Recruiting the Most Vulnerable:
What Explains the Use of Child Soldiers?

Yun Jung. Yang

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Abstract

What factors influence the use of child soldiers in armed conflict? The recruitment of child soldiers is widespread in modern conflict, with at least 300,000 children believed to be serving as soldiers until recent years. A growing body of analysis looks at this question but there is a limited amount of systematic research. The existing literature focuses on factors such as poverty, the youth population, and the availability of lightweight weapons as factors behind child recruitment, but other explanations seem likely. To better understand this important issue, this dissertation examines two under-examined factors – international humanitarian regulation and external support – and uses quantitative analyses to test resulting hypotheses. The first chapter addresses the impact of the international humanitarian regulations on governments and rebel groups' child recruitment. An important finding is that the existing regulations do not seem to reduce governments and rebel groups' forced recruitment. The second and the third chapters focus solely on rebel groups' child recruitment. These two chapters suggest external support is a crucial factor in rebel groups' child recruitment. More specifically, the second chapter examines how different types of external support can affect rebel groups' child recruitment and argues that rebel groups that receive territorial support are more likely to recruit children than rebels that do not. The third chapter investigates how two different types of external supporters can influence child soldiering by rebel groups. The results indicate that rebel groups that receive support from different rebel groups are more likely to recruit children than those that do not. Overall, this dissertation contributes to debates on child soldiering, rebel group dynamics, international humanitarian regulation, and related topics. Doing so, it sheds light on previously unexamined factors behind this important phenomenon, providing contributions to both theory and policy.

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Chapter 1. Introduction

Starting in the late 20th century, civilians became the primary target of armed conflicts (Singer 2005-2006), meaning there have been various civilian victimizations such as ethnic cleansing, genocide, sexual violence, and abductions in conflict zones. Among the civilian population, children can be the most vulnerable actors as they are not only victimized by violence but may also join military forces and engage in violence. According to a recent report, more than 330 million children are facing the risk of recruitment by rebel groups and government forces while those about 200 million are living in the brutal conflict zones (Save the Children 2021). Compared to the 1990s, around three times more children are facing on threats of recruitment in conflict zones (Save the Children 2021) even though the treaties which prohibiting the child recruitment is developing at the same time. Therefore, it is crucial to understand the factors that make children engage in armed conflicts and affect child recruitment in conflict zones.

In this dissertation, I ask what makes children engage in armed conflicts. Throughout the dissertation, I explore the impact of international humanitarian regulations on forced child recruitment, and the consequences of different types of external support and supporters on child soldiering by rebel groups. Examining the factors that maintain the patterns of child recruitment is crucial as almost four decades have passed since the first international humanitarian treaties prohibiting child soldiering were implemented.

This dissertation purposes to contribute to the literature discussing the important topic of child soldiers, which political science should focus on examining in more depth. Concurrently, it aims to support policy makers to establish better protection for children in conflict zones by examining this crucial humanitarian violation. Regarding the

academic motivation for this work, research on child soldiering has gained increasing attention in recent years, but it is still studied less than comparable topics and scholars have highlighted that more work that systematically analyses the topic is warranted (Haer 2019; Fox 2021). Therefore, this dissertation aims to systematically examine the reasons for child soldiering by focusing on the factors that have not been discussed by existing scholars.

Furthermore, considering that child recruitment is one of the tactics that recruiters can choose in conflicts, this dissertation can contribute the research on conflict dynamics, rebel groups' survival, and tactical selections from broader perspective. Specifically, with regard to conflict dynamics, children have become one of the central actors in conflict zones and may affect conflict outcomes, meaning that examining and understanding the factors related to child recruitment can expand and the understanding of the complicated processes and stages of armed conflicts.

From a policy perspective, this dissertation aims to seek effective protection of children by examining the reasons underpinning continuous child recruitment. The average age of children who are recruited is decreasing, particularly in Africa (Rakisits 2008). A recent report from the United Nations (2021) reveals that children as young as six years old are recruited as child soldiers, thus highlighting the urgent human rights situation. Concurrently, children do not start the conflicts, but those conflicts can significantly affect their daily lives and future by making them participate in armed conflicts both directly and indirectly that it is required to consider how to separate children from armed conflicts.

Moreover, after experiencing brutal conflicts, many children suffer post-trauma and struggle to reintegrate into society. For instance, ex-combatants are likely to engage

in crimes like robberies by relying on wartime social tie after a conflict is over when they are out of reintegration (Peña and Dorussen 2021). As adult ex-combatants do, many former child soldiers are likely to engage in violence such as sexual violence, crimes, and alcoholism in their new environment when their community does not welcome them and fail to reintegrate into the society (Veale and Stravrou 2007). It suggests that the issue of child soldiering can be far serious and complex than we expected. To this end, this dissertation aims to discuss the potential factors that drive children to engage in armed conflict. To develop a better understanding and protection of children in the future, it is key to understand the potential factors related to child soldiering that have not been examined in previous studies.

Before discussing the arguments introduced by this dissertation, I firstly summarize some key studies on child soldiers. Existing research on child recruitment develops the reasons why children are being recruited in conflict zones from the perspective of general, supply and demand. One of the popular general factors discussed in relation to child recruitment is the proliferation of small arms. Indeed, the widespread of small arms has been frequently discussed by scholars, as this proliferation has been simultaneously accompanied by an increase in the recruitment of child soldiers (Dhanapala 2002; Stohl 2002; Singer 2006). Globalization and liberalization make it difficult to control the circulation of small arms across conflict zones (Collmer 2004).

Scholars who study the supply (children) side of child soldiering often suggest that the scarcity of basic necessities such as clothes, foods and houses may drive children to join armed groups (Brett and MacCallin 1996). Additionally, some children may believe in heroism, seeking revenge for losing families and friends or that participating in conflict is better than escaping from conflict (Brett and MacCallin 1996; Francis 2007). Furthermore, limited educational system can reduce the opportunities for children to gain

a job, meaning they may decide to join armed groups (Goodwin-gill and Cohn 1994; Machel 1996; Wessells 2016; Haer 2019). In contrast, scholars also explain the phenomenon of child recruitment from the demand perspective. Central reason why recruiters show a preference for the use of child soldiers is that children are more obedient, easy to indoctrinate and represent a cheaper workforce than using adults (Wessells 2005; Tiefenbrun 2007; Annan and Blattman 2010; Beber and Blattman 2013; Lasely and Thyne 2015; Gates 2017).

Beyond the research about why children are being targeted for recruitment as soldiers, recent studies have also examined the impact child soldiers may make during armed conflicts. Several studies have focused on the consequences of child soldiering and how this can affect rebel groups' military effectiveness (Haer and Böhmelt 2016a, 2016b, 2017), as well as how child soldiers affect the peacekeeping operations of the United Nations (Bakaki and Hinkkainen 2016). In addition, due to the high proportion of girls involved in armed groups, some researchers focus on the recruitment of girl soldiers (Carroll 2015; Haer and Böhmelt 2018). There are also studies examining the process of reintegration of child soldiers, the limitations of the reintegration system (e.g. Wessells 2004; Williamson 2006; Halton 2011) and the psychological impacts after experiencing conflicts (e.g. Wessells 2004; Schauer and Elbert 2010).

Compared to other topics in armed conflicts, the study of child soldiers is far limited, even though some scholars give significant efforts to developing this field of research. Therefore, to address this gap in the literature and enhance the understanding of child soldiering specifically, this dissertation focuses on three different topics that previous research on child recruitment has not examined: the effectiveness of international humanitarian regulations (IHRs) on preventing forced child recruitment by

governments and rebel groups and the impact of types of external support and types of supporters on rebel groups' child soldiering.

Throughout the dissertation, I find that there are several factors which may affect child recruitment during armed conflict that were not examined in earlier studies. First of all, this dissertation shows that international humanitarian regulations (IHRs) may not fully regulate forced child recruitment by government forces and rebel groups. Second, dependent on types of support that rebels received, child soldiering by rebel groups can be affected. Third, similar to the second finding, I observe that when rebel groups receive external support from different supporters, there is also heterogeneity in their recruitment of children. To obtain these findings, this study exploits quantitative analysis using mainly child soldiers' data from the research of Haer, Faulkner and Whitaker (2020) and combining the different data and information accordingly.

In the following chapter, I discuss the impact of IHRs on governments and rebel groups' forced child recruitment. In that chapter, I argue that forced recruitment by both governments and rebel groups may not be regulated by the IHRs except the case of secessionist rebel groups. The third chapter examines three different types of external support – territorial, troop, and monetary support – and how they can affect rebel groups' child recruitment. Here, I suggest that rebel groups who receive territorial support are more likely to recruit children actively than those that do not. In the fourth chapter, this dissertation studies that whether having different types of supporters – state and rebel supporters – as external backers can have different consequences for rebel groups' child recruitment. The results show that when rebel groups have rebel supporters (who are different rebels from them), they are more likely to engage in child soldiering. Chapter Five concludes with an overall discussion of the dissertation, academic and policy implications and limitations and potential further developments.

To conclude, understanding the reasons underpinning child recruitment is important for both scholars and policy makers. Previous studies on child recruitment are relatively sparse, so the aim of this dissertation is to determine prospective reasons that explain child recruitment during armed conflict. Researching the reasons of child recruitment from diverse perspectives is crucial to understand why children become soldiers and can also establish the reasons for the difficulties of reintegration by exploring the process of being child soldiers. Therefore, the findings of this dissertation will contribute to enhancing the understanding of the mechanisms of child recruitment, the obstacles to reintegration, and how to reduce potential child soldiering in the long term.

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Chapter 2. Protection for Whom? Impact of International Humanitarian Regulations and Forced Child Recruitment

2.1 Introduction

The prevention of child recruitment in conflict zones is an important issue in international politics. Many states are parties to treaties that outlaw child recruitment, such as the Additional Protocol II to the Geneva Conventions (hereinafter, 'Additional Protocol II') or the United Nation Convention on the Rights of the Child (UNCRC). Scholars have emphasised the impact of international humanitarian regulations (IHRs) and the possibilities of actors' compliance with these regulations (e.g. Keohane 1984; Risse-Kappen et al. 1999; Guzman 2002; Hathaway 2007; Long et al. 2007; Simmons 2010). In addition, scholars have argued that rebel groups are likely to feel bound to international humanitarian laws (IHLs) and demonstrate respect for them by restraining from violence (Clapham 2014; Murray 2014; Jo and Niehaus 2018; Callamard 2019; Santon 2020).

However, it remains unclear whether IHRs can protect children from being recruited, while numerous children across the world continue to be enlisted as soldiers in armed conflicts. According to UNICEF (2021), approximately 93,000 children were recruited as soldiers between 2005 and 2020. Moreover, in 2020 alone, 8,521 children were newly engaged in armed conflicts as soldiers (War Child 2020). The following graphs in Figure 1 present the numbers governments and rebel groups that engage in child recruitment. Although the numbers of both types of recruiters are decreasing, these graphs suggest that children are consistently recruited in conflict zones. For instance, some governments such as those of Myanmar and Iraq still recruit children as militants (United

States State Department 2021[1]). In addition, rebel groups, such as the Houthi in Yemen, the former Revolutionary Armed Forces of Colombia – People's Army in Colombia and the Taliban in Afghanistan have continued to recruit children in recent years (Human Rights Watch 2022; United Nations General Assembly Security Council 2021).

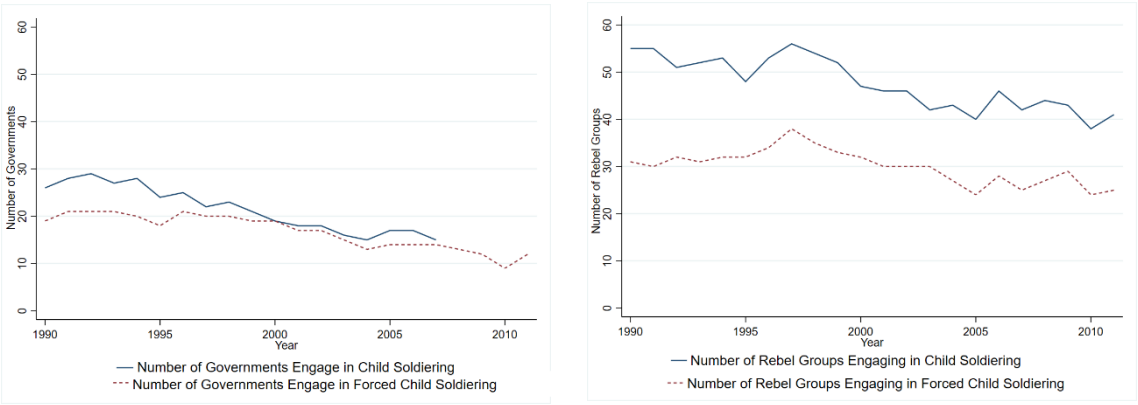

Figure 1. Child Recruitment Figures by Governments and Rebel Groups

Note: Created based on data from Haer et al. (2020) and Tynes and Early (2015). Due to limitations of the data, the number of governments engaged in overall child soldiering is only plotted until 2007.

Children may join armed conflicts of their own will; however, this research mainly focused on forced recruitment, the reasons for which are explained as follows. Although existing regulations restrict both voluntary and forced recruitment of children, they generally restrain the actions of those who demand child soldiers, rather than those of the suppliers (children). Therefore, since forced recruitment is conducted on the demander (recruiters) side, examining whether existing IHRs are effectively regulating child soldiering by governments and rebel groups requires a focus on forced child

[1] The United States issuing the Trafficking in Persons Report annually and reports the identified countries where use children in governmental armed forces, such as police, other security forces, or government supported rebel groups in previous year. The name of the list called Child Soldiers Prevention Act List (CSPA) and was introduced based on the Optional Protocol to the Convention on the Rights of Children (OPAC)'s definition of child soldiers.

recruitment[2]. In addition, Beber and Blattman (2013) highlight that two to three times more African rebel groups are reliant on forced recruitment than those that do not engage in forced child recruitment. Thus, examining forced recruitment is much more urgent than examining voluntary recruitment.

Among several IHRs that regulate child recruitment, I focus on the impacts of the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict (OPAC) as well as the Rome Statute (or the International Criminal Court: ICC) from two reasons. First, the OPAC and the Rome Statute (or the ICC) explicitly prohibit forced child soldiering while other treaties, such as the Additional Protocol II and the UNCRC do not specifically restrict this mode of child recruitment. Second, these two regulations refer to the control of forced recruitment by both governments and rebel groups. Thus, they consider the actions of rebel groups in addition to those of governments regarding children and aim to limit them. The OPAC restricts forced recruitment by governments and rebel groups, while the ICC and its convention – the Rome Statute – regulate forced child soldiering by individuals and governments, respectively. Focusing specifically on coercive child recruitment, I argue that both governments and rebel groups would still associate with forced child recruitment under the IHRs. The only exception is secessionist rebel groups, which are less likely to recruit children coercively under the impact of IHRs.

Although the first treaties regarding child soldiers were introduced in 1977, child recruitment still occurs nearly half a century later. Therefore, examining and understanding the impact of IHRs on recruiters' child recruitment should be necessarily

[2] In appendix H, I also run the model with use of child soldier variable which embraces both voluntary and forced recruitment. Unfortunately, there is no existing data which only measures voluntary recruitment.

considered. In the face of continued recruitment despite the efforts of international society, this research is critical as it is first study to examine the impact of IHRs on child recruitment by governments and rebel groups. Although existing studies on child soldiers have examined several reasons for the recruitment of children, the legal factors that can influence child recruitment remain under-studied. Second, expanding the discussion of child recruitment by governments is helpful for drawing attention to this crucial topic since there are sparse research on governments' child soldiering. Third, identifying the impact of IHRs on rebel groups could also assist the discussions of rebel groups' compliance, which has recently been discussed among scholars (Jo 2015; Jo and Niehaus 2018). Indeed, whether rebels comply with IHRs and refrain from child recruitment is questionable considering that some groups continue to recruit children. From a policy perspective, this research helps policy makers with an enhanced understanding of the impact of IHRs, including their limitations. Notably, this study does not intend to argue that the existing instruments do not have any effect; rather, it argues that as those regulations have some limitations, more effective pathway for protecting children from being recruited should be considered.

2. 2. Logic of Child Soldiering and Protections

Scholars are likely to distinguish the reasons for child recruitment between the supply and the demand side. On the supply side, there are several reasons for why children engage in armed conflict as soldiers of their own will. First, children join armed groups to find basic necessities, such as foods, clothes, or shelters (Brett and MacCallin 1996). These requirements may also help children to support their families (Udombana 2006), which is a reason for them deciding to become a member of military groups. Moreover, children

may decide to join armed groups because of severe poverty and a lack of an education system (Goodwin-gill and Cohn 1994; Machel 1996; Wessells 2016; Haer 2019).

On the demand side, the reasons for child recruitment stem from costs and benefits (Lasely and Thyne 2015). The demanders may prefer to recruit children because of their effectiveness. Children are easy to indoctrinate, and thus they are likely to commit risk-taking activities and stay longer in groups, which can provide long-term benefits to the recruiters (Wessells 2005; Tiefenbrun 2007; Annan and Blattman 2010; Beber and Blattman 2013; Gates 2017). Additionally, children are likely to be satisfied with smaller incentives compared with well-trained soldiers, meaning that recruiters can preserve their resources (Beber and Blattman 2013). Furthermore, child soldiers can be an instant solution for replenishing military shortages (Wessells 2005; Singer 2006).

For decades, international society has criticised and thus banned child soldiering. Scholars and policy makers believe that IHRs are effective instruments for protecting human rights in conflict zones; therefore, they may also introduce several child recruitment treaties. Studies of governments' compliance with IHRs argue that reputation may affect their agreement and compliance (Keohane 1984) by forcing them to adhere a rule (e.g. Franck 1995; Barrett 1999; Guzman 2002). This is because reputation matters for governments when making a new relationship or sustaining an existing one with other countries, thus, violating IHRs could damage their image. Moreover, IHRs are more likely to be followed by countries with more human rights organisations (HROs) (e.g. Keck and Sikkink1998; Sikkink 1998; Hathaway 2007), regardless of their regime type (Stobb 2018). To ensure cooperation with others or coercion from different countries (Avdeyeva 2007; Wotipka and Tsutsui 2008) or organisations, IHRs make governments adhere to human rights regulations.

In addition, scholars who research rebel groups have argued that rebel groups may show respect on IHRs like governments, expressing intentions to respect human rights (Jo and Thomson 2013; Murray 2014; Jo and Niehaus 2018). Jo (2015) argues that rebel groups may adhere to international regulations, especially IHLs, to express their values to others and attempt to justify their rebellion. Another study suggests that these non-state armed groups allow the International Committee of the Red Cross (ICRC) to access zones under their control and adhere to the Geneva Convention (Jo and Thomson 2013). Furthermore, according to Radhika Coomaraswamy, former Under Secretary General and the Special Representative on Children and Armed Conflict, said rebel groups started to negotiate the release of children they had recruited following the prosecution of Thomas Dilyo for child recruitment (Steinberg 2016).

The aforementioned points strengthen the belief that IHRs may effectively protect human rights in conflict zones; thus, international society may continue to introduce new regulations regarding child soldiers. In 1977, a definition of child soldiers was first described in the Additional Protocols II in Article 4 (3)(c)[3]. The UNCRC also restricts the use of children aged under 15 years as soldiers in Article 38[4]. However, the UNCRC defines children as those under the age of 18, which raised the question of what about children aged 15-18 are recruited. Therefore, the OPAC was introduced to mitigate the ambiguity, a treaty that limits the involvement of children younger than 18 in armed

[3] Article 4-3 (c): "Children who have not attained the age of fifteen years shall neither be recruited in the armed forces or groups nor allowed to take part in hostilities."

[4] Article 38-3: "States Parties shall refrain from recruiting any person who has not attained the age of fifteen years into their armed forces. In recruiting among those persons who have attained the age of fifteen years but who have not attained the age of eighteen years, States Parties shall endeavour to give priority to those who are oldest."

conflict[5]. In addition, the Rome Statute prohibits the use of children aged under 15 years as soldiers, defining the use of child soldiers as a war crime[6].

However, some different backgrounds may obstruct the prevention of forced child recruitment. First, different conceptualisations of children between Western and other societies must be considered. Although Western society and international organisations define children as people aged under 18 years, the definition of children varies across countries dependent on their own cultural and historical contexts (Francis 2007; Kononenko 2016). This means that a common understanding on the age of childhood does not exist (Rosen 2007). Furthermore, more than 50 percent of the population in some African countries is younger than 18 years, such as Angola, Ghana, Sierra Leone, and Uganda (Achilihu 2010; D' Costa 2015). Therefore, children represent critical manpower in certain countries, as opposed to a protected category. These social differences make preventing child engagement in conflict difficult.

[5] Article 2: "States Parties shall ensure that persons who have not attained the age of 18 years are not compulsorily recruited into their armed forces."

[6] Government side Article 8(2)(b): "Other serious violations of the laws and customs applicable in international armed conflict, within the established framework of international law, namely, any of the following acts: (xxvi) 'Conscripting or enlisting children under the age of fifteen years into the national armed forces or using them to participate actively in hostilities.'"

Non-State Groups side Article 8(2)(e): "Other serious violations of the laws and customs applicable in armed conflicts not of an international character within the established framework of international law, namely, any of the following acts: (vii) 'Conscripting or enlisting children under the age of fifteen years into armed forces or groups or using them to participate actively in hostilities'.

2. 3. Impact of IHRs and Forced Child Recruitment by Governments and Rebel Groups

In this research, I argue that IHRs cannot deter both governments and rebel groups from forced child recruitment due to several limitations. These are described in the following subsections.

(1) Governments, Compliance with IHRs and Forced Child Recruitment

For state governments, child recruitment, especially forced recruitment is difficult to conduct because they would risk damaging or losing their reputation. Furthermore, they face diverse pressures and obstacles and are required to follow various treaties once they are ratified. However, some governments are still likely to recruit child soldiers by force. According to the Trafficking in Persons Report, fifteen countries – including Myanmar, Iraq, Mali, South Sudan, Nigeria, and Yemen – were added to the list of the Child Status Protection Act (CSPA) in 2021 for conscripting children as soldiers (United States Department of States 2021). The Myanmar government ratified the UNCRC in 1991, however, the Tatmadaw Kyi, the government's military force recruited children by offering incentives to civilian brokers, non-commissioned soldiers, and junior officers (Coalition to Stop the Use of Child Soldiers 2011). Even during armed conflict, countries are obliged to follow the regulations once treaties have been ratified (United Nations Human Rights 2011).

Therefore, this research argues that governments are likely to recruit children coercively even after they ratify the relevant regulations for the following reasons. First, some governments may intentionally ratify international regulations not for following them per se but for justifying worse actions in the future (Hathaway 2002; Neumayer 2005). They may do so when they face an emergency such as an outbreak of conflict (Neumayer 2005). Furthermore, such governments are likely to ratify human rights

regulations to pretend that they respect humanitarian issues and to attempt to avoid pressure from other countries even if they violate the regulations (Neumayer 2005). Moreover, engaging with international regulations even allow state governments to conceal domestic human right violations (Hafner-Burton and Tsutsui 2005).

Second, some state governments are unwilling to accept clear and compulsory language in treaties (Rosen 2007), instead, they prefer to ratify ambiguous treaties. In fact, many existing IHLs set ambiguous and vague treaties (Posner 2014). For instance, the Additional Protocol uses "all *feasible* measures" for regulating child soldiering instead of "all *necessary* measure", which a scholar argues that it limits the pressure on governments to adhere to such regulations (Kononenko 2016). This protocol may allow governments to assert that they take all possible measures not to recruit children, yet they could also argue that they are allowed to recruit children if they have no other choice in specific circumstances. This ambiguity enables governments to break the regulations by finding loopholes in the statements.

Third, governments continue to recruit children due to the lack of monitoring systems. Scholars have argued that state governments are only likely to follow international regulations either when they correspond with their interests or when international institutions operate as observers to enforce the regulations (Downs et al. 1996; Hathaway 2002; Hafner-Burton and Tsutsui 2005) and without observers, self-enforcement does not work properly (Downs and Jones 2002; Simmons 2010). Furthermore, 'reputational sanctions' may be the suboptimal since it cannot overcome problems of collective action unless there is a way to avoid them (Guzman 2008). In fact, humanitarian violations are likely to be perpetrated by lower tier governmental officials, such as police, or other security forces which is difficult to control (Neumayer 2005).

Echoing the reasons for child recruitment on the demand side, the use of child soldiers can also provide several benefits to governments. For instance, during the conflict in Myanmar, the national army forcibly recruited children as soldiers even though the government had enacted the domestic laws to prohibit child soldiering, child recruitment occurred because the army could not replenish military shortages due to the reluctance of adults to join military forces (Becker 2007). This case indicates that governments are likely to act against regulations even if they set such regulations themselves; therefore, they may also easily violate regulations if several limitations are set by international treaties. Thus, even if governments promise that they do not recruit children into their military forces by investing much effort and budget, they still have opportunities to recruit children. In certain situations, these regulations even ensure room for governments to recruit children more actively in a certain situation.

Hypothesis 1: *The ratification of international humanitarian treaties on forced child soldiering does not decrease the likelihood of forced child recruitment by governments.*

(2) Rebel Groups, Impact of IHRs and Forced Child Recruitment

The use of child soldiers provides rebel groups to enhance their military capabilities, obtain more obedient military power than adults, and preserve their resources (e.g. Vautravers 2009; Beber and Blattman 2013). Rebel groups consider the regulations on child soldiering to be disrespectful legal instruments (Bangerter 2011) because of the benefits that child recruitment yields. Furthermore, compared with governments, rebel groups may have more incentives to continue recruiting children forcibly due to economic

shortage or military asymmetry (Brett and MacCallin 1996; Singer 2006; Tynes and Early 2015; Haer and Böhmelt 2017).

Different from governments, rebel groups do not employ security governance, thus, they do not need to engage in treaties like governments (Lamp 2011; Coggins 2015; Krieger 2018). Several regulations restrict child recruitment by rebel groups, such as the OPAC, however, there is no surveillance or strong enforcement to prevent rebel groups engaging in war crimes (Francis 2007). Moreover, to regulate child recruitment by rebel groups, the cooperation of local authorities is important, yet in most cases, these authorities are not particularly willing or do not have the capacities to control and arrest individuals who violate the regulations (Burke-White 2016). Furthermore, even if they show interest in IHRs, rebel groups may still have more incentives to keep recruiting children forcibly. For instance, according to the Revolutionary Armed Forces of Colombia (FARC), they refused to recruit children and promised to return recruited children to appropriate authorities, however, they continued to engage in child soldiering (Jo and Niehaus 2018). They justified their recruitment by arguing that they could not ignore children who lost their home, and that they helped children by letting children join their group as soldiers (Jo and Niehaus 2018).

Hypothesis 2: *The existence of international humanitarian regulations on forced child soldiering does not decrease the likelihood of forced child recruitment by rebel groups.*

Moreover, this study highlights that both governments and rebel groups do not comply with IHRs but are likely to recruit children coercively in general, however, it also expects that specific rebel groups are less likely to recruit children coercively than others.

Rebel groups may shift their violence to civilians depending on their goals or characteristics (e.g. Wood 2010), and therefore, they may also change their engagement in child recruitment. Among several potential characteristics of rebel groups, rebels who pursue legitimacy may express interest in IHLs and human rights issues (Jo and Thomson 2013). Legitimacy can play a crucial role for rebel groups in terms of gaining material and moral support from locals and outsiders. Concurrently, it is a key factor for rebel groups in maintaining power and can also guarantee political success, such as the acquisition of political power or maintenance of their political position (Schlichte and Schneckener 2015).

Several rebel groups seek legitimacy. This research expects that separatists groups are more likely to pursue legitimacy, and thus, they are less likely to engage in forced recruitment in particular because they are more likely to be concerned about international norms (Lasely and Thyne 2015) and adhere to regulations. Since secessionists emphasise legitimacy more than other groups, they may prioritise positive recognition both domestically and internationally, engaging in 'diplomacy' to achieve their purposes during civil wars (Huang 2016). In addition, Fazal (2018) argues that secessionist rebel groups are likely to adhere to IHRs and avoid attacking civilians to obtain support from international organisations. Since secessionists attempt to win over local and international audiences, they are less likely to recruit children coercively (Jo 2015), which is especially the case under international regulations. Nevertheless, a possibility exists that some children will joint separatist groups voluntarily (Jo 2015). Although room exists for voluntary child recruitment, I expect that rebel groups that seek secession may have fewer incentives to use child soldiers coercively, especially as they want to establish good relation with locals as well as international entities.

Hypothesis 3. *Secessionist rebel groups are less likely to engage in forced child recruitment under international humanitarian regulations than non-secessionist rebel groups.*

2. 4. Research Design

This research uses the datasets introduced by Haer, Faulkner and Whitaker (2020)[7] to measure forced child recruitment by governments and rebel groups. The unit of analysis is government-year[8] when analysing governments' side and rebel-year when examining rebel groups. This study focuses on forced recruitment by governments and rebel groups from 1990 to 2011. I use several different methodological approaches due to the different characteristics that governments and rebel groups have regarding IHRs. Since governments' ratification of IHRs can be endogenous to various factors, some models exploit the instrumental variable approach to examine the governments side.

Dependent Variables

For this analysis I employ two dependent variables: forced child recruitment by governments and forced child recruitment by rebel groups. This research focuses on forced recruitment because examining it can help to understand the effectiveness of IHRs. The dependent variables take a dichotomous value. For instance, if governments recruit children coercively, the variable takes 1 and otherwise 0. This also applies to rebel groups.

[7] They expanded data established by Haer and Böhmelt (2016a; 2016b; 2017) by adding the year information.

[8] Codes all conflicts over the government as the same conflict. Therefore, if government A involves actor B and actor C in given year, considers them as the same (Cunningham et al. 2013).

Table 1 indicates that approximately 40% of governments recruited coercively whereas 41% of rebel groups recruited children forcibly.

Table 1. Forced Child Recruitment by Government and Rebel Groups[9]

Government	Frequency (N)	Percentage (%)	Rebel Groups	Frequency (N)	Percentage (%)
No	88	72.93	**No**	157	61.570
Yes	48	39.34	**Yes**	105	41.180
Total	122	100.00	**Total**	255	100.00

Independent Variables

(1) Government Side

To understand whether IHRs can deter governments' forced child recruitment, I introduce two different treaties that regulate the exploitation of children: the OPAC and the Rome Statute. Among the several potential international humanitarian treaties that governments could ratify, I examine these two treaties because the regulations restrict forced recruitment by governments whereas other treaties do not explicitly mention restrictions on forced recruitment. The OPAC states the following: "States Parties shall ensure that persons who have not attained the age of 18 years are not compulsorily recruited into their armed forces". The Rome Statute considers that "Conscripting or enlisting children under the age of fifteen years into the national armed forces or using them to participate actively in hostilities" as a war crime.

The OPAC was introduced in 2000 and entered into force in 2002. It prohibits compulsory recruitment of children under the age of 18 years in Article 2, which stipulates

[9] Descriptive statistics of cross-sectional variables which are collapsed over governments and rebel groups respectively. (unit of analysis: conflict period)

stricter prevention of using children than the UNCRC. I coded 1 when the governments ratified the OPAC, and 0 otherwise. The data is from the United Nations Treaty Collection.

In 2002, the Rome Statute of the ICC defines the restriction of child soldiers under Article 8 (2)(b)(xxvi). When a government ratified the Rome Statute, it takes 1, and 0 otherwise. I refer to the United Nations Treaty Collection webpage to code this variable.

Instrumental Variable: Government Side

Endogeneity can be a major concern when examining the impact of IHRs on governments. This is because the dependent and the independent variable may have mutual influence. Furthermore, factors intended to explain the dependent variable (forced child recruitment) are also likely to affect the main independent variables (OPAC/ Rome Statute). To overcome this endogeneity concern, this study employs an instrumental variable approach model for the government side[10].

For a valid instrumental variable, it should be correlated with the key independent variable(s) but not with the dependent variable (Greenland 2000). Therefore, I exploit the number of human rights treaties that governments ratified (treaty membership) as the instrumental variable. Again, two major conditions need to be satisfied for an instrument to offer consistent parameter estimates: (1) the instrument has to be exogenous to forced child recruitment (dependent variable) and (2) it should be correlated to the ratification of treaties regarding forced child recruitment (independent variable).

The ratification of treaties is not always associated with governments' human rights practices (Hafner-Burton and Tsutsui 2005, 2007; Clark 2010). Therefore,

[10] See research such as Gauri (2011), Cole (2012) and Stein (2016).

regardless of the number of governments' memberships of human rights treaties, their human rights practices are decoupled. Furthermore, I exclude the treaties related to child recruitment, therefore, this variable is highly likely to have no impact on the dependent variable. Thus, this study expects that the governments' memberships of human rights treaties may not affect forced recruitment by governments.

Regarding the second condition, ratifications of various human rights treaties must be related to those of child soldier treaties. I expect that when governments ratified different human rights treaties, they are more prone to ratifying relevant treaties. Since governments ratify treaties to establish close relationships with different countries, ratifying diverse treaties may ensure a greater chance of forming such relationships. Indeed, state governments prefer to cooperate and establish closer relationships with countries have similar preferences (Downs et al 1996; Koremenos et al. 2001; Lupu 2016). Thus, countries that seek to form close relationships with different countries are more likely to accept many diverse treaties. Moreover, states that ratify treaties expect an increase in their legitimacy (Hafner-Burton et al. 2008) that governments may ratify treaties more actively to enhance their legitimacy. By contrast, less ratification also reduces the likelihood of ratifications of child soldier treaties. This is because active humanitarian treaty ratification increases the possibility of their human rights performance being reported (Heyns and Viljoen 2001; Goodman and Jinks 2003). Therefore, for the aforementioned reasons, membership of treaties is likely to be strongly associated with the ratification of child soldiering treaties.

(2) Rebel Group Side

Different from governments, rebel groups do not ratify regulations. However, there are still some international legal instruments that may affect rebel groups. Therefore, to test their impact, this research introduces the measurements that restrict rebel groups' child recruitment: the OPAC, the ICC, and interacted terms. I use two instruments, the OPAC and the ICC, as the main independent variables because they aim to regulate non-state actors or individual's child recruitment whereas other instruments do not.

Different from other treaties, the OPAC prohibits the use of child soldiers by rebel groups in Article 4[11]. However, as rebel groups do not ratify the regulation directly, I examine the influence of the OPAC by checking when it was first introduced in a country. This research expects that, different from the ICC, the OPAC would only have power to control rebel groups when their countries demonstrate interest in the treaty. This is because the OPAC only has an impact when a country either signs or ratifies it, whereas the ICC is an independent institute that may be considered to have a different influence on rebel groups' child recruitment. I coded 1 when a country either signed or ratified the OPAC, and 0 otherwise.

The second independent variable relies on the existence of the ICC. I coded 1 after the ICC was established and coded 0 before it's establishment. The ICC is an entity with the power to accuse an individual of committing a war crime(s).

To examine the hypothesis 3, variable of secessionist is interacted with each IHR. Rebel groups who seek legitimacy may respect and adhere to IHRs considering their reputation. Secessionists who are highly likely to consider their legitimacy, are thus less

[11] "Armed groups that are distinct from the armed forces of a state should not, under any circumstances, recruit or use in hostilities persons under the age of 18 years."

likely to engage in forced recruitment to win over domestic and international audiences, as discussed earlier.

Control Variables

There are two common control variables which control both governments and rebel groups sides: conflict duration and battle-related deaths. In addition to these variables, each side has few more control variables which may affect their decisions regarding child recruitment.

(1) Both Government and Rebel Group Models

The number of child soldiers recruited by rebel groups increases when a conflict lasts longer due to the military shortages (Haer et al. 2020), which can be also applicable to the government side. To measure *conflict duration*, this research utilises data from the Non-State Actor (NSA) dataset (Cunningham et al. 2009; 2013).

When conflict intensity increases and more casualties are sustained, rebel groups must replenish their military shortages (Singer 2006; Haer and Böhmelt 2017). This can also be applicable when governments face military shortages due to a loss of militant powers. To measure conflict intensity, this research use *battle-related death* to understand the severeness of conflict. The data is from the UCDP Battle-Related Deaths Dataset (Gleditsch et al. 2002).

(2) Government Side

The models include *GDP per capita*. Poverty is the one key factors behind the use of child soldiers (e.g. Achvarina and Reich 2006; Francis 2007). A natural logarithm of GDP per capita is used following other work (Gleditsch 2002).

Some research suggests that larger youth populations make it more likely that children work as child soldiers (Dallaire 2011; Tynes and Early 2015; Haer 2019). *Youth population* is calculated into a natural logarithm. The data is from the World Bank.

Models also include *infant mortality rates*. This variable indicates the extent of impoverished states and especially reflects the children's welfare in their countries (Tynes and Early 2015). When children are exposed to serious poverty, they are prone to engaging in armed conflicts. The data is from the World Bank.

Although many non-democratic countries also follow the regulations, governments who are active in democratic countries are more likely to respect the regulations than non-democratic countries, as mentioned earlier. The models include *democratic regime*, for which I use polity IV data. When a country is a democratic regime (+6 ~ +10) it takes 1, and otherwise 0 (-10 ~ +5) (Marshall and Jaggers 2002).

Hathaway (2007) highlights that having human rights advocacies are likely to pressure governments to follow regulations. Therefore, governments with a larger *number of HROs* would be less likely to recruit children to protect their rights. To measure the presence of HROs, I use data from Murdie and Bhasin (2011)[12]. Instead of using the

[12] This data covers until 2008, which means that I will lost 3 years of observations. However, number of HROs is important factor to control especially studying the impact of treaties on government based on the existing studies (Neumayer 2005; Hathaway 2007; Kim 2013; Stobb 2018).

number of memberships of each government, I utilise the number of secretaries for measuring this variable, which indicates a permanent impact of HROs.

Models include *governments' fighting capacity* compared with rebel groups. Similar to rebel groups, government forces may use children more when their military capacity is lower than that of rebel groups to increase the probability of defeating their opponents. I use data from the NSA dataset of Cunningham et al. (2009, 2013). These data originally indicate the fighting capacity of rebel groups compared with opponent governments, I, therefore, reverse the value to measure governments' fighting capacity. When a state's capacity is stronger than that of rebel groups, it takes 2, if moderate, it takes 1 and 0 otherwise.

No existing research has examined whether governments are likely to recruit children more when rival rebel groups recruit children coercively, however, it is possible that governments are less likely to recruit children under such a situation. Governments might be more likely to maintain their reputation and pursue support among locals since they may have more incentive to avoid actions that could harm their popularity. I use data from Haer et al. (2020), which takes a dichotomous value: 1 when there was *forced recruitment by rebel groups* and 0 otherwise.

Table 2. Forced Child Recruitment by Government Collapsed Over Government[13]

Variable	Observation	Mean	Standard Deviation	Min	Max
Forced Recruitment by Government	122	0.341	0.454	0	1
OPAC	122	0.134	0.265	0	1
Rome Statute ICC	122	0.089	0.252	0	1
Conflict Duration	122	5.726	6.94	1	40.304
Battle-related Deaths	111	5.723	1.398	1.04	8.671
Youth Population	111	3.562	0.276	2.698	3.89
GDP (per capita)	122	7.732	1.055	5.476	10.637
Infant Mortality Rates	119	61.401	35.375	5.227	160.333
Democratic Regime	112	0.31	0.435	0	1
Numbers of HROs	81	2.992	8.389	0	71
Governments' Fighting Capacity	117	1.633	0.501	0	2
Forced Recruitment by Rebel Groups	122	0.374	0.451	0	1
Number of International Human Rights Treaties (IHT) Ratified	122	4.312	2.333	0	10.333

(2) Rebel Group Side

Some scholars point out that rebel groups with their own *political wing* may also seek legitimacy by adhering to international regulations, with the aim of becoming admitted entities both internally and externally (Jo and Thomson 2013); therefore, having one's own political wing may affect rebel groups' child recruitment. The variable takes a categorical value: when a rebel group has its own political wing and is legally admitted, it takes 2, when a rebel group has non-legally admitted political wing, it takes 1 and 0,

[13] Descriptive statistics of cross-sectional variables which are collapsed over governments. (unit of analysis: conflict period)

otherwise. The data originally come from the NSA dataset (Cunningham et al. 2009, 2013).

The models also include rebel groups with the goal of *secession*. It is coded 1 when a rebel group's goal is secession, 0 otherwise. For this information, I refer to the Foundation of Rebel Group Emergence (FORGE) Dataset (Braithwaite and Cunningham 2020).

When rebel groups have access to natural resources, they are more likely to recruit children (Faulkner et al. 2019). Especially when they have access to *lootable resources* such as diamonds, they may recruit children more actively and even coercively (Haer et al. 2020). The data source for lootable resources is Haer et al. (2020).

Models include *territorial control* by rebel groups. When rebel groups have strong territorial control, it allows them to recruit people (Kubota 2013; Haer et al. 2020) which may be applicable to children as well. When rebel groups have strong control, it takes 3 and accord to the power of territorial control it takes 2, 1 and otherwise 0. To measure this variable, I use the NSA dataset (Cunningham et al. 2009, 2013).

Rebel groups are likely to have more incentives to recruit children when they do not have enough power to defeat governments forces. They seek to recruit children to compensate for power shortages more than governments, as indicated in research that examines the impact of *rebel groups' fighting capacity* and child recruitment (Haer and Böhmelt 2016a). For this variable, I use data from the NSA dataset (Cunningham et al. 2009, 2013).

Rebel groups' strength of command (*Strength Control*) can affect their engagement in civilian abuse (Weinstein and Humphereys 2006). Haer et al. (2020) highlight the possibility of forced child recruitment by arguing that when a rebel group's

leader has limited power to control its members, the members are more likely to engage in humanitarian violations based on Weinstein (2005)'s research. The data is from the NSA dataset (Cunningham et al. 2009, 2013) and takes ordinal value. It captures the strength of control displayed by a rebel group's leader. A low level of control takes 1 and if leader has a high level of control, it takes 3.

The models also control for *forced recruitment by government*. If governments coercively recruit children, this may increase rebel groups' intention to recruit children coercively (Haer et al. 2020) to attract the required military capacity. Furthermore, if governments frequently violate citizens' human rights, rebel groups are also more likely to disrespect local citizens. This variable is coded 1 if there was forced recruitment by government and 0 otherwise.

Table 3. Forced Child Recruitment by Rebel Groups Collapsed Over Rebel Groups[14]

Variable	Observation	Mean	Standard Deviation	Min	Max
Forced Recruitment by Rebel Groups	255	0.399	0.485	0	1
Introduce of OPAC	255	0.283	0.409	0	1
Introduce of ICC	255	0.362	0.434	0	1
Conflict Duration	255	4.444	6.069	1	42
Battle-related Deaths	243	6.025	1.409	1.04	9.21
Political Wing	252	0.562	0.783	0	2
Secession Group	244	0.275	0.447	0	1
Lootable Resources	255	0.252	0.418	0	1
Territorial Control	252	0.669	1	0	3
Fighting Capacity	244	0.384	0.54	0	2
Strength Control	221	2.033	0.629	1	3
Forced Recruitment by Government	255	0.357	0.474	0	1

2. 5. Empirical Results

I use a probit regression and a logistic regression analysis respectively to examine the relationship between IHRs and child recruitment by governments and rebel groups.

(1) Government Side

I first present the probit models to examine the relationship between governments' forced child recruitment and ratification of related treaties. To avoid obtaining biased results due to endogeneity, I apply an instrumental variable approach by computing the probit models with endogenous regressors and present second stage results for the model. I also examine the relationship between the dependent variable of interest (forced child recruitment) and the instrumental variable (number of international human rights treaties ratified). The

[14] Descriptive statistics of cross-sectional variables which are collapsed over rebel groups. (unit of analysis: conflict period)

results suggest that no statistically significant relationship exists between the two measures[15]. Therefore, I am confident that in the IV-probit regression, I could employ the number of international humanitarian treaties ratified as the instrumental variable. To test for weak instruments, this research tests the joint significance of my instrumental variables using F-test[16]. Following Stock and Yogo (2002), my F-statistics exceeded 10, which indicate that refers that my instrumental variables satisfied the typical rule of thumb. Therefore, I conclude that my instrumental variables fit my model.

Regardless of the model specifications, the results in Table 4 suggest that ratification of the OPAC and the Rome Statute increase governments' likelihood of conducting forced child recruitment. In other words, even after governments ratify the OPAC and the Rome Statute, they do not comply with them and are instead likely to recruit children coercively. Models 3 and 4 indicate the testing of instrumental models. The statistical results still suggest that governments forcibly recruit children even after controlling the endogeneity concern. Across the models, the results suggest that governments are less likely to abduct children to use them as soldiers when more HROs are active. In addition, Models 3 and 4 indicate that governments are more actively engage in forced child recruitment when conflict intensity becomes stronger, GDP per capita is larger, and their opponent rebel group also recruits children coercively. Also, they report that democratic regime is less likely to engage in forced child recruitment.

[15] See appendix B.
[16] See appendix E.

Table 4. Forced Child Recruitment by Governments

	Probit Models		IV Probit Models	
	Model 1	**Model 2**	**Model 3**	**Model 4**
OPAC	0.605**		0.922**	
	(0.296)		(0.468)	
Rome Statute		1.142**		1.716*
		(0.508)		(0.914)
Conflict Duration	0.00136	-0.000429	0.00316	-0.000467
	(0.0248)	(0.0240)	(0.00814)	(0.00788)
Battle-related Deaths	0.116	0.123	0.115***	0.131***
	(0.0800)	(0.0816)	(0.0440)	(0.0455)
Youth Population	1.345	1.233	1.342***	1.222**
	(1.172)	(1.165)	(0.491)	(0.479)
GDP	0.226	0.230	0.256**	0.262**
	(0.327)	(0.331)	(0.112)	(0.114)
Infant Mortality Rate	0.00196	0.00109	0.00356	0.00206
	(0.00956)	(0.00911)	(0.00416)	(0.00377)
Democratic Regime	-0.549	-0.557	-0.571***	-0.575***
	(0.538)	(0.535)	(0.176)	(0.174)
Number of HROs	-0.346***	-0.332***	-0.354***	-0.336***
	(0.111)	(0.106)	(0.0451)	(0.0444)
State Fighting Capacities	0.213	0.231	0.212	0.262
	(0.393)	(0.394)	(0.171)	(0.177)
Forced Recruitment by Rebel Groups	0.586	0.576	0.540***	0.539***
	(0.420)	(0.423)	(0.160)	(0.157)
Constant	-7.596	-7.205	-7.930***	-7.575***
	(5.099)	(5.252)	(2.240)	(2.185)
N	646	646	646	646
Pseudo-R^2	0.303	0.307		
Wald-χ^2	29.11	41.70	148.4	145.8

Note: Standard errors of the pooled probit models are clustered around each government and are displayed in parentheses. IV probit models are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(2) Rebel Groups Side

The Models 1 and 2 suggest that rebel groups also recruit children coercively even under the regulations. Table 5 below presents the test of the interaction term of hypothesis 3 in Models 3 and 4 as well. The statistical results indicate that the introduce of the OPAC and the ICC have the power to regulate secessionist rebel groups in their coercive recruitment of children whereas those regulations are likely not to deter forced recruitment by overall rebel groups. Across the models, the statistical results indicate that rebel groups are more likely to recruit children with coercion when the length of conflict is extended, the strength of conflict is higher, and opponent government also uses child soldiers forcibly. The interaction models also highlight that rebel groups recruit children coercively if their fighting capacity is strong.

Table 5. Forced Child Recruitment by Rebel Groups

	Logit Models		Interaction Models (*Secessionists*)	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Introduce of OPAC	0.838***		1.978***	
	(0.323)		(0.420)	
Introduce of ICC		0.266		0.855*
		(0.275)		(0.443)
OPAC×Secessionist			-2.240***	
			(0.634)	
ICC×Secessionist				-1.351**
				(0.561)
Conflict Duration	0.124***	0.120***	0.133***	0.127***
	(0.0317)	(0.0315)	(0.0319)	(0.0334)
Battle-related Deaths	0.420***	0.433***	0.417***	0.425***
	(0.0959)	(0.0940)	(0.0978)	(0.0961)
Political Wing	0.0142	-0.0368	-0.0428	-0.0258
	(0.277)	(0.281)	(0.278)	(0.281)
Secessionist Group	-0.861	-0.742	-0.174	-0.167
	(0.531)	(0.530)	(0.586)	(0.541)
Lootable Resources	0.595	0.588	0.544	0.555
	(0.451)	(0.445)	(0.455)	(0.441)
Territorial Control	0.0701	0.0670	-0.0246	0.0161
	(0.231)	(0.229)	(0.240)	(0.228)
Strength Control	0.303	0.252	0.364	0.258
	(0.339)	(0.325)	(0.344)	(0.321)
Rebel Fighting Capacity	0.608	0.563	0.680*	0.659*
	(0.401)	(0.389)	(0.401)	(0.385)
Forced Recruitment by Government	0.835**	0.847**	0.834*	0.913**
	(0.425)	(0.417)	(0.429)	(0.423)
Constant	-4.804***	-4.598***	-5.113***	-4.845***
	(0.936)	(0.896)	(0.978)	(0.902)
N	927	927	927	927

Chi^2	59.02	48.43	76.86	49.69
Pseudo-R^2	0.229	0.213	0.259	0.226
Log Likelihood	-489.1	-499.4	-470.3	-490.9

Note: Standard errors of the pooled logit models are clustered around each rebel group and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

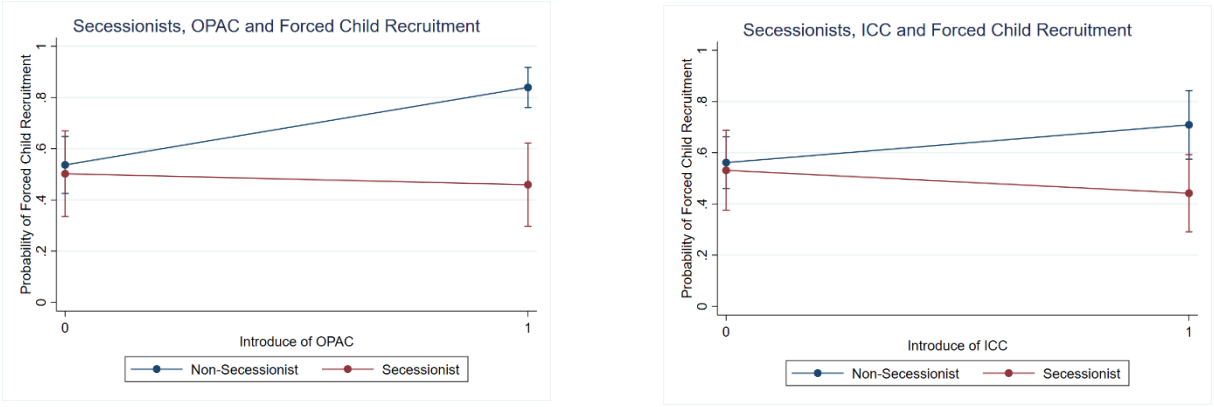

Figure 2. Marginal Impact of the Interactions Effects on Different Types of IHRs and Secessionist Rebel Groups

Figure 2 presents the impact on rebel groups' coercive child recruitment when they have legitimacy related characteristics under the influence of IHRs. Marginal effects of the interaction models suggest that the introduction of the OPAC affects rebel groups' forced recruitment of children whereas not when there is the ICC. Before the OPAC was launched, no differences existed between rebel groups who seek secession and those who do not. However, since the OPAC was introduced, rebel groups who are non-secessionists have been likely to recruit children coercively considering that the line in the graph is steep, means the impact of the OPAC is meaningful and higher forcible recruitment.

Overall, this analysis emphasises the importance of understanding whether IHRs deter both governments and rebel groups from conducting forced recruitment. Although international society believes that the existing instruments may prevent children from joining armed conflicts as soldiers, many children around the world continue to do so. Here, I find that the examined IHRs, namely the OPAC and the Rome Statute (or ICC), are not adhered to by governments

and rebels, and still allow for children to be recruited into military forces. Furthermore, the statistical results imply that the existing instruments cannot fully discourage child recruitment due to the absence of statistically significant correlations between factors.

Conclusion

This chapter sought to provide the first attempt to systematically examine the effectiveness of IHRs on child recruitment. The findings suggest that the existing IHRs do not have enough influence to regulate child soldiering by governments and rebel groups due to the limitations of IHRs. In particular, governments are more likely to recruit children even after ratifying the treaties. Rebel groups, however, may be less likely to recruit children coercively when their goal is secession.

Future research can proceed in a number of directions. First, further research could include different conventions or treaties not considered in this research. For instance, Africa has its own treaty named the African Charter on the Rights and Welfare of the Child (ACRWC). Since the ACRWC is only applicable in Africa, researchers should pay closer attention to Africa by examining this convention. Focusing on Africa would also be meaningful because child soldiering has recently been more concentrated in African countries, while the average age of children who are recruited in this region is decreasing (Rakisits 2009). Moreover, such a focus may allow future scholarship to understand the impact of humanitarian regulations in a certain country by conducting in-depth research.

Crucially, more data are required. Most humanitarian regulations are relatively new, and therefore, observations are limited with available data. The Rome Statute and the ICC were established in 2002, whereas the data in this paper only cover until 2011. Therefore, if possible,

the data should be expanded to recent years to determine whether longer-term effects of these instruments exist.

Finally, as aforementioned, some children engage in armed conflicts as soldiers of their own volition, not due to threats or abduction by militant groups. There are limited sources exist for identifying whether children voluntary participate in conflicts, however, if voluntary participation data could be successfully complied, they would help to develop further research to understand the impact of IHRs, since some regulations also prohibit volunteer participation.

With regard to policy implications, as opposed to conventional wisdom, international regulations do not seem to reduce the use of child soldiers forcibly in most contexts. This research provides the first insights for international policy makers to re-examine potential strategies for improving existing measures to protect children in conflict zones. Although this research only finds the possibility that two different actors may not comply with some regulations but instead recruit children, it also carefully conclude that IHRs cannot fulfil its duties. To expect a function of international law, it is important not to centralised to certain countries' interests but common agreements and a power balance are required (Morgenthau 1948). Additionally, scholars argue that having too many protections can easily lead to conflicts between them; thus to improve compliance, it is crucial to establish treaties with much narrower focus on particular rights to avoid conflict between various human rights (Posner 2014). To conclude, this research urges and emphasises the possibility of the continuous sacrifice of children under the IHRs unless no re-examination is conducted of the current instruments that concern child recruitment.

2. 7. Appendix: Additional Models, Robustness tests

A. Descriptive Statistics

B. Exclusion Restriction

C. Variance Inflation Factor (VIF)

D. Cross-Sectional Analysis

E. IV Regress Model-Governments and F-statistics

F. Ordinary Least Square Model (OLS)-Rebel Groups

G. Lagging Independent Variables Only

H. Overall Recruitment

Included below are several additional tables which the main manuscript cannot cover. Also, there are additional models which some of them ensure the robustness of the findings in this main manuscript.

A. Descriptive Statistics

Tables show the descriptive statistics which are not collapsed over governments and rebel groups.

(1) Government Side

Variable	Observation	Mean	Standard Deviation	Min	Max
Forced Recruitment by Government	1164	0.421	0.494	0	1
OPAC	1164	0.196	0.397	0	1
Rome Statute	1164	0.076	0.264	0	1
Conflict Duration	1164	9.994	9.171	1	42
Battle-related Deaths	1091	6.204	1.51	0	10.38
Youth Population	1138	3.608	0.247	2.688	3.908
GDP (per capita)	1161	7.758	1.033	5.315	10.681
Infant Mortality Rate	1134	60.869	35.574	3.5	190.6
Democratic Regime	1104	0.395	0.489	0	1
Numbers of HROs	754	3.099	7.583	0	71
States' Fighting Capacity	1122	1.742	0.467	0	2
Forced Recruitment by Rebel Groups	1164	0.566	0.496	0	1
Number of IHTs[17] Ratified by Government (Instrumental variable)	1161	4.829	2.364	0	13

[17] International Humanitarian Treaties

(2) Rebel Group Side

Variable	Observation	Mean	Standard Deviation	Min	Max
Forced Recruitment by Rebel Groups	1164	0.566	0.496	0	1
Introduce of OPAC	1164	0.318	0.466	0	1
Introduce of ICC	1164	0.393	0.489	0	1
Conflict Duration	1164	9.994	9.171	1	42
Battle-related Deaths	1091	6.204	1.51	0	10.38
Political Wing	1159	0.347	0.476	0	1
Secession Group	1131	0.413	0.493	0	1
Lootable Resources	1164	0.361	0.48	0	1
Territorial Control	1156	0.721	0.994	0	3
Strength Control	1036	1.965	0.63	1	3
Fighting Capacity	1122	0.258	0.467	0	2
Forced Recruitment by Government	1164	0.421	0.494	0	1

B. Exclusion Restriction

A valid instrument should have correlation between the key independent variable, however, it should be uncorrelated with the dependent variable simultaneously (Greenland 2000). The table below proves that there is no statistical correlation between my dependent variable and instrumental variable. It means that my instrumental variable is valid.

	Probit Model
Number of IHTs that Government Ratified	0.0678
	(0.0865)
Conflict Duration	-0.00277
	(0.0246)
Battle-related Deaths	0.116
	(0.0813)
Youth Population	1.156
	(1.153)

GDP (per capita)	0.236
	(0.324)
Infant Mortality Rate	0.00318
	(0.00830)
Democratic Regime	-0.510
	(0.557)
Numbers of HROs	-0.349***
	(0.102)
States' Fighting Capacity	0.270
	(0.413)
Forced Recruitment by Rebel Groups	0.603
	(0.411)
Constant	-7.399
	(5.399)
N	646
Chi^2	35.17
Pseudo-R^2	0.293

Note: Probit model is clustered around each government and are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C. Variance Inflation Factor (VIF)

Tables below show the variance inflation factor (VIF) which detects multicollinearity between variables. There are no variables which are above 5, therefore my variables do not suffer from multicollinearity. Several studies argue that there is a concern but no serious collinearity unless VIF is over 10 (Menard 2001; Vittinghoff et al. 2012; James et al. 2017) that my variables are considered that there are almost no concern on collinearity.

(1) Government Side

Variable	VIF
Forced Recruitment by Government	.
OPAC	1.16
Rome Statute	1.10
Conflict Duration	1.77
Battle-related Deaths	1.21
Youth Population	2.81
GDP (per capita)	3.29
Infant Mortality Rate	4.01
Democratic Regime	1.76
Numbers of HROs	1.37
States' Fighting Capacity	1.31
Forced Recruitment by Rebel Groups	1.51

(2) Rebel Group Side

Variable	VIF
Forced Recruitment by Rebel Groups	.
Introduce of OPAC	1.96
Introduce of ICC	1.93
Conflict Duration	1.42
Battle-related Deaths	1.08
Political Wing	1.07
Secession Group	1.08
Lootable Resources	1.14
Territorial Control	1.22
Strength Control	1.15
Fighting Capacity	1.29
Forced Recruitment by Government	1.11

D. Cross-Sectional Analysis

Although Haer et al. (2020) provide the year information, the dependent variables change across conflict periods. Therefore, by calculating a cross-sectional model which collapsed over each side, I examine the impact of international humanitarian regulations (IHRs) on forced child recruitment by each actor.

(1) Government Side

Unfortunately, the statistically important correlations between governments' forced child soldiering and ratification of specific treaties cannot be observed when I change the unit of analysis. The results also show that governments who have democratic regime and larger number of human rights organizations are less likely to engage in forced child recruitment whereas they are more likely to engage in forced child soldiering when their opponent rebel groups recruit children coercively.

	Probit Models		**IV Probit Models**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
OPAC	1.946		-0.472	
	(1.287)		(2.994)	
Rome Statute		1.291		-0.861
		(1.116)		(2.454)
Conflict Duration	-0.00792	0.00180	-0.00721	-0.00222
	(0.0321)	(0.0321)	(0.0345)	(0.0344)
Battle-related Deaths	0.142	0.227	0.323	0.170
	(0.188)	(0.186)	(0.280)	(0.203)
Youth Population	0.849	0.956	1.204	0.589
	(1.521)	(1.482)	(1.688)	(1.594)
GDP (per capita)	0.0380	0.112	-0.212	-0.237
	(0.410)	(0.405)	(0.512)	(0.538)
Infant Mortality Rate	-0.00288	-0.00344	-0.00979	-0.00726

	(0.0136)	(0.0130)	(0.0167)	(0.0143)
Democratic Regime	-2.025***	-1.769***	-1.776**	-1.831***
	(0.708)	(0.653)	(0.789)	(0.683)
Number of HROs	-0.368**	-0.362*	-0.303*	-0.313*
	(0.179)	(0.188)	(0.168)	(0.168)
State Fighting Capacity	0.111	0.119	0.357	0.181
	(0.475)	(0.480)	(0.571)	(0.508)
Forced Recruitment by Rebel Groups	1.495**	1.315**	1.419**	1.416**
	(0.596)	(0.556)	(0.640)	(0.599)
Constant	-4.063	-5.456	-4.232	-0.855
	(6.993)	(6.954)	(7.487)	(8.533)
N	70	70	70	70
Chi^2	42.62	41.49	18.42	20.11
Pseudo-R^2	0.467	0.455		

Note: Standard errors of the pooled probit models are clustered around each government and are displayed in parentheses. IV probit models are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(2) Rebel Group Side

Rebel groups are likely to engage in forced child recruitment even under the impacts of IHRs exist when calculating the cross-sectional models. Across the models, the table suggests that rebel groups are also more likely to recruit children forcibly when conflict lasts longer, intensity of conflict becomes stronger, when they can access to lootable resources and when their opponent government recruit children coercively.

	Logit Models	
	Model 1	**Model 2**
Introduce of OPAC	1.453***	
	(0.447)	
Introduce of ICC		1.236***
		(0.418)

Conflict Duration	0.122***	0.123***
	(0.0377)	(0.0378)
Battle-related Deaths	0.433***	0.485***
	(0.148)	(0.147)
Political Wing	-0.300	-0.334
	(0.237)	(0.239)
Secessionist Group	-0.487	-0.369
	(0.432)	(0.424)
Lootable Resources	1.378***	1.380***
	(0.448)	(0.446)
Territorial Control	0.0552	0.0185
	(0.187)	(0.184)
Strength Control	0.140	0.0910
	(0.320)	(0.306)
Rebel Fighting Capacity	0.386	0.387
	(0.352)	(0.350)
Forced Recruitment by Government	1.694***	1.640***
	(0.383)	(0.378)
Constant	-5.146***	-5.409***
	(1.284)	(1.291)
N	197	197
Chi^2	71.13	69.07
Pseudo-R^2	0.264	0.256
Log Likelihood	-99.39	-100.4

Note: Standard errors of the pooled logit models are clustered around each rebel group and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

E. IV Regress Model: Government Side

In the main text, I run the instrumental variable with the probit models that, here, I also test the iv regression models. The statistical results does not support the results from the main manuscript in general, however, the regression models suggest that governments who ratify the

Rome Statute are likely to engage in forced child recruitment. Furthermore, the results of the F-Statistic show that my instrumental variable fits my model.

	Regress Models		IV Regress Models	
	Model 1	**Model 2**	**Model 3**	**Model 4**
OPAC	0.146		0.153	
	(0.0951)		(0.136)	
Rome Statute		0.379***		0.294
		(0.141)		(0.259)
Conflict Duration	0.00308	0.00229	0.00313	0.00228
	(0.00844)	(0.00769)	(0.00238)	(0.00223)
Battle-related Deaths	0.0162	0.0217	0.0162	0.0204
	(0.0265)	(0.0275)	(0.0124)	(0.0130)
Youth Population	0.422	0.409	0.422***	0.413***
	(0.327)	(0.329)	(0.126)	(0.125)
GDP (per capita)	0.0962	0.103	0.0968***	0.0988***
	(0.108)	(0.110)	(0.0307)	(0.0311)
Infant Mortality Rate	0.000461	0.000387	0.000499	0.000248
	(0.00273)	(0.00256)	(0.00115)	(0.00103)
Democratic Regime	-0.367**	-0.370**	-0.368***	-0.367***
	(0.145)	(0.146)	(0.0447)	(0.0442)
Number of HROs	-0.0227	-0.0206	-0.0228***	-0.0209***
	(0.0141)	(0.0135)	(0.00491)	(0.00487)
State Fighting Capacity	0.0201	0.0405	0.0201	0.0359
	(0.117)	(0.115)	(0.0456)	(0.0473)
Forced Recruitment by Rebel Groups	0.146	0.142	0.144***	0.147***
	(0.123)	(0.119)	(0.0446)	(0.0434)
Constant	-1.919	-1.980	-1.926***	-1.936***
	(1.674)	(1.734)	(0.577)	(0.574)
N	646	646	646	646
R^2	0.273	0.287	0.273	0.285

Note: Standard errors of the pooled regression models are clustered around each government and are displayed in parentheses. IV regression models are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F-Statistics: OPAC

First-stage regression summary statistics

Variable	Adjusted R-sq	Partial R-sq	R-sq	F (1,635)	Prob>F
OPAC	0.2098	0.1973	0.1196	86.2631	0.0000

Minimum eigenvalue statistic = 86.2631

Critical Values # of endogenous regressors: 1
H0: Instruments are weak # of excluded instruments: 1

	5%	10%	20%	30%
2SLS relative bias	(no available)			
	10%	15%	20%	25%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53

F-Statistics: Rome Statute

First-stage regression summary statistics

Variable	Adjusted R-sq	Partial R-sq	R-sq	F (1,635)	Prob>F
Rome Statute	0.1523	0.1389	0.0986	69.4941	0.0000

Minimum eigenvalue statistic = 69.4941

Critical Values # of endogenous regressors: 1
H0: Instruments are weak # of excluded instruments: 1

	5%	10%	20%	30%
2SLS relative bias	(no available)			
	10%	15%	20%	25%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53

F. Ordinary Least Square Model (OLS): Rebel Group Side

The table below shows the statistical results of forced child soldiering by rebel groups. I run the OLS models to check the simple linear relationships between my dependent variables and independent variables. Across the models, IHRs do have statistically important impact on forced child recruitment by rebel groups. Furthermore, separatist rebel groups are less likely to engage in forced child soldiering when there are impact of IHRs exist. Rebel groups are more

likely to recruit children coercively when conflict lasts longer, intensity of conflict is stronger, and their opponent government forces recruit children coercively.

	Logit Models		Interaction Models	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Introduce of OPAC	0.136**		0.285***	
	(0.0617)		(0.0741)	
Introduce of ICC		0.0439		0.141*
		(0.0510)		(0.0739)
OPAC × Secessionist			-0.348***	
			(0.118)	
ICC × Secessionist				-0.237**
				(0.0983)
Conflict Duration	0.0178***	0.0182***	0.0181***	0.0189***
	(0.00352)	(0.00355)	(0.00349)	(0.00351)
Battle-related Deaths	0.0792***	0.0827***	0.0766***	0.0806***
	(0.0169)	(0.0169)	(0.0165)	(0.0171)
Political Wing	-0.00434	-0.0108	-0.0131	-0.00965
	(0.0506)	(0.0519)	(0.0498)	(0.0512)
Secessionist Group	-0.116	-0.106	0.00189	-0.00559
	(0.0938)	(0.0942)	(0.102)	(0.0952)
Lootable Resources	0.115	0.116	0.104	0.104
	(0.0813)	(0.0817)	(0.0799)	(0.0808)
Territorial Control	0.00143	0.00161	-0.0147	-0.00726
	(0.0432)	(0.0443)	(0.0426)	(0.0434)
Strength Control	0.0665	0.0562	0.0711	0.0566
	(0.0625)	(0.0614)	(0.0602)	(0.0603)
Rebel Fighting Capacity	0.113	0.110	0.119	0.124
	(0.0823)	(0.0818)	(0.0785)	(0.0796)
Forced Recruitment by Government	0.154*	0.156*	0.148*	0.165**
	(0.0796)	(0.0799)	(0.0773)	(0.0787)
Constant	-0.379**	-0.360**	-0.394***	-0.387***

	(0.153)	(0.151)	(0.147)	(0.148)
N	927	927	927	927
R^2	0.257	0.243	0.281	0.256
Log Likelihood	-527.4	-535.8	-512.1	-528.1

Note: Standard errors of the pooled logit models are clustered around each rebel group and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

G. Lagging Independent Variables Only

Existing research points out that the endogeneity issue cannot be solved even if we run our models with the lagged independent variables (Bellemare et al. 2017), however, I run the models with the lagging independent variables to check whether the statistically important relations keep remain after lagging my independent variables.

(1) Government Side

In the Models 1 and 2, the results show that governments who ratified the Rome Statute do have statistically important correlation between their forced recruitment. In the IV models, it suggest that governments are likely to recruit children coercively after they ratified the treaties. Across the models, the statistical results show that governments are less likely to recruit children coercively when there are more HROs in their country.

	Probit Models		**IV Probit Models**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
OPAC	0.356		0.964*	
	(0.231)		(0.514)	
Rome Statute		0.712*		2.017*
		(0.421)		(1.139)
Conflict Duration	0.00115	-0.000502	0.00459	-0.00144
	(0.0246)	(0.0244)	(0.00829)	(0.00796)
Battle-related Deaths	0.117	0.120	0.122***	0.146***

	(0.0797)	(0.0803)	(0.0444)	(0.0496)
Youth Population	1.242	1.170	1.269***	1.105**
	(1.155)	(1.160)	(0.485)	(0.486)
GDP (per capita)	0.197	0.200	0.246**	0.246**
	(0.325)	(0.327)	(0.111)	(0.111)
Infant Mortality Rate	0.000951	0.000733	0.00333	0.00262
	(0.00935)	(0.00907)	(0.00400)	(0.00386)
Democratic Regime	-0.524	-0.540	-0.580***	-0.578***
	(0.537)	(0.545)	(0.179)	(0.177)
Number of HROs	-0.340***	-0.332***	-0.349***	-0.340***
	(0.106)	(0.105)	(0.0445)	(0.0446)
State Fighting Capacity	0.191	0.218	0.175	0.284
	(0.395)	(0.393)	(0.171)	(0.180)
Forced Recruitment by Rebel Groups	0.595	0.595	0.512***	0.522***
	(0.421)	(0.416)	(0.162)	(0.160)
Constant	-6.901	-6.686	-7.576***	-7.180***
	(5.079)	(5.212)	(2.226)	(2.177)
N	646	646	646	646
Chi^2	33.24	42.76	146.2	143.2
Pseudo-R^2	0.295	0.298		

Note: Standard errors of the pooled probit models are clustered around each government and are displayed in parentheses. IV probit models are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(2) Rebel Group Side

Rebel groups are more likely to recruit child soldiers forcibly under the impact of the OPAC whereas there is no important impact by the ICC. The statistical results suggest that rebel groups are less likely to recruit children when they have goal to independent from their own governments. Across the models, rebel groups are more likely to recruit children coercively when conflict lasts longer, conflict intensity becomes stronger, and their fighting capacity is stronger.

	Logit Models		Interaction Models	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Introduce of OPAC	0.807**		2.852***	
	(0.393)		(0.646)	
Introduce of ICC		0.0938		0.782
		(0.297)		(0.561)
OPAC × Secessionist			-3.278***	
			(0.835)	
ICC × Secessionist				-1.406**
				(0.656)
Conflict Duration	0.131***	0.126***	0.139***	0.133***
	(0.0378)	(0.0363)	(0.0376)	(0.0380)
Battle-related Deaths	0.448***	0.460***	0.434***	0.448***
	(0.122)	(0.120)	(0.123)	(0.123)
Political Wing	0.126	0.0399	0.0815	0.0514
	(0.312)	(0.318)	(0.318)	(0.320)
Secessionist Group	-0.983*	-0.836	-0.212	-0.278
	(0.584)	(0.580)	(0.653)	(0.596)
Lootable Resources	0.442	0.430	0.407	0.390
	(0.523)	(0.514)	(0.544)	(0.512)
Territorial Control	0.0582	0.0564	-0.0678	-0.00666
	(0.272)	(0.267)	(0.291)	(0.268)
Strength Control	0.425	0.365	0.529	0.369
	(0.378)	(0.363)	(0.404)	(0.365)
Rebel Fighting Capacity	0.913*	0.834*	1.005*	0.961**
	(0.511)	(0.492)	(0.514)	(0.481)
Forced Recruitment by Government	0.626	0.652	0.585	0.737
	(0.494)	(0.485)	(0.512)	(0.496)
Constant	-5.116***	-4.829***	-5.495***	-5.079***
	(1.191)	(1.141)	(1.247)	(1.137)
N	705	705	705	705
Chi^2	38.37	34.35	59.19	39.68
Pseudo-R^2	0.226	0.210	0.275	0.224

Log Likelihood	-363.4	-370.8	-340.1	-364.0

Note: Standard errors of the pooled logit models are clustered around each rebel group and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

H. Overall Recruitment

These models examine the impact of IHRs on overall child recruitment by governments and rebel groups. The main manuscript highlighted the importance of researching forced child soldiering, there are some children who engage in armed conflicts by their volition. This overall child recruitment embraces both voluntary and coerced child recruitment due to the data limitation. I utilise two different data to measure child recruitment: Haer, Faulkner and Whitaker (2020)'s and Tyens and Early (2015)'s. I use Haer et al. (2020)'s data for measuring rebel groups' recruitment and Tynes and Early (2015)'s data for governments. The data introduced by Tynes and Early (2015) covers until 2007 while Haer et al. (2020) covers until 2011. Both variables take a dichotomous value. Approximately 42% of the governments recruit children whereas nearly 75% of rebel groups recruit children.

Table A: Overall Child Recruitment by Governments and Rebel Groups[18]

Government	Frequency (N)	Percentage (%)	Rebel Groups	Frequency (N)	Percentage (%)
No	37	30.33	**No**	65	25.49
Yes	52	42.62	**Yes**	193	75.69
Total	122	100.00	**Total**	255	100.00

[18] Descriptive statistics of cross-sectional variables collapsed over governments and rebel groups respectively.

(1) Government Side

From Models 1 to Model 2, governments are likely to recruit children when they ratified the Rome Statute whereas Models 3 and 4 suggest that governments' ratification on the OPAC and the Rome Statute do not have statistically significant impact on overall child recruitment. Across the models, governments are likely to recruit children when conflict lasts longer, youth population is larger and bigger the economic capability is. Governments, on the other hand, less likely to recruit children when they have democratic regime and have more power capabilities than their opponent rebel groups.

	Probit Models		**IV Probit Models**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
OPAC	0.420		0.683	
	(0.291)		(0.595)	
Rome Statute		1.397**		1.250
		(0.671)		(0.997)
Conflict Duration	0.0418**	0.0399*	0.0431***	0.0401***
	(0.0209)	(0.0229)	(0.00938)	(0.00890)
Battle-related Deaths	0.00147	0.0121	0.00511	0.00976
	(0.0959)	(0.101)	(0.0538)	(0.0550)
Youth Population	2.961*	2.957**	2.947***	2.977***
	(1.549)	(1.505)	(0.558)	(0.573)
GDP (per capita)	0.785**	0.803**	0.808***	0.798***
	(0.384)	(0.382)	(0.146)	(0.140)
Infant Mortality Rate	0.00276	0.00259	0.00408	0.00227
	(0.0122)	(0.0114)	(0.00514)	(0.00462)
Democratic Regime	-1.021*	-1.069*	-1.043***	-1.063***
	(0.606)	(0.611)	(0.198)	(0.193)
Number of HROs	-0.0330	-0.0237	-0.0353	-0.0237
	(0.0675)	(0.0565)	(0.0314)	(0.0280)
State Fighting Capacity	-2.301***	-2.307***	-2.305***	-2.317***

	(0.670)	(0.686)	(0.238)	(0.247)
Forced Recruitment by Rebel Groups	-0.329	-0.368	-0.360**	-0.360**
	(0.387)	(0.387)	(0.181)	(0.175)
Constant	-12.39*	-12.51**	-12.63***	-12.48***
	(6.347)	(6.225)	(2.629)	(2.575)
N	523	523	523	523
Chi^2	27.29	22.71	147.7	152.4
Pseudo-R^2	0.327	0.340		

Note: Standard errors of the pooled probit models are clustered around each government and are displayed in parentheses. IV probit models are displayed in parentheses. *$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(2) Rebel Group Side

The statistical results suggest that rebel groups are likely to recruit children regardless of mode of recruitment even under the potential impact of the OPAC. However, the results also suggest that there is no statistically important correlation between separatist rebel groups and their compliance on IHRs. Jo (2015) argues that secessionist rebel groups are likely to get a chance to support from locals that rebel groups may have a chance to recruit volunteered children, however, since the data of this analysis capture both voluntary and forced recruitment at the same time, her argument is not supported here. Across the models, the statistical results indicate that rebel groups are more likely to recruit children when conflict lasts longer, and their opponents recruit children coercively. However, rebel groups' power of control may decrease rebel groups' likelihood of engaging child soldiering.

	Logit Models		**Interaction Models**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Introduce of OPAC	1.817***		1.517***	
	(0.547)		(0.580)	
Introduce of ICC		0.809		0.711

		(0.513)		(0.605)
OPAC × Secessionist			1.327	
			(1.453)	
ICC × Secessionist				0.425
				(1.068)
Conflict Duration	0.701***	0.669***	0.702***	0.671***
	(0.118)	(0.116)	(0.117)	(0.114)
Battle-related Deaths	-0.0930	-0.0440	-0.106	-0.0495
	(0.125)	(0.122)	(0.131)	(0.127)
Political Wing	-0.229	-0.142	-0.214	-0.146
	(0.270)	(0.275)	(0.274)	(0.274)
Secessionist Group	0.647	0.793	0.456	0.661
	(0.527)	(0.515)	(0.591)	(0.630)
Lootable Resources	0.461	0.494	0.497	0.515
	(0.617)	(0.613)	(0.609)	(0.605)
Territorial Control	-0.0477	-0.120	-0.0198	-0.112
	(0.200)	(0.195)	(0.200)	(0.198)
Strength Control	-0.838**	-0.781**	-0.851**	-0.794**
	(0.345)	(0.350)	(0.339)	(0.343)
Rebel Fighting Capacity	0.521	0.477	0.524	0.468
	(0.415)	(0.358)	(0.420)	(0.359)
Forced Recruitment by Government	1.520**	1.470**	1.560***	1.491**
	(0.606)	(0.595)	(0.602)	(0.601)
Constant	1.226	0.930	1.328	1.012
	(1.033)	(1.006)	(1.046)	(1.041)
N	927	927	927	927
Chi^2	63.67	58.71	67.15	63.29
Pseudo-R^2	0.435	0.407	0.437	0.408
Log Likelihood	-151.4	-158.7	-150.6	-158.5

Note: Standard errors of the pooled logit models are clustered around each rebel group and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Chapter 3. Vicious Gift? Types of External Support and Child Recruitment by Rebel Groups

3. 1. Introduction

The Lord's Resistance Army (LRA) in Uganda was infamous for their recruitment of children during their conflict with Uganda government. Joseph Kony, the leader of the LRA, actively abducted children and young adults. It is estimated that nearly 38,000 children were abducted by the LRA (Pham et al. 2008). Meanwhile, to sustain their military power, Kony not only recruited children but also received territorial and material support from the Sudanese government (Patel et al. 2012; Papa and Mapendere 2017). In another example, the Revolutionary United Front (RUF) in Sierra Leone also actively recruited children during the conflict. Children in the RUF forced to work as soldiers or sex slaves (Denov 2010; Tynes 2018). RUF had a strong tie with the National Patriotic Front of Liberia (NPFL), and the group sustained its military power by receiving support from the NPFL.

This research examines whether having external support can affect rebel groups' recruiting children as soldiers. More specifically, this research asks whether rebel groups' engagement in child soldiering will be different depending on what they receive from their external supporter. I argue that rebel groups may recruit more or fewer children dependent on the type of support they receive. For instance, the National Democratic Front of Bodoland (NDFB) and the Maoist Communist Centre (MCC) received different types of support from their external supporters. Both were active in India, the NDFB received support such as territorial support whereas the MCC got troops or weaponry support (Högbladh et al. 2011). Both of them used children as soldiers, but the NDFB recruited higher numbers of children than the MCC (Haer et al. 2020) during each conflict. Thus, in this research, I disaggregate types of

support and examine each impact on rebel groups' child recruitment rather than simply test the influence of external support.

Existing research on child soldiers focuses on why children participate in conflict from a demand – supply side perspective (e.g. Francis 2007; Beber and Blattman 2013; Tynes and Early 2015; Lasely and Thyne 2015). Some scholars also study how participation of children in armed conflict can affect conflict duration (Haer and Böhmelt 2017), whether child soldiers can influence military capacity (Haer and Böhmelt 2016a) or how child soldiers affect peace keeping operations (Bakaki and Hinkkainen 2016) and children's reintegration to society (e.g. Halton 2011; Utas 2011).

Building on this literature, this research seeks to contribute to understand the possible linkage between external support and child recruitment by rebel groups. Intervention of third party, especially external support has been emphasised by the existing researchers when they examine rebel groups' strategies during armed conflict (e.g. Salehyan et al. 2014; Sawyer et al. 2017; Zhukov 2017). Despite the fact that child recruitment has been researched by several scholars and child soldiering is one of the rebel groups' tactics, the relationship between external support and child soldiering by rebel groups remains understudied.

Although existing research suggests that external support has no effect on forced child recruitment (Haer et al. 2020), this research shows that external support does have an effect on overall child recruitment once it is disaggregated into different support types. Therefore, exploring whether a certain type of external support influences rebel groups' engagement in child soldiering facilitates on-going debates about a possible factor that may affect rebel groups' decision in recruiting children. Specifically, research on child soldiers is likely to focus on domestical factors, therefore, examining the influence of international factor such as external

support may promote the discussion of why child soldiering continuously takes place in conflict zones.

This study also contributes to developing the discussion on armed conflicts, rebel groups' strategies during civil war and conflict management. Many rebel groups are receiving support and cooperating with different actors during armed conflicts, that without understanding the influence of external support, one cannot fully understand armed conflicts (Salehyan et al. 2011). Understanding armed conflicts may also help scholars to understand the reasons behind the use of child soldiers by rebel groups during the wartime. Therefore, this research also largely contributes to bridging the mechanism between foreign support and armed conflicts, and additionally human rights issue in conflict zone. In addition, this research redounds to policy makers who aim to reduce child involvement on armed groups and protect children from violence during conflict. If a certain type of support makes rebel groups likely to recruit more children, identifying both relationships will provide a new insight and plausible pathway to establish better solutions for policy makers who seek to protect children from armed conflicts.

My theoretical arguments look at both demand and supply side for answering the question how different types of external support affect child recruitment by rebel groups. I argue that rebel groups who receive territorial support from their external supporter are more likely to recruit more children than rebel groups who do not receive such support. This is because when rebel groups with territorial support, they have more chance to encounter new children who may agree their goals. Furthermore, when this safe haven – external territory – is use as refugee camp in supporter's territory, rebel groups can recruit children who lost their parents or who want to escape from extreme poverty. On the other hand, troop support and monetary support discourage rebel groups from using children as soldiers.

This paper proceeds as follows. In the next section, I introduce the existing literature regarding child recruitment by dividing literature into supply versus demand side and how and why external support happens. Then I pose a number of hypotheses with some discussion what types of external support motivate rebel groups to recruit children in higher numbers than others. In the third section, I analyse the data and discuss the statistical results. In conclusion, I provide theoretical and policy relevant implications of my findings and limitation of this research.

3. 2. The Rationale Behind Child Soldier Recruitment and Impact of External Support

The 1989 United Nations Convention on the Rights of the Child (UNCRC) defines a child as 'every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier'[19]. It has been ratified by 194 states and it suggests that there is worldwide agreement on the definition of a child (D'Costa et al. 2015). Furthermore, the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict (OPAC) shows that the international community generally considers child soldiers to be individuals under the age of 18. However, the definition of children can differ among countries because each country has different anthropical perspectives on children, meaning different societies have diverging ideas about children's roles (Kononenko 2016). Therefore, it is not rare to see children who join serious labour and even armed groups in conflict zones. In conflict zones, children do not only serve as soldiers, but also work as cooks, spies, messengers, 'mine-cleaners' or sex-slaves, and other roles (Brett and MacCallin 1996).

Child participation in armed groups has been researched by scholars and international organisations. Scholars point out that availability of light-weight weapons like the AK-47 (Stohl 2002) or the increase of youth population (Dallaire 2011; Haer 2019) make it easier for armed

[19] United Nations Conventions on the Rights of the Child Article 1.

groups to recruit children. The existing literature primarily has focused both on demand and supply reasons to explain why children are engaged in conflict (e.g. Brett and MacCallin 1996; Vautravers 2009; Beber and Blattman 2013).

From the demand-side perspective, scholars raise the following points as the reasons why rebel groups recruit children as soldiers. First, Vautravers (2009) and Beber and Blattman (2013) point out that children are less expensive 'human material' because they rarely have high demands from their recruiter, and in turn, armed groups prefer to recruit children than adults. Also, children are easier to brainwash and manipulate, or more loyal than adults which makes them more desirable recruits than adults (Vautravers 2009; Beber and Blattman 2013). Children are especially easier for rebel leaders to influence by using substances such as alcohol or drugs (Vautravers 2009) that make them more risktakers than adults. Third, children can provide tactical benefits to rebel groups (Honwana 2006; Singer 2006; Tynes and Early 2015). For instance, scholars suggest that using child soldiers can attract attention from oversea and create psychological complexities which lead hesitation of attacks by opposition groups (Tynes and Early 2015). Lastly, recruiting children simply increases the number of members. Existing studies explain that children have been used as an effective solution to the troops' shortage of rebel groups (Brett and MacCallin 1996; Singer 2006; Tynes and Early 2015).

Some of these demand-side perspectives also address an opportunity perspective (Haer and Böhmelt 2017). In other words, recruiting children as soldiers can provide an opportunity to rebel groups. Scholars argue that children can influence power asymmetry between rebel groups and their opponents and enhance rebels' ability to resist their opponents (Haer and Böhmelt 2017). This is derived from the nature of child soldiers being more adaptable and obedient that can help to replenish personnel shortages or rebuild rebels' forces (e.g. Vautravers 2009; Beber and Blattman 2013) which mentioned earlier.

That said, child soldiering can also be explained using supply-side factors. Children in serious poverty who seek basic necessities, such as places to live, food to eat, and clothes to wear are encouraged to join armed groups (Brett and MacCallin 1996). These socio-economic reasons are widely considered within the scholarship. Goodwin-gill and Cohn (1994) are the first to tackle the child soldiers issue from a socio-economic perspective. Including Goodwin-gill and Cohn, scholars like Francis (2007) argues that socio-economic factors like poverty, social deprivation, and limited education make children to join armed forces. Also, street children or refugees provide chances to rebel leaders to recruit them (Singer 2006). Especially, children who are displaced in camps for internally displaced persons (IDP) or refugee camps are easier to be targeted (Achvarina and Reich 2006; Lischer 2010). Family and self-protection, or mis-heroism can also push children to participate in armed groups (Francis 2007) as well. Norms are another reason which incentivise children to be exposed to warfare (Machel 1996; Lasely and Thyne 2015). Moreover, some children believe participating in conflict is much safer than escaping it. Children can consider joining a rebel group not only for protection but also for their prestige (Lasely and Thyne 2015). In addition, they may believe that having a gun or the military uniform gives them power and prestige (Wessells 2005; Chen 2014). Seeking revenge [20] is another reason why children often willingly join armed groups (Brett and MacCallin 1996).

Although the literature on demand and supply factors of child soldiering is rich, there is a lack in understanding on how the intervention of a third party can affect child soldiering by rebel groups. On the other hand, the impact of external support on a conflict and actors has been actively researched by scholars. For instance, they argue that external support may extend the

[20] Children may seek revenge to their government or rebel groups. During a conflict, children may lose their family or friends and those events can make children to join conflict as soldiers.

conflict duration (Akcinaroglu and Radziszewski 2005), change conflict intensity (Gleditsch and Beardsley 2004) or cause conflict recurrence (Karlén 2017).

External supporters support rebel groups to establish democracy (Carothers 2006; Coyne 2008; Salehyan 2010) or make a new government which is friendly toward them (Vanneman and James 1983; Salehyan 2010). From a recipient side perspective, attaining external support helps rebel groups to mislead their opponents about their fighting capacities (Sawyer et al. 2017). Moreover, support from outside directly enhances rebel groups' resources and strengthens rebel groups to capacity in conflict (Testerman 2015). Hence, it also implies means for survival for rebel groups (Weinstein 2007).

At the same time, existing literature suggests that having external support significantly shifts rebel groups' attitude toward local civilians. Foreign support can be interpreted as a substitute for local support (Salehyan et al. 2014; Sawyer et al. 2017) and it makes rebels less reliant on local support (Zhukov 2017). Therefore, rebel groups are likely to employ unconstrained tactics that motivate them to execute violent attacks (Salehyan et al. 2014; Sawyer et al. 2017; Zhukov 2017). Foreign support also motivates rebel groups to recruit civilians without consent (Weinstein 2007). Along these lines, rebel groups may also engage in coercive child recruitment because they may not need to restrain violence or seek consent as they do with adult civilians.

If external support can influence certain features of rebel groups, I expect it can also influence the likelihood of those groups to recruit children considering that child soldiering is one of rebels' strategies. External support during armed conflicts causes deadlier and longer conflicts (Lucina 2006; Cunningham 2010; Aydin and Regan 2012); the increase of conflict intensities or duration correlates the child recruitment by rebel groups (Singer 2006; Haer and Böhmelt 2017). Therefore, when rebel groups have external support, they may also be likely to

recruit children more actively because of prolonged and intensified armed conflicts from the impact of external support. In addition, external support of certain resources such as funds and weapons could also increase the possibility of those groups to recruit more children (Haer et al. 2020).

Regarding types of support, Sawyer et al. (2017), for instance, point out that each type of support yields different results on civil wars. In other words, depending on what rebels receive from their supporters, civil wars can be prolonged or concluded. Scholars also argue each type of external support has a different impact that dependent on what rebel groups receive, it can differently influences rebels' motives (Huang and Sullivan 2021). Certain types of support, especially monetary support, helps rebel groups in recruitment since it will assist them with their propaganda and generate incentives for their fighters (Byman 2005). Additionally, receiving sanctuary from a supporter often provides rebel groups with a new place for recruitment (Byman et al. 2001). These existing studies suggest that different types of support cause different effects and show how different types of support affect rebel groups' movements. This research expects that as different types of external support yield diverse rebel groups' tactical choices, those could also affect differently on their recruitment, namely child soldiering.

3. 3. Types of External Support and Rebel Groups' Child Recruitment

Approximately 50 percent of rebel groups' activities have been supported by external actors after the end of the Second World War (Cunningham et al. 2013; Tamm 2016). Rebel groups may receive different types of support such as troops, training, weaponry, and logistic support from external patrons. All types of support can either directly or indirectly influence child soldiering by rebel groups. However, this research focuses on three types of support which

might intertwine with rebel groups' child recruitment: territorial access, troop, and monetary support.

I focus on these three types of support (i.e., territorial, troop, and monetary support) between several possible support alternatives in the following logical orders. Firstly, I divided fungible and non-fungible support. 'Fungible' support means that a person can substitute a certain support to another by using it. Monetary support and resource support can be categorized into this type of support. On the contrary, 'non-fungible' support, such as troops, territorial access, and training cannot be replaced with other types of support. I, then, also selected territorial access, and troop support as types of non-fungible support. This is because territorial support and troop support are respectively represent material and personnel support. These three different support types are directly related to recruiting new members. More specifically, territorial access broadens the chance of rebel groups to encounter more people by enlarging their active region, troop support increases the number of their members, and monetary support enables rebel groups to hire new members[21]. Based on these points, this research focuses on these three types of support rather examining remained types of foreign support.

To start with the impact of territorial support, in recent conflicts, many rebel groups have had the chance to access cross-border sanctuaries (Byman et al. 2001). However, compared to different types of external support, impact of territorial support is underestimated. Accessing external supporter's territory enables rebel groups to protect their militants from government attacks, to find a place to train, or to spread propaganda (Byman et al. 2001; Salehyan 2008). Territorial access provides a new place where rebel groups can recruit new

[21] Indeed, there are additional types of support that this research does not cover, this research selects three most relevant external support on rebel groups' child recruitment. It is meaningful to develop further research with comparing other support types which this research does not cover. Check appendix G to see the result when testing all types of external support that UCDP External Support Data covers.

members with ease. It may be because accessing the new territory simply increases the chance to encounter more people who may agree goals or ideologies of rebel groups and it also allows for engaging with more children as well. Access to substantial territory means rebels encounter new people, which allows for the unconstrained conscription of children with no reputation costs in their own country (Achvarina 2010). Furthermore, if rebel groups successfully integrate into the local societies of their supporters, it can also increase their opportunities to recruit children. For instance, rebel groups like the National Movement for the Liberation of Uganda (NALU) recruited youth by interacting with the local population in their supporting state, Zaire (Titeca and Vlassenroot 2012).

Second, external territorial access can operate as a safe haven to rebel groups. Generally, safe haven provides a place where rebel groups can take a rest, reorganize, train, and even recruit new members without attack from their opponents (Byman et al. 2001). For instance, the LRA had their base camps in the southern Sudan (now South Sudan) where they recruited children repeatedly and coercively (Allen et al. 2020). Furthermore, the LRA abducted local children to the camps for the purpose of training them as soldiers (Ehrenreich 1993).

When these safe haven works as a refugee camp, it may increase rebel groups' chance to access more children when the camp locates the host state. This is because refugees may have more incentives to revenge their home governments (Salehyan 2007), and if the home government of refugees is the common enemy of a rebel group, rebel group can recruit 'refugee warriors' at a lower cost. Concurrently, in refugee camps, children being vulnerable are also easily targeted by rebel groups (Goodwin-gill and Cohn 1994; Barnitz 1997; Achvarina and Reich 2006). Achvarina and Reich (2006) argue that rebels' access to refugee camps can increase both forced and volunteered participation of children in armed groups. Reasons such as limited resources, extreme poverty and revenge to opponents drive children in refugee camps to decide to join the armed groups based on the discussion of supply side reasons. On the other

hand, those camps are relatively have limited protection system. Therefore, considering that children constitute nearly 60 percent of the inhabitants of refugee camps in UNHCR controlled facilities in Africa (UNHCR 2001), rebels can recruit children without any obstacles to replenish their military shortage or to seek cost effective human resources. For example, Lebanon allowed several Palestine insurgents to access their territory (Byman et al. 2001). During conflict, these groups ran refugee camps in Lebanon and educated children in camps to join armed conflict (Child Soldier International 2004). It suggests that territorial support provides chance to rebel groups to recruit children.

Hypothesis 1*: Rebel groups that receive territorial support are more likely to recruit more child soldiers than rebel groups with no such support.*

Troop support is another type of support which widely used by external suppliers to rebels. Existing research suggests that nearly 16 percent of rebel groups received troops as support from an external backer from 1945 to 2011 (Cunningham et al. 2013; Tamm 2016; Tamm 2019). Although this support also directly affects rebels' recruitment, troop support is not likely to cause rebel groups to engage in child soldiering. Rather, rebel groups will use fewer children when they receive troops from their supporters.

Previous studies have shown that rebel groups do have incentive to use children who are likely overpopulated in conflict zones (e.g. Vautravers 2009; Haer 2019) because child soldiers may strengthen the fighting capacity of armed groups (Haer and Böhmelt 2016a). However, if they can retain constant troop support, rebel groups do not necessarily recruit children. Since children are unskilled and in most of cases they are just recruited for bolstering the military number (Tynes and Early 2015), meaning that receiving troop from their supporter

may decrease incentive to use children as soldiers. Furthermore, attaining external troop support enables rebel groups to obtain more military capacity in relation to their belligerents (Johansson and Sarwari 2019) that rebel groups may not necessarily need to actively engage in child soldiering. Due to its imminent and drastic impact, troop support can work as a potential game-changer during a conflict (Krain 2005; Johansson and Sarwari 2019). In this case, putting relatively low skilled children becomes a less preferable option for rebel groups when they can otherwise acquire sufficient military forces from their external supporter.

***Hypothesis 2**: Rebel groups who receive troop support are less likely to recruit children than rebel groups who do not receive troop support.*

Moving to the external monetary support, I suggest that it increases rebel groups' economic wealth and economic conditions. Existing literature shows that economic shortage leads rebel groups to engage in child soldiering (Richards 2014). This is because children are recognised as less expensive forces than adults or well-trained soldiers (e.g. Vautravers 2009; Andvig 2010; Bosch and Easthorpe 2012), which is desirable for rebel groups to recruit children when they are on limited budget. That said, some studies argue that rebel groups are willing to recruit more children even when they have enough resources to maintain their power without them (Faulkner et al. 2019; Haer et al. 2020).

Unlike the previously discussed types of support, funding is a fungible type of support that rebels can utilise in various ways, including purchasing new weapons and food, or recruiting soldiers (Sawyer et al. 2017). If rebel groups who initially experienced power and economic asymmetry (Cunningham et al. 2009; Hear and Böhmelt 2017) during conflict, gaining monetary support from their external supporter means that they could sustain their

military power (Lujala 2010) by replenishing necessities such as weapons and soldiers. Especially, having enough money helps them to recruit new skilled members. Children may still have incentive to join rebel groups based on supplier side reasons, however, as troop support, if rebel groups have enough manpower or resources to sustain their military power, there should be less demand to use child soldiers. With financial support, rebel groups may have less incentives to recruit children based on the argument that economic shortage makes them recruiting children.

Hypothesis 3*: Rebel groups who receive external monetary support are less likely to recruit children than rebel groups who do not receive such support.*

3. 4. Research Design

To systematically test my hypotheses, I utilise expanded data by Haer, Faulkner and Whitaker (2020). They built on the data constructed by Haer and Böhmelt (2016a, 2016b, 2017) namely the Child Soldier Data Set (CSDS). While CSDS takes conflict dyad-period[22] as its unit of analysis, the data expanded by Haer et al. (2020) use conflict dyad-year as the unit of analysis. Although they introduce this data mainly for analysing coercive recruitment and their research is also about forced child soldiering, they also provide data of general child recruitment (which includes voluntary and coerced recruitment) by rebel groups which this research mainly focuses. This data spans from 1990 to 2011. I employ the expanded data by Haer et al. (2020) for two main reasons: first, it offers annual information; and secondly, the data is suitable for combining the UCDP External Support Project - Primary Warring Party Dataset (hereinafter, called the

[22] Government is connected to one rebel group in a particular conflict period (Haer et al. 2020).

UCDP External Support Dataset; Högbladh et al. 2011) which offers detailed information about external support in a given year. The UCDP External Support Dataset uses yearly information which covers from 1975 to 2009. My analysis studies the years between 1990 and 2009, a time period that is covered in the two different datasets by Haer et al. (2020) and Högbladh *et al.* (2011).

Dependent Variable: Use of Child Soldiers

For the dependent variable, *use of child soldiers*, I rely on Haer et al. (2020)'s ordinal variable of child recruitment (not forced recruitment which their research mainly focus on), which separates "no child soldiering" from "low child soldiering" and "high use of child soldiering"[23]. I reconstructed this variable as lower recruitment which includes no child soldiering and low child soldiering and higher recruitment which refers high child soldiering for the following reasons.

First and utmost, this research aims to examine whether rebel groups recruited more or fewer children rather than whether their engagement in child recruitment happened or not. I expect that rebel groups can decide whether they recruit children or not based on such as their environment or capability regardless of having external support. Therefore, this study interests in whether having a specific support increases the number of child recruitment rather they will engage in child soldiering or not after they receive support. Second, I assume that no matter what types of support that rebel groups receive from their supporter, there are no constraints on

[23] In Haer et al. (2020)'s data, they coded variable for overall child recruitment (which covers both voluntary and forced) as follows: when rebel groups have more than 50% of child soldiers in their total military population, it takes 2, when less than 50%, it takes 1 and 0 otherwise. In appendix J, I also run the model using ordinal dependent variable which originally Haer et al. (2020) provided in their data. The statistical results accord the result of the main manuscript.

rebel groups' decision on child recruitment unless their supporter strongly regulate child soldiering or they reluctant to use children as their soldiers. Since the research focuses on types of support, I assume that rebel groups still have incentives to recruit children and a certain type of support can only decrease the likelihood of child soldiering. For these two reasons, the dependent variable in this research takes a dichotomous value: I coded 0 when rebel groups recruit less children as soldiers and 1 for higher recruitment.

Table 1. Distribution of Child Usage in Rebel Groups Collapsed over Rebel Groups[24]

Child Recruitment	Frequency (N)	Percentage (%)
Low Recruitment	212	87.240
High Recruitment	33	13.580
Total	243	100.00

Table 1 shows the distribution of child usage by rebel groups. In total, there are 243 rebel groups in my sample. Nearly 87 percent of rebel groups used low number of children whereas approximately 13 percent of rebel groups recruited higher volumes of children[25].

[24] Descriptive statistics of cross-sectional variables which are collapsed over conflict period. Unit of analysis is rebel group-government conflict period.

[25] Existing studies suggests that there are children who voluntarily participate in armed groups. For the purposes of this I do not distinguish between voluntary and forced recruitment in my research.

Independent Variables: Types of Support

I employ variables from the UCDP External Support Dataset (Högbladh et al. 2011) to assess the influence of external support on rebel groups' recruitment of children. The dataset is set up in the recipient side of analysis. It offers information on what kind of support that primary warning groups received in each dyad-year. For instance, it shows the information that the RUF in Sierra Leone received intelligence, weapons, materiel or logistics, and training support from their external supporters in 1991.

The UCDP External Support Dataset categorises types of support that rebel groups received from external supporter in each dyad-year. This analysis focuses on following three specific variables: *territorial support*, *troop support*, and *monetary support*. Table 2 shows that approximately 17 percent of rebel groups were allowed territorial access in their supporter's territory, around 5 percent of rebel groups received troop support, and nearly 15 percent of rebels received monetary support. To test my hypotheses, I set each type of support as a binary value. For instance, if rebel groups received monetary support from its external supporter, I coded it as 1 and 0 otherwise. Same applies to all types of support measures.

Control Variables

I include several control variables to control for unobserved factors. First, I control *conflict duration*. The longer a conflict lasts, the more likely rebel groups become to recruit more children (Haer et al. 2020) to replenish military shortages. This data comes from the Non-State Actor (NSA) dataset introduced by Cunningham et al. (2009, 2013).

Similar to conflict duration, rebel groups will engage in more child soldiering to cover their militant losses if conflict is severe (Singer 2006; Haer and Böhmelt 2017). Hence, I set

the total *battle-related death* events to measure the intensity of conflict. The data is from the UCDP Battle-Related Deaths Dataset (Gleditsch et al. 2002).

Poverty can motivate children to join rebel groups (e.g. Achvarina and Reich 2006; Francis 2007). On the contrary, rebel groups in developing countries are likely to have incentives to recruit children who are less expensive than adults (e.g. Vautravers 2009; Beber and Blattman 2013). To measure the poverty of a state, I control for *GDP per capita* using the natural logarithm from a country's GDP per capita take measured by Gleditsch (2002).

Following, I control for the *youth population* (natural logarithm). If there are many children in a given region means that there are enough children to be potentially recruited in the future. Some studies have also pointed out that child over-population is one reason which could explain the increased demands of recruiting by rebel groups (Dallaire 2011; Haer 2019). The information on the size of youth population is from the World Bank.

Also, I control for the *level of democracy* to control for the state's democratic capacity. Existing research argues that rebel groups who are active in democratic states may have more restrain to use child soldiers than rebel groups who do not (Tynes and Early 2015). Following Haer et al. (2020)'s dataset, the level of democracy is measured on a 0 (full autocracy) to 20 (full democracy) scale instead of original polity IV data, which scales from -10 to 10 (Marshall and Jaggers 2002).

If rebel groups have their own *political wing*, they may not recruit children if they desire to attain legitimate existence both domestically and internationally. Jo and Thomson (2013) suggest that certain rebel groups hope to interact with other political actors by accepting international rules, by which rebel groups potentially show their willingness to gain legitimacy. Therefore, rebel groups with their own political wings have less incentives in engaging in child

soldiering. The information is from the NSA data (Cunningham et al. 2009, 2013) and it is coded 1 for the presence of a political wing and 0 for its absence.

Existing research has suggested a link between child soldiering and increases in rebel groups' fighting capacities (Haer and Böhmelt 2016a). Therefore, rebel groups with relatively high fighting capacity do not necessarily recruit children because they may be able to defeat their opponents without aid from children. For this, I control for *rebel groups' fighting capacity*, relative to the government's forces. I use the NSA dataset (Cunningham et al. 2009, 2013) for this variable and it is coded 0 if the rebel groups' fighting capacity was lower than government forces, 1 for equal capacities, and 2 if the rebels' capacity was higher than the government forces.

I also include the *territorial control* as a control variable. Rebel groups are less incentivised to use violence against their citizens when they control their territory effectively (Stewart and Liou 2016). Additionally, if rebels effectively control a territory, rebel groups may have greater access to resources and an easier time recruiting adolescents (Kubota 2013; Haer et al. 2020) that when rebel groups have stronger power to control their territory, they may have more chance to recruit more children as well. This variable ranges from 0 (no territorial control) to 3 (high level of control) based on the NSA dataset (Cunningham et al. 2009, 2013).

This research controls for the *forced recruitment by government*. Haer et al. (2020) suggest that rebel groups will likely recruit children forcibly if governments recruit children coercively. At the same, I assume that rebel groups have a greater chance to recruit children under the government that forcibly uses children. Høiskar (2001) argues that when the government disrespects the human rights of its citizens, rebel groups can establish better relations with local populations, that I assume it can be a factor which motivates children to join armed groups. Høiskar (2001)'s research is more about political terror rather than coercive

recruitment, however, I expect that the government under the low human rights respect, children can be also conscripted as soldiers by government as well which finally increases the chance to recruit children by rebel groups. I include a dichotomous item that 1 measure forcible recruitment of children and 0 otherwise (Haer et al. 2020)

Table 2. Descriptive Statistics Collapsed over Rebel Groups[26]

Variables	Observations	Mean	Standard Deviation	Min	Max	VIF
Child Soldiers	243	0.134	0.34	0	1	-
Territorial Support	240	0.167	0.333	0	1	1.143
Troop Support	240	0.046	0.186	0	1	1.257
Monetary Support	240	0.148	0.314	0	1	1.12
Conflict Duration	243	4.642	6.28	1	42	1.481
Battle-related Deaths	232	6.048	1.36	3.219	9.21	1.146
Youth Population	232	3.634	0.255	2.69	3.904	2.461
GDP (per capita)	243	7.596	1.045	5.425	10.635	2.471
Level of Democracy	230	10.579	5.708	1	20	1.487
Political Wing	240	0.342	0.47	0	1	1.16
Fighting Capacity	233	0.367	0.538	0	2	1.318
Territorial Control	240	0.655	0.995	0	3	1.464
Forced Recruitment by Government	243	0.345	0.471	0	1	1.257

Table 2 also shows the variance inflation factor (VIF) which detects multicollinearity. Across the variables, there are no variables which are above 5 which indicate that my variables do not suffer from multicollinearity.

[26] Descriptive statistics of cross-sectional variables which are collapsed over conflict period. Unit of analysis is rebel group-government conflict period.

3. 5. Empirical Results

I employ a logistic regression analysis to examine the relationship between external support and child soldiering by rebel groups. Standard errors are clustered by rebel-government dyads to take into consideration the lack of independence among observations.

Regardless of the model specifications, territorial access has a positive and statistically significant relationship with high usage of child recruitment by rebels. In other words, rebel groups which allowed to access in external supporter's territory are more likely to use many children than rebel groups who do not. The results also suggest that there is a negative but statistically significant relationship between external troop support and high use of child recruitment in Model 2. However, there is no statistically significant result for this variable in Model 1. Regarding the third hypothesis, economic support, I do not find a statistically significant relationship with child recruitment across the models. The results show that my first hypothesis is supported, whereas the second hypothesis has limited support and third hypothesis is not supported.

Model 1 tests the influence of the primary independent variables – territorial access, troops, and monetary support – on the likelihood of child soldiering without control variables. The result indicates that rebel groups who have external territorial access have a positive and statistically meaningful relationship between child recruitment. However, troop support has negative and statistically no meaningful correlation with child soldiering. The model also reports that there is no statistically important impact on child soldiering when rebel groups receive monetary support.

Model 2 includes the confounding factors which may affect rebel groups' child recruitment. The result suggests that rebel groups are more likely to exploit more children when they receive territorial access as support, and less likely to recruit children when they receive

troops as support when holding control variables fixed. In contrast, there is no impact of monetary support on child recruitment. There is statistical importance between battle-related death, rebel groups' fighting capacity, and forced recruitment by government and likelihood of child soldiering by rebel groups. Rebel groups are more likely to use children when the intensity of conflict is higher, rebel capacity is stronger and government forcibly recruits children. Furthermore, the statistical result shows there is a positive and statistically meaningful correlation between higher child recruitment and the level of democracy. It refers that rebel groups who are active in democratic regime are more likely to recruit children in higher amount. It contradicts the existing literature which argues that democratic countries are likely to refrain the use of children (Lasely and Thyne 2015). Also, there is negative but statistically important correlation between child recruitment by rebel groups and GDP per capita. In other words, rebel groups are less likely to recruit more children when GDP per capita becomes higher. Loglikelihood and Pseudo-R^2 values show that the Model 2 increases its explanatory power over the first model.

Table 3. Type of External Support and Child Recruitment by Rebel Groups

	Model 1	**Model 2**
Territorial Support	0.988***	1.082**
	(0.370)	(0.421)
Troop Support	-0.413	-2.989**
	(0.950)	(1.322)
Monetary Support	-0.159	-0.318
	(0.583)	(0.494)
Conflict Duration		0.0108
		(0.0286)
Battle-related Deaths		0.400***
		(0.109)
Youth Population (log)		-2.063
		(1.620)
GDP (log)		-1.103***
		(0.409)
Level of Democracy		0.125***
		(0.0484)
Political Wing		-0.219
		(0.599)
Fighting Capacity		1.155**
		(0.536)
Territorial Control		0.133
		(0.286)
Forced Recruitment by Government		1.487***
		(0.511)
Constant	-1.276***	9.390
	(0.257)	(7.999)
N	941	846
Chi^2	7.715	36.65
Pseudo-R^2	0.0293	0.230
Log Likelihood	-514.4	-373.3

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

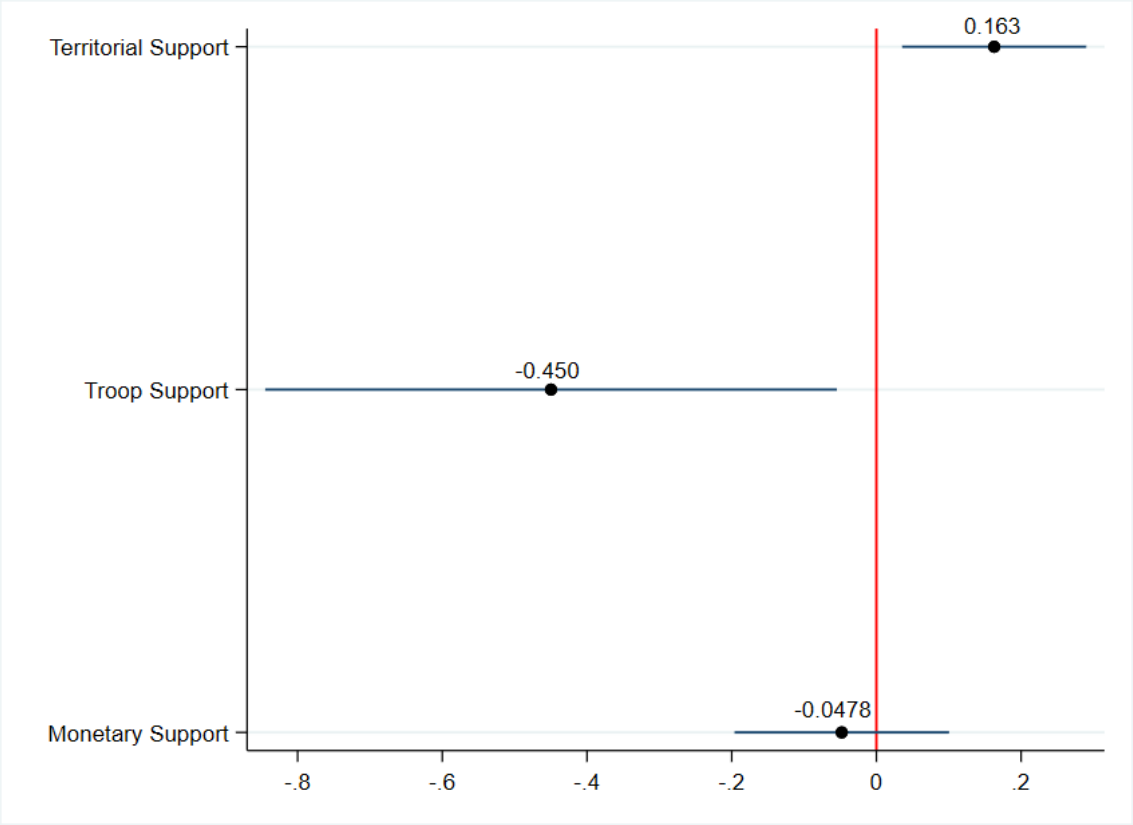

Figure 1. Substantive Impact of Child Recruitment by Rebel Groups
Note: Horizontal bars pertain to 95% confident intervals.

To thoroughly examine the substantive effects of my independent variables, I calculated marginal effects. Figure 1 shows the substantive impact on child soldiering by rebel groups when they receive a certain type of support. The figure suggests that rebel groups who have chance to access external supporter's territory increases by nearly 16 percentage points in its probability to use higher number of child soldiers than rebel groups who cannot access their supporter's territory. Troop support, on the other hand, shows that probability of using higher number of children as their soldiers decreases 45 percentage points more than when they do not receive troops as the support. Although monetary support also decreases the likelihood of active recruitment approximately 5 percentage points, financial support from an external supporter does not have important impact on rebel groups' child recruitment.

Overall, this analysis highlights the importance of understanding the impact of external support on rebel groups' decision on engagement in child recruitment. More specifically, this research shows that different types of external support can yield different likelihood of rebel groups' child soldiering. Previous scholars showed there is no significant relationship between external support and rebel groups' child soldiering (e.g. Haer et al. 2020)[27], but when I subdivided into different types of support that rebel groups received from their supporter, I could find that there is important impact on child soldiering. My findings are robust across a series of model specifications. This demonstrates that there are certain associations between external support and child soldiering. To put it differently, if rebel groups have a chance to access external supporter's territory, these rebel groups are associated with recruiting more children.

3. 6. Conclusion

Previous studies on the use of child soldiers in civil wars have focused on the description of child soldiers, the conditions which lead children to join armed groups, and the motivations behind rebel groups' use of children as soldiers. Although existing literature has actively examined the drivers of child soldiering, the impact of external support has been widely ignored. By combining the conflict dyad-year data developed by Haer et al. (2020) with the dyad-year based dataset from UCDP External Support, this article provides a first attempt of systematically examining whether certain types of support affect a level of child recruitment by rebel groups. The empirical results largely confirmed my theoretical expectation: rebel groups who have access to the external supporter's territory are likely to recruit more children. This

[27] They examine the relationship between forcible child recruitment and external support and they argue that there is no correlation between them.

finding suggests the need for further research on how certain external support materials and supporters can influence way to recruit children.

With regard to scholarly implications of my work, I believe this research could influence the study of not only armed conflicts but also rebel groups' strategies for overall recruitment and child soldiering, third-party intervention, and conflict reoccurrence in important ways. The research suggested an important linkage between external support and child soldiering by rebel groups, a factor which previous studies have overlooked. For broader implications, this study is also meaningful with respect to how funding resources can affect rebel behaviour.

Research on child soldiering still has by no means been exhaustive, and several points should necessarily be considered in future research. Expanding the child soldiering data would significantly improve the study of rebel groups and their strategies, particularly having more information on recruitment per se, timing or location of the conflict.

Second, certain types of external support should be studied further and whether they can facilitate the government side of child soldiering. My research only focuses on rebel groups, but many states militant groups also use children as their soldiers whilst receiving external support. Thus, studying the government side is also necessary to expand this discussion.

Third, further research can also focus on domestic conditions such as crime rates, availability of state repression, or number of ethnicities, can affect external support and child soldiering by rebel groups. Domestic conditions can largely influence rebel groups' decision making even if external support may affect rebel groups' strategical selection.

For the policy community, which pursues the reduction and prevention of child soldiers, it is crucial to know the possible drivers of child soldiering from different perspectives. Therefore, it is important to understand that certain types of support can not only affect rebel groups to recruit children but can also make rebel groups recruit a larger number of children.

This research suggests that territorial support, which allows rebel groups to access external supporter's territory enables rebel groups to recruit higher number of children. Policy makers may carefully monitor movements of rebel groups who are actively mobilise near border between countries where at least one country is under conflict. Although it is difficult for international society to track all movements of external support between the supporter and the recipient, this research provides a first insight for international policy makers who want to protect children in conflict zones.

3. 7. Appendix : Additional models, Robustness Tests

A. Supply and Demand Side Models of Child Recruitment

B. Descriptive Statistics

C. Cross-Sectional Analysis

D. Ordinary Least Squares (OLS) Model

E. Logit Model with All Variables Lagged

F. Bivariate Model

G. Including All Types of Support

H. Fungible vs Non-fungible Support

I. Impact of Natural Resources

J. Ordered Logit Model

Included below are several additional models which ensure the robustness of the findings in this main manuscript.

A. Supply and Demand Side Models of Child Recruitment

Table below differentiates between supply and demand factors of child recruitment. Supply side model shows that GDP per capita has statistically important and negative correlation between child soldiering by rebel groups. Battle-related deaths, fighting capacity and forced recruitment by government are also have statistically significant and positive relation between child recruitment from demand side perspective. I include main variables – territorial support, troop support and monetary support – as demand factors. The result suggests that rebel groups who receive external territorial support are more likely to recruit more children when controlling with all other demand side factors.

	Supply Side	**Demand Side**
	Model 1	**Model 2**
Territorial Support		0.703*
		(0.395)
Troop Support		-1.262
		(0.938)
Monetary Support		-0.360
		(0.530)
Conflict Duration		0.0113
		(0.0249)
Battle-related Deaths		0.449***
		(0.107)
Youth Population (log)	-0.0850	
	(1.730)	
GDP (log)	-0.672**	
	(0.328)	

Level of Democracy	0.0521	
	(0.0394)	
Political Wing		-0.191
		(0.555)
Fighting Capacity		0.786*
		(0.447)
Territorial Control	0.197	
	(0.237)	
Forced Recruitment by Government		0.902*
		(0.510)
Constant	3.556	-4.707***
	(8.080)	(0.782)
N	985	882
Chi^2	8.484	36.67
Pseudo-R^2	0.0643	0.122
Log Likelihood	-518.0	-447.0

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B. Descriptive Statistics

Table B shows the descriptive statistics which is not collapsed over rebel groups.

Variables	Observations	Mean	Standard Deviation	Min	Max
Child Soldiers	1048	0.248	0.432	0	1
Territorial Support	941	0.192	0.394	0	1
Troop Support	941	0.032	0.176	0	1
Monetary Support	941	0.193	0.395	0	1
Conflict Duration	1048	9.876	9.176	1	42
Battle-related Deaths	985	6.188	1.504	2.303	10.38
Youth Population	1025	3.617	0.246	2.688	3.908
GDP (per capita)	1045	7.74	1.048	5.315	10.681

Level of Democracy	996	11.506	6.17	1	20
Political Wing	1045	0.337	0.473	0	1
Fighting Capacity	1019	0.25	0.466	0	2
Territorial Control	1040	0.753	1.005	0	3
Forced Recruitment by Government	1048	0.436	0.496	0	1

C. Cross-Sectional Analysis

Haer et al. (2020) provide year information on the dependent variable, however, the dependent variable changes across conflict periods. By calculating a cross-sectional model, Table C tests the robustness of previous model specifications. This model is necessarily examined for verifying whether the statistical importance is keep remained even after changing the unit of analysis (conflict dyad-period). It shows that there is robust and positive relationship between child soldiering by rebel groups and external supporter's territorial support. On the other hand, troop support and monetary support do not have meaningful relations between rebel groups' child recruitment.

	Logit Model
Territorial Support	1.457***
	(0.551)
Troop Support	-1.577
	(1.376)
Monetary Support	-0.136
	(0.601)
Conflict Duration	0.0588**
	(0.0299)
Battle-related Deaths	0.793***
	(0.215)
Youth Population (log)	0.355
	(1.547)

GDP (log)	-0.372
	(0.294)
Level of Democracy	0.136***
	(0.0487)
Political Wing	0.373
	(0.457)
Fighting Capacity	1.003**
	(0.416)
Territorial Control	0.0255
	(0.232)
Forced Recruitment by Government	1.821***
	(0.508)
Constant	-8.845
	(7.507)
N	251
Chi^2	64.07
Pseudo-R^2	0.283
Log Likelihood	-81.33

Note: The observations are the conflict dyad-period. Standard errors of the pooled logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D. Ordinary Least Squares (OLS) Model

The model suggests that rebel groups are more likely to recruit many children when they receive territorial support whereas troop support reduces the incentives to recruit higher volumes of children. Monetary support remains the statistically insignificant correlation between active child recruitment.

	Regress Model
Territorial Support	0.182**
	(0.0748)
Troop Support	-0.358**
	(0.180)

Monetary Support	-0.0129
	(0.0803)
Conflict Duration	0.000625
	(0.00401)
Battle-related Deaths	0.0474***
	(0.0154)
Youth Population	-0.314
	(0.236)
GDP (log)	-0.146***
	(0.0545)
Level of Democracy	0.0147**
	(0.00632)
Political Wing	-0.0187
	(0.0853)
Fighting Capacity	0.165*
	(0.0856)
Territorial Control	0.0150
	(0.0469)
Forced Recruitment by Government	0.188**
	(0.0873)
Constant	1.899
	(1.186)
N	846
R^2	0.220
Log Likelihood	-398.0

Note: The observations are the conflict dyad-year. Standard errors of the pooled ordinary least squares (OLS) model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

E. Logit Model with All Variables Lagged

Table below, all the independent and control variables are lagged. Although lagging explanatory variables may not circumvent the endogeneity threats (Bellemare et al. 2017), I run the model with lagged independent and control variables. The model suggests that territorial

support is associated with higher number of child recruitment by rebel groups. Troop support, on the other hand, is associated with less child soldiering when they have such a support. Monetary support remains statistically not meaningful relationship between child recruitment in this model.

	Logit Model
Territorial Support	1.273**
	(0.494)
Troop Support	-4.333***
	(1.579)
Monetary Support	-0.463
	(0.574)
Conflict Duration	-0.0112
	(0.0339)
Battle-related Deaths	0.425***
	(0.125)
Youth Population (log)	-2.690
	(1.644)
GDP (log)	-1.397***
	(0.473)
Level of Democracy	0.150***
	(0.0568)
Political Wing	-0.340
	(0.677)
Fighting Capacity	1.475**
	(0.632)
Territorial Control	0.183
	(0.323)
Forced Recruitment by Government	1.597***
	(0.585)
Constant	13.77
	(8.454)

N	610
Chi^2	33.15
Pseudo-R^2	-270.3
Log Likelihood	1.273**

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit models with lagged independent variables are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

F. Bivariate Model

In Table F, I report bivariate models in which I solely focus on the relationship between child recruitment by rebel groups and the main variables of interest (i.e. territorial, troop and monetary support). The results indicate that rebel groups who receive territorial support from their external patrons are likely to recruit more children. However, troop support and monetary support remain statistically insignificant correlation between child recruitment.

	Logit Models		
	Model 1	**Model 2**	**Model 3**
Territorial Support	0.968***		
	(0.351)		
Troop Support		-0.530	
		(0.909)	
Monetary Support			-0.0235
			(0.519)
Constant	-1.314***	-1.080***	-1.090***
	(0.250)	(0.238)	(0.248)
N	941	941	941
Chi^2	7.584	0.340	0.00205
Pseudo-R^2	0.0278	0.00120	0.0000143
Log Likelihood	-515.2	-529.3	-530.0

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

G. Including All Types of Support

According to the Högbladh et al. (2011), there are several types of support that rebel groups may receive from external supporters. The main manuscript focuses on territorial, troop, and monetary support, but there are other supports such as weapons, training, or materiel support. This model includes eight different types of support that rebel groups can receive from their supporters. The model shows the robust relationship between rebel groups who receive territorial support and their engagement in child recruitment. At the same time, it also suggests there is statistically negative correlation between troop support and child soldiering whereas monetary support does not have statistically meaningful relationship with child recruitment. Except three types of support, there is a statistically significant but negative correlation between intelligence support and child soldiering by rebel groups.

	Logit Model
Territorial Support	1.004**
	(0.416)
Troop Support	-3.172**
	(1.401)
Monetary Support	-0.346
	(0.529)
Infrastructure Access	0.573
	(0.497)
Weapons	-0.238
	(0.613)
Materiel Support	0.552
	(0.628)
Training Support	-0.123
	(0.465)
Intelligence Support	-2.873*
	(1.684)
Conflict Duration	0.0131

	(0.0288)
Battle-related Deaths	0.401***
	(0.110)
Youth Population (log)	-2.094
	(1.702)
GDP (log)	-1.120***
	(0.405)
Level of Democracy	0.125***
	(0.0482)
Political Wing	-0.164
	(0.594)
Fighting Capacity	1.170**
	(0.564)
Territorial Control	0.131
	(0.285)
Forced Recruitment by Government	1.541***
	(0.511)
Constant	9.519
	(8.229)
N	846
Chi^2	47.08
Pseudo-R^2	0.243
Log Likelihood	-366.9

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

H. Fungible vs Non-fungible Support

As I examined in earlier table, rebel groups may receive several different types of support from their supporters. By dividing the types of support into fungible and non-fungible, I categorized all types of support, except monetary support, into non-fungible support since they cannot replace with other items. The statistical results support my main argument that rebel groups who receive territorial support are more likely to recruit children in higher amount. Also, getting

infrastructure access and materiel support may affect rebel groups to recruit children more whereas receiving intelligence as a support may decrease the likelihood of rebel groups' child soldiering. However, when holding control variables fixed, the statistical results suggest that rebel groups are more likely to recruit children when they receive territorial support whereas troop support and intelligent support are negatively associated with child recruitment by rebel groups.

	Logit Models			
	Non-Fungible Support		**Fungible Support**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Territorial Support	0.785**	0.979**		
	(0.331)	(0.414)		
Troop Support	-0.962	-3.246**		
	(0.936)	(1.418)		
Monetary Support			-0.0235	-0.285
			(0.519)	(0.506)
Infrastructure Access	0.754*	0.587		
	(0.457)	(0.502)		
Weapons	0.0266	-0.303		
	(0.479)	(0.609)		
Materiel Support	0.933*	0.539		
	(0.504)	(0.636)		
Training Support	-0.323	-0.159		
	(0.389)	(0.469)		
Intelligence Support	-2.161*	-2.817*		
	(1.236)	(1.645)		
Conflict Duration		0.0117		0.0136
		(0.0284)		(0.0282)
Battle-related Deaths		0.389***		0.375***
		(0.109)		(0.105)
Youth Population (log)		-2.076		-0.886
		(1.737)		(1.612)

GDP (log)		-1.119***		-0.780**
		(0.408)		(0.341)
Level of Democracy		0.125***		0.107**
		(0.0482)		(0.0488)
Political Wing		-0.113		-0.0900
		(0.589)		(0.600)
Fighting Capacity		1.186**		1.012**
		(0.568)		(0.514)
Territorial Control		0.127		0.00802
		(0.286)		(0.286)
Forced Recruitment by Government		1.532***		1.462***
		(0.509)		(0.510)
Constant	-1.447***	9.496	-1.090***	3.320
	(0.290)	(8.366)	(0.248)	(7.539)
N	941	846	941	846
Chi^2	16.60	44.18	0.00205	35.76
Pseudo-R^2	0.0581	0.241	0.0000143	0.179
Log Likelihood	-499.2	-367.8	-530.0	-398.3

Note: The observations are the conflict dyad-year. Standard errors of the pooled ordered logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

I. Impact of Natural Resources

Existing research suggests that natural resources can affect rebel groups' engagement in civilian abuses (e.g. Weinstein 2007; Faulkner et al. 2019). Haer et al. (2020) also study the possible linkage between natural resources and rebel groups' child soldiering. Table below includes the natural resources as a variable and check whether having natural resources can affect relationship between external support and rebel groups' child recruitment. The result explains that territorial support has statistically significant and positive correlation between rebel groups' child soldiering while troop support has statistically significant but negative correlation between child recruitment. Receiving monetary support does not affect rebel groups'

engagement in child soldiering even after including the variable of natural resources. At the same time, as the previous scholars argue, rebel groups are more likely to recruit children when they have chance to access natural resources (Faulkner *et al*. 2019, Haer et al. 2020).

	Logit Model
Territorial Support	1.078**
	(0.421)
Troop Support	-3.351**
	(1.381)
Monetary Support	-0.275
	(0.479)
Natural Resources	1.113**
	(0.479)
Conflict Duration	-0.00112
	(0.0324)
Battle-related Deaths	0.353***
	(0.116)
Youth Population (log)	-1.417
	(1.614)
GDP (log)	-1.013**
	(0.413)
Level of Democracy	0.108**
	(0.0482)
Political Wing	-0.225
	(0.634)
Fighting Capacity	1.172**
	(0.553)
Territorial Control	0.156
	(0.309)
Forced Recruitment by Government	1.377***
	(0.508)
Constant	6.442
	(8.021)

N	846
Chi^2	41.88
Pseudo-R^2	0.260
Log Likelihood	-358.6

Note: The observations are the conflict dyad-year. Standard errors of the pooled logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

J. Ordered Logit Model

This model uses index measurement which originally Haer et al. (2020)'s expanded data offers. The main text's dependent variable is reconstructed from following original ordinal variable. When child soldiers constitute more than 50 percent of a rebel group's total population, it takes 2, less than 50 percent it takes 1, and otherwise it takes 0. The result suggests that rebel groups who receive territorial support from their external supporters are more likely to recruit higher volume of children whereas rebel groups with troop support are less likely to recruit children actively. There is no statistically significant relationship between monetary support and rebel groups' engagement in a high number of child recruitment.

	Logit Model
Territorial Support	0.836**
	(0.356)
Troop Support	-2.276**
	(1.040)
Monetary Support	-0.0621
	(0.392)
Conflict Duration	0.0355*
	(0.0202)
Battle-related Deaths	0.263***
	(0.0841)
Youth Population (log)	-0.858
	(1.287)

GDP (log)	-0.569**
	(0.277)
Level of Democracy	0.0769**
	(0.0325)
Political Wing	-0.345
	(0.450)
Fighting Capacity	0.855*
	(0.446)
Territorial Control	0.0822
	(0.240)
Forced Recruitment by Government	1.161***
	(0.436)
Cut1	-6.467
	(6.329)
Cut2	-2.547
	(6.301)
N	846
Chi^2	52.93
Pseudo-R^2	0.142
Log Likelihood	-636.0

Note: The observations are the conflict dyad-year. Standard errors of the pooled ordered logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Chapter 4. Types of Supporters and Child Recruitment by Rebel Groups

4. 1. Introduction

Rebel groups are funded in several different ways. Some rebel groups maintain their military power by financing themselves through natural resources (Collier and Hoeffler 2004; Walsh et al. 2018; Conrad et al. 2019; Krauser 2020), collecting taxation from local citizens (Arjona 2016; Walsh et al. 2018) or, on occasion, getting support from external supporters (e.g., Salehyan et al. 2011; Wennmann 2011). Receiving support from external supporters is important for rebel groups especially when they do not have enough local resources to maintain their power. Indeed, many rebel groups receive external support; approximately half of all rebel groups' activities have been supported by foreign patrons after the end of the Second World War (Cunningham et al. 2013; Tamm 2016).

Having an external supporter can be a significant source of power for rebel groups, but, at the same time, receiving support from a third party may constrain rebel groups' tactical choices. For example, existing studies show that having external supporters can affect rebel groups' movements in important ways (e.g., Carothers 2006; Salehyan 2010; Salehyan et al. 2014). Although, child soldiering is one of the common tactical choices by rebel groups, how having external support can affect their engagement in child recruitment was not studied by scholars. Only Faulkner (2019) suggests that rebel groups are less likely to recruit children when they receive support from a foreign government that considers humanitarian issues. While his study only covers state supporters, external support for rebel groups can also come from other actors.

As an existing study points out that having different types of supporters can bring different outcomes of rebel groups may take (Petrova 2019), this paper develops an argument

regarding the consequences of having different types of supporters. It seeks to show how different types of supporters affect a highly important outcomes of interest – child soldiering.

This research examines how two different types of external supporters, other rebel groups (hereafter referred to as rebel supporters) and foreign state governments (hereafter referred to as state supporters), affect child soldiering by rebel groups. I argue that rebel groups who receive support from rebel supporters are more likely to recruit child soldiers[28], whereas they are less likely to do so when they have state supporters. This is because when rebel groups have rebel supporters, they may cheat their supporters easier due to the limited monitoring system. Also, by establishing a cooperative relationship with their rebel supporters, rebel groups can get a chance to learn child recruitment tactics. This research does not make direct comparison between having rebel supporters and state supporters, but rather examines the impact of having each type of supporter. This is because this study aims to understand whether having a certain type of supporter can affect rebel groups' child soldiering, rather than examining which type of supporter has more influence on child recruitment by rebel groups.

This study contributes to several important themes in the study of conflict. First, by drawing attention to the diverse types of external supporters that rebel groups have, I examine their association with distinct outcomes. Indeed, the previous literature on child soldiering has mostly ignored the impact of external support. It also helps to develop and understand the possible factors that may facilitate rebel groups' child recruitment. Recent works in conflict studies have examined the possible reasons why rebel groups recruit children, but no works

[28] Child soldiers are individuals who are aged under 18 based on the international humanitarian regulations. For instance, the Geneva Convention additional Protocol II Article 4 (3)(c) and the Convention on the Rights of Child Article 38 (3) regulate the use of children under 15 years old; and the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict (OPAC) defines the prevention of using children under 18 years old.

have attempted to examine whether different types of external supporters may change the likelihood of child soldiering by rebel groups. Lastly, I utilise the principal-agent approach and the cooperation and diffusion theories as a basis for the hypotheses. Especially, the principal-agent approach has been highlighted by various academic fields, the theory has been under-utilised for discussing humanitarian issues in conflict studies (Rauchhaus 2009; Haer 2015). Therefore, studying child soldiering using the principal-agent framework can promote the ongoing discussion regarding the theory in this field.

This article is divided into six parts. Firstly, I introduce the reasons for the use of child soldiers by rebel groups before discussing the existing research about external support. Secondly, I shape my theory in terms of the impact of certain types of supporters on child recruitment by rebel groups and offer hypotheses. My theoretical arguments are developed from both voluntary and forced recruitment by rebel groups. Subsequently, I discuss my data and methods and present my statistical results. I conclude this research by presenting the implications of the study to inform both further research and policy making.

4. 2. Factors Relating to Child Recruitment: General, Supply and Demand Factors

Child soldiers have become one of the key actors in armed conflict, and existing studies have examined the reasons why children have been serving as soldiers in conflict zones in recent years. Scholars who explore the factors associated with child soldiers from general and systematic perspectives highlight that, with increases in the availability of small weapons, children have become efficient combatants because those weapons are light enough for them to carry (Stohl 2002; Bloom and Horgan 2019). This enables children to fight as adult combatants and has increased the likelihood of child recruitment (Singer 2006; Haer 2019). Not only the proliferation of lightweight weapons but also the large population of children has affected child

soldiering (Daillaire 2011; Haer 2019). For example, existing studies highlight that the large youth population in Africa increases the likelihood of child recruitment (Peters et al. 2003; Haer 2019). Indeed, countries such as Angola have larger population of youth than adults (Achilihu 2010; D'Costa 2015). Aside from these systematic factors, scholars examine the potential reasons for child recruitment from the perspectives of both the supplier (children) and the demander (armed groups).

Some children decide to join armed groups of their own volition and there are certain reasons why suppliers' may decide to join armed conflict. Firstly, the lack of educational opportunities can encourage children to join armed conflicts. The existing literature suggests that limited education can be a factor in children joining armed groups (Goodwin-gill and Cohn 1994; Machel 1996; Wessells 2016; Haer 2019). For example, children in the Democratic Republic of Congo have poor access to education, and most of them finish their studies in military school. Consequently, due to the limited job opportunities, children may consider that joining armed conflicts as soldiers is an attractive option (Brett and MacCallin 1996; Haer 2019). Taken together, these socio-economic factors are likely to influence children to join armed conflicts (Francis 2007). Furthermore, seeking basic necessities such as home, food and clothes, is other reasons why children may voluntarily engage in armed conflicts (Brett and MacCallin 1996). According to scholars, norms is another key factor in children's engagement in conflicts (Machel 1996; Lasely and Thyne 2015). Finally, mis-heroism or the opportunity to feel prestige and gain power may drive children to expose themselves to warfare (Wessells 2005; Chen 2014; Francis 2007).

However, children are often recruited coercively. One of the most commonly discussed reasons for coercive recruitment is that children are more obedient than adults and more easily brainwashed, which makes children more likely to become risk-takers (Annan et al. 2010). Moreover, armed groups use drugs or alcohol to control children. In Sierra Leone, drugs are

widely used for manipulating children and cause children to engage in violent movements (Human Rights Watch 2008). Further to their obedient characteristics, children are also less likely to make demands (e.g., regarding salary) to their commanders (Vautravers, 2009; Beber and Blattman, 2013). Additionally, children are often simply recruited to compensate for military shortages, especially when groups face difficulties with recruiting enough adults (Woods 1993; Brett and MacCallin 1996; Singer 2006; Tynes and Early 2015; Haer 2019). Therefore, many rebel groups kidnap children during conflicts. For example, the Lord's Resistance Army (LRA) in Uganda, several armed groups in Liberia such as the National Patriotic Front of Liberia (NPFL), the United Liberation Movement of Liberia for Democracy (ULIMO), and the Independent National Patriotic Front of Liberia (INPFL), as well as the Revolutionary Armed Forces of Colombia (FARC) in Colombia have threatened, forced, and abducted children to join groups (Human Rights Watch 2008).

4. 3. Impact of External Supporters on Rebel Groups

Existing research on external supporters focuses on why they decide to support rebel groups. Scholars argue that those supporters may support rebel groups to create a pressure and, ultimately, replace existing regimes with their preferred regime types (Carothers 2006; Coyne 2008) or establish a new government that is friendly towards them (Vanneman and James 1976; Salehyan 2010). Furthermore, some external supporters provide technical and financial assistance for rebel groups as they expect that rebel groups could form political parties with whom they could make connections even after the conflict ends (Carothers 2006; Vanderhill 2013). Other studies report that, dependent on how external supporters allocate their supporting materials, it can undermine conflict diffusions, weaken adversaries (Karlén 2017) and promote the unity or fragmentation of rebel groups (Tamm 2016).

Researchers also examine why rebel groups themselves seek backing from external supporters. First and foremost, for rebel groups that cannot receive resources from local residents or do not have access to natural resources, obtaining support from other entities is essential for their survival. However, this does not mean that all rebel groups who receive external support lack in economic gains or support from others. In fact, the Revolutionary United Front (RUF), who make profits from diamonds, also receive support from the National Patriotic Front of Liberia (NPFL). Moreover, other groups such as the Movement of Democratic Forces of Casamance (MFDC) in Senegal received support from the Military Junta for the Consolidation of Democracy Peace and Justice; the Allied Democratic Forces (ADF) in Uganda was supported by the Zaire and Sudanese governments; and the Democratic Forces for the Liberation of Rwanda (FDLR) had the Democratic Republic Congo as its external backer. Those groups also maintained their military power through extortion (Walsh et al. 2018) whilst concurrently receiving aid from their external backers. In terms of another reason why rebel groups seek external support, Staniland (2010) argues that external support can enhance groups' military capacity and cohesion since it enhances resource centralization and attracts and retains individuals. Furthermore, external support enables rebel groups to survive despite repression from opponents (Sinno 2008).

Importantly, some scholars examine the variety of ways in which certain types of supporters can affect the behaviour of rebel groups. State supporters, who want to save their costs, may support terrorists rather than use their own military forces (Byman 2006; Corbin 2011) because by utilising cheaper power, principals (state supporters) can bolster both efficiency and productivity (Corbin 2011). Moreover, another study states that rebel groups who receive support from state supporters are more likely to increase the attacks on civilians because having external support reduces their incentives to seek civilian support (Salehyan et al. 2014). Aside from state supporters, some rebel groups also receive support from non-ethnic

groups and the research suggests that rebel groups who are supported by non-ethnic supporters are likely to become fragmented (Ives 2021). Petrova (2019) argues that different external supporters have varying impacts on the groups they support. By making comparisons between state supporters and diaspora, she finds that rebel groups who receive support from the diaspora are more likely to engage in non-violent tactics.

Some of those earlier studies relate to the tenets of the principal-agent theory. Scholars in armed conflict and terrorism research are increasingly using the principal-agent theory (Bapat 2011; Corbin 2011; Haer 2015; Berkowitz 2018) when examining the impact of external support on rebel groups (e.g., Salehyan 2010; Salehyan et al. 2014). Studies such as Salehyan (2014), Ives (2021) and Petrova (2019) are good examples of applying principal-agent theory to examining rebel groups' tactical decisions. Indeed, the principal-agent theory is commonly used in studies of political institutions because this framework examines how principal's preference can incentivise an agent's decision, as well as how this relationship can affect each actor (Gailmard 2014).

Specifically, Petrova (2019) shows how different external supporters have varying effects on rebel groups' decision-making. In line with her work, this research compares the effects of two different external supporters on rebel groups' tactic during armed conflict. Focusing on rebel groups' tactics of child recruitment in particular, this research hypothesises that child soldiering by rebel groups may differ depending on who their supporters are.

4. 4. Types of External Supporters and Child Recruitment

This research hypothesises, receiving support from different types of actors, such as different rebel groups or foreign governments, may have different effects on rebel groups' engagement in child recruitment. This is because different actors have different incentives and constraints,

which can, in turn, have varying effects on rebel groups (Petrova 2019). Therefore, rebel groups with a certain backer may pursue child soldiering, whereas another supporter may prevent rebel groups from recruiting child soldiers. This research focuses on two different types of supporters: rebel supporters and state supporters. 'Rebel supporters' refers to a rebel group that aid another rebel group. On the other hand, 'state supporters' refers to a foreign government that may support rebel groups.

One of the main reasons why this research focuses on these two types of supporters (i.e., rebel supporters and state supporters) is that both backers more actively engage with rebel groups during civil wars compared to any other potential supporters, such as non-governmental organizations (NGOs) or lobby groups. For instance, some rebel groups such as the Congolese Rally for Democracy (RCD) and the Mouvement de Libération du Congo (MLC) in the Democratic Republic of the Congo, were supported by the Rwandan and Ugandan governments through receiving aid like troops, training, and budgets. That external support from foreign states happened in conflict areas (Högbladh et al. 2011). Further to state supporters, rebel groups were also actively supported by different rebel groups during civil wars. For example, the Taliban and al-Qaida cooperated with each other; and the National Council for the Defense of Democracy (CNDD) in Burundi was supported by the National Union for the Total Independence of Angola (UNITA) (Högbladh et al. 2011). Although there is sufficient research on state supporters (e.g., Szekely 2016; Popovic 2018), there is relatively limited research on rebel supporters even though both types are active intruders during armed conflicts. However, rebel supporters are not significantly different from rebel group alliances, and there are several studies that investigate rebel group alliances in the field of conflict studies (e.g. Christia 2012; Popovic 2018; Gade et al. 2019). Therefore, by comparing these two external actors – rebel supporters and state supporters – , this research attempts to highlight the heterogeneity among types of supporters of rebel groups.

In this research, I assume that rebel groups who receive support from other rebel groups are more likely to recruit children than rebel groups who do not have such supporters, whereas they are less likely to recruit children when they receive support from state supporters. Part of my argument corresponds to the principal-agent framework, which I utilise to develop my theory, similar to existing scholars in conflict studies examining the impact of external support. My arguments also rely on tactical diffusion theory when developing the argument on rebel supporters in particular.

Firstly, the potential connection between having rebel supporters and rebel groups' child recruitment is likely to exist for several reasons. To start with, moral hazard can explain why having different rebel groups as supporters may make rebel groups more likely to engage in child recruitment. Moral hazard occurs when a principal fails to observe an agent's movement. Since the principal cannot observe all the actions carried out by their agent, the agent can commit hidden actions that generates moral hazard (Rauchhaus 2009). There are some rebel groups that want to have strong connections with their partners; however, there are other rebel groups who may want to maintain weak relationships with their supporting groups, and, as a result, those groups may be less likely to monitor their agents. Concurrently, rebel supporters, who are also battling with opponents in their home countries, do not have sufficient capacity to comprehensively monitor their agents regardless of their relationship between their agents. Therefore, even if their principal opposes child recruitment[29], the agent has the opportunity to commit hidden actions, which ultimately generates moral hazard by the group avoiding surveillance. Moral hazard is also difficult to prevent when children are voluntarily joining rebel groups because it is more difficult to observe and monitor individual movement.

[29] Lasely and Thyne (2015) argue that a certain type of rebel groups is less likely to engage in child recruitment to seek their goal.

The relationship between rebel groups and rebel supporters can be hierarchical, as in traditional principal-agent relation, when rebel groups that provide support have power advantages over the groups that receive the support. However, the relationships can also be horizontal, meaning they may be relatively cooperative and symmetrical. Importantly, both hierarchical and horizontal relationships between rebel groups may lead to more child soldiering. When their relationship becomes cooperative and symmetrical, the relationship can be defined as an alliance and can be explained by rebel groups' cooperation theory or tactical diffusion theory rather than principal-agent theory. According to scholars, more than 50 percent of rebel groups who were active between 1946 and 2008 established alliances with each other during conflict (Akcinaroglu 2012; Gade et al. 2019). This research assumes that this relationship causes rebel groups with rebel supporters to be more likely to engage in child soldiering than those without rebel supporters. Based on this point, receiving external support from rebel supporters may increase the likelihood of child recruitment due to cooperative relationships being established between them. Following reasons support the argument why this relationship increases the likelihood of child recruitment by rebel groups.

According to the existing literature, generally, cooperation between groups may increase the capabilities of groups and allow tactical proliferation between them that tactics such as civilian targeting can be diffused among groups when cooperation happens (Asal et al. 2022). In the similar vein, the use of child soldiers can be also transmitted via group cooperation (Tynes 2018). More specifically, terrorist networks increase the use of child soldiers among terrorists and insurgent groups (Tynes 2018). The transmission of the child soldiering tactic is possible because tactical intelligence can be diffused by cooperation between groups (Heyman and Mickolus 1981; Tynes 2018), and this interaction is likely to happen at training centres, during meetings, or among umbrella organizations (Tynes 2018). Furthermore, cooperation between groups enables the transmission of strategies to each other with lower costs (Horowitz

2010). Acquiring new tactics from different groups is considerably vital for armed groups since it may affect their development and success (Asal et al. 2022). Therefore, this cooperative network which a place where tactics are discussed, fine-tuned, and can become successful and this network can be used to diffuse the tactic of child soldiering (Tynes 2018). Although terrorist networks are different from rebel groups, rebel alliances enable rebel groups to form networks that help them to have better tactical productivity (Lichbach 1995; Gade et al. 2019). Therefore, when this network promotes inter-rebel tactical diffusion, having rebel supporters may enhance the spread of child recruitment strategies among groups.

Cooperation between different rebel groups can enhance durability by pooling resources (Philips 2014) but also makes rebel groups more likely to commit violence against local citizens. Therefore, rebel groups who need to maintain their survival may obtain extra resources by cooperating with other groups and, thus, become likely to use violence against citizens (Salehyan et al. 2014; Sawyer et al. 2017; Zhukov 2017). External support may ultimately motivate rebel groups to recruit people coercively (Weinstein 2007). Indeed, rebel groups are prone to recruiting children not only voluntarily but also coercively in such cases. However, the violence of rebel groups does not always cause forced recruitment, civilians may also join rebel groups of their own volition. This is because, rather than suffering pillage, they may decide to become the pillagers themselves (Richards 2014). Similarly, children may also decide to join armed conflict rather than escape in response to violence. Therefore, rebel groups who can attain extra resources by cooperating with different rebel groups are also more likely to recruit children than those groups without such supporters.

Support from the National Patriotic Front of Liberia (NPFL) to the Revolutionary United Front (RUF) in Sierra Leone is the most representative example demonstrating how having different rebel groups as supporters may facilitate rebel groups' child recruitment. When Charles Taylor's NPFL controlled 90 % of Liberia's territory, the war in Liberia spilled over

into Sierra Leone (Gershoni 1997). The RUF, which was the central actor of conflict in Sierra Leone, had the NPFL as its supporter. The RUF firstly aimed to create a new Sierra Leone, claiming 'liberation' and 'democracy'; however, the conflict was accompanied by a trend of violence that lasted for 11 years, along with the loss of support from their local population (Denov 2010). While the RUF received support from the NPFL, the RUF acquired the NPFL's ideology and strategies, such as attacking civilians or carrying out other humanitarian abuses (Nuxoll 2014; Day 2015). Therefore, their original ideology was lost due to receiving support from the NPFL (Restoy 2006). The RUF's using of a large number of child soldiers was influenced by the NPFL since, at the first stage, most of the soldiers in the RUF were composed of Liberian forces (Restoy 2006; Utas and Jörgel 2008). In fact, approximately 10,000 to 30,000 children were involved in the movement of the RUF and played a central role during the conflict (Abraham 2001; Murphy 2003; Denov 2010).

Hypothesis 1*: Rebel groups who receive support from other rebel groups are more likely to recruit child soldiers than those without rebel supporters.*

Compared to rebel supporters, state supporters are relatively likely to expect reciprocity from the recipients of their aid. State supporters cannot directly intervene in the conflict so, instead, they invest material support in rebel groups with the hope of achieving their goals (Salehyan et al. 2014). Therefore, compared to other types of supporters, state supporters may have more power to compel rebel groups to follow their commands when they establish principal-agent relationships, especially because state supporters are likely to support weak rebel groups that may be less likely to oppose their preferences (Sinno 2008; Salehyan et al. 2011; Lidow 2016). Therefore, due to agency slack, external state supporters are more likely to

support weaker groups, thus giving them greater power in the relationship. Agency slack, which refers to an agent being able to engage in undesired actions that deviate from their supporters' interests (Hawkins et al. 2006; Tamm 2016). This phenomenon of agency slack ultimately makes external state supporters give aid to weaker groups to prevent a potential deviation.

Concurrently, for a state government, supporting rebel groups can be a risky investment (Salehyan et al. 2014; Marshall 2019). Even if a supporting actor makes a contractual agreement with their recipient, information asymmetry between the supporter and recipient can occur, which is a situation known as adverse selection (Salehyan 2010; Marshall 2019). If a rebel group engages in an action that contradicts the supporter's principals, this could significantly damage the reputation of the supporter both nationally and internationally as a result (Vanneman and James 1976; Salehyan 2010; Salehyan et al. 2014; Marshall 2019). Specifically, violence against civilians causes reputational losses for state supporters in terms of their domestic audiences (Berkowitz 2018). Therefore, these state supporters may have less incentive to support rebel groups that potentially recruit child soldiers.

As supporting rebel groups can involve reputational costs both nationally and internationally, external state supporters wish to constrain their agents' activities. Specifically, state supporters who desire to pursue human rights protections or have democratic regime are likely to oppose human rights violations. In such cases, state supporters are likely to avoid risky and high-cost rebel group support (Putnam 1998; Marshall 2019) and could choose to constrain or withdraw from their recipients. Faulkner (2019) argues that support from external democratic states prevents rebels from recruiting children as soldiers. Similarly, some authoritarian governments also pursue human rights protections, and, in fact, many authoritarian regime states have ratified international humanitarian regulations regarding child recruitment. Although their intention to respect and ratify human rights treaties may be different from democratic states (Hollyer and Rosendorff 2011), violation of the regulations can equally affect

their reputations because states are bond to the regulations. International relations researchers suggest that state governments' adhere to humanitarian treaties since violation can affect their reputations (Keohane 1984; Guzman 2002). Regardless of the state supporters' regime types, rebel groups with state supporters are less likely to engage in child soldiering because those state supporters care about their reputations and need to establish or sustain relationships with other countries. Meanwhile, reputation may also matter to rebel groups, but this research emphasises that state governments have greater concern for reputation than rebel groups. Therefore, state supporters are likely to support rebel groups that may protect their reputations and do not make tactical decisions that deviate from the state supporters' preferences. Overall, rebel groups that are aided by foreign governments and need to maintain those supportive relationships may be unlikely to engage in humanitarian violations such as recruiting child soldiers.

Hypothesis 2: *Rebel groups who receive support from external state supporters are less likely to recruit children.*

4. 5. Research Design

To systematically test my hypotheses, I use data from Haer, Faulkner and Whitaker (2020)[30], which developed from the Child Soldier Data Set (CSDS). These data cover the period from 1990 to 2011. These data can be combined with data from the UCDP External Support Project-Primary Warring Party dataset (here after called the UCDP External Support Dataset; Högbladh

[30] Their research is motivated to introduce forced recruitment by rebel groups, but their data also provides overall child recruitment which covers both voluntary and forced recruitment.

et al., 2011) since the dataset utilise the conflict dyad-year[31] as its unit of analysis. The UCDP External Support Dataset also includes yearly information with detailed explanations of external support received by rebel groups and covers from the period from 1975 to 2009. Therefore, researchers can obtain the information regarding who the supporter was in a given year. This research examines the period between 1990 and 2009 when the two different data sources overlap.

Dependent Variable: Use of Child Soldiers

I employ a binary variable to measure the usage of child soldiers by rebel groups. If a rebel group recruited child soldiers in a given year, this variable takes 1, and otherwise 0. Table 1 shows the distribution of child recruitment by rebel groups which clustered into rebel dyads. In total, 243 rebel groups are observed. Approximately 74 % of rebel groups engaged in child soldiering. This research does not distinguish between forced and voluntary recruitment of children because children may be involved in armed conflicts by coercion but also by their own decision.

***Table 1. Distribution of Child Recruitment Collapsed Over Rebel Groups*[32]**

Child Recruitment	Frequency (N)	Percentage (%)
No Child Recruitment	64	26.340
Child Recruitment	181	74.490
Total	243	100.00

[31] Government is connected to one rebel group in a particular conflict year (Haer et al. 2020).
[32] Descriptive statistics of cross-sectional variables which are collapsed over conflict period. Unit of analysis is rebel group-government conflict period.

Independent Variables: Types of Supporters

To code the types of supporters, I use the UCDP External Support Dataset (Högbladh et al. 2011). This dataset provides information regarding the recipient side that allows the researcher to understand who the supporter was in a given year. This study examines two different external actors – rebel supporters and state supporters –, who may affect rebel groups' engagement in child soldiering. As noted earlier, the term rebel supporters refers to different rebel groups, whereas the term state supporters refers to foreign state governments.

To test my hypotheses, I use a dichotomous variable. If rebel groups received a support from other rebel groups, this value takes 1, and 0 otherwise. The data shows that rebel groups are more likely to receive support from other rebel groups who are not active in the same country, however, few rebel groups receive support from other rebel groups who are active in the same country. For instance, the Eritrean People's Liberation Front (EPLF) in Ethiopia received support from the Ethiopian People's Revolutionary Democratic Front (EPRDF). Therefore, based on the dataset, this research also includes rebel supporters who are active in the same country, since at least this support is offered by different actors. The variable for having state supporters is coded in the same way as for rebel supporters.

Table 2[33] shows that nearly 12% of rebel groups received support from external rebel supporters. Conversely, external state supporters give support to approximately 31% of rebel groups during the same period.

[33] Table 2 is also clustered into rebel dyads to understand the percentage of rebel groups who receive support from each type of supporter. The table for descriptive statistics for full observation is presented in Appendix B.

Control Variables

Several control variables are used in this study. Models include *conflict duration* because rebel groups may engage in child soldiering when a conflict lasts longer (Haer et al. 2020) in order to replenish the number of soldiers and prevent military shortage. This variable comes from the Non-State Actor (NSA) dataset (Cunningham et al. 2009, 2013).

Models also include *battle-related death* as a control variable which reflects the intensity of a conflict. If a conflict causes many causalities, rebel groups are more likely to engage in active child soldiering (Singer 2006; Haer and Böhmelt 2017), as they do when a conflict lasts longer. This data come from the UCDP/ PRIO Battle-Related Deaths Dataset (Gleditsch et al. 2002).

The models also control for *GDP per capita*. Scholars argue that poverty can lead children to engage in armed conflict and one study statistically supports the increase of child recruitment under conditions of poverty (Achvarina et al. 2007). At the same time, rebel groups in developing nations also prefer to use children who are less likely to ask for incentives (Vautravers 2009). Therefore, to control for the poverty of a state, I control the variable of GDP per capita which is calculated into natural logarithm (Gleditsch 2002).

The study also controls for *youth population* taking the natural logarithm. Larger populations of children are possible reason for increased child recruitment (Dallaire 2011; Haer 2019). It refers that if there are more children in the population, more children can be potential soldiers.

Rebel groups having their own *political wing* may deter them from actively using child soldiers. This is because they may seek to be perceived as legitimate actors both domestically and internationally by adhering to humanitarian regulations (Jo and Thomason 2013). To assess

this variable, the research utilises the NSA dataset (Cunningham et al. 2009, 2013). If rebel groups have their own political wings, it takes 1, and otherwise 0.

I control for *rebel groups' fighting capacity* compared to the government's force. I use the NSA dataset (Cunningham et al. 2009, 2013) to measure this variable. I coded 0 when rebel groups' fighting capacity is lower relative to government forces. It takes 1 if the fighting capacity is moderate, and 2 when the rebel groups' fighting capacity outstands the government forces. Rebel leaders may not feel attractive to exploit children when they have enough power to compete against their government, that they are less likely to recruit child soldiers. The idea to control for fighting capacity arose from the existing research, which investigate the relationship between child soldiers and rebel fighting capacity (Haer and Böhmelt 2016).

I include *territorial control* by rebel groups as a control variable. I assume that rebel groups can more easily recruit people when they control a certain place compared to when they do not (Kubota 2013; Haer et al. 2020). Territorial control is an ordinal variable: if rebel groups do not have territorial control, it takes 0 whereas takes 3 if rebel groups have strong control of the territory. I use the NSA dataset (Cunningham et al. 2009, 2013).

If governments recruit children coercively, rebel groups may also actively recruit children (Haer et al. 2020). Furthermore, if a state disrespects their citizens, the citizens may have an incentive to cooperate with rebel groups (Høiskar 2001). Høiskar (2001) argues that, under these circumstances, children may join in rebel groups to improve their condition of human rights. Haer et al. (2020) code *forced recruitment by government* as a dichotomous variable: 1 if there was forced recruitment and 0 if not.

***Table 2. Descriptive Statistics Collapsed over Rebel Groups*[34]**

Variables	Observations	Mean	Standard Deviation	Min	Max	VIF
Child Soldiers	243	0.742	0.436	0	1	.
Rebel Supporter	240	0.124	0.288	0	1	1.075
State Supporter	240	0.314	0.423	0	1	1.144
Conflict Duration	243	4.642	6.28	1	42	1.337
Battle-related Deaths	232	6.048	1.36	3.219	9.21	1.104
Youth Population (log)	232	3.634	0.255	2.69	3.904	2.149
GDP (per capita) (log)	243	7.596	1.045	5.425	10.635	2.259
Political Wing	240	0.342	0.47	0	1	1.117
Fighting Capacity	233	0.367	0.538	0	2	1.24
Territorial Control	240	0.655	0.995	0	3	1.419
Forced Recruitment by Government	243	0.345	0.471	0	1	1.18

Table 2 also includes the variance inflation factor, which detects multicollinearity between variables, for key independent variables and control variables. Across these variables, there are no variables which are above 5, suggesting that variables in this research do not suffer from multicollinearity.

4. 6. Empirical Results

I employ a logistic regression analysis to examine the impact of different supporters on rebel groups' engagement in child soldiering. Due to the lack of independence among the observations, standard errors are clustered by rebel-government dyads. In addition, in this statistical test, I do not lag the independent variables. Although lagging independent variables

[34] Descriptive statistics of cross-sectional variables which are collapsed over conflict period. Unit of analysis is rebel group-government conflict period.

can be a way to avoid the issue of endogeneity, it is not the perfect method for solving the endogeneity problem (Bellemare et al. 2017)[35].

Across the models, rebel groups who receive support from rebel supporters have a positive and statistically significant relationship with rebel groups' engagement in child soldiering. This means that rebel groups who receive support from different rebel groups are more likely to recruit children as their soldiers. In contrast, obtaining support from foreign states do not statistically significant associations with child soldiering. Model 2 introduces control variables that may affect rebel groups' child soldiering. The results indicate that rebel groups are more likely to use child soldiers when conflicts become longer, the youth population is larger, and the government recruits children coercively.

As a result, my hypothesis that rebel groups with rebel supporters are more likely to recruit children than rebel groups without such supporters has been supported whereas there is no statistically important relationship between rebel groups' child soldiering and receiving support from state supporters. Loglikelihood and Pseudo-R^2 values indicate that Model 2 has greater explanatory power than Model 1.

The previous results do not exclude the cases when rebel groups have both types of supporters concurrently. Therefore, to check the robustness of my statistical results, I exclude the cases when rebel groups have both types of supporters simultaneously[36]. In the appendix, I present a model using rebel groups with only one type of supporter. The statistical results suggest that receiving support only from other rebel groups during conflicts have positive and statistically meaningful correlation between their child recruitment. In other words, rebel groups are more likely to recruit child soldiers when they have rebel supporters, even after

[35] In appendix F, I lagged variables to potential suggestion for lagging my variables.
[36] See appendix D.

excluding rebel groups that have state supporters at the same time. On the other hand, receiving support only from foreign states does not have statistically significant association with rebel groups' child soldiering, even after removing the possibility of rebel groups that receive support from other rebel groups simultaneously.

Table 3. Types of External Supporters and Child Recruitment by Rebel Groups

	Model 1	Model 2
Rebel Supporter	2.092***	1.864**
	(0.787)	(0.913)
State Supporter	0.517	0.264
	(0.400)	(0.497)
Conflict Duration		0.364***
		(0.101)
Battle-related Deaths		0.0398
		(0.109)
Youth Population (log)		1.868*
		(0.963)
GDP per capita (log)		0.449
		(0.292)
Political Wing		-0.570
		(0.457)
Fighting Capacity		0.266
		(0.356)
Territorial Control		0.229
		(0.218)
Forced Recruitment by Government		1.151**
		(0.575)
Constant	1.703***	-10.61*
	(0.208)	(5.499)
N	941	876
Chi^2	8.966	32.81
Pseudo-R^2	0.0413	0.328
Log Likelihood	-325.4	-206.2

Note: Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

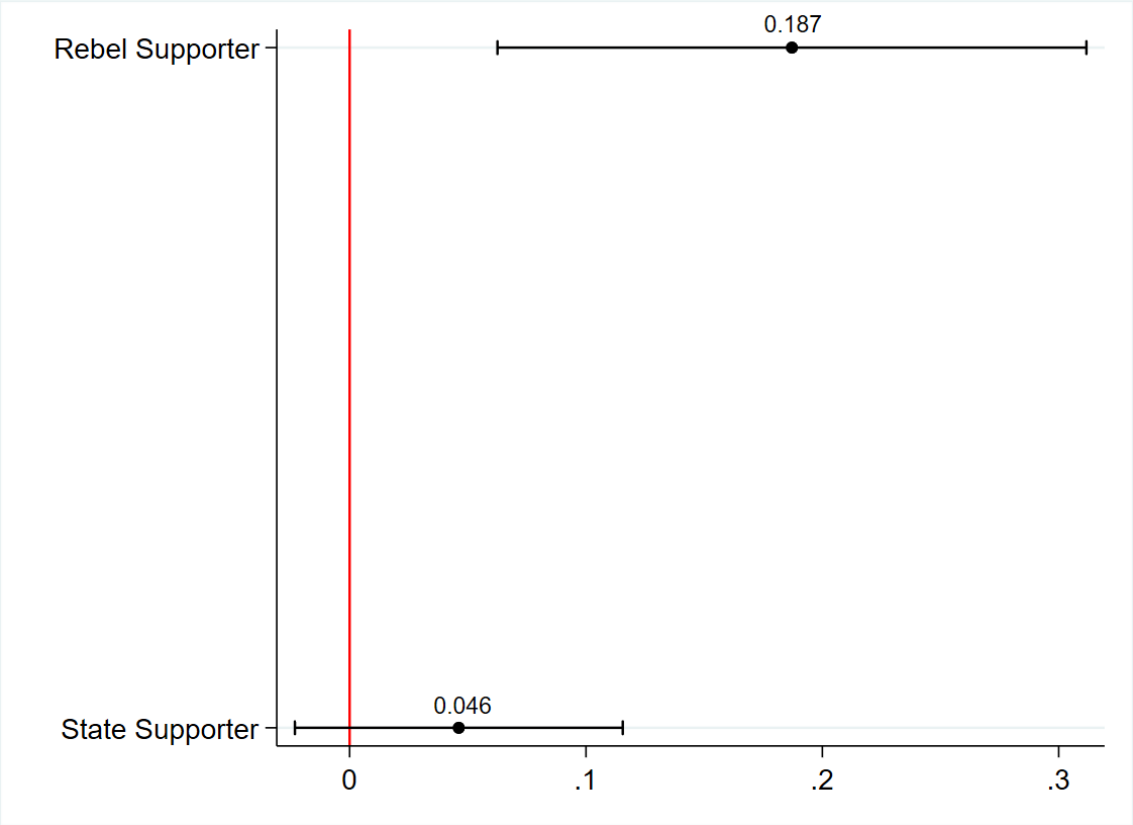

Figure 1. Substantive Impact of Child Recruitment by Rebel Groups
Note: Dichotomous measures. Horizontal bars pertain to 95% confident intervals.

Figure 1 shows the marginal effects of having each type of supporter. It estimates the probability of child soldiering when rebel groups have a certain type of supporter. Figure 1 suggests that the likelihood of child soldiering increases by approximately 19 percentage points when rebel groups receive external support from rebel supporters than when they do not. On the other hand, rebel groups who receive external support from state supporters is not statistically different from zero.

To conclude, across the analyses, this research found a crucial relationship between receiving support from other rebel groups and child soldiering by rebel groups, whereas no relationship is identified between having state supporters and rebel groups' child soldiering. This research emphasises the needs to develop the discussion regarding the relationship between external support and child soldiering by rebel groups.

4. 7. Conclusion

Existing research on child recruitment by armed groups in civil wars has often been descriptive or has focused on efforts to reintegrate child soldiers into society (e.g., Brett and MacCallin 1996; Halton 2011; Beber and Blattman 2013). Although some recent studies have examined child soldiering empirically to understand its roots, there are still several possible factors that may facilitate child soldiering. In fact, almost no one has examined the impact of rebel groups' external supporters on their child recruitment. This research provides a first attempt to examine how different actors make influence on rebel groups' decision on child recruitment by developing the principal-agent theoretical argument and rebel groups tactical diffusion and cooperation theory. Although previous research demonstrates the impact of having democratic state supporters (Faulkner 2019), this research finds the heterogeneous effects of different types of supporters on child recruitment and, thus, emphasises the importance of examining the possible impacts of external supporters on rebel groups' decision on child soldiering.

To my knowledge, this study is novel as it is the first to examines how different types of supporters affect rebel groups' child recruitment. My findings highlight the link between having external support and rebel groups' engagement in child recruitment. Specifically, when rebel groups receive support from external rebel supporters, they are more likely to use child soldiers. Interestingly, support from foreign states is not related to child recruitment, which is surprising given other previous research on foreign support and civilian abuse (Salehyan et al. 2014). This study has important implications for research on civil war, rebel groups' child recruitment, third-party intervention, and conflict management.

However, this study is subject to certain limitations. First and utmost, the data for child soldiers should be expanded. Although Haer et al. (2020) expand their original child soldiers' dataset by including annual information, they report that their data have limited number of

annual observations. At the same time, current data only capture whether militant groups have child soldiers or comprise ambiguous percentages of the prevalence of children in each group. Therefore, more precise estimation about child soldiers is required for further research. It is important to understand the extent to which having a specific supporter can affect rebel groups' child recruitment, as well as to conduct research on child soldiers themselves.

Secondly, some rebel groups receive support from more than one actor and some of them even receive support from diverse numbers of different types of actors simultaneously. For instance, the Taleban received support from five different states and two different rebel groups (Högbladh et al. 2011). This research only considered whether rebel groups had a specific type of external supporter in a given year and did not consider factors such as the number of supporters or whether there were multiple different types of supporters, which can also affect child soldiering. Similarly, there are other types of external supporters, such as diaspora or organizations, that this research did not examine. Since existing research suggests a link between rebel groups' choice of tactics and support from the diaspora (Petrova 2019), it would also be useful to investigate whether other types of external supporters have impact on rebel groups' decision on child soldiering. These investigations would represent a beneficial direction for future research.

Thirdly, the types of external supporters can be subdivided based on their characteristics. For example, dependent on the regime type of the supporter, rebel groups may be more or less likely to engage in child recruitment. Although the results present in the appendix show that the regime type of supporters do not affect rebel groups' child recruitment, a more detailed examination is needed. Furthermore, some rebel supporters may seek secession or seize power in their own countries. In further research, researchers should also investigate these characteristics and how they differentially affect rebel groups' child recruitment.

With regard to policy implications, this research provides valuable insight for policy makers who seek to protect children from armed conflict. It is challenging for policy makers to monitor interactions between rebel groups and third parties in conflict zones, but they should carefully observe possible cooperation between rebel groups and third parties to prevent or reduce child participation in armed conflicts. Moreover, by recognising that having a certain external supporter may motivate rebel groups to use child soldiers, it provides policy makers to consider another important factor that may cause rebel groups' child recruitment.

4. 9. Appendix : Additional models, Robustness Tests

A. Supply versus Demand Models of Child Recruitment

B. Descriptive Statistics

C. Cross-Sectional Analysis

D. Excluding the Case When Rebel Groups Have Both Supporters at the Same Time

E. Ordinary Least Squares (OLS) Model

F. Logit Model with All Variables Lagged

G. Bivariate Models

H. External State Supporter with Different Regime Types

I. Ordered Logit Model

Included below are several additional models which ensure the robustness of the findings in this main manuscript.

Appendix A. Supply versus Demand Models of Child Recruitment

Table below shows how supply and demand factors can affect rebel groups' child soldiering. Table includes rebel supporters and state supporters as demand side factors. Since research of child soldiers is developed by examining both demand and supply sides, it is necessary to measure the impact of types of external supporters by dividing all variables into demand and supply sides. There is a statistically significant relationship between rebel groups' child soldiering and support from different rebel groups. However, support from external state supporters shows that there is no statistically important relationship between rebel groups' child recruitment. At the same time, the table suggests that rebel groups are more likely to recruit children when a conflict lasts longer, there are more children, GDP per capita is higher, stronger the rebel groups' territorial control is and government recruits children forcibly across the models.

	Supply Side	**Demand Side**
Rebel Supporter		1.703**
		(1.98)
State Supporter		0.279
		(0.62)
Conflict Duration		0.373***
		(3.50)
Battle-related Deaths		0.00774
		(0.08)
Youth Population (log)	2.539**	
	(2.41)	
GDP (log)	0.547**	

	(2.42)	
Political Wing		-0.475
		(-1.11)
Fighting Capacity		0.240
		(0.67)
Territorial Control	0.386*	
	(1.84)	
Forced Recruitment by Government		1.206**
		(2.29)
Constant	-11.47**	-0.140
	(-2.23)	(-0.19)
N	1017	882
Chi^2	10.16	26.35
Pseudo-R^2	0.0375	0.314
Log Likelihood	-331.3	-211.1

Note: Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix B. Descriptive Statistics

Table B is descriptive statistics which is not collapsed over rebel groups.

Variable	Observations	Mean	Standard Deviation	Min	Max
Child Soldiers	1048	.891	.312	0	1
Rebel Supporter	941	.162	.368	0	1
State Supporter	941	.318	.466	0	1
Conflict Duration	1048	9.876	9.176	1	42
Battle-related Deaths	985	6.188	1.504	2.303	10.38
Youth Population	1025	3.617	.246	2.688	3.908
GDP per capita	1045	7.74	1.048	5.315	10.681
Political Wing	1045	.337	.473	0	1
Fighting Capacity	1019	.25	.466	0	2
Territorial Control	1040	.753	1.005	0	3
Forced Recruitment by Government	1048	.436	.496	0	1

Appendix C. Cross Sectional Analysis

Expanded data by Haer et al. (2020) change its dependent variable across conflict periods, this model is analysed based on conflict dyad-periods as unit of analysis. Rebel groups are likely to exploit children when they garnered support from rebel supporters while they do not have statistical correlation when they receive support from state supporters. Also, longer a conflict becomes, larger the child population is and higher the GDP per capita is, rebel groups are more likely to recruit children. The result also suggests that rebel groups are likely to do so when the government recruit children coercively.

	Logit Model
Rebel Supporter	1.755**
	(0.881)
State Supporter	0.370
	(0.424)
Conflict Duration	0.316***
	(0.102)
Battle-related Deaths	0.176
	(0.120)
Youth Population (log)	2.366**
	(0.946)
GDP (log)	0.650**
	(0.260)
Political Wing	-0.534
	(0.364)
Fighting Capacity	-0.150
	(0.304)
Territorial Control	0.238
	(0.205)
Forced Recruitment by Government	1.349***
	(0.442)
Constant	-14.67***

	(5.255)
N	261
Chi^2	66.37
Pseudo-R^2	0.240
Log Likelihood	-105.1

Note: Standard errors of the pooled logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix D. Excluding the Case that Rebel Groups Have Both Supporters

Some rebel groups may receive support from two different supporters – rebel and state supporters – simultaneously. To examine the influence of each supporter on child recruitment by rebel groups more precisely, I exclude the cases when rebel groups receive support from two different supporters and examine when they have only one type of supporter at the time. The statistical result shows that there is a statistically important correlation between rebel groups' child soldiering and receiving support from different rebel groups.

	Logit Model
Rebel Supporter	1.719*
	(0.935)
State Supporter	0.190
	(0.500)
Conflict Duration	0.370***
	(0.103)
Battle-related Deaths	0.0432
	(0.110)
Youth Population (log)	1.837*
	(0.965)
GDP (log)	0.418
	(0.288)
Political Wing	-0.556
	(0.454)

Fighting Capacity	0.277
	(0.356)
Territorial Control	0.222
	(0.216)
Forced Recruitment by Government	1.199**
	(0.583)
Constant	-10.27*
	(5.491)
N	876
Chi^2	32.01
Pseudo-R^2	0.323
Log Likelihood	-207.7

Note: Standard errors of the pooled logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix E. Ordinary Least Squares (OLS) Model

I employ a different model to examine whether the impact of getting support from external supporters can change the likelihood of child recruitment by rebel groups. This model suggests that rebel groups who receive support from rebel supporters are more likely to recruit children as their military forces than rebel groups without such supporters. On the other hand, there is no statistically meaningful result between rebel groups' child soldiering when they receive support from external state supporters. At the same time, table suggests that rebel groups are more likely to recruit children when the conflict lasts longer and their opponent governments forced to recruit children whereas they are less likely to recruit children when they have their own political wings.

	Logit Model
Rebel Supporter	0.120***
	(0.0348)
State Supporter	0.0304

	(0.0361)
Conflict Duration	0.0101***
	(0.00204)
Battle-related Deaths	0.00474
	(0.0111)
Youth Population (log)	0.154
	(0.122)
GDP (log)	0.0294
	(0.0237)
Political Wing	-0.0811**
	(0.0406)
Fighting Capacity	0.0291
	(0.0430)
Territorial Control	0.00866
	(0.0209)
Forced Recruitment by Government	0.100***
	(0.0350)
Constant	-0.0853
	(0.596)
N	876
R^2	0.151
Log Likelihood	-159.7

Note: Standard errors of the pooled ordinary least squares (OLS) model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix F. Lagged Variable Model

In this model, I lagged variables. Lagging the variable may not help to reduce the endogeneity threats (Bellemare et al., 2017) but to check the robustness of my results, I run a model by lagging all variables. The statistical results prove that rebel groups who receive support from rebel supporters are more likely to recruit children as soldiers whereas there is no statistical correlation between having external state supporters and child recruitment by rebel groups. Also,

the table indicates that rebel groups are more likely to recruit children when conflict lasts longer and child population is larger.

	Logit Model
Rebel Supporter	2.334*
	(1.256)
State Supporter	0.0711
	(0.684)
Conflict Duration	0.346***
	(0.0995)
Battle-related Deaths	-0.0327
	(0.172)
Youth Population (log)	2.110*
	(1.246)
GDP (log)	0.423
	(0.362)
Political Wing	-0.617
	(0.702)
Fighting Capacity	0.954
	(0.614)
Territorial Control	0.256
	(0.287)
Forced Recruitment by Government	0.959
	(0.778)
Constant	-10.79
	(6.953)
N	629
Chi^2	39.51
Pseudo-R^2	-98.80
Log Likelihood	2.334*

Note: Standard errors of the pooled logit model with lagged independent variables is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix G. Bivariate Model

Table below simply examine the relationship between rebel groups' child recruitment and the impact of having a certain type of supporter. The statistical results report that rebel groups who have different rebel groups as their supporters are more likely to recruit children than rebels who do not. There is a statistically meaningful and positive correlation between them. On the other hand, there is no statistically important correlation between rebel groups' child soldiering and having external state supporters.

	Logit Model	
	Model 1	**Model 2**
Rebel Supporter	2.053***	
	(2.61)	
State Supporter		0.458
		(1.16)
Constant	1.852***	1.894***
	(9.99)	(9.37)
N	941	941
Chi^2	6.799	1.335
Pseudo-R^2	0.0339	0.00588
Log Likelihood	-327.9	-337.4

Note: Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix H. External State Supporter with Different Regime Types

Existing research argues that the possible correlation between regime type and rebel groups' recruitment on child soldiering still remains ambiguous (Lasely and Thyne, 2015), however, one may expect that rebel groups who receive support from democratic countries are less likely to recruit children than rebel groups who do not. Therefore, in this robustness check, I divided the state supporters variable dependent on their regime types – autocracy and democracy. I

utilise Marshall and Jagger (2002)'s Polity IV data. According to the data, autocracy ranges from -10 to -6 and democracy ranges from +6 to + 10.

To analyse it, I firstly differentiate variables for rebel supporters and state supporters. I coded 1 when rebel groups have rebel supporters and 0 otherwise. For state supporters, when rebel groups do not have state supporters, it takes 0, have at least one autocratic state supporter it takes 1, and have at least one democratic state supporter it takes 2. The result suggests there is no statistical correlation between a specific type of regime and child recruitment by rebel groups across the models.

Faulkner (2019) argues that having democratic state supporters decreases the possibility of rebel groups' child soldiering whereas I could not find such a result in my statistical results. There are two possible reasons why my research and his research show different results. First, datasets which he and I utilise are different. He mainly utilise the dataset established by Haer and Böhmelt, which the unit of analysis is conflict-period while I use data by Haer et al. (2020) which the unit of analysis is conflict-year. Second, what we are focusing and controlling in our research are also different. In his research, he does not examine the rebel supporters' impact. Concurrently, some of the control variables are not the same among our studies that my research results do not support his argument. However, still it can be the crucial discussion whether a certain characteristic of rebels' supporters has can affect rebel groups' tactical selection, namely child soldiering.

	Logit Models	
	Model 1	**Model 2**
Rebel Supporter		1.638*
		(1.73)
State Supporter(Autocracy)	-0.308	-0.326
	(-0.61)	(-0.65)
State Supporter (Democracy)	0.307	0.205

	(0.55)	(0.36)
Conflict Duration	0.377***	0.361***
	(3.21)	(3.26)
Battle-related Deaths	0.102	0.0895
	(0.93)	(0.83)
Youth Population (log)	2.048**	2.247**
	(2.08)	(2.28)
GDP (log)	0.478	0.530*
	(1.55)	(1.69)
Political Wing	-0.386	-0.479
	(-0.81)	(-0.98)
Fighting Capacity	0.355	0.352
	(1.07)	(1.05)
Territorial Control	0.169	0.227
	(0.84)	(1.03)
Forced Recruitment by Government	1.223**	1.220**
	(2.09)	(2.08)
Constant	-11.71**	-12.81**
	(-2.09)	(-2.28)
N	844	844
Chi^2	29.09	34.64
Pseudo-R^2	0.318	0.335
Log Likelihood	-193.9	-189.0

Note: Standard errors of the pooled logit models are clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix I. Ordered Logit Model (Using Index Variable)

This model reports the relationship between child recruitment by rebel groups and impact of having a certain type of supporter by using ordinal value. Based on the explanation of data offered by Haer et al. (2020), dependent variables take three-point scales, 0 for when rebel groups did not use child soldiers, 1 for when rebel groups recruited children less than 50% of their total military size and 2 for when rebel groups recruited more than 50%. The result

suggests that rebel groups who receive support from rebel supporters are more likely to recruit a large number of children than who do not. On the other hand, there is negative but no statistical significance between rebel groups' child soldiering and having foreign state supporters. Also, the table reports that rebel groups are more likely to recruit children actively when conflict lasts longer, when conflict becomes stronger and government recruit children coercively.

	Logit Model
Rebel Supporter	1.233***
	(3.17)
State Supporter	-0.115
	(-0.41)
Conflict Duration	0.0414**
	(2.41)
Battle-related Deaths	0.256***
	(3.00)
Youth Population (log)	0.134
	(0.11)
GDP (log)	-0.192
	(-0.81)
Political Wing	-0.563
	(-1.36)
Fighting Capacity	0.646
	(1.45)
Territorial Control	0.0344
	(0.15)
Forced Recruitment by Government	1.152***
	(2.62)
Cut1	-0.723
	(-0.12)
Cut2	2.896
	(0.48)
N	876
Chi^2	38.81

Pseudo-R^2	0.111
Log Likelihood	-695.0

Note: Standard errors of the pooled ordered logit model is clustered around each conflict dyad and are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Chapter 5. Conclusion

This dissertation investigates the factors that make children engage in armed conflict. This important question has been examined by some political scientists but has not yet been adequately discussed. This dissertation, therefore, attempts to address the gap in the literature. In this chapter, I summarize the findings of the thesis and their implications. First, I review the presented argument and the empirical evidence. Subsequently, I discuss the contributions of this dissertation and its policy implications. I conclude the dissertation by discussing future research that can build on the findings presented.

I focus on different factors related to child soldiering that had not been examined in the previous literature: the effectiveness of international humanitarian regulations (IHRs) and the impact of external support and supporters. The argument presented in the Chapter Two of this dissertation is that forced child recruitment by governments and rebel groups may not be regulated by IHRs. Empirical results show that existing IHRs cannot deter forced child recruitment by governments and rebel groups, as continue to recruit children forcibly despite such regulations. The only exception is that secessionist rebel groups are likely to adhere to IHRs and restrain forced child recruitment. This chapter does not imply that the existing legal instruments are ineffective but that they may not sufficiently prevent certain cases of forced child recruitment due to their systematic limitations.

Whilst the second chapter focuses on both governments and rebel groups, third and fourth chapter mainly examine rebel groups' child soldiering. Furthermore, the third and fourth chapters move on from legal factors to discuss the economic factors related to child recruitment, more specifically the types of external support and types of external supporters. In the third chapter, the findings demonstrate that rebel groups who have territorial support are more likely to recruit higher number of children whereas receiving troop and monetary support are less

associated with child recruitment. Territorial support increases the incentives to recruit more children because rebel groups encounter new children, and when this safe haven is used as a refugee camp, rebel groups can recruit children who have lost their parents or who want to escape from extreme poverty. Overall, the statistical results support the argument that receiving territorial support increases the likelihood of rebel groups' active child recruitment.

In Chapter Four, the results suggest that there is heterogeneity in the likelihood of child recruitment by rebel groups when they have different external supporters. The study argues that rebel groups with other rebel groups as their supporters are more likely to recruit soldiers than groups without such supporter. It also argues that having state supporters should be negatively related to child soldiering. The results indicate that having a specific type of external supporter, namely other rebel groups, has an important influence on rebel groups' decisions regarding child recruitment. Throughout the third and fourth chapter, it is clear that third party intervention should be considered when attempting to understand the child soldiering by rebels.

This dissertation contributes to the literature of child soldiering in a number of ways. First, this work is among a group of studies attempting to systematically understand the use of child soldiers (e.g. Tynes and Early 2015; Lasely and Thyne 2015; Haer and Böhmelt 2016a, 2016b, 2017; Tynes 2018; Faulkner et al. 2019; Haer et al. 2020). Although existing studies have examined the reasons for child soldiering from diverse perspectives, research on several potential factors remains limited. In this sense, this research addresses a theoretical lacuna by contributing to understanding what other potential factors can influence children's engagement in armed conflict. This study highlights that, contrary to conventional belief, the promises made in international society through IHRs may lack the expected power to protect children from being recruited as soldiers.

Additionally, this work indicates the importance of examining the reasons for child recruitment not just in terms of domestic factors but also international impacts by examining third-party intervention, namely external support. Indeed, even though several scholars have suggested the potential reasons for children continually being recruited, it is still necessary to identify further possible factors, considering that many children are still being recruited in conflict zones.

Second, by understanding the impact of legal and economic factors on child soldiering in conflict zones, this research may also help to expand the research on the reintegration of child solders. Indeed, returning children to their own societies is often much harder than expected, and thus knowing the various factors underpinning children becoming involved in armed conflicts may be key to understanding why many children fail to reintegrate. In addition, from a broader perspective, this dissertation can also contribute to the study of conflict management and resolution because we know that child soldiers are vital actors in recent conflicts.

The most substantial contribution to the literature made by this dissertation is its emphasis on whether child soldier related IHRs have enough control to regulate both governments' and rebel groups' forced recruitment. Examining the impact of external support on child recruitment by rebel groups is an equally important topic for expanding the discussion regarding the factors that make children engage in armed conflict; however, I believe that researching the legal impact is more important than any other factors with regard to understanding the fundamental reasons of the continued recruitment of children despite such efforts being made by international society. Additionally, the interplay of human rights and humanitarian regulation has yet to be sufficiently examined theoretically and or practically (Oberleitner 2015), meaning this dissertation represents a key piece of work for developing and clarifying the interaction between human rights and IHRs in conflict zones. This development and clarification are important theoretically but is also a crucial topic for policy makers as well.

Beyond the theoretical contributions, I suggest some guidance for policymakers. Overall, this dissertation suggests that several potential factors may influence conflict actors to continuously recruit children. These factors can be examined to inform expectations regarding the reasons behind child soldiering across countries.

More specifically, Chapter Two of this dissertation highlights the importance of international policy-makers reconsidering the effectiveness of IHRs on forced child recruitment by governments and rebel groups. As discussed in an earlier paragraph, examining, and understanding the effectiveness of IHRs for preventing child recruitment is crucial to explain why children continue to be forcibly recruited in some regions despite the introduction of several international regulations. Indeed, this research may provide an important pathway for policy makers to consider the current limitation of the IHRs and how these can be overcome.

In the third and fourth chapter, the dissertation suggests that policy makers should observe the potential connection between rebel groups and third party. Gaining a better understanding of the sponsorship of rebel groups can help policy makers to formulate effective approaches to protect children from being recruited. Indeed, the involvement of third-parties makes it difficult to predict and prevent child recruitment by rebel groups. Therefore, examining the case(s) in which rebel groups are more likely to engage in child recruitment in terms of their external support may help to ameliorate child soldiering by rebels. Overall, rather than focusing on domestic factors only, the impact of third party must be considered by policy makers to prevent and reduce the active number of child soldiers in conflict zones.

This dissertation expands upon ongoing research on child soldiers and successfully examines the diverse factors that have received relatively less attention in the existing literature. However, it also has several limitations that need further development. First, limited data exist on child recruitment by both government and rebel groups. Although existing scholars have

compiled data for child soldiers (e.g. Haer and Böhmelt 2016a, 2016b, 2017; Tynes and Early 2015; Haer et al. 2020) in their research, there are limited data on governments' child recruitment in particular. Furthermore, most data only code the use of child soldiers as a dichotomous variable, meaning there are no data that capture the specific number of child soldiers. In addition, a lack of time variance, such as change in child recruitment over the years also hinders in-depth analysis. It is difficult to obtain precise data on child soldiering, but this issue must be addressed to develop further research on child soldiering.

Second, in terms of limitations, there are several more diverse factors that may influence the use of children during armed conflict. I mainly focus on legal and economic factors, but other factors such as political factors can influence children's engagement in armed conflict. Specifically, the connections between rebel group's child recruitment and democracy is still questionable, and further research should thoroughly examine how political regimes can affect child recruitment in specific countries. Furthermore, there may be more political factors that affect child recruitment such as political stability or level of political freedom.

Third, the discussions in each chapter could be expanded as follows. In Chapter Two, I could develop more in-depth research by focusing African continent. Child recruitment is actively conducted in Africa, while they also have their own regulations to prohibit recruiters from engaging in child recruitment. Regarding Chapters Three and Four, examining the relationship between external support and child recruitment could be developed by including additional external supporters such as diaspora or NGOs or measuring the number of external supporters and whether this number affects child recruitment. In addition, the discussion on how external support can affect governments' recruitment could be expanded as well. Governments may also receive external support, such as foreign aid, and would be useful to examine how this can affect child recruitment by governments.

As this dissertation has demonstrated, the use of child soldiers is one of the most severe and immoral humanitarian violations which deteriorate human rights standards. Therefore, an in-depth understanding of why children are recruited in armed conflicts is important not only to protect children but also for local and international society. Research on child soldiers is difficult due to several limitations, but I believe that this dissertation can be one of the breakthroughs of the further development of this field of study, and hopefully contribute to the reduction and eventual elimination of this important and detrimental phenomenon.

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