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Natural Resources and Sexual Violence - Exploring the Nexus

A quantitative analysis of Natural Resource Conflicts, Conflict-related Sexual Violence and mechanism of influence

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Abstract

Over the last two decades, Conflict-related sexual violence (CRSV) has come under increased scrutiny from academics and the public alike. Despite this, there remains a crucial need for further research to understand the variations and extent of CRSV across conflicts. This thesis introduces natural resource conflicts as a variable of interest, by examining the relationship between natural resource conflicts and CRSV while exploring potential mechanisms of influence. The study focuses on three mechanisms - finance, distribution, and aggravation - associated with natural resource conflicts, to assess their impact on the prevalence of CRSV. Using a quantitative approach, a large-N study was conducted analyzing data from the Sexual Violence in Armed Conflict (SVAC) and Natural Resource Conflict datasets. In order to contextualize the relationship between natural resource conflicts, CRSV, and the three mechanisms a theoretical framework drawing upon previous research and the theory of ecofeminism was employed. The findings indicated a positive relationship between natural resource conflicts and CRSV. Additionally, the distribution mechanism was found to influence this relationship, while the finance and aggravation mechanism did not. The study emphasizes the urgency of addressing these issues and advocates for a broader framework for the protection of women and girls in relation to the environment.

Key words: Conflict-related sexual violence, Natural resource conflicts, Finance, Distribution,Aggravation
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1 Introduction

Sexual violence has emerged as a critical issue of global concern in recent years, garnering attention from policymakers, academics, and activists alike. Once an overlooked and marginalized topic of study, it is now widely recognized as an international security issue (Aolain et al. 2011: 45). Conflict-related Sexual violence (CRSV) is a specific form of sexual and gender-based violence that occurs in armed conflict, often with devastating consequences for individuals and communities (UN, 2020). CRSV is a weapon of war, ethnic cleansing, and genocide, primarily affecting women and girls (Cohen & Nordås, 2014: 42).

Over the last two decades, there has been a significant increase in the study of CRSV.
Despite this, there remains a crucial need for further research to enhance our understanding of this phenomenon, as previous explanations by scholars have failed to fully explain the variations regarding the extent of CRSV in conflicts at a broader level. Thus, it is necessary to investigate variables that influence the prevalence of CRSV. One variable that merits greater scrutiny is natural resource conflicts, referring to conflicts clearly linked to natural resources, caused or involving competition for scarce resources, extraction, uneven access, and unsustainable methods (Rustad & Binningsbø, 2012; Mildner et al., 2011). This variable is of interest based on the assertion that up to 40% of all intrastate conflicts during the last 60 years have been linked to natural resources and environmental challenges, pointing toward the importance of understanding such conflicts and interconnections (Matthew et al., 2009: 8). Additionally, CRSV is frequently employed as a strategy of war to gain access to and assert control over natural resources (Leatherman, 2013: 6).

Furthermore, scholars have recognized the linkage between environmental challenges and Sexual and gender-based violence (SGBV), referring to how gender inequalities get heightened through climate disasters (Desai & Mandal, 2021). Due to gender-differentiated roles, women are heavily dependent on natural resources and thus impacted negatively by natural resource conflicts and environmental challenges (Carney et al., 2020:40).

Women are often responsible for collecting livelihoods, which can become scarce during the conflict, enhancing their vulnerability and exposure to different types of sexual and gender-based violence both within and outside their households as they have utilized different ways to collect livelihoods. Moreover, women are often excluded from decision-making processes for managing natural resources, further exacerbating their vulnerability to violence and marginalization (Desai & Mandal, 2021).

More research is needed to fully understand the complex connection between conflicts over natural resources and CRSV. Therefore, this thesis explores the relationship quantitatively and analyses what mechanisms that characterizes it. Moreover, this is carried out through a statistical comparative design, specifically by conducting a large Large-N study. The data builds on the Sexual violence in armed conflict (SVAC) and Natural Resource conflict data sets (Cohen & Nordås 2014; Rustad & Binningsbø, 2012a). To further investigate the relationship between natural resource conflicts and CRSV, the presence of three mechanisms; Finance, Distribution and Aggravation in natural resource conflicts are applied to analyze the degree of CRSV. Furthermore, to discuss the result from the statistical analysis, a theoretical framework is applied, focusing on the relationship between natural resource conflict, CRSV and the three mechanisms.

1.1 Purpose of the Study and research question

The purpose of this thesis is two-fold. First, contribute to a broader understanding of CRSV and natural resource conflicts and the relationship between these variables, which has yet to be explored from a larger perspective. Second, explore what mechanisms influence this relationship. Furthermore, this thesis hopes to enhance understanding of the relationship between natural resource conflicts and CRSV to inspire policymakers to take action towards preventing and addressing these issues. Specifically, this thesis seeks to investigate the relationship between natural resource conflicts and Conflict-related sexual violence by posing the following questions:

i. *What is the relationship between natural resource conflicts and Conflict-related sexual violence?*

ii. *How does the mechanisms of Finance, Distribution and Aggravation affect the degree of Conflict-related sexual violence?*

1.2 Scope and Limitations

The scope of this study is, first and foremost, limited regarding the independent and dependent variables. The independent variable, natural resource conflicts, considers all types of natural resources as potential drivers of armed conflict: land, water, agricultural products, oil, gas, diamonds and other gems, minerals, narcotics, and timber (Rustad & Binningsbø, 2012a: 3). Furthermore, by focusing specifically on natural resource conflicts, an analysis of the unique challenges and mechanisms can be understood. The data set defines a conflict following the definition from UCDP/PRIO Armed Conflict Dataset, which is also used by the SVAC data set. However, the SVAC data set includes all active state-based armed conflicts, while the Natural resource conflict data set only covers internal armed conflicts. This thesis is, therefore, further limited to internal armed conflicts. Furthermore, the availability and accessibility of data limit the research. The SVAC data set covers the years from 1989 until 2021. On the other hand, the Natural Resource conflict data set covers the years from 1946 until 2006. Hence, this study covers the period from 1989 until 2006.

The dependent variable, Conflict-related sexual violence, distinguish from other forms of sexual violence as it is associated with armed conflict. Solely looking at CRSV allows focused research on the phenomena in such contexts. Moreover, while the statistical analysis is not limited to a specific gender, it should be stated that the thesis focuses on women and girls as victims of CRSV. This limitation is motivated by the fact that women and girls and the primary victims of CRSV. Moreover, in the SVAC data set, less than 1% of the reported victims were male (Cohen & Nordås, 2014: 421), thus focusing on male victims of CRSV would require a significant amount of additional research and analysis that goes beyond the scope of the thesis.

2 Literature review

In this part previous literature is presented in order to give a background and overview of the research topic. The section first presents the academic work on CRSV followed by an overview of the research on natural resource conflicts and CRSV.

2.1 Conflict-related sexual violence (CRSV)

The academic work on CRSV has evolved during the last two decades, with the study of sexual violence previously being an obscure and marginalized topic of study. Sexual violence became accepted as a mainstream part of the peace and security policy agenda in line with the United Nations resolutions 1325 and 1820, adopted in 2000 respectively 2008. Resolution 1325 addresses the impact of war on women and the importance of women's full and equal participation in conflict resolution, peacebuilding, peacekeeping, humanitarian response, and in post-conflict reconstruction (UN, 2010: 11). Moreover, Resolution 1820 recognizes sexual violence as a weapon of war and war crime and the importance of addressing such violence against women. (ibid.). Framing sexual violence as a weapon and tool of war led to policies and critical security discussions of the phenomenon.

For a long time, wartime sexual violence was viewed as an inevitable feature of war and thought to be a continuum of violations against women that carried over from peacetimes. However, this opportunistic view has later on been confronted by scholars. For instance, Skjelsbæk (2001) published the first article on sexual violence in political science, challenged previous ideas by describing wartime sexual violence as a tool and weapon of war. Another belief held by earlier studies was that sexual violence is correlated with other forms of wartime violence, thus diminishing the idea of sexual violence as a distinct category. While some contemporary

academic debates still resonate with such arguments, other scholars have recognized the phenomena more critically.

Wood (2006) outlines a broader research agenda, suggesting that sexual violence varies in extent across conflicts and actors. By doing so, Wood (2006) challenged earlier ideas in the literature and influenced the study of sexual violence and opened out the research field for a more comprehensive understanding of the phenomenon. The variation of sexual violence access conflicts is a key part of this study as this thesis is interested in uncovering the relationship of CRSV and natural resource conflicts.

The SVAC data set (Cohen & Nordås, 2014) paved the way for conducting quantitative studies on CRSV. The data set demonstrates significant variation in sexual violence by armed actors and conflict. Moreover, studies conducted through the data set suggest that state militaries are reported at a higher rate than militias or rebel groups, with the highest share of rebels groups reported as perpetrators in the period 1989–2015 was 40% (in 2002); on the contrary, the highest observed share for states was about 60% (in 2002 and 2012). Another implicit assumption of early studies on the topic was that sexual violence only affected women and is perpetrated by men. Although data remain sparse, there is evidence of females being perpetrators and men being victims of sexual violence (Cohen & Nordås, 2021: 198). While it is important to recognize men as victims and women as perpetrators, this thesis will not elaborate on this aspect due to the scope of the study.

Scholars highlight several different wartime conditions under which sexual violence is used. Some scholars have theorized that economic endowments influence rebels' use of sexual violence, building upon the idea that economic endowments reduce such violence (Weinstein 2007). Similarly, Wood's (2006) research shows that rebel groups dependent on local support may seek to restrain the use of sexual violence to maintain support. Concerning such research, Whitaker et al. (2019) present extortion of natural resource production as a condition under which sexual violence is used. Whitaker et al. (2019) further present evidence that rebel groups who generate funds through natural resources are more likely to engage in sexual violence than groups that do not use such extortions. Thus, the financing factor, where the funds fuelling the war stems from, is of interest to this thesis.

Furthermore, Whitaker et al. (2019), argue that the use of sexual violence by rebel groups depends on the extent to which the rebel groups depend on the local population to sustain funding sources. Scholars have also examined how combatants inside armed organizations interpret sexual violence. For instance, Cohen (2013) emphasizes group cohesion and forced recruitment, arguing that how fighters are attracted by the groups norms and recruited affects their tendency to engage in sexual violence during conflict. Cohen (2013) also presents a weak state as another mechanism associated with increased CRSV. Yet, common explanations such as ethnic conflict, gender inequality, and genocide did not associate with wartime rape (ibid.).

In contrast to Cohen (2013), other scholars are reluctant to the relationship between individual and group perpetrator dynamic and sexual violence. For instance, Davies and True (2015) argue for a refocus on structural gender inequalities, proposing patriarchal structures and societal gender roles in the pre-war period as an explanatory variable for CRSV. This is of interest in this thesis and will be elaborated later.

2.2 Natural resource conflict and CRSV

Scholars have extensively studied natural resource conflicts, with diverse theoretical perspectives examining the nexus between natural resources and conflict. These theoretical viewpoints include, among others, the resource curse, the greed and grievance model, abundance, and scarcity, as documented in scholarly literature (Collier, 1999; Collier & Hoeffler 2005; Mildner et al., 2011)

A growing body of literature suggests exploration and control of natural resources contribute to conflict. Natural resources such as oil, diamonds, and timber are often at the center of violent conflicts. During the last 60 years, 40% of all intrastate conflicts have been linked to natural resources and environmental challenges (Matthew et al., 2009: 8). Recent studies have highlighted the connection between natural resource conflicts and CRSV, pointing toward how such conflicts exacerbates existing gender inequalities and increases sexual violence against women and other marginalized groups. For instance, Cohen (2013) found a positive relationship between the rebel group's access to natural resources and the extent of CRSV.

Other scholars have pointed toward how the availability of natural resources affects the recruitment process of rebel groups, which in turn influences the level of violence committed by rebel groups. Weinstein (2007) argues that easily extractable resources can increase the likelihood of violence against civilians by influencing the recruitment process. In resource-rich environments, rebel organizations attract opportunistic and less disciplined recruits, who are more likely to victimize civilians (ibid.). In contrast, rebel organizations in conflict zones without natural resources are compelled to compete based on social endowments, leading to a more cohesive and disciplined recruitment pool (Weinstein 2007: 101). Such factors are of interest for this thesis and will be elaborated on in the theoretical framework.

Conflict-related sexual violence can also be understood as a weapon of war. Leatherman (2013: 6) states that CRSV is often used as a war tactic to control and access natural resources. Rustad et al. (2016) argues that women living near mines may be more likely subjects to sexual violence and rape than other women, wherein power dynamic between the area's local population, military, and rebels is an influencing factor.

However, Rustad et al. (2016) also argues for a more comprehensive approach when analyzing the linkages, emphasizing how structural forms of gendered violence are linked to resource extraction in conflict. Women are frequently underrepresented within the natural resource sector, contributing to further marginalization (Carney et al., 2020). In addition, some scholars argue that greater participation of women in policymaking regarding the Distribution of natural revenues decreases corruption levels (Salari & Noghanibehambari, 2021).

Another factor pointed out by scholars is the circumstances of the conflict. Cohen (2013) emphasizes state collapse and lack of enforcement of laws create opportunities for rebels to engage in wartime rape. While recognizing the relevance of these factor, they are not a central theme of this thesis due to the employed objectives.

3 Theoretical Framework and Hypotheses

In this section the theoretical framework and hypothesis are presented. The theoretical framework builds upon the key concepts from the literature and existing theories explored in the previous section. Although various explanations exist regarding the interconnection between CRSV and natural resources within the literature, this thesis proposes a theoretical framework comprising four hypotheses. Whereof one hypothesis covers the relationship between natural resource conflicts and CRSV and the other three each covering a mechanism and it relation to the degree of CRSV

3.1 Relationship between Natural Resource conflicts and CRSV

This thesis theorizes that conflicts involving natural resources are more likely to include the prevalence CRSV than those conflicts that are not directly linked to natural resources. This argument is based on previous literature and the theory of ecofeminism.

The theory of ecofeminism consists of a mix between feminism and ecology. The theory builds upon the axiom that women and the environment are interconnected and thus suffer from similar violence (Puleo, 2017: 28). Moreover, the theory emphasizes that women are the primary protectors and caregivers of the environment (ibid.). This can further be explained through gender-differentiated roles, where women are heavily dependent on natural resources and thus impacted negatively by natural resource conflict and environmental challenges (Carney et al., 2020: 40). Conflicts revolving around natural resources are, therefore from the

viewpoint of ecofeminism, a constitutes a greater direct threat of CRSV to women vis a vis to conflicts that are not intertwined with the environment. For instance, research has found that SGBV increases during environmental threats, as gender inequalities get heightened through climate disasters (Desai & Mandal, 2021). Furthermore, in many societies, women are responsible for collecting livelihoods which might be scarce during the conflict, or the distance to collect such livelihoods increases, thus exposing them to violence as the difficulty or inability to gather such resources increases tensions. In addition, in natural resource conflicts, sexual violence is often used as a means to control, enforce and protect existing privileges. In addition, in conflict contexts, the enforcement of the rule of law might be limited, and sexual violence is used as a tool to facilitate illegal activities by using sexual exploitation to exert control over communities (Carney et al., 2020: 14).

Conflict-related sexual violence can be theorized to be more prevalent in natural resource conflicts due to the interconnection between women and the environment, which places women in a vulnerable position during conflicts linked to natural resources. Moreover, as sexual violence is employed as a weapon to access, control, and enforce over natural resources, it is possible to assume that CRSV will be prevalent in natural resource conflicts.

H1*: Natural resource conflicts are positively related with Conflict-related sexual violence (CRSV)*

3.2 The mechanisms

The theoretical framework of this thesis further builds upon three key concepts which are assumed to influence the relationship described above. These concepts are a part of the natural resource conflict data set, there are three different mechanisms by which natural resources are directly linked to conflict: Distribution, Finance, and Aggravation. Drawing upon the previous literature, the mechanisms will be defined and elaborated on below and theorized as to whether they influence the relationship between natural resource conflict and the degree of CRSV.

Finance mechanism

The Finance mechanism represents one of the three possible ways in which natural resources are directly linked to conflict. The mechanism can be defined as: natural resource conflicts may arise as revenues generated by such resources create funding opportunities for rebels (Rustad &Binningsbø, 2012a). Several scholars have highlighted the Finance mechanism as an explaining variable for the prevalence of CRSV in natural resource conflicts. Weinstein (2007) illustrates this mechanism through the argument of economic endowment, where rebels lack access to revenues from resources or external aid, they must embrace their relationship with the local population. As a result, rebels need to respect the civilians and thus not exort any type of violence upon them (ibid). In line with that argument, it can be theorized that rebel groups without the need for local support may be more prone to engage in sexual violence. This argument is supported by Whitaker et.al (2019), arguing that rebel groups who fund through extortion of natural resources conduct more sexual violence than those who do not fund their warfare through natural resources.

The financing mechanism can further be theorized to influence the degree of CRSV through the concept of greed, referring to the motivation of rebellion are motivated by a desire to generate a profitable opportunity (Collier & Hoeffler, 2005: 564). From the viewpoint of greed, conflicts are motivated by opportunistic reasons, such as cost-benefit calculation. Natural resources thus might act as a motive for rebels as a profitable opportunity. In line with the arguments provided by Weinstein (2007) the greed concept further explains why some rebels'

groups may not need support of locals and thus exert to CRSV. Following the argument above, the hypothesis is formulated as follow:

H2*: The financing mechanism is positively related to a higher degree of conflict-related sexual violence.*

Distribution mechanism

Natural resource conflicts can also be linked to conflict through the Distribution mechanism. The mechanism can be defined as: disagreements over the revenue Distribution from natural resource potentially motivating a rebellion (Rustad & Binningsbø, 2012a). Hence, disagreement over the Distribution of natural resources may influence and/or directly cause conflict.

The mechanism can further be explained through the concept of grievance, where rebellion is theorized to occur due to perceived unfair access to natural resources, unsatisfactory Distribution of benefits from natural resources, and lack of control over such resources (Collier & Hoeffler, 2004; Rustad & Binningsbø, 2012a: 7). The government, on the other hand, may use violence as a means to avoid losing control over valuable resources (Rustad & Binningsbø, 2012a: 7). Based on this viewpoint, it is possible to assume that the Distribution mechanism may influence the degree of CRSV in a natural resource conflict. This can further be illustrated by the fact that sexual violence is often used as a tool to facilitate illegal access to natural resources by using sexual exploitation and/or to exert control over communities (Carney et al., 2020: 14). Research has also found that grievances increase support for violence; thus, natural resources conflicts linked to Distribution mechanisms might be more violent and have a higher degree of CRSV (Dyrstad & Hillesund, 2020). Moreover, research by Rustad and Binningsbø (2012b: 540) found that natural resource conflicts with the Distribution mechanism are more likely to resume than other mechanisms, pointing towards the influence of the mechanism on peace and stability.

Furthermore, previous research has demonstrated that women living near mining sites have a much greater risk for sexual violence (Rustad, 2016). Given that the Distribution mechanism encompasses conflicts over territorial disputes related to land ownership and control over natural resources (Rustad & Binningsbø, 2012b), it is possible to assume that the Distribution mechanism may exert an influence on the prevalence and severity of CRSV. Another aspect examined by previous literature is that women are often restricted and underrepresented in political contexts, thus not included in the agreements or management of the Distribution of natural resources (Desai & Mandal, 2021: 145). Natural resource conflicts linked to disagreement over Distribution might, therefore, further exacerbate the marginalization of women and expose them to violence such as CRSV. Based on the above arguments, the hypothesis is as follows:

H3*: The Distribution mechanism is positively related to a higher degree of conflict-related sexual violence.*

Aggravation mechanism

Natural resources can also be linked to conflict through Aggravation. The Aggravation mechanism is defined on the assertion that natural resources might intensify ongoing conflict by acting as motivation or opportunity for rebels but through roles other than Distributional claims or as a funding source (Rustad & Binningsbø, 2012a). In contrast to the other mechanism, the Aggravation mechanism indirectly affects conflict, for instance, as natural resources may disturb peace and stability in a country (ibid.). Furthermore, Rustad and Binningsbø (2012a) emphasize that the mere presence or knowledge of natural resources by conflicting parties may aggravate the conflict. For instance, knowledge of resource reserves and planned future oil-related projects might influence the conflicting parties' actions (ibid.). Therefore, natural resources do not have to be in direct access for the conflicting parties to influence conflict, in contrast to the Finance and Distribution mechanisms where natural resources have more of a direct influence.

With the indirect nature of the mechanism, natural resources may not be valuable or connected enough to the conflict to influence the rebel's use of sexual violence. Because of this, it can be theorized that women might not be in a direct position of violence in connection to the

resources. Moreover, previous research has mainly focused on factors that can be tied to either the Distribution or financing mechanism. However, that is not to say that conflicts with the Aggravation mechanisms do not have any prevalence of CRSV; instead that, it is theorized the role of the mechanisms is less profound. Based on the argument presented above, it is theorized that the Aggravation mechanisms do not positively affect the relationship between the independent and dependent variables leading to the following hypothesis:

H4*: The Aggravation mechanism is not positively related to a higher degree of conflict-related sexual violence.*

4 Method

In this section, the method of this thesis is described and motivated. After that, the material is presented, followed by the conceptualization and operationalization of the independent, dependent and control variables. Lastly, the data analysis and central terms of it are presented.

4.1 Research design

To answer the research question, a large-N comparative research design is employed. This is carried out through statistical analysis covering 497 cases. Statistical analysis of many cases allows for observing statistical relationships between the independent and dependent variables and rigorously testing different hypotheses (Halperin & Heath, 2017: 251). This thesis explores whether a relationship between natural resource conflicts and the degree of CRSV exists and whether particular mechanisms are more prone to a greater degree CRSV. To achieve that, statistical analysis is a well -suited method as the method allows the identification of patterns and relationships between variables across multiple cases (Halperin & Heath, 2017: 168). Moreover, the quantitative design provides high external validity of the results due to the large sample size, standardized procedures and rigorous statistical analysis (Halperin & Heath, 2017: 174-175). Additionally, using a large-N study enables control of potentially confounding variables, leading to increased internal validity. Moreover, Large-N studies can test and generate hypotheses, compared to small-n studies, better suited for only the latter (Halperin & Heath, 2017: 234). The selection of cases is based on the two data sets used for the independent and dependent variables. The population of interest is further limited to the available years and actors of the datasets, previously described in section 1.2.

4.2 Material

The material used for this study has been selected through a literature review of relevant published studies, books, articles, and data sets. Some of the data and material are secondary sources. While the quality of secondary sources can pose a challenge, the methodological statements of the material used in this research suggest high quality (Halperin & Heath, 2017: 195). The data sets presented below are the primary material used for analysis in this thesis and have been chosen on the principles of wide time range, reliability, and compatibility.

The natural resource conflict data set is used for the independent variable. The independent variable measure if internal armed conflicts are clearly linked to natural resources, specifically if natural resources have affected the conflict through at least one of three mechanisms. The three mechanisms are Distribution, Finance, and Aggravation. The coding of the data set relies on Keesing's World News Archive, case studies as well as other studies on natural resources and conflict (Rustad & Binningsbø, 2012a: 3). In addition, the UCDP database and the United States Library of Congress Country Studies are used (ibid.).

For the dependent variable, the SVAC data set is used. The data set captures the degree of CRSV by reporting the severity of sexual violence perpetration by an armed actor in a given year. Due to data limitations and validity concerns, there are no numerical estimates of incidents (Cohen & Nordås, 2014: 419). The SVAC data sets rely on sources from the US State Department, Amnesty International, and Human Rights Watch. The three sources provide annual global coverage and are commonly used within quantitative human rights scholarship. While the data is of secondary nature, the sources are widely acknowledged as reliable and trustworthy. (Cohen & Nordås, 2014). However, as the SVAC data set provides the reporting from the sources, the data may be biased. A common potential bias within large-scale data collection on sexual violence is underreporting. Potential underreporting can arise as victims are unable or unwilling to report it due to stigmatization and inability to reach authorities (Cohen & Nordås, 2014: 421). In addition, victims and witnesses may not survive the assault and thereby not able to report the incident (ibid.). The thesis also employs three control variables, all of which build upon data from the World bank. The World Bank is

considered a reliable source of information as it is widely applied in quantitative research and builds upon international norms and standards.

4.3 Operationalization

4.3.1 Independent variable

The independent variable (IV), Natural resource conflicts, is conceptualized through the Natural Resource Conflict Data set. The conceptualizing of conflict relies on the UCDP/PRIO Armed Conflict Dataset version 4-2007, which defines a conflict as "*a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths*" (Harbom et al., 2008: 4).

Natural resource conflicts are conceptualized based on an internal armed conflict that is clearly linked to natural resources. Furthermore, natural resource conflicts are characterized by three different mechanisms which connect natural resources with conflict: (1) disagreements over revenue Distribution from natural resources may motivate rebellion, (2) revenues from natural resources may create funding opportunities for rebels, and (3) natural resources may aggravate ongoing conflict acting either as motivation or opportunity for rebels, but through other roles than a Distributional claim or as a funding source (Rustad & Binningsbø, 2012b). Natural resource conflicts are operationalized as 1 if one or more natural resource conflict mechanisms are present and 0 if none are present (ibid.).

4.3.2 Dependent variable

The dependent variable, degree of CRSV is conceptualized through the SVAC data set. In the SVAC data set, the definition of an armed conflict builds upon the same as for the independent variable mentioned above. The conceptual definition of CRSV includes the following: (1) rape, (2) sexual slavery, (3) forced prostitution, (4) forced pregnancy, and (5) forced sterilization/abortion, (6) sexual mutilation, and (7) sexual torture (Cohen & Nordås, 2013). The definition reflects the legal understanding of the term. Given that the SVAC data set focuses on behaviors of direct force and physical violence, it does include some acts of sexual violence such as sexual humiliation, sexualized insults or forced undressing that other scholars have included (Ibid.) Operationalization of the variable will be done through a ordinal scale measurement (Cohen & Nordås, 2014). The ordinal scale estimates from 0 to 3 and captures the reported severity of sexual violence perpetration by an armed actor in a given year (ibid). A prevalence score of 3 (massive) indicates sexual violence was used as a "means of intimidation" or a "weapon" on a "massive scale." A score of 2 (common) indicates sexual violence was "widespread" or "persistent" but did not meet the criteria for a score of 3. A score of 1 (some) indicates isolated reports of sexual violence. A score of 0 (none) indicates no reported sexual violence in a given year. (ibid.)

4.3.3 Control variables

In addition to examining the relationship between the independent and dependent variable, three control variables will be examined that may affect the outcome of the analysis. The selection of control variables is guided by earlier research.

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is used as a proxy to measure a country's level of development and resource availability. GDP is conceptualized through the World Bank, defined as the sum of value added by all producers in a country. The concept is operationalized through the world bank data measuring GDP in U.S. dollars (World Bank, n.d.a). GDP is used as a control variable as earlier research has found that violence against women can significantly negatively impact

economic development (Ouedraogo & Stenzel, 2021). Controlling whether broader economic factors in a country may impact the measured relationship and provide a more accurate understanding of the relationship between the independent and dependent variables can be achieved.

Level of education women

Another control variable is the level of education of women. This variable is conceptualized through the World Bank index on secondary school enrolment of females. Further, the variable is operationalized by measurement of the gross enrolment ratio for secondary education of female students (World Bank, n.d.b). Secondary school enrolment is a more relevant variable than primary school, as research has shown that the impact of primary education is not significantly different from having no education at all (Wodon et.al, 2018: 3) School enrolment is used as a control variable since higher education is linked to more significant economic opportunities and empowerment, which can decrease women's vulnerability to CRSV and improve their ability to access resources (ibid). Education level is also an indicator for broader social and cultural factors such as gender inequality. For instance, studies have shown that gender-based violence often affects low education levels, which may affect girls' school enrolment or increase dropout rates (Morrison et al., 2004).

Unemployment of men

The third control variable is the unemployment of men, conceptualized through the World Bank index as the male labour force that is unemployed and seeking employment relative to the total male labour force (World Bank, n.d.c.) Unemployment is operationalized by a modelled estimate based on the International Labour Organization measuring the percentage of unemployment (ILO) data (ibid.). According to some scholars, men's unemployment is associated with increased violence against women (Bhalotra et.al, 2021). Moreover, unemployment is also an indicator of labour for rebel groups; as Gilligan (2016) argued, rebel groups may provide individuals in fragile states with personal security that cannot be obtained through formal employment. Thus, unemployment is used as a control variable to control for factors that might influence the relationship between natural resource conflict and CRSV.

4.4 Data analysis

The data analysis is carried out through the statically software Stata. The independent and dependent variable is on an ordinal scale, meaning that the values of the variables are ranked and cannot be quantified (Halperin & Heath, 2017:492). Given this, the appropriate statistical method to analyze the relationship between an ordinal dependent variable and one or more independent variables is through an ordinal logistic regression. The method enables estimating the effects of one or more dependent variables on the likelihood of observing a particular outcome, thereby providing insights into the relationship between the variables of interest.

By using logistic regression, it can be examined whether the variables are related or associated with one another. This is also more formally known as statistical significance. When testing for significance, the idea of hypothesis testing is a central theme. However, instead of testing whether there is a relationship between the variables, it is tested whether there is no relationship. This can further be described through the term null hypothesis, referring to the finding of no association between the dependent and independent variable (Halperin & Heath, 2017: 424). Therefore, to infer that there is a relationship, one has to find evidence that can reject the null hypothesis and reject that there is no relationship (ibid.). To decide whether the null hypothesis can be rejected, the standard practice of p-value is applied. P-value refers to the probability that the null hypothesis is true. If the p-value is less than 0.05, the relationship is statistically significant, and the null hypothesis can be rejected.

In ordinal logistic regression, the numerical interpretation of the variables differs from regressions with interval variables, where the coefficient refers to the value of the dependent variable (Halperin & Heath, 2017: 453). In ordinal logistics regression, the variables are on an ordinal scale and either take a value of 1 or 0, hence the coefficient refers to the odds of the dependent variable taking one value over the other. This is also known as the odds ratio and tells the likelihood of a result happening given a specific exposure compared to the likelihood of the outcome happening in the absence of that exposure. The odds ratio is a key part of the data analysis, as this thesis aims to explore whether conflicts involving natural resources have a higher degree of CRSV than conflicts that do not involve natural resources.

There are four ordinal logistics regressions carried out. First, one bivariate ordinal logistic regression analysis is employed between the independent and dependent variables. Secondly, an analysis with the dependent variable and each of the mechanisms to examine how the mechanisms influence the relationship. Third, an analysis between the dependent variable and the control variables. The control variables are applied to isolate the relationship between the independent and dependent variables and the mechanism. By so, it allows control for various factors suggested by the previous research to be necessary. As some control variables only cover some of the years for the independent and dependent variables, the number of observations is lower. Fourthly, an analysis covering the dependent variable, mechanisms and control variables. The four analysis constitutes the basis for interpretation of statically significance and the odds ratios.

Moreover, in order to illustrate the relative importance of each of the mechanism the so-called predicted probabilities will be calculated through Stata (Halperin & Heath, 2017:472-473. Predicted probabilities represent the estimated probability that an outcome will occur, while holding all other variables at their mean (ibid.). In logistic regression, the predicted probabilities take a value between 0 and 1, where a lower predicted probability suggests a weaker influence or association and the higher predicted probability suggest higher influence. This is a key part of the analysis as the predicted probabilities reveals the likelihood of each mechanism being present given a specific degree of CRSV. The predicted probabilities are calculated for each one of the mechanisms, Finance, Distribution and Aggravation at all of the degrees for CRSV reaching from 0 to 3.

5 Results

This section covers the results of the study. First, a summary of the statistics is displayed through descriptive statistics in order to give an overview of the variables. Thereafter, the ordinal logistics regression analysis of the independent and dependent variables is shown, followed by the regression analysis of the three mechanisms. After that, the analysis of the control variables and the analysis between the three mechanisms and the control variables is outlined. Lastly, a table covering the predicted probabilities for the mechanisms and degree of CRSV is presented.

5.1 Descriptive statistics

Table 1. Descriptive statistics. Natural resource conflicts and CRSV

Degree CRSV	**Natural Resources**		**Total**
	0	1	
0	95	149	244
1	42	109	151
2	18	62	80
3	9	13	22
Total	164	333	497

Table 1 summarizes the statistics for the independent and dependent variable. There are 497 observations, whereof 164 are not natural resource conflicts, and 333 are natural resource conflicts. Furthermore, the total number of natural resource conflicts at each degree of CRSV

can be seen, whereof the table reveals that there are much more natural resources conflicts at degree 1 of CRSV than at degree 2 and 3 of CRSV.

Table 2. Summary of all variables

Variables	**Obs**	**Mean**	**Std. dev.**	**Min**	**Max**
Degree CRSV	497	.7585513	.8787663	0	3
Natural Resources	497	.6700201	.4706792	0	1
Aggravation	497	.3259557	.4692031	0	1
Finance	497	.2756539	.4472934	0	1
Distribution	497	.3018109	.4595062	0	1
GDP	438	1832.368	3995.04	22.85037	28297.87
Level Education Women	256	45.46477	32.06931	1.90884	106.4883
Unemployment men	418	7.894435	5.97258	.253	31.999

Table 2 presents a summary of statistics of all variables. There are 497 observations for all variables except the control variables since data from control variables are missing for some of the years in the SVAC and natural resource conflict data set. Moreover, Table 2 shows an overview of the minimum and maximum value of the variables. Whereas the independent, dependent and mechanisms variables are on an ordinal scale, the control variables are numerical. The summary of statistics in the table also makes it possible to check for possible outliers and extreme values whereof level of education women and GDP have extreme values

due to the substantial difference between the minimum and maximum values. While extreme values can significantly impact statistical analysis by leading to skewed results, given that the variables are control variables it is less concerning that it would.

5.2 Regression analysis and Predicted probabilities

Table 3. Ordinal logistic regression analysis. Natural resource conflicts and CRSV

Variables	**Model 1**
Degree CRSV	
Natural Resource Conflict	1.607**
	(0.297)
Observations	497
Standard errors in parentheses *** p<0.01, ** p<0.05	

Table 3 presents the ordinal logistic regression analysis between the degree of CRSV and Natural resource conflicts. The analysis covers 497 observations. The relationship is significant between the independent variable (Natural resource conflicts) and the dependent (CRSV) variable, having a p-value lower than 0.05. Thus, the null hypothesis can be rejected. The odds ratio displays that a natural resource conflict is associated with a 1.6 increase in likelihood some form of CRSV. The results do support hypothesis 1" *Natural resource conflicts are positively related to Conflict-related sexual violence".*

Table 4. Regression analysis with control variables

Variables	**Degree CRSV**
Natural resource conflicts	1.181***
	(0.334)
GDP	-3.98e-05
	(4.17e-05)
Level of education women	-0.0161***
	(0.00545)
Unemployment men	0.0568**
	(0.0228)
Observations	198
Standard errors in parentheses	
*** p<0.01, ** p<0.05	

Table 4 presents the results from the regression analysis between the dependent, independent and control variables. The results indicate that the control variables of unemployment of men and level of education women are statistically significant and thus have an impact on the dependent variable (CRSV). Furthermore, the results reveal that the control variable for GDP is not statically significant.

Table 5. Ordinal logistic regression, Degree of CRSV and Natural resource mechanisms

Variables	**Model 1**	**Model 2**
Degree CRSV		
Aggravation		1.318
		(0.237)
Finance		1.421
		(0.280)
Distribution		1.745***
		(0.331)
Natural Resource Conflict	1.607**	
	(0.297)	
Observations	497	497
Standard errors in parentheses		
*** p<0.01, ** p<0.05		

Table 5 presents the results from the ordinal regression analysis between the dependent variable and the three mechanisms Finance, Distribution and Aggravation (see model 2). For the Finance mechanism, the results show that there is no statistical significance, thus do not support hypothesis 2, "*The financing mechanism is positively related to a higher degree of conflict-related sexual violence"*. The relationship between the dependent variable and the Distribution mechanism is statistically significant as the p-value is lower than 0,05. In addition, the odds ratio displays that the mechanism of Distribution is associated with a 1.75 increase of some sort of CRSV. This supports hypothesis 3 "*The Distribution mechanism is positively related to a higher degree of conflict-related sexual violence"*. The third mechanism, Aggravation, is not statistically significant with CRSV which supports hypothesis 4, *"The Aggravation mechanism is not positively related to a higher degree of conflict-related sexual violence."*

Table 6. Ordinal logistic regression. Mechanisms with control variable

Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Degree CRSV				
Aggravation		1.318		1.848
		(0.237)		
Finance		1.421		2.255**
		(0.280)		(0.806)
Distribution		1.745***		2.746***
		(0.331)		(0.866)
Natural Resource conflict	1.607**		3.258***	
	(0.297)		(1.088)	
GDP			1.000	1.000
			(4.17e-05)	(4.39e-05)
Level education Women			0.984***	0.984***
			(0.00536)	(0.00565)
Unemployment men			1.058**	1.048**
			(0.0241)	(0.0234)
Observations	497	497	198	198
Standard errors in parentheses *** p<0.01, ** p<0.05				

Table 6 contains the previous results presented in table 4 and 5, as well as an ordinal regression analysis with the dependent variable, independent variable and the control variables (see Model 3). Moreover, the table also reveals the regression results carried out between the three mechanisms and the control variables (see Model 4).

Model 3 in the table reveals that the control variable for level of education of women and unemployment for men is statistically significant and thereby influences the relationship between the independent and dependent variables. However, the control variable for GDP is not statistically significant. Furthermore, looking at model 4 the results reveal that the Finance mechanisms is statically significant in contrast to model 2 where it was not. This can be

explained through the control variables which are added into the regression presented in model 4. As the control variables for level of education women and unemployment men are statistically significant in model 4, the results point towards and influence of those variables on the Finance mechanisms. However, as pointed out in relation to table 2 (see section 5.1), the control variables for GDP and level of education women did have extreme values which might drive the findings for the Finance mechanisms.

Table 7. Predicted probabilities. Degree CRSV and mechanisms

Degree CRSV	Distribution	Finance	Aggravation
0	.33	.38	.43
1	.45	.42	.41
2	.17	.13	.11
3	.036	.028	.025

Table 7 presents the predicted probabilities for the different mechanisms (Finance, Distribution, and Aggravation) across different degrees of CRSV. For degree 0 (none) of CRSV, the predicted probability for the mechanisms of Aggravation is higher than the mechanisms of Finance which in turn is higher than the mechanism of Distribution. This suggest that in conflicts with degree 0 (none) CRSV the Aggravation mechanism has the strongest association. For degree 1 (some) CRSV the predicted probabilities for the mechanism Distribution is stronger than for the mechanisms of Finance which in turn is stronger than the Aggravation mechanism. This reveals that the Distribution mechanism has the strongest effect for degree 1 of CRSV of all of the mechanisms. Moreover, the odds ratio for the Distribution mechanisms is noticeable higher at degree 1 than at degree 0, suggesting that the Distribution mechanisms has an influence on degree of CRSV. This support hypothesis 3, "*The Distribution mechanism is positively related to a higher degree of conflict-related sexual violence.".* For degree 2 (common) CRSV the Distribution mechanism has the strongest predicted probability of the mechanisms, while the Finance mechanisms are somewhat stronger than the Aggravation

mechanism. On the other hand, the predicted probabilities for degree 2 CRSV is much lower than for degree 1.

For degree 3 the predicted probability for the Distribution mechanism is stronger than the mechanisms of Finance and Aggravation. The predicted probabilities are lower at degree 3 than degree 2 suggesting that the predicted probability that the mechanisms influence the degree of CRSV at a lower rate. The Distribution mechanism has the strongest predicted probability at degree 1 of CRSV. The same goes for the Finance mechanisms, while the Aggravation mechanism has the stronger predicted probability at degree 0 of CRSV. Thus, the table reveals that the Distribution and Finance mechanism is likely to be present at degree 1 of CRSV, whereof the Distribution mechanism has the most noticeable increase from degree 0 to 1.
Hence, the mechanism of Distribution is associated with an increase of CRSV.

6 Discussion

The following part provides a discussion of the results presented in section 5. In addition, the theoretical framework and previous research is applied to interpret and evaluates the results and hypotheses. Moreover, alternative explanations and future research is discussed and suggested.

The results demonstrated that natural resource conflicts are associated with CRSV, where the odds ratio for natural resource conflicts indicated a 1.7 increase in the likelihood of CRSV, thereby indicating a higher chance of CRSV occurring in such conflicts. Thus, the results support hypothesis 1. Furthermore, the data suggested that the Distribution mechanisms is associated with a higher degree of CRSV, while the Finance mechanisms and Distribution mechanisms were not. The control variables of unemployment of men and level of education of women were statically significant while GDP was not.

In line with hypothesis 1, that natural resource conflicts are positively related to CRSV, the results can be understood through the concepts of gender-differentiated roles, ecofeminism, and sexual violence as a weapon of war. Drawing upon critical concepts from ecofeminism, the results support the argument of theory pointing towards the interconnection between women and the environment. For instance, due to the crucial role women have in resource collection and sustaining livelihood, conflicts involving natural resources puts women in a vulnerable position where they are more likely to experience CRSV. In line with such arguments, gender differentiated roles can further explain the results as women often bear the responsibility of gathering resources and providing livelihood. In contrast to conflicts unrelated to the environment, natural resources have a more profound effect on disrupting these livelihood activities, leading to scarcity or longer distances to access necessary resources. Contrary to previous research (Cohen, 2013), the argument of gender differentiated roles align with gender inequality as being a cofounding factor for CRSV. While this thesis did not include gender inequality in the statistical analysis due to the limited scope of the study, gender perspective could be of interest for future research. Thus, the results indicate the need for alternative explanations. For instance, as argued by Cohen (2013) lack of enforcement of laws create

opportunities for rebels to engage in wartime rape. Hence, future research could focus on how lack of law enforcements and impunity effects the prevalence of CRSV.

Moreover, the results can also be interpreted through the concept of sexual violence as a weapon of war. Rebel groups may exploit the absence of local support, as previously theorized by researchers, and utilize sexual violence as a strategic tactic to humiliate, instill fear, or gain access to natural resources (Whitaker et al., 2019; Weinstein, 2007). However, such arguments fall short for explaining the results of this study as the absence of local support also exists within non-natural resources conflicts as well. Based on findings from similar research (Davies & True, 2015: 2), a plausible explanation is that natural resource conflicts create power relations wherein women are vulnerable to CRSV as rebel groups exploit natural resources leading to increased violence and insecurity. Moreover, building upon arguments from by previous research, the results can be understood through patriarchal structures, which gives rise to sexual violence through the absence of social, economic, and political security and the culture of widespread impunity to the perpetrators (Desai & Mandal, 2021).

The findings indicated that the control variables of male unemployment and female education level were statistically significant, whereas GDP was not. The statistical significance of those control variables strengthens the regression by demonstrating their impact on the dependent variables, whereof higher level of education of women is associated with lower degrees of CRSV and higher unemployment rates of men is associated with higher level of CRSV. Moreover, the results of the control variables do not weaken the relationship between the independent and dependent variable, as the p-value for the independent variables was very low (see section 5.2, Table 4). Rather the control variables provide a comprehensive understanding of the relationship by considering other relevant factors. Thus, the results emphasize the importance of gaining a more holistic understanding of the factors influencing CRSV, going beyond solely financial aspects that previous research (Whitaker et al., 2019; Weinstein 2007) has primarily concentrated on. Supporting these arguments, the variables of women's education level and men's unemployment can be seen as reflecting the interplay between broader social factors like gender inequalities, women's rights, and the propensity of unemployed men to join rebel movements, thus affecting CRSV.

Contrary to hypothesis 2 - The financing mechanism is positively related to a higher degree of conflict-related sexual violence - the results demonstrated that the Finance mechanism was not statistically significant with CRSV. However, the data suggested that the Finance mechanisms became statically significant when the control variable of unemployment of men and level of education of women was applied. Based on findings from previous research, a plausible explanation for the contradictory results is context-specific factors, such as social cohesion and local support, which were not included in the analysis as it employed a broader lens.

In line with the hypothesis 3 - The Distribution mechanism is positively related to a higher degree of conflict-related sexual violence - the results suggested that natural resources conflicts involving the Distribution mechanism have a odds ratio of 1.75, which indicates a 1,75 increase in the likelihood of CRSV. The results support the theory of sexual violence as a weapon of war. Based on previous research, CRSV can be understood as a means to exert control over communities, in order to exploit natural resources (Carney et al., 2020: 14). In addition, as the Distribution mechanism include conflicts over territorial control such conflicts might involve direct battles for territorial control. From, that viewpoint, the results support existing evidence of how women living in close proximity to natural resources are likelier to experience sexual violence (Rustad, 2016). Moreover, the Distribution mechanism encompasses conflicts over high-value resources. In this regard, the results further support previous research by Weinstein (2007), which posits that resource abundant environment tend to attract opportunistic and less disciplined individuals who are more prone to victimizing civilians. The results confirm the claims of grievance covered in the theoretical framework, as well as findings from previous studies (Dyrstad & Hillesund, 2020) which have argued that grievances contribute to increased acceptance for the use of violence. Thus, the results indicated that conflicts involving Distribution mechanisms exhibit a higher degree of CRSV.

For the Aggravation mechanism the results from the regression analysis supported hypothesis 4 - The Aggravation mechanism is not positively related to a higher degree of conflict-related sexual violence. In accordance with the theoretical framework, the results suggest that the Aggravation mechanisms have a less profound influence on conflicts. As a result, women might not be in a direct position of violence, or the conflicting parties might not have enough motive for conducting such violence as with the Distribution and Finance mechanisms which are more direct factors. Moreover, the results contributed to a broader understanding of why previous

research seeking to explain CRSV mainly focused or can be linked to arguments similar to the Finance or Distribution mechanism. In addition, the results align with the comprehensive understanding of CRSV presented by Wood (2006), highlighting the need for understanding the implications of what factors intervene with variation of CRSV in conflicts.

The results of the predicted probability revealed an increase of CRSV at degree 1 of CRSV for the Distribution mechanism. However, the value noticeably decreased for the higher degrees of CRSV which can be explained as a result of the number of reported cases for degree 2 and 3 of CRSV. The data illustrate the limitations of quantitively studies on sexual violence, due to the lack of data the results cannot confirm the influence of the mechanisms at the degree of 2 and 3 of CRSV. Such shortcomings highlight the need for more extensive data and research to successfully address CRSV.

In summary, the results can partially be attributed to the claims made by the theoretical framework of this thesis and supported by previous research. However, certain findings also raise questions and offer alternative explanations, highlighting the need for further investigation in future studies. The results suggest that certain mechanisms may exert greater influence than others, indicating the necessity for additional research on factors that shape this relationship to gain a comprehensive understanding of the phenomenon.

7 Conclusion

This thesis aimed to contribute to a broader understanding of Natural resource conflicts and the degree of conflict related sexual violence and explore what mechanisms influence the relationship. The research questions for thesis was as follows:

i. *What is the relationship between natural resource conflicts and Conflict-related sexual violence?*

ii. *How does the mechanisms of Finance, Distribution and Aggravation affect the degrees of Conflict-related sexual violence?*

Based on the results from the quantitively analysis it can be concluded that natural resources conflicts are positively related with CRSV. The results also indicate that one of the three mechanism examined, the Distribution mechanisms, influences the relationship. The study was carried out quantitively, though conducting a comparative large-N study covering 497 observations. The methodology allowed for broader relationship to be uncovered and thus contributed with robustness and generalizability of the results. While the methodology was effective to answer the research question and fulfill the aim of the thesis, it was limiting in uncovering how the mechanisms affected CRSV in conflicts where it is highly prevalent, that is at degree 2 or 3. This can be explained as a result of underreporting of sexual violence. Moreover, the method enabled a macro perspective of the relationship and thus did not include contextual differences of the cases, which illustrates the common trade-off between internal and external validity within Large-N studies.

It was hypothesized that the relationship between natural resource conflict and CRSV would be positively related, which was supported by the results. The Distribution and Finance

mechanisms were also hypothesized to be positively related, while the results supported the Distribution mechanism the latter was not. For the Aggravation mechanisms it was hypothesized that it would not be positively related, this was supported by the results. Thus, the research clearly illustrated the relationship between natural resource conflicts, but also provided insights on differences regarding the mechanisms influence on CRSV.

The findings of this thesis confirm previous research (Wood 2006), by emphasizing the varying degrees of CRSV across different conflicts, whereof natural resource conflicts is one. Moreover, the results indicated that, depending on what mechanism is present within the conflict, the degree of CRSV is affected. In addition, the results confirmed earlier research arguments on the impacts of gender differentiated roles and sexual violence as a weapon of war on CRSV in natural resource conflicts. On the other hand, the financing mechanism challenged earlier research and opens up for alternative explanation of economic and societal factors.

To build upon the conclusions of this thesis, future research should consider looking into how contextual differences between natural resource conflicts impact the degree of CRSV. For instance, if the share of women in resources management affect their vulnerability to CRSV. Furthermore, future research is needed to determine what other factors apart from the, Finance, Distribution and Aggravation, impact the degree in natural resource conflicts. Based on the results from this study, scholars could consider strategies for CRSV in relation to environmental challenges. Moreover, this thesis highlights the need for action towards preventing and addressing these issues and include a broader framework on protection of women and girls in relation to the environment, something that is of great importance in line with the existing climate crisis.

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