find that states with using helicopters tend to use more violence against civilians but the results on motorized vehicles and the overall military spending is not consistent, even though they increase civilian victimization once they achieve significance. The results on military capacity shows that higher military capacity tend to lead to more

civilian casualties but use of helicopters is especially alarming in terms of civilian victimization by government forces in civil war. One implication of these results for states involving in civil wars is that the states should develop military tactics and use weapons in order to improve interaction with the local population. More interaction with the local populace can enhance the effectiveness of counterinsurgency operations (Lyll & Wilson, 2009) as well as helps the military to distinguish civilians from insurgents and their active supporters. Also, using such brutal weapons might not necessarily translate to be more effective against rebel groups. Less brutal but more useful weapons for counterinsurgency might also be useful for less civilian victimization.

For bureaucratic capacity, states with having an established bureaucracy that is able to provide public service without interruption or making discrimination, and that recruit and train public officials, commit less violence against civilians in civil wars. Although monitoring capacity is also related to bureaucratic capability, I did not find support for the argument that states with the higher monitoring capacity do not use less violence against civilians. However, when monitoring capacity is combined with bureaucratic quality, this combination has a very powerful reducing impact on civilian victimization by government forces. One of the implications for the finding on bureaucratic capacity is that the higher monitoring capacity alone is not helpful in reducing civilian casualties caused by government forces but when states involving in civil war have a good bureaucratic quality and higher monitoring capacity together, the likelihood of using violence against civilians becomes remarkably low. In that sense, continuing to provide public service to citizens even in civil war times is useful for less civilian victimization because this might be a way to gain legitimacy in the eye of citizens and draw their support for the government.

In terms of institutional capacity, unlike to expectations in the literature, neither democratic institutions nor having a federal system has a significant impact on use of violence against civilians by government forces in civil war. The findings on democracy is not consistent with the literature and it indicates that public and political pressure on democratic regimes, in fact, do not necessarily restrict democracies from using violence against civilians. The finding on federal systems, like in the finding on relative political reach, confirms that

monitoring capacity alone is not helpful in minimizing civilian casualties caused by government forces.

For future studies, they should examine what sort of counterinsurgency tactics and weapons that states should develop in order to increase interaction with the local population and information from the locals. In this paper, I only examined the effect of motorized vehicles and helicopters but the effects of other types of weapons and military tactics might be examined by using case studies on counterinsurgency operations across the world. Secondly, I did not sufficiently examine the role of rebel groups in this paper, which can be addressed in future research on civilian victimization. Although state capacity plays a considerable role in civilian victimization by government forces, rebel groups' capacity might have a conditioning impact on the effect of state capacity on state violence against civilians. I include the strength of rebel groups as a control variable but it is a rebel group's military capacity compared to government. Some rebel groups have media agencies or provide welfare services to their constituents. These capabilities of rebel groups might gain legitimacy on the eye of their constituents. More service from the rebel groups might lead to less cooperation with the government forces, even if the government provides same public service. Less cooperation with the government, in that sense, might lead to more civilian victimization by government forces. As a result, similar arguments might be developed and how the rebel group characteristics mediate the role of state capacity on civilian victimization by government forces can be explored further in future research.

Limitations

Before concluding the paper, I should note that some of the results should be approached with caution for several reasons. First, the data on use of helicopters and number of motorized vehicles remarkably restricts my number of observations, which decreases the degree of the generalizability of my findings. Secondly, my finding on use of helicopters is very robust but since the unit of analysis is country-year, it is hard to attributing the increase in civilian victimization in a given year to the deployment of 25 or more helicopters during the civil war. For instance, one state involving in a civil war may deploy 100 helicopters in 5 different counterinsurgency operations in 1990 and this state is coded as 1 in my sample. On the other hand, another state involving in a civil war may deploy 5 helicopters in 4 different counterinsurgency operations but in the

5th counterinsurgency operations, let's assume, the state managed to deploy 26 helicopters. Both states are coded as 1 in my sample regarding the use of helicopters. However, the former state has higher military capacity in terms of use of helicopters. In that sense, it is possible to argue that using counterinsurgency-year as a unit of analysis would be more appropriate than country-year, but the data on civilian victimization, which is Eck and Hultman (2007)'s UCDP One-sided violence data, uses country-year as the unit of analysis of the data.

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