THE ROLE OF SECURITY IN EDUCATIONAL INSTITUTIONS TO PREVENT
CHILD RECRUITMENT
A Quantitative Study on Colombia

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Acknowledgments

I would like to thank my dear friends, Robin and my family who supported me not only in the process of writing my master thesis but also during my entire academic career. Thanks to my parents who gave me the power to fight for everything I want to achieve in life.

Moreover, I would like to thank Pernille and Lani, for being such good friends and supporting me during all these hours together in the library. Thanks to my friends Elin and Selma who gave my time in Uppsala an amazing extra Swedish touch.

I would like to acknowledge the unconditional support of my dearest friend Sammy. Even when being on the other side of the world, she was always available for a discussion, feedback and a motivational talk, thank you.

Moreover, I would like to thank Mark and Brigitte and Eleonora for proofreading my thesis drafts and Valentina, Niels and Shawn for helping out with the statistics.

I would like to thank my advisor, Anders Themnér, for helping me to realize the research I wanted to do and providing all his professional knowledge in this field. Thanks for the Department of Peace and Conflict for believing in me and to all my dear classmates answering the 1000 questions and support throughout the process.

I would like to thank Mercy Corps Colombia, Cindy and most of all the amazing children in Putumayo, Colombia who gave me the inspiration to write about this topic, showed me its importance and gave me a life-changing experience I will never forget.
Abstract

A relatively new academic field, a highly increasing phenomenon: the recruitment of children in armed groups. Previous research has highlighted the importance of education in the prevention of child recruitment. However, I argue that the already established negative relationship between education and child recruitment is incomplete as education can also positively affect child recruitment. Therefore, it is important to look under which circumstances education decreases the likelihood of child recruitment. No previous research has systematically introduced a theory of the security field into the educational research field while explaining the phenomena of child recruitment. This thesis argues that the security provision in an educational institution is of importance, as a safe learning space can prevent child recruitment through deterrence and empowerment. Using data on Colombian municipalities in 2016, this research aims to statistically investigate the role of security in an educational institution in decreasing the likelihood of child recruitment. This thesis finds that when controlling for displacement, presence of armed groups, poverty, population and rurality, the unexpected outcome that the presence of safe learning spaces, measured through boarding schools, is positively correlated with child recruitment.

Key words: Child recruitment, education, security, safe learning spaces, boarding schools, deterrence, empowerment, Colombia
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<th>Full Form</th>
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<tr>
<td>AIC</td>
<td>Akaike Information Criterion</td>
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<td>BACRIM</td>
<td>Bandas Criminales</td>
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<tr>
<td>CAAFAGs</td>
<td>Children Associated with Armed Forces or Armed groups</td>
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<td>CFS</td>
<td>Child Friendly Space</td>
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<tr>
<td>DANE</td>
<td>Departamento Administrativo Nacional de Estadística</td>
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<tr>
<td>ELN</td>
<td>Ejército de Liberación Nacional</td>
</tr>
<tr>
<td>FARC</td>
<td>Fuerzas Armadas Revolucionarias de Colombia</td>
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<tr>
<td>ICBF</td>
<td>Instituto Colombiano de Bienestar Familiar</td>
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<tr>
<td>LRA</td>
<td>Ugandan Lord’s Resistance Army</td>
</tr>
<tr>
<td>LTTE</td>
<td>Liberation Tigers of Tamil Eelam</td>
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<tr>
<td>OLS</td>
<td>Ordinary Least Square</td>
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<tr>
<td>RCD-Goma</td>
<td>The Congolese Rally for Democratic-Goma</td>
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<td>RNI</td>
<td>Red Nacional de Información</td>
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<td>RPA</td>
<td>Rwandan Patriotic Army</td>
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<td>RUF</td>
<td>Revolutionary United Front</td>
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<tr>
<td>TPLF</td>
<td>Tigrayan People’s Liberation Front</td>
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<tr>
<td>UCDP</td>
<td>Uppsala Conflict Data Program</td>
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<tr>
<td>UDHR</td>
<td>Universal Declaration of Human Rights</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>UNICEF</td>
<td>United Nations International Children’s Emergency Fund</td>
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<td>UNOCHA</td>
<td>United Nations Office for the Coordination of Humanitarian Affairs</td>
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<tr>
<td>VIF</td>
<td>Variance Inflation Factor</td>
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1. Introduction

Worldwide, violent conflict is continuing to tear apart communities. From the abduction of brides by Boko Haram in Nigeria and the ‘Caliphate Cubs’ of the Islamic State in Syria to the recruited others in South Sudan, Afghanistan, Myanmar and the Democratic Republic of Congo: children are taking part in 75% of the violent conflicts worldwide. Overall, more than half a million children under the age of eighteen were enrolled in armies in more than eighty-five countries, of which some were only seven years old (Child Soldiers International, 2017). In 2017 alone, over one-hundred armed forces and armed groups recruited children whom they used in a total of fifty-eight conflicts. This alarming number of recruitment and usage of children as well as the severity and scale of related violations committed against these children, calls upon a response. (International) non-governmental organisations, governments and academic researchers are trying to understand the phenomena of child recruitment in detail in order to develop more effective policies and therewith put a halt on this cruel phenomenon.

Although several important arguments on child recruitment have been made by scholars in the last decades, still many new components arise and need to be investigated in order to explain and prevent children being recruited (Karen McVeigh, 2017). Based on thorough investigations, the majority of academic researchers agree that the recruitment of children occurs in various ways. Some children are abducted, coerced or threatened to join armed groups and are thus forcibly recruited while others join on a “voluntary” basis. Both for forcibly and voluntary recruitment, children are mostly at risk in four scenarios. These are situations where they are living in a war-affected area with the presence of armed groups, where they are living in poverty, displaced from their home, or have limited or no access to education (Singer, 2006). Due to the limited scope of this research, the paper focuses on the role of education in the prevention of child recruitment into armed groups\(^1\) and follows the general argument that children are at risk of recruitment when they have limited or no access to education. Education gives vulnerable children and families hope for a better future and children are placed in a secure and protected institution (Wessels, 2005).

Although much research follows the general idea that children must go to school because education is inherently good and provides peace, this research argues that education

\(^1\) In this research, an armed group refers to a non-state armed group
does not under each and every circumstance decrease the likelihood of children being recruited. According to Baxter (2000), an unbiased and non-politicised content of education is essential to the prevention of child recruitment. A curriculum that is used as propaganda to glorify war will motivate children to join armed groups. Moreover, Colclough (2005) argues that the quality of education is important in the prevention of children being recruited. A low quality of education will demotivate children to participate in learning and demotivate their parents or family to invest any money or time in the child’s education. Another explanation of why education cannot prevent child recruitment in all cases and an important and often understudied concept is the security of children in and around the educational setting. Children need to be protected from harm intentionally done by human behaviour or action (Prins, 2008; McClure & Retamal, 2010; Kjaerulf and Barahona, 2010).

A clear research gap exists in the field of child recruitment and the role of education in it because there is, to my knowledge, no research that includes the concept of security in examining this relationship. Therefore this study contributes to the growing field of research on child recruitment in general and to its relationship with education, by combining a theory of the security research field into the educational field while explaining the phenomena of child recruitment. Additionally, this purely quantitative based analysis will contribute to the field considering that the majority of the research on child recruitment is qualitative research. The aim of the study is to statistically investigate the role of security in educational institutions in decreasing the likelihood of child recruitment. In order to do so, the following question will be attempted to answer: *Under what circumstances does education decrease the likelihood of children being recruited?* Based on the theoretical framework of this research, the hypothesis stating that child recruitment will be less common in municipalities where vulnerable children have access to education in a secure place, will be statistically tested.

A safe learning space in this paper indicates a place, often located in rural and urban insecure and war-affected areas, within or close by an educational institution where vulnerable children can reside for the entire week and are protected from intentional harm caused by human behaviour or action. Following the hypothetical argument that states that safe learning spaces prevent child recruitment, two causal mechanisms are applicable. First, safe learning spaces create deterrence and therefore prevent child recruitment and second, safe learning spaces create empowerment and prevent children being recruited. This concept will be operationalised by measuring the presence of boarding schools in 562 Colombian municipalities. The method used to compare the municipalities and analyse the given hypothesis, is a quantitative study that applies a logit binary and a logistic regression model.
The findings of this statistical analysis, give an unexpected positive relationship between boarding schools and child recruitment. In other words, the presence of a boarding school increases child recruitment in a Colombian municipality. Whether this relationship can be explained by theoretical or methodological weaknesses is investigated in the analysis, where also the importance of future research on this field in highlighted.

This paper first gives an overview of theories in previous work on child recruitment, the overall importance of education in the prevention of child recruitment, and describes the debate on why education in some cases does not decrease the likelihood of children being recruited. This brings us to the second part of the paper, the theory that looks into the understudied security element of the educational institution and theorise that it can play a particular important role in the prevention of child recruitment because of deterrence and empowerment. Third, the question on why and how the theory is tested is explained in the research design. Fourth, the empirical evidence and the main results will be presented and additional observations are mentioned. Fifth, the empirics are analysed and I will reflect on the methodological choices and research design and how this could influence my results. Moreover, possible theoretical weaknesses and alternative explanation for the unexpected outcome are mentioned. The sixth and last chapter will summarise the results of my study and the contribution of this research to the field.
2. Literature Review

Firstly, this chapter will look into theories in previous work on the phenomena of child recruitment. Secondly, based on previous literature I acknowledge that education plays an important role in the prevention of children being recruited. However, I also argue that the previous academic relationship between education and the prevention of children being recruited is not enough. To my knowledge, no systematic study exists that looks into whether security in educational institutions can play a significant role in decreasing the likelihood of child recruitment. This research gap therefore motivates me to statistically test my hypothesis that child recruitment will be less common in municipalities where vulnerable children have access to education in a secure place.

2.1 Theories in Previous Literature

The adoption of several international treaties, such as Universal Declaration of Human Rights of 1948, the Geneva Convention of 1949, additional protocols to the Geneva Convention in 1977 and the Convention on the rights of the child of 1989, already condemned the recruitment of child soldiers. However, with the first report only dating back to 1996, the phenomenon of children in armed conflict, and in specific recruitment of children in armed groups, has been a relatively new academic field. An increase of children being used in armed groups in the last decades, as well as the argument that the use of children "makes conflicts easier to start, tougher to end, and more likely to recur" (Singer, p.112), resulted in a rapid development of research on its causes, dynamics and impacts.

2.1.1 Child Recruitment

What exactly is a child soldier? Most research refers to a child soldier in a more general and broad way as "any person under eighteen years of age who is engaged in deadly combat or combat support as part of an armed force group" (Singer, p.7). However, UNICEF mentions that a child soldier does not only refer to a minor that takes direct part in hostilities. No matter which role a child has within the armed group, he or she is exposed to high levels of violence as a victim, witness or perpetrator. Therefore, UNICEF created the more liberal definition of UNICEF which states that a child soldier is a person below the age of 18 years
used by an armed group “including children, boys and girls, used as fighters, cooks, porters, messengers, spies or for sexual purposes” (2007).

In order to transform a child into a soldier, they have to be recruited into an armed group, voluntarily or by force. By listing what the recruitment of children exactly means, the most commonly used definition and which is also stated in the Principles and Guidelines on Children Associated with Armed Forces or Armed groups (CAAFAGs): “Recruitment refers to compulsory, forced and voluntary conscription or enlistment of children into any kind of armed group or armed force.” By going more into detail of this definition, several scholars (Wessel, 2002; Brett & McCallin, 1996) argue that the lines between voluntary and forceful recruitment are blurred and that there is a great overlap in both fields. However, a distinction between voluntary and forced recruitment is important in order to understand why and when children are at risk of being recruited and to be able to create an effective prevention framework.

Forced recruitment is mainly done through abduction or coercion and is the most common method of child recruitment. Forcefully recruiting children happens in the majority of conflicts and is a meticulously planned process where a child has to meet certain criteria (Singer, 2006). It often concerns more vulnerable children that are homeless, internally displaced, refugee, or not protected by their parents or community. The importance of security in the prevention of forced recruitment will be explained in a later stage. A well-known example of a rebel group that used abduction or coercion as their main method of recruitment is the Ugandan Lord’s Resistance Army (LRA), which according to the Coalition to Stop the Use of Child Soldiers abducted a total of nearly 25,000 children for their activities.

“Voluntary recruitment refers to cases where children take the initiative of joining armed groups themselves, without being under immediate physical threat” (Schmidt, 2007). However, there is an ongoing debate if the term “voluntary” should be used since although those children may not be physically forced to join; several structural and emotional factors may in a way force them to join an armed group. The UN even argues that children who voluntarily join a group do this as “a desperate attempt to survive” (UN, n.d.). An example of structural and emotional factors that forced Ethiopian women into the Tigrayan People’s Liberation Front (TPLF) are “political motivations, inspiration by peers or family members, loss of family members due to droughts, escaping unwanted marriages, educational opportunities, or being brought up in the fighter camps (and attending kindergarten and school there)” (Schmidt, 2007). Since also adult women mention that “voluntary” recruitment is not completely voluntary because of several push factors, it is possible to apply this reasoning
also to children, as they are psychologically less developed. They are at an age where they are not capable of making mature decisions (Singer, 2006) and/or they are not able to critically judge their situation (Schmidt, 2007). Whether the voluntary recruitment of child soldiers is completely voluntary or not, it is crucial to distinguish it from forced recruitment because different factors lead up to each of them.

As already touched upon in the introduction, with a total of more than a half million children recruited worldwide, children of this era are more at risk of being recruited than ever before. The reasons for the global growth in the number of child soldiers, is because of the technological improvements in small arms, which created small and cheap weapons that are easily used by children (Renner, 1999). Moreover, a more brutal and criminalised type of conflict arises whereby especially civilians and children are the primary targets, including the unimaginable misery and the normalisation of conflict (Singer, 2006).

### 2.1.2. Different Explanations of Child Recruitment

The focus on the increasing trend worldwide does not explain the differences in number of child soldiers between countries. Why and when are children in, for example, the Democratic Republic of Congo more at risk of being recruited than children in another country in conflict? In general, when a child lives or grows up in a war affected area, different factors coincide which works as a multiplier effect. As it is out of this paper’s scope to include all potential factors, only the main ones that increase the risk of children being recruited are taken into account.

An important factor for child recruitment is the presence of armed groups. In line with Schmidt’s (2007) and Downing’s (2014) argument, the presence of armed groups in the area close to the child heavily increases the risk of being recruited because interaction between recruiter and child can happen regularly. The interaction can be while playing, while being home alone, helping a parent on the field, or even in or around the educational institution. Children often have the possibility to interact with recruiters on their way to school where the perpetrators try to convince them of joining the armed group or even try to abduct or coerce the children. When there is no armed group present in the area, the risk of a child being recruited is smaller. In addition, in an area where armed groups are present, children will be more likely to be influenced by the war-ethos and insecurity in their communities.

Another factor that might increase the vulnerability of children being recruited is the level of poverty (Wessels, 2005). Poverty can influence the motivation of a child to join an
armed group because of grievance; “social and economic injustice motivates adults and children to take up arms, sometimes with a long-term vision of affecting change”, greed; to receive a significant income and survival; because joining the armed group could be the only way to guarantee a regular meal, clothing and medical attention (Achvarina, Nordas, Ostby & Rustad, 2009). It could also be the case that children are sent to armed groups by their parents to financially support their family. Moreover, poverty has an influence on the protection structures of a family and community since they have less means to defend their family, friends and children (Ibid.) (Goodwin-Gill and Cohn, 1994).

Displacement of children and families might be another aspect that influences the risk of recruitment of children. The chaos often linked with displacement could lead to a sudden separation of families, whereby children are sometimes isolated from their parents and become unaccompanied minors, the most at risk group for recruitment (Machel, 1996). Even when they are not separated there is often a minimal or lack of protective parental or family structures. Moreover, the loss of community protective structures after displacement, increases the risk of abduction or coercion, or increases the opportunity for non-civilian activities among displaced individuals (Lisher, 2006; Singer, 2006; War Child, 2014; Özerdem & Podder, 2011; Dumas, 2003). The protection structures are in specific very important during insecure times, shown by the regular attacks of armed groups on refugee camps or internally displaced groups. Moreover, the insecurity in these groups can give individuals the opportunity to grow “non-civilian” activities wherein children can participate. Lisher (2006) also argues that protracted displacement give children often no opportunity to receive (adequate) education which leads to frustration and desperation. Concerning the role that education can play for a child, independent on whether a child is displaced, will be discussed in the next section.

2.1.3 Education

Many scholars have argued that there is a relationship between education and conflict (Wessels, 2005; Ishiyama, J., & Breuning, M., 2012; Christie, D.J., 2011; Downing, C., 2014). However, much research has focused on the effect of conflict on the education system. This focus is with good reason since, according to War Child (2004), twenty-eight million children are not able to attend primary schools due to the effect of war. Several reasons for the high number of out-of-school children have been brought up, such as a lack of resources and infrastructures that result in the absence of educational institutions. Moreover, (primary
school-age) children are not attending classes due to fear of unsafe travel routes, insecure educational environments or because they have to stay at home to generate income (Lai and Thyne, 2007) (Buckland, 2005). However, although conflict has such a huge impact on education, the Universal Declaration of Human Rights (UDHR) mentions that every state should provide compulsory, free, non-discriminatory and accessible education for primary school-age children, even in war-affected areas.

Not only does conflict influence education, education also have an effect on conflict. Collier (1999), for example, shows the importance of education in a conflict-prone area by arguing that when ten percent of a country’s youth is attending education, the conflict risk decreases from fourteen to ten percent. Moreover, Ishiyama and Breuning (2012) also argue in line with Collier that education has a positive effect on conflict. Namely, an increase in the enrolment of children and youths in the higher education levels during the first years post-conflicts significantly decreases the likelihood of a restart of the conflict. Moreover, “long-term peace building increases significantly when a conflict-affected population is educated” (Inter-Agency, 2010). Thus, according to these arguments one can state that education has a positive influence because it affects the risk of conflict, the restart of a conflict and the long-term peace building.

2.1.4 Education and Child Recruitment

When following the arguments that education decreases conflict in general, does this also means that an increase in education has an effect on the prevention of child recruitment? In other words, is it important to invest in education to prevent child recruitment and if so, why? Many children affected by war see education as essential for building a bright and positive future, informs about peace, protects them and it gives them a meaning of life (Wessels, 2005; War Child, 2014; Inter-Agency, 2010; Wessels, 2005). Bakaki and Hinkkainen (2016) argue that “educational grievances hamper the establishment of viable livelihoods and therefore education increases the opportunity costs for armed groups and provide future alternatives to fighting for child soldiers” (p.28). Moreover, scholars argue that children growing up with no educational opportunities are like a pool of recruitment because when children have access to education, they are more socialised, since they have similar socialisation processes, beliefs, values, ethos and culture of school environment. When children do not have access to education, there is a possibility of alienation (Christie, 2011).
Moreover, education should be: “1. directed to full and harmonious development of the child's personality, talents and mental abilities. 2. Live and participate responsible and understand peace, respect and dignity for all. 3. Promote respect for parents and cultural identity” (Art. 29 (1), Convention of the rights of a child). With these skills a child should be less dependent and less vulnerable to recruitment by armed groups. A case showing the importance of education in the prevention of child recruitment is Sierra Leone. Former child soldiers mentioned during interviews that specifically because of the lack of educational opportunities provided by the government, a service that was promised during their recruitment, they joined the Revolutionary United Front (RUF) (Wessels, 2005). Another practical example is the Democratic Republic of Congo, which is one of the countries with the lowest educational completion and at the same time the country with the highest number of child soldiers (War Child, 2014).

However, as already stated in the introduction and argued by the studies above, much research follows the general idea that children must go to school because education is inherently good. However, education can also have a negative impact on conflict and on the recruitment of children to armed groups. The first argument is because the educational content can be used as propaganda material to glorify the war, dehumanising the opponent and manipulating a child’s ideology (Singer, 2006, Bird, 2007). The use of propaganda could deepen the conflict among religious, ethnic or other social groups and it could lower the threshold for children to join the armed groups. For this reason, it is important to highlight that education alone does not prevent children from being recruited, but that the educational system and curriculum is unbiased and promotes peace (Baxter, 2000).

Second, next to role of educational content, the quality of education influences the recruitment of children. The quality of education is often low in conflict areas because of insecurity, the lack of (knowledgeable) teachers and insufficient learning materials. A relatively high percentage drop-out rate, around 28%, of primary education in conflict-affected countries could be explained by the low quality of education (UNESCO, 2018). ColClough (2005) recognise that the participation of children in education depends on the quality of education available. “How well pupils are taught and how much they learn can have a crucial impact on how long they stay in school and how regularly they attend” (p.28). Moreover, he states that if parents support their children to go “to school at all is likely to depend on judgements they make about the quality of teaching and learning provided – upon whether attending school is worth the time and cost for their children and for themselves”. If children in war-affected areas drop-out of school or do not attend school on a regular basis,
they are more vulnerable and therefore the quality of education is a crucial factor in order to prevent children being recruited.

Third, the security provision in educational institutions is another highly important issue. As Singer (2005) argues, the most frequent target of abduction used by rebels is secondary schools or orphanages. In these institutions children are all together in one place and often out of contact with their parents and thus children are more vulnerable in these situations. An example of this phenomenon is the infamous kidnapping by Boko Haram of 276 girls from a school in Nigeria in 2014. Furthermore, the walk to and from school, which can sometimes be for a couple of hours, subjects the children to physical or psycho-social risks. As a frequent scenario, the children travelling to school have direct contact with recruiters, who try to recruit them by promising services or products. Moreover, both students and personnel are physically attacked on a regular basis on their way to school (Downing, 2014).

2.2 Research Gap and Contribution

The above mentioned arguments, present that education is important in decreasing the likelihood of child recruitment but only under specific circumstances. I argue that there is a research gap since there is, to my knowledge, no research that includes the security concept in examining the relationship between education and child recruitment. Moreover, the majority of the previous work on this relationship is based on a qualitative analysis. For this reason, this paper contributes to the field by statistically investigating the role of security when examining the relation between education and child recruitment. The importance of this study is to analyse under which circumstances education can prevent child recruitment and examining the role of security in explaining this phenomenon.
3. Theory

In this chapter, the paper explains the theoretical claim it is going to use in order to answer the research question: *under what circumstances does education decrease the likelihood of children being recruited?* The theoretical claim is built on broader knowledge and concepts in the security field.

First, this section explains the definitions of security and its importance in war-affected areas. Insecurity and vulnerability makes individuals more willing to use physical aggression to protect themselves (Kjaerulf and Barahone, 2010). Therefore, this research systematically analyses whether children in insecure educational institutions are also more vulnerable to violence in the form of recruitment. Child recruitment is defined in line with Principles and Guidelines of CAAFAGs, “compulsory, forced and voluntary conscription or enlistment of children into any kind of armed group or armed force”. However, due to the limited data this research only looks at the recruitment of children into armed groups and not into armed forces.

Second, the characteristics of a safe learning space and its possible role in child recruitment will be highlighted. Third, according to McClure & Retamal (2010), safe learning spaces create deterrence and should therefore protects children physically and prevents children from being recruited. Fourth, the argument by Inter-Agency (2010), that not only deterrence but also empowerment of children in these safe learning spaces should positively affect the prevention of child recruitment due to the protection of the children through their empowerment, will be highlighted. Based on these hypothetical arguments, I will arrive at the hypothesis tested in this research on whether child recruitment will be less common in municipalities where children have access to education in a secure environment.

3.1 Security

The concept of security is much contested. The definition used in this study is: “the condition of being protected from harm caused by intentional human actions or behaviours” (Prins, n.d.) and therefore distances itself from the concept of safety where harm is caused without the involvement of a human-being. This paper continuous to use the term safe learning spaces instead of secure learning spaces as it is an already established concept by War Child (2014) and it would cause confusion when a different name is used for the exact same concept. The research by Walter and Snyder (1999) is one of the first that demonstrated the importance of security in relation to a peace settlement. They argue that the security
dilemma of warring parties makes credible peace guarantees without third party intervention almost impossible. On a state-level this means that a fall-back in defences creates an intense vulnerability for the party, which in most cases leads to a decision that the party continues to fight. The argument that insecurity and vulnerability of parties leads to (a continuous) use of violence is also shared by Kjaerulf and Barahone (2010) even if, their research looks more into the individual security that they call human security. In their article they state that the “vulnerability and perception of insecurity create hopelessness apathy, and decreased resilience against violence” (ibid. p.390). Moreover, feelings of insecurity can lead to adjustments in personal behaviour whereby an individual is more willing to use physical aggression (ibid.). In dangerous areas that experience a failure in public security or even have security vacuum, gangs or rebel groups sell security and protection to its vulnerable residents. However, it could also be the other way around, and vulnerable individuals could start to protect themselves from repression or organised crime with the use of violence. By following the argument by Kjaerulf and Barahone (2010), security matters to everyone, especially in violence-affected areas, and so also to a more-vulnerable group: children. By linking the earlier made argument on the importance of education in conflict-areas, this research has to analyse whether security in the educational setting can make children more resilient against violence in the form of recruitment.

3.2 Safe Learning Spaces

The concept of a safe learning space is introduced in a report created by an international NGO called War Child (War Child, 2014). Although a clear definition is lacking, I defined it in line with their description and on relatively similar concepts by UNICEF, Save the Children and Plan International. The relevance of this perspective is also confirmed based on the author’s work with these types of schools for 4 months. In this research, a safe learning space can be defined as a place, often located in rural and urban insecure and war-affected areas, within or close by an educational institution where vulnerable children can reside for the entire week and are protected from intentional harm caused by human behaviour or action. The key concept that provides the protection in these educational environments is the possibility for vulnerable children to reside there for the entire week. In addition, it also provides an education and regular meals for children. Safe learning spaces are often located at strategic places, a location where a high number of children are able to join and stay overnight. They are based in both rural and urban insecure
and war-affected areas. In rural areas, the safe learning spaces give children from remote areas the possibility to attend school without travelling long distances and undertaking dangerous journeys every day. The safe learning spaces in urban areas are often located in the less-developed and poorer communities in the cities where children are highly influenced by the violence and aggression in their immediate surroundings. By providing children with a secure area where they have access to an education, extra-curricular activities, regular meals, a place to stay overnight, and where they can be protected from the harmful influences from the violent community should lead to less recruitment. This argument is, among others, based on the policy documents by UNICEF and Save the Children, arguing that a secure learning environment can address protection risks. In order to protect the children from recruitment, safe learning spaces should be:

“educating children on the risks of recruitment, assessing children and the reasons for putting children at risk of recruitment and alternative strategies, developing advocacy targeted at duty bearers, coordinating with community protection structures and other agencies, building children’s self-confidence and validating education and social norms, providing and validating alternative development, education, and social opportunities, feeding information into incidence reports, and offering peer support” (Save the Children, 2008).

However, whether this hypothetical argument on the role of safe learning spaces in preventing child recruitment is correct, is statistically tested through a logit and logistic regression (see chapter four).

3.3 Deterrence

The first causal mechanism of this research argues that deterrence provided through physical protection in safe learning spaces leads to the prevention of child recruitment (Figure 1). Physical protection is defined by Inter-Agency (2010) as “protection from freedom from all forms of abuse, exploitation, violence and neglect”. In this paper, physical child protection will only be intended as protection from the forceful recruitment of children through abduction and coercion.

The deterrence theory gained prominence as a theory of military strategy. Thomas Schelling’s (1966) classic theory on deterrence argued that the capacity of state X to harm state Y, is seen by state Y as a motivating factor to avoid any conflict. By incorporating the
power to hurt as a bargaining power to the field of peace and conflict, the deterrence theory can be used in different forms. For instance, Kjaerulf and Barahona (2010) argue, the use of deterrents in the form of documenting violations, legal prosecutions and international advocacy reduces violence. Their article uses the theory in a broader and more high-level way. However, in order to explain why safe learning spaces prevent the recruitment of child soldiers, one has to look into the deterrence theory in a more specific and individual way.

McClure & Retamal (2010) argue that the human security framework, with its focus on the protection of local individuals and children, is the best way forward to prevent the recruitment of children. They state that each child requires defence against forced recruitment into armed groups and according to their research the best way to provide the defence and deterrence is “through safe spaces where children could be isolated from predators”. They argue that deterrence is a strategy of local community and parental protection whereby the protection of children is at its centre. A small-scale success story of the use of this strategy is in refugee camps where protected areas for activities and services for children were located in the most-secure and most-visible areas. Hereby the strategy is rooted into the local communities, since they provide a web of security. This means that when a civilian population is attacked, local adults work together with local and external security forces to prevent recruiters accessing the secure space (ibid.).

In short, McClure & Retamal (2010) argue that child recruitment can be prevented through secure spaces where children are isolated from recruiters. Although their research puts more focus on the importance of physical protection within refugee camps, this research focuses only on physical protection within the educational system. I argue that, since there are many similarities between a refugee camp and a safe learning space, concerning the concentration of children at one place, the same mechanism can be applied. Moreover, children in safe learning spaces should be protected by parents, the community and security forces (War Child, 2014). This physical protection could be provided, for example, through the location of the school, locked doors, visible protective boundaries, clear signs, a vigilante, an adult who is with the children twenty-four hours a day, and the possibility to stay overnight to prevent potentially hazardous daily journeys between home and school. Whether the physical protection and deterrence of predators through safe learning spaces prevent child recruitment, should be analysed.
3.4 Empowerment

The second causal mechanism of this paper, hypothetically arguing that safe learning spaces prevent child recruitment, is about the empowerment of children in safe learning spaces (Figure 2). Different definitions of empowerment are used in the academic world. The general empowerment theory by Zimmerman (2000) “includes processes that enable effective participation such as decision-making in community change efforts”. However, as indicated by Rappaport (1984), three forms of empowerment exist: individual or psychological empowerment, community empowerment, organisational empowerment. Individual or psychological empowerment is a process that develops “the cognitive and behavioural skills necessary to critically understand their social environments and become independent problem solvers and decision makers to improve their quality of life” (Zimmerman, 2000). This paper will only focus on the former form of empowerment, the individual or psychological empowerment, and in more detail the empowerment of children up to the age of eighteen years. Therefore, empowerment is defined in this paper as “the cognitive and behavioural skills” of a child “necessary to critically understand their social environments and become independent problem solvers and decision makers to improve their quality of life” (Zimmerman, 2000). How this empowerment of children works depends on each child and context. However, the general aspects included in this concept are to ensure that children have the skills to make sound decisions and form their own opinions, that they are able to resolve conflicts in a non-violent way, and think critically (Inter-agency, 2010).

By defining empowerment of children in educational institutions, it is important to distinguish this argument from the earlier mentioned alternative argument on why education can sometimes harm children in conflict-areas, namely the content of education. The latter focuses on how biased and politicised curricula can glorify war while this argument solely
focusses on the inclusion of psychological empowerment of children in the content of extra-curricular education.

Inter-agency (2010) argues that: “by strengthening problem-solving and coping skills, education in empowerment enables learners to make informed decisions about how to survive, improve the quality of life and care for themselves and others in dangerous environments. It can help people think critically about political messages or conflicting sources of information”. They state that children will learn how to solve their problems in a non-violent way and will be more resilient to the use of violence by themselves or in an armed group. Moreover, the decision-making skills of children will be improved in order to allow them to realise the possible consequences of a decision. Children will first think of the possible consequences before deciding to join an armed group. Another important concept of empowerment is the ability to form opinions. If children are able to form their own opinion and know how they feel and think about certain issues, they become less vulnerable to recruitment (ibid). The last concept taken into account when speaking about empowerment is the skill to think critically. The report by Inter-Agency (2010) already argues that critical thinking will make them less vulnerable to propaganda issued by armed groups. Before they believe the arguments in favour of joining an armed group, they will think critically on whether the information is correct and unbiased.

I argue in line with War Child (2014) that children in a safe learning space will receive, next to academic skills of basic education such as literacy and numeracy, extracurricular education on empowerment. Hereby, children will learn problem solving, decision-making, opinion forming and critical thinking. In addition, I argue that the empowerment of children residing in safe learning spaces are often more effective since the children stay at the safe learning spaces. In communities which were highly affected by the war, a war-ethos is often present for years after the war. Children staying in the safe learning spaces are less exposed to the war-ethos present in the municipalities where their family and friends are living and they are thus less-influenced by it.
To conclude, the theoretical claim of this research is that safe learning spaces lead to deterrence and child empowerment and therefore, decreases the likelihood of child recruitment. Based on these causal stories, this research will statistically test the hypothesis: child recruitment will be less common in war-affected municipalities where vulnerable children have access to education in secure spaces.
3. Research Design

As explained in the previous chapter, the hypothesis of this research is that child recruitment will be less common in municipalities where vulnerable children have access to education in secure spaces. This chapter describes the research design that was used to analyse the collected empirical material. Hereby a logit and logistic regression, and predicted probabilities will be used to take us closer to the answer of the formulated research question: under what circumstances does education decrease the likelihood of children being recruited?

3.1 Method & Data

The aim of this paper is to provide a statistical analysis of the role of security in an educational institution in decreasing the likelihood of child recruitment and thereby broadening the analysis of the effect of education on child recruitment. The reason why this research uses a quantitative analysis is first because of the research gap on quantitative research in this field. As already mentioned previously, most research that investigates the relationship between education and child recruitment uses a qualitative approach based on interviews or surveys. Therefore, this research contributes to the field by using a quantitative analysis. Second, a quantitative approach is used because it allows one to seek correlations, causality and relationships between variables. It gives the possibility to isolate specific variables by controlling for the environment. Moreover, it provides a broader study including more observations, and a greater accuracy and objectivity of the results due to the use of computational techniques, STATA in this analysis (Brians et al, 2011).

In order to run the statistical analysis, two databases are used. One concerning the number of safe learning spaces and one concerning the number of children recruited in armed groups. Several criteria for selecting cases for empirical evidence have been applied. First and most important is that it is possible to statistically test the hypothesis with the cases provided. Since this paper wants to investigate the relationship between safe learning spaces and the prevention of child soldiers, each observation should have at least one of the two concepts present. Moreover, in order to make the research more general a large number of observations should be used. I decided to use Colombian municipalities and the year of 2016 as my unit of analysis. Analysing on a municipal level provides more in-depth and detailed information. In total, 597 out of 1122 Colombian municipalities are compared concerning their number of boarding schools and their number of children recruited in armed groups in the year 2016.
Unfortunately, the accessible data was not accurate enough to compare all Colombian municipalities in the analysis.

The reason why this research only focuses on child recruitment in the year 2016 is because of the importance of the year in the Colombian society. In this year, Colombia was in the final phase of the peace accords with the largest Colombian armed group called the FARC (Fuerzas Armadas Revolucionarias de Colombia). However, in the previous years despite talks between FARC and the government that lead up to a peace agreement, the recruitment of children did not halt. UNICEF’s report on children in war demonstrated that since the start of the peace talks with FARC at the end of 2012, an estimate of 1000 children had been recruited into armed groups (UNICEF, 2016). An argument that is strengthened and elaborated with the quantitative research by the Colombian Family Welfare Institute (ICBF) published in 2014, arguing that not only the FARC but also other armed groups such as the ELN (Ejército de Liberación Nacional) and other neo-paramilitary groups called BACRIM (Bandas Criminales), were recruiting children into their armed groups. As a result of the peace talks and peace agreement, FARC was losing territory and power especially in the rural zones. Therefore, the areas started to be filled up by new armed groups or already existing armed groups expanding their power to new rural areas and continued to recruit children (Downing, 2014). Thus, although FARC stopped recruiting children after the peace agreement in 2016, it does not mean that there is no child recruitment occurring anymore. This research focuses on the year 2016 and wants to highlight that in the middle of the transition period when FARC is losing territory and power and new groups are becoming stronger, child recruitment continues to occur.

Two databases are used for the dependent and the independent variable. More details on the databases used for the control variables will be given later. For the dependent variable, child recruitment, a database by Red Nacional de Información (RNI – National Information Network) in cooperation with Unidad de lasVictimas (Unit of the Victims) is used. This database is chosen because it is the most comprehensive database on the victims of the Colombian conflict. This database covers a high number of observations, which are spread over the entire country. For the independent variable, boarding schools, data collected by the Departamento Administrativo Nacional de Estadística (DANE - National Administrative Department of Statistics) in cooperation with the Government of Colombia will be used. A complete dataset of all municipalities has not yet been created; therefore, I combined all the regional information for the year 2015 into one database.
In order to control for temporal order, data on the independent variable as well as most other control variables will be for the year 2015. When analysing the relationship between child recruitment and boarding schools in 2016, it is important to take the presence of boarding schools as well as the control variables for 2015 into account since it could influence the dependent variable.

3.2 Colombia as a Case

Up until 2016, the Colombian war was for more than fifty years, according to UCDP (Uppsala Conflict Data Program), a non-state, intra-state and one-sided conflict (UCDP, 2018). The conflict between the Colombian Governments, and far-left guerrillas such as the FARC, ELN, and M-19 started in the mid-1960s. As a consequence of the increasing strength of the guerrillas, drug lords and powerful landowners formed paramilitary groups or private armies to protect themselves in the early 1980s. These groups were supported by local politicians and sometimes by members of the Colombian military. However drug lords and landowners did not only use these groups to protect themselves against guerrilla attacks, but they were also used for human rights violations such as one-sided violence and attacking of civilians and government employees. The fighting between the Colombian Government, paramilitaries and guerrillas lead to an extremely bloody first decade of the twenty-first century, where millions of people were displaced or killed. In 2012 talks began between the largest guerrilla group, FARC and the Colombian Government, and reached a peace agreement at the end of 2016 (ibid.).

The price that Colombian children have paid in the war reaches shocking numbers. Out of the 7.6 million registered victims, one third is children. Children are forcefully displaced, abducted, or even killed. Up until 2016, UNICEF shows this by stating that 43,550 children were killed, 8,000 disappeared, and 2.3 million forcefully displaced as a result of the conflict. This alarming number already indicates that Colombian children are extremely vulnerable. Adding to this that the Colombian Government, paramilitary groups and far-left guerrillas have committed war-crimes by recruiting both forcefully and voluntarily children into their groups makes the situation even worse. Every day one Colombian child is recruited into an armed group (UNICEF, 2016).

That conflict has an impact on education is already argued by many scholars, so the Colombian conflict also impacted their education system. 40% of the children that do not attend school come from conflict affected areas. Through the insecurity in and around the
schools, children drop out of education. The damage in schools as a result of armed confrontations exposes children to even more harm or results in the closure of a school. “Death threats against teachers, killings, displacement and insecurity have resulted in teacher shortages in the worst affected areas, limiting children’s schooling opportunities even more. From 2013 to 2016, at least 10 teachers were killed and 65 schools were either damaged, mined or used for military purposes by parties to the conflict” (ibid.).

It goes without saying that a country with such a history is an interesting case for research in the peace and conflict field. In addition, other factors have motivated me to choose Colombia as a case study in my research. Colombia is a country where more than eleven million people are still living in rural areas, it has a high inequality and poverty rate, and has one of the world’s most severe internal displacement situations due to conflict. Moreover, with a highly war-affected population including remarkably vulnerable children as a result of a fifty-year war, the war-ethos is still present among many Colombian residents. These factors make Colombia an extra interesting country, also when looking at the phenomenon of child recruitment. A large number of Colombian children are recruited into armed groups already since the 90’s onwards. However, the phenomenon of child soldiers in Colombia is a relatively understudied field when comparing it to countries as Sierra Leone or Uganda. Therefore, and as Dowing (2014) mentions: “it is important that researchers continue to […] highlight the issues contributing to child recruitment and potential solutions for the Colombia case”. Especially now Colombia is in the post-peace agreement period, one should not stop investigating the phenomenon of child recruitment in this country.

3.3 Operationalisation of Variables

In order to statistically test the hypothesis outlined in the theoretical framework, the dependent, independent and control variables need to be operationalised. The operationalisation of variables allows one to compare the empirics, systematically analyse it and draw conclusions out of it (George and Benet, 2005).

3.3.1 Dependent Variable

The dependent variable, child recruitment, is defined in this research as: “Recruitment refers to compulsory, forced and voluntary conscription or enlistment of a person below the age of 18 years into any kind of armed group” (CAAFAGs, n.d.). Child recruitment is measured through a database by RNI in corporation with Unidad de las Victorias and the
Colombian Family Welfare Institute (ICBF). This data set defines child recruitment as: “any child or adolescent who participates in war actions directed by an irregular armed group, developing intelligence, logistics or combat activities” (translated by the author). The data includes children who disengaged from the armed conflict as those who have abandoned the conflict either by their own will, capture or surrender of the group to the State or another entity and are demobilised through one of the government programs. The criticism pointed towards this and the potential influence this has on the empirical results are discussed in a later stage.

The operationalisation of the dependent variable in the data set corresponds with the definition of this research. Both definitions include forceful and voluntary recruitment, highlight the inclusiveness by not only focusing on children in combat and only looks into child recruitment into armed groups and not state-armed forces. Therefore, I argue that the operationalisation of child recruitment is measuring what it should be measuring according to my theory and therefore I argue that it is profoundly valid.

Moreover, this research uses child recruitment as a binary variable where it codes municipalities with an absence of recruited children as a 0 and municipalities where children are recruited as a 1. A binary variable is used due to excess frequency of zero in the actual data. In more than 91% of the municipalities, no children are recruited into armed groups and in order to correctly analyse the variables in the regression, the algorithm needs to be ‘tricked’ (Long & Freese, 2001).

### 3.3.2 Independent Variable

The independent variable, safe learning spaces, is operationalised by boarding schools. Boarding schools are educational institutions that provide care to children for twenty-four hours a day. Most of the schools provide education for children up to the age of eighteen years old. It is important to mention that within the concept of boarding schools, I do not include boarding schools which are, in other countries, well-known because of the wealthy children that are able to attend these educational institutions at a high cost. Boarding schools in Colombia, called internados are often located in more rural areas or marginal urban areas where children can stay overnight when living far from the educational institution. As already touched upon in previous theories, dangerous travels routes to school make children more vulnerable for recruitment and less likely to continue their education when being exposed to those risks on a regular basis.
The formal definition used by the data set created through the DANE in corporation with the Government of Colombia, is “a habitual residence in the same educational headquarters where children can reside, stay overnight, receive food, develop curricular programs of formal education and receive assistance for the integral development” (translated by the author).

Although there are some minor differences in the two definitions, the most important aspect of having the possibility to reside and stay overnight is present in both definitions. Therefore, I argue that the operationalisation of boarding schools correlates with the definition used in this paper. In other words, the database is measuring what it is supposed to measure according to this research, which makes it valid to a great extent. When looking at the sort of variable, boarding schools are measured both as a numeric and as a binary variable. As a numeric variable the number of boarding schools reflects the actual number whereby a zero means absence of any safe learning space. As a binary variable, zero indicates the absence of boarding schools while one includes the municipalities where boarding schools are present independent on the actual number.

3.3.3. Control Variables

In order to analyse the relationship between the variables in which this paper is interested, boarding schools and child recruitment, one has to control for the potential role structural variables can play in influencing the outcome of this relationship. The earlier mentioned factors that could influence the relationship are displacement, presence of armed groups and poverty. Two additional control variables included in this research are population and rurality. Other structural factors that can have an influence on the recruitment of children will not be measured due to the scope of this research.

The first control variable measured in this research tests the argument that a municipality with higher number of received displaced individuals are more likely to have child recruitment. The data for this structural factor is provided by Unidad de las Victimas. In line with the theory, a municipality that receives more displaced people could have a higher number of children recruited because of the lack of security structures. Therefore, instead of looking at the displacement rate within the municipality that indicates the number of people moving from the municipality because their life, physical integrity, security or personal freedom have been threatened, this research looks at the “number of people that were received by the municipality” in 2015 (Unidad de las Victimas, 2018). In order to control for the outliers, which goes up to 13,628 received displaced individuals in one municipality in one
year, the variable is logged. However, to be able to log the twenty-one zeros in the observations, I decided to use log+1 in the regression.

The second variable that will be controlled in this research is the presence of armed groups in a Colombian municipality in 2015. Due to the lack of data on the actual presence of an armed group and more details on the name and characteristics of the armed group, I decided to look at the number of terrorist acts, general attacks and combat and harassment incidents within each municipality. These four acts were merged together by the Unidad de las Victimias and defined as acts that "indiscriminately attempt against the civilian population, causing damage to their physical integrity and terrorist events correspond to those caused by bombs or other explosive devices, those caused by terrorist attacks on municipalities, that generate civilians, death or deterioration in their personal integrity” (translated by the author).

This variable analyses the argument that a municipality with a relatively high number of these incidents, indicates that an armed group is present and therefore, child recruitment could be more common. This variable has been used as a dummy variable where zero means the lack of terrorist act, general attacks, combats, and harassment and one means the presence of those incidents within each municipality. The underlying reason for the change in variable sort is the excessive amount of zeros in the dataset. 78.72% of the observations have an absence of terrorist act, general attacks, combats, and harassment and in order to let the regression algorithm correctly analysing the variables, one has to create a dummy variable.

The third variable that could influence the number of children recruited and the number of boarding schools is the level of poverty of the people living in the municipality in 2015. As the only data on poverty, such as GINI or GDP was available on a departmental level, this could not be used for controlling for differences in number of child recruitment per municipality. Therefore, I decided to use data on the infant mortality rate under one year. This database is provided by the Colombian Family Welfare Institute (ICBF) and this proxy is also used by another quantitative study on child recruitment in Colombia by Vargas and Restepo-Jaramillo (2016). The numeric variable is defined as: “it is the number of deaths of children under one year of age per 1,000 live births” (translated by the author). Since the infant mortality rate under one year can be indicated as a proxy for (relative) poverty, it will be used as a way to measure the poverty level of a municipality and testing the contention that a child that lives in poverty is more likely to be recruited into an armed group (Messner et al, 2010).

Next to capturing the impoverishment of the municipality, the infant mortality rate under one year also indicates the priority that municipal leaders put on the welfare of a child (Vargas and Restepo-Jaramillo, 2016).
Two additional control variables have been added throughout the research. The fourth one is the population per municipality in the year 2015, testing the reasoning of an increase in population could indicate a higher amount of children present in the region and therewith create a larger pool of potential child recruits in each municipality (Tynes and Early, 2014). The dataset is provided by the United Nation Office for the Coordination of Humanitarian Affairs (UNOCHA). Due to a problem in skewness in the variable’s distribution, a logged variable is used in the analysis.

The fifth and last control variable is the rurality index provided by the United National Development Program (UNDP). The rurality index is defined as: “the index proposed by the INDH which combines the population density with the distance from the smaller population centres to the largest ones; adopts the municipality as the unit of analysis and not the size of the agglomerations (head, populated and rural centre dispersed in the same municipality); and assumes rurality as a continuum (more or less rural municipalities), rather than as a dichotomy (urban-rural)” (translated by the author). According to the Downing (2014), there is a limited state presence in rural areas and therefore children are more vulnerable for recruitment. Due to the lack of more recent data, the rurality index used was measured in 2011. However, because of the expected influence of the index on the outcome of the relationship, I decided to include the numeric variable that investigates the assumption that children are more likely to be recruited when living in rural alienated areas.

3.4 Source Criticism

When doing research on the phenomenon of child recruitment, one should always keep in mind the difficulties of data collection. Exact numbers of children recruited are hard to find because in countries where children are used to fight, the national administrative system is often not well-developed due to a lack of resources or not putting enough attention to its registration process. This is also the case in Colombia, where only children demobilised through governmental programs are registered and included in the database. Therefore exact figures on how many children are recruited in armed groups during Colombia’s conflict are very hard to find. It could be the case that children demobilised on their own and therefore are not included into this database, although they were a member of the armed group. It could also be the case the children recruited in 2016 are still part of the armed group and therefore not covered in this data. Moreover, the ICBF defines child recruitment as “any child or adolescent who participates in war actions directed by an irregular armed group, developing
intelligence, logistics or combat activities” (translated by the author). Hereby, they exclude the 15,000 children which were once recruited by the national security forces (Human Rights Watch, 2001). Moreover, as the year of interest of this paper is 2016, according to the child soldier world index, no children were recruited by the national security forces in Colombia. However, according to the child soldier world index, no children were recruited by the national security forces in Colombia and since this research only focuses on child recruitment in non-state armed groups, this has no effect on the research.

Next to the argument that children of the national forces are not included, the objectivity of the databases cannot be guaranteed. Because of the lack of detailed databases on the number of children recruited in Colombia by objective (international) organizations such as the UN, databases created and owned by the Colombian governmental institutions are used. The use of official sources by studying an internal armed conflict is an arguable decision since the data could be biased and incorrect. Next to the earlier mentioned argument that states in war often have a less-developed administrative system that influence the correctness of the data available, governments sometimes use databases to influence a country’s image. Therefore, a critique on the sources used in this research is that the objectivity cannot be fully guaranteed but because of a lack of other databases available, the databases will be used.

3.5 Scope Conditions

For transparency reasons, the following section sheds light on potential biases and errors that this research might be confronted with. Although these errors and biases could occur randomly, it can have an influence on the validity and reliability of the research. Therefore, it is necessary to make clear under which circumstances this paper expects its hypothesis to hold.

In order to shed light on the scope conditions of this research, it is important to distinguish between the theoretical and methodological scope conditions. Starting with the theoretical scope conditions, “almost all theories in the social sciences are designed to apply to some cases and not to others, they are bound by scope conditions that puts limit on their generality” (Goetz & Mahoney, 2012). Especially concerning time and space, theories are often applicable to specific areas at specific moment due to differences in time and space. An argument which is also brought up and developed further by Gates and Reich (2010), stating that until the moment that national datasets and policy instruments are developed together
with an extensive knowledge on country specific child recruitment practices, it is impossible to create any worldwide policy to reduce or even prevent children from being recruited. In other words, an extensive knowledge and data availability of this phenomenon on a national scale would be the first step in order to prevent the phenomenon worldwide. By using the developed theory solely on the case of Colombian municipalities, I hope to contribute to the knowledge availability of the phenomenon in Colombia and therefore make a small but necessary contribution to the general knowledge on child recruitment. However, concerning the scope conditions of this research it is important to shed light on the fact that the results of this research are only applicable to the Colombian case. In order to make any conclusion on the relationship between child recruitment and safe learning spaces, more cases should be analysed through the lens of this theory.

Several reasons are brought up why this theory could be applicable to some countries and maybe not so to other countries. One of scope conditions of the theory is that the armed groups recruiting children are not too strong and not too violent, which means that when an armed group is strong enough to be able to overthrow a safe learning space, there is no way of securing the children from being recruited. Moreover, not only from the armed grouped side but as McClure & Retamal (2010) already mentioned in their research, a problem in the child soldier deterrence could be that some communities are not able or willing to defend themselves and/or their children because of capacity failure or failure by malevolence. Therefore, the theory is only applicable to cases where the ability of armed groups overruling a safe learning space is relatively small because of the lack of power of armed groups and the increasing power and willingness to secure children of the community.

On the other hand, the restrictions on what this research expects the method to operate and the measurements taken to minimise their impact on the results, should also be brought up. The quantitative analysis gives the possibility to identify statistically significant relationships between variables of interest on a larger scale. However, a quantitative analysis does not give one the possibility to draw any conclusions on the individual level. In other words, the results of this study are applicable to all Colombian municipalities that were observed in this study. However, this does not mean that the conclusion of this research is also applicable to one child in one specific municipality.
3.6 Logit and Logistic Regression

To predict the relationship between this research’s dichotomous dependent variable and the independent variables, a binary logit model is used. By using a binary logit model, this analysis expects that there is a non-linear relationship between the dependent and independent variables. Binary regression models are selected because it gives the researcher the possibility to examine how every explanatory or control variable has an effect on the probability of the occurrence of the dependent variable (Long & Freese, 2001). Moreover, the choice for a binary logit model was also motivated by the Tynes and Early (2014) article, which also uses a binary logit model for analysing the phenomena of child soldiers. Following, a binary logistic regression is used to examine the odds ratios and the predicted probabilities of the model are calculated.
4. Empirics

In this chapter, the main results of the binary logit model are presented and additional observations related to this research’s main argument will be highlighted. First, the variables will be described concerning their number of observations, mean, standard deviation, and the minimum and maximum values. Second, several tests for multicollinearity will show that there is no high correlation between the variables and thus a binary logit regression can be used. Third, a binary logit model will demonstrate that boarding schools seem to increase child recruitment. Fourth, the logistic regression calculates the odd ratios and predicted probabilities will show us the expected difference in outcome probability of the dependent variable.

4.1 Descriptive Statistics

The descriptive statistics for the dependent, independent and control variables are displayed in table 1. In order to understand the variables and data used in this analysis, we will discuss them shortly.

Table 1: Descriptive Statistics

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<th>St. Dev.</th>
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<td>.0836</td>
<td>.2270</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>INDEPENDENT VARIABLE:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boarding Schools</td>
<td>562</td>
<td>2.9110</td>
<td>5.5216</td>
<td>0</td>
<td>72</td>
</tr>
<tr>
<td>Boarding Schools - B</td>
<td>562</td>
<td>.7064</td>
<td>.4558</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CONTROL VARIABLES:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displacement (ln)</td>
<td>562</td>
<td>4.0312</td>
<td>1.7292</td>
<td>0</td>
<td>9.52</td>
</tr>
<tr>
<td>TA, GA, C, H</td>
<td>562</td>
<td>.2722</td>
<td>.4455</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Infant Mortality Rate</td>
<td>562</td>
<td>20.3729</td>
<td>8.6595</td>
<td>7.08</td>
<td>63.02</td>
</tr>
<tr>
<td>Population (ln)</td>
<td>562</td>
<td>9.9991</td>
<td>1.1633</td>
<td>7.2034</td>
<td>15.8797</td>
</tr>
<tr>
<td>Rurality</td>
<td>562</td>
<td>48.3498</td>
<td>13.9183</td>
<td>0</td>
<td>96.08</td>
</tr>
</tbody>
</table>
Starting with the dependent variable, child recruitment is originally a discrete numeric variable that measures the number of children recruited in each municipality. A minimum of zero recruited children in a municipality and a maximum of eleven children recruited in a municipality are among the observations. One can already see that there are very few municipalities where children were recruited as the average number of children recruited per municipality is 0.1317. When looking at the binary transformation of this variable – where zero means no children recruited and one means at least one child recruited – one can note that as the average is 0.0836, in 91.64% of the districts no children were recruited. Although this is ethically a good conclusion, it also indicates that there is only limited variation in the dependent variable of this research.

Concerning the independent variable of our interest, boarding schools, are used in two different ways in this analysis. The numeric variable, which is called Boarding Schools, can have the values from 0 to 72. Once again, when looking at its mean of only 2.911, there is a clear majority of municipalities with zero or only a small number of boarding schools. The limited variation of this variable is also demonstrated by the 304 municipalities that have less than two boarding schools. Due to this, it is interesting to see the possible changes in relationships when making the variable dichotomous without losing much information on the variable. By making boarding schools a binary variable, which is called Boarding Schools-B, the variable is coded with a zero when there is a lack of boarding schools while one means the presence of boarding schools independent the number of boarding schools. When analysing the binary variable one can see that its mean is 0.7064 which indicates that 70.64% of the municipalities have at least one boarding school.

Regarding the control variables, displacement measures the log of people received by the municipality and has a mean of 4.0312. When analysing the binary variable on terrorist acts, general attacks, combat and harassments – where zero means none of these acts and one means at least one of these acts – 27.22% of the Colombian municipalities had at least one incident in 2016. The population variable is expressed in the log of number of people living in the municipality. Last, the variable on rurality measures the rurality index per community. With a mean of 48.3498, one can state that the average rurality index in a Colombian municipality in 2016 is a bit higher than 48. In summary, all control variables have zero or very small outliers with a relatively equal dispersion and do not show any peculiar results. The variable on displacement and population is logged and the variable on TA, GA, C, H is a binary variable.
4.2 Multicollinearity

In order to argue for the use of a binary logit regression several conditions need to be met according to Long & Freese (2001). The dependent variable must have a binary nature, there must be zero or relatively small outliers in the data and zero or moderate multicollinearity should be present. Multicollinearity can be defined as a high correlation between two or more independent variables and it “can cause unstable estimates and inaccurate variances which affects confidence intervals and hypothesis tests” (Midi, Sakar & Rana, 2010). In order to test the multicollinearity of the model, it starts with a simple correlation matrix and follows with an OLS regression and the Variance Inflation Factor (VIF) test (Appendix, table 2). Although this research will be using a logit binary model, Menard (2002) states that “information for multicollinearity (e.g. VIFs) can be obtained by calculating an OLS regression model using the same dependent and independent variables you are using in your logistic regression model”. This means that one should ignore the results of the OLS regression, while the values for multicollinearity can still be used. Starting with the correlation matrix, a correlation coefficient over 0.9 indicates multicollinearity (Hair et al, 2013). When making a correlation matrix for the variables of this research, one can see that the coefficients are relatively low with a maximum of 0.6968 between the displacement and population variable (Appendix I, table 6). According to the correlation matrix, there is no multicollinearity. However, as Midi, Sakar & Rana (2010) argue, a correlation matrix is a helpful way to test for multicollinearity however it is not sufficient to draw any conclusion. For this reason a second measure of multicollinearity is used namely the VIF which is based on the OLS regression output and indicates multicollinearity when the value is above ten (Chen et al., 2003). When looking at the results of both tests, one can state that there is no multicollinearity in the model used (Appendix I, table 5).

4.3 Binary Logit Model

As the matrix and test show, there is only moderate multicollinearity between the independent variables. Moreover, the dependent variable has a dichotomous character, so one can use a logit model. This analysis uses four models to distinguish between the independent variable as a binary and numeric variable as well as including or excluding the covariates (Table 3). Model one analyses the relationship between child recruitment and the number of boarding schools without controlling for any other factor. In the second model, one sees the
relationship between the number of boarding schools in a municipality and the presence of child recruitment when controlling for other variables. In the third model, the independent variable becomes a binary variable and analyses the relationship between the presence of boarding schools, independent of the number of boarding schools, and the presence of child recruitment within the Colombian municipality. This model does not control for any covariates. In model four, this paper examines the same relationship, presence of boarding schools and presence of child recruitment, but then while controlling for other factors.

Interpreting a logit regression is different than a linear regression because of the binary dependent variable and its non-linear character. The significance level of the relationship is indicated with the p-value and in table 2 with the symbol (*). The p-value has a range between 0 and 1, meaning that how closer the value is to zero, the more significant the relationship is. As one can see, the significance level per model and per variable varies. In the first model, the relation between the presence of child recruitment and the number of boarding schools is positive and significant on a 95% level. Thus, an increase in boarding schools increases child recruitment. However, this changes when the model starts controlling for covariates, as one can see in model 2. The relationship between the number of boarding schools and child recruitment is not statistically significant anymore, neither is the variable on terrorist acts, general attacks, combats and harassments as well as the variable on population is not statistically significant and therefore cannot be used for any conclusions. The variables on displacement, infant mortality and rurality are statistically significant and are positively correlated with child recruitment. Using the independent variable as a binary variable, the presence of boarding schools in a Colombian municipality, the relationship of interest is significant and positive with and without controlling for covariates (Model 3 and 4). Thus, the presence of a boarding school in a municipality correlates with an increase in child recruitment. Concerning the control variables in model 4, only the displacement, infant mortality and rurality variables are significant on a 95% and 99% level. In other words, an increase in the number of displaced people entering the municipality correlates with an increase in child recruitment. This reasoning also applies to the variables on infant mortality and rurality.

In a logit regression it is more difficult to say something about the coefficient since the dependent variable is not linear. However, both the statistical significance and the sign of the coefficients can tell us something about the relationship between the dependent variable and the independent variable (or a control variable). Three out of the four logit models show that boarding schools seem to increase child recruitment. In order to say something about the
strength of the relationship in more detail a logistic regression should be done (Kellstedt and Whitten, 2009).

Table 2: Logit regression

<table>
<thead>
<tr>
<th>Child Recruitment - B</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boarding schools</td>
<td>.0703**</td>
<td>.0269</td>
<td>1.3313**</td>
<td>1.2394**</td>
</tr>
<tr>
<td>Boarding schools - B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displacement</td>
<td>.3427**</td>
<td></td>
<td>.3198**</td>
<td></td>
</tr>
<tr>
<td>TA, GA, C, H</td>
<td>.5436</td>
<td></td>
<td>.4185</td>
<td></td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>.0524***</td>
<td></td>
<td>.0592***</td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>.2761</td>
<td>.3541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rurality</td>
<td>.0439***</td>
<td>.0480***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>562</td>
<td>562</td>
<td>562</td>
<td>562</td>
</tr>
<tr>
<td>Log Pseudolikelihood</td>
<td>-155.3821</td>
<td>-133.4652</td>
<td>-156.4448</td>
<td>-130.7757</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>.0385</td>
<td>.1741</td>
<td>.0319</td>
<td>.1908</td>
</tr>
<tr>
<td>AIC</td>
<td>.5600</td>
<td>.5000</td>
<td>.5640</td>
<td>.4900</td>
</tr>
</tbody>
</table>

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

4.4 Measures of fit

By comparing which of the four models is the best fit and should be used for the logistic regression and the predicted probability test in the next part, the Log Pseudolikelihood, the Pseudo R2 and AIC are compared. The Log likelihood “calculates how likely it is that we would observe the data we actually observed if a given set of parameter estimates were the true parameters” (Long and Freese, 2001). Pseudo indicates that it is adjusted to the particular model used. The Psuedo R2, also called Mc Fadden’s R2, “compares a model with just the intercept to a model with all parameters” (ibid.). The AIC test, unlike R2 also includes a penalty for additional independent variables that are put into the model and thus also checks for parsimony (ibid.). For the value of Log Pseudolikelihood, the higher the value so the closer to 0 the better so there is some evidence to prefer model 4 which has a higher Log Pseudolikelihood than the other models. Concerning the Pseudo R2, it means as well the higher the value the better and when comparing all 4 models, model 4 has the highest value. However, since these values should be interpreted with caution, I decided to also test for AIC (Akaike Information Criterion). “All else being equal, the model with the smaller AIC is considered the better fitting model”, which is in this case model 4. As all three
measures of fit indicates that model 4 has a better fit, this model, will be used in the logistic regression and for calculating predicted probabilities.

4.5 Substantial Interpretation

Odds ratios are calculated in order to detect the effect of boarding schools. Odds ratios can be defined as the change in odds of the dependent variable when the independent variables change with one unit. An odds ratio smaller than one means a negative relationship, an odds ratio of one means no relationship, and an odds ratio larger than one means a positive relationship between the variable of interest and the dependent variable. One can see that all odds ratios are positive, which means that a one-unit increase in each individual variable leads to an increase in the odds of child recruitment, if the relationship is statistically significant. However, the variable on terrorist attacks, general acts, combats and harassments and the variable on population are not statistically significant and thus no conclusions can be drawn from the given odds ratio.

For the odds ratios that are statistically significant, a positive relationship can be detected. A one-unit increase in the logged displacement variable, leads to an increase of 1.3769 in the odds of child recruitment while controlling for the other variables. This follows the argument by Lisher (2006), Singer (2006), War Child (2014), Özerdem & Podder (2011), and Dumas (2003) stating that a displaced community is more vulnerable to child recruitment. Concerning the variable on infant mortality, a one-unit increase in infant mortality which means that one more child under 1 year per 1000 live births dies, relates to an increase of .610, equals to 6.1% change, in odds of child recruitment while keeping the other variables constant. Since this paper uses the infant mortality rate as a proxy for poverty, this regression shows that an increase in poverty leads to an increase in the odds of child recruitment and thus follows the argument by Wessels (2005) and Achvarina et al. (2009). However, since the value is close to one it only indicates a rather weak relationship. The last control variable that is statistically significant is the rurality index. For one-unit increase in the rurality index, which means a 1% increase in rurality, we expect the odds of child recruitment to increase with .0492 while controlling for covariates. In other words, a 1% increase in rurality results in a 4.9% increase in the odds of recruitment, which indicates a relatively weak relationship. This relationship is in line with Downing’s theory (2014) that children in rural areas are more vulnerable to recruitment.
The last and most important variable analysed is the independent variable of interest, the presence of boarding schools. The relationship of interest is statistically significant and an unexpected relationship can be observed. According to the regression, an increase of one unit in the binary boarding schools variable, which is equal to the presence of boarding schools, increases the odds of child recruitment by 2.4537, equals a tremendous 245.37%, while controlling for the other variables in the model.

Table 3: Logistic regression with odd ratios

| Child Recruitment - B | Odds Ratio | Robust Std. Err. | Z     | P>|z| | [95% Conf. Interval] |
|-----------------------|------------|------------------|-------|------|---------------------|
| Boarding schools - B  | 3.4537     | 2.0476           | 2.09  | 0.037| 1.0805              |
| Displacement (log)    | 1.3769     | .2019            | 2.18  | 0.029| 1.0329              |
| TA, GA, C, H          | 1.0610     | .5596            | 1.14  | 0.256| .7384               |
| Infant Mortality      | 1.0610     | .0201            | 3.13  | 0.002| 1.0224              |
| Population (log)      | 1.4248     | .3289            | 1.53  | 0.125| .9063               |
| Rurality              | 1.0492     | .0177            | 2.85  | 0.004| 1.0151              |

| N                     | 562        |
| Log Pseudolikelihood  | -130.7757  |
| Pseudo R2             | 0.1908     |

In table 4 the predicted probabilities are displayed, measuring the predicted probability for child recruitment in the presence or absence of boarding schools in a Colombian municipality when keeping all other variables at their mean or median. One can see that the predicted probability increases from 1.9% to 6.3% when there is a boarding school present in a Colombian municipality while keeping other factors at their mean or median, a 33% increase in the predicted probability.

Table 4: Predicted Probabilities

<table>
<thead>
<tr>
<th>Pr (child recruitment)</th>
<th>Boarding schools 0</th>
<th>Boarding schools 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.0191**</td>
<td>.0631***</td>
</tr>
</tbody>
</table>

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

When examining the outcome of the logit and logistic regression as well as the predicted probabilities, one can see an unexpected relationship between the independent variable of interest and the dependent variable. Controlling or not controlling for other
factors, using the independent variable as a binary or numeric variable, the presence of boarding schools leads to an increase of child recruitment. This outcome goes against the theory of this paper by arguing that boarding schools create deterrence and empowerment and therefore prevent child recruitment. This opposite relationship will be analysed in the next chapter.
5. Analysis

The following chapter will interpret the main results given in the empirics, highlight the implications of the theory and model used in this research and put emphasis on the influence of choices made in the research design. Moreover, it analyses additional observation, focuses on interesting variations in the results and gives alternative explanations for the outcome.

Starting with the main result, the empirics showed the unexpected relationship that the presence of boarding schools lead to child recruitment while controlling for displacement, terrorist acts, general attacks, combats, harassments, poverty, population and rurality. As the theory argues, child recruitment should be less common when vulnerable children have access to education in a secure place because this can provide deterrence and empowerment. However, the results of the paper’s analysis did not support this negative relationship and showed that the presence of boarding schools increases child recruitment in Colombian municipalities. The predicted probability of child recruitment increases from 1.9% to 6.3% when there is a boarding school present in a Colombian municipality while keeping other factors at their mean or median. This means a 33% increase in the predicted probability of child recruitment when a boarding school is present. Possible theoretical and methodological reasons for this unexpected relationship need to be analysed.

A theoretical discussion on why boarding schools were found to increase child recruitment will shed more light on the possible implications of my theory and hypothesis. The theory used in this research explains that the presence of safe learning spaces, measured through boarding schools, makes the recruitment of children less likely. McClure & Ratamal (2010) argue that the physical protection provided in safe learning spaces will prevent child recruitment because of deterrence. Moreover, Inter-Agency (2010) argues that the child’s empowerment provided through safe learning spaces will make a child less vulnerable for recruitment. However, the statistical analysis of this research shows that safe learning spaces cannot prevent child recruitment and even increased child recruitment in Colombian municipalities. A possible theoretical weakness is that safe learning spaces might not be able to provide the necessary security to the children residing there. It could be that in Colombian municipalities the boarding schools do not meet a certain level of security or do not use the appropriate form of security in order to prevent children from being recruited. Some already existing research, reports and policy papers indeed highlight that schools and orphanages are
often targets of child recruitment. One of these reports is by the Global Coalition to Protect Education from Attack (2018), and it shows that in at least sixteen countries, including Colombia, children were recruited while being at or around school.

Singer (2005) mentions that children are coerced or kidnapped from secondary schools and orphanages as the children are in suitable physical condition, concentrated in one place and not in contact with their caretakers or parents. He mentions the examples of the Liberation Tigers of Tamil Eelam (LTTE) which had its unit formed of orphans; The Congolese Rally for Democratic-Goma (RCD-Goma); and Rwandan Patriotic Army (RPA) that almost exclusively targeted school in their recruitment for children. Furthermore, UNICEF, Plan International and Save the Children, state that several conditions need to be met in order to create a Child Friendly Space (CFS) (UNICEF, n.d.). Although a CFS is a little different than safe learning spaces as the focus is not only on education, the principle that children are concentrated in one place stays the same. They argue that it is inappropriate to put a CFS in areas where fighting occurs or where children are recruited, because it will put children at risk while traveling to or being present in these CFSs. In sum, all these sources argue that locations where children are concentrated in one space and out of contact with their parents, in war-affected areas, can put them at a higher risk for recruitment. This means that children residing in a safe learning space could be at higher risk because the safe learning space cannot provide the security necessary to protect them from recruitment.

Moreover, additional interesting variations and additional relevant observations are that some of the included control variables have the expected positive relationship towards child recruitment, but are not statistically significant. Although these relationships are not statistically significant, one can still argue about the nature of the relationship. The variable on terrorist acts, general attacks, combat, and harassments is not statistically significant, not when coding it as a binary variable and neither when using it a numeric variable. The outcomes of the logistic regression indicate that the variable is positively correlated with child recruitment but has a p-value of 0.256. Furthermore, the variable on population indicates a positive relationship to child recruitment but is not statistically significant, not in the logarithm and not when actual numeric variable. Additional research should use those variables as variables of interest instead of control variables in order to test their relationship to child recruitment.

The positive relationship between boarding school and child recruitment can also be explained through methodological implications. The first question that should to be answered
is how the choices and research design could influence the empirical results given in the previous chapter. Due to the scope of this research I decided to use the dependent variable, child soldiers, as a binary variable coding it zero when there was no child recruitment in the specific municipality and one when a child was recruited. Moreover because of the rather unbalanced distribution of the numeric variable of child recruitment with one extreme case, the results of the regression could be influenced a lot. By changing a numeric variable into a binary variable, some information is lost. In this case, the research did not make any distinction between whether there was only one child or in the extreme case, eleven children recruited in the municipality. Therefore, we should ask ourselves whether the dependent variable on child recruitment should be used as a binary. Does the limited variation in the loss of information have any effect on the results? In order to analyse the actual effect on the result, one should compare the results of the models using child recruitment as a numeric and as a binary variable. When using child recruitment as a numeric variable, it is bounded on one side since it cannot have negative values. For this reason, a standard OLS should not be used as a main model to draw conclusions from. Instead, a count model and in this case a zero inflated negative binomial regression should be used. Because of the limited scope of this research, child recruitment is coded as a binary variable and different robustness checks are used to see if the results lasted after changing the modelling assumptions.

The first robustness check is done through the use of robust variance estimates while running the regression. These estimates control for heteroscedasticity by providing the correct standard errors when the assumptions of the model are violated. In other words, the robust variance estimator controls for the confidence intervals when having the problematic case of an unspecified model. The second robustness check is comparing the outcomes of the logit regression to an OLS regression by changing the dependent variable back into a numeric variable. Although I argued in the previous paragraph that when using child recruitment as a numeric variable one should use a zero inflated negative binomial regression analysis, I decided to run an OLS regression with this variable as a robustness test. An OLS regression should only be used when having a non-binding numeric variable. However, looking into the economics field, income, as a discrete numerical dependent variable, is often analysed with an OLS regression. As we are not drawing any conclusions from the coefficients and only use it as a robustness test, the OLS test will be used. The results of the OLS regression can be found in the Appendix II and do not show significant changes from the results of the logit model. Therefore, I argue that according to this test the results are robust. The third and last robustness test is the use of a probit model. Probit and logit models are both types of
generalised linear models and only differ in their link functions. A logit model uses a logit link function, while a probit model uses an inverse link function (Liao, 1994). These small differences are not of significance to our research but give us the possibility to use a probit regression to test for robustness. According to this test, once again the probit test gives almost identical results and therefore one can state that the outcome of the logit test is robust.

Another potential way of how the choices and research design could have influenced the empirical results is through the independent variable, boarding schools. Boarding schools as a numeric variable as well as a binary variable have been included in the regression. The large difference in the results of the regression, depending on the coding of the independent variable, is a bit problematic. The results may be highly affected by the unbalanced distribution of the numeric variable with some extreme values (see descriptive statistics, table 1). From a theoretical perspective, I would argue that it makes sense to code this independent variable as a numeric variable because it makes a difference whether there is only one boarding school or seventy-two boarding schools in a municipality. However, due to the anomalous distribution, including extreme values, it may be better to use it as a binary variable. This is also shown by the outcomes of the measures of fit statistics (log pseudolikelihood, pseudo R2, AIC). By using boarding schools as a numeric variable influence the empirical results but the relationship continues to be positive although it is not statistically significant anymore when controlling for other variables.

Another effect on empirical results by the research design could be the operationalisation of the independent variable. The operationalisation of the term safe learning spaces is a little challenging. The database makes the distinction between educational institutions that provide a place during the “night”, a place during the “weekend” and a place for “complete” residence. Due to the availability of detailed information on the number of boarding schools of interest in five Colombian municipalities, I analysed which of the numbers in the database matched with the number of secondary sources. The boarding schools that were coded as “weekend”, gave the correct numbers and therefore this data was used for all Colombian municipalities. With the use of other secondary sources I could control if the database matches the available information. Via this way I could guarantee that the concept used in the database is equal to the concept used in the theory and therefore does not influence the results of the analysis. This search could also be traced back to the rather new concept of safe learning spaces. The concept has not been so explicitly used in any previous research and therefore this research had to come up with its own definition from a combination of personal experiences in these environments and concepts in the literature.
Several limitations of this research could also have an influence on the provided results. This research controls for five important factors that can influence the likelihood that children are recruited: displacement, poverty, presence of armed groups, population and rurality. Due to the scope and data limitations it was not possible to include all factors that might influence the relationship. For this reason, the paper uses this section to identify and explain alternative factors for child recruitment. One alternative explanation would be the presence of coca crops in the municipality. According to Vargas and Restepo-Jaramillo (2016), “the association between coca crops and both the likelihood of recruitment and the count of recruited children” is particularly strong in Colombia. Another explanation for child recruitment that is already recognised by previous research is the family situation. Downing (2014) highlights that domestic violence can be seen as a push factor to join armed groups. Mistreated children can prefer to join a rebel group to escape from the situation at home. Additional factors such as, coca crops presence, domestic violence and even control factors on education such as the quality and content of it, might be influential for the results of this analysis and should therefore be included, when data is available, in future research.

As already mentioned, child recruitment is a phenomenon which is not thoroughly investigated. Several reasons could be given for this: First, that it is an ethically difficult topic to research and second, because of the already mentioned lack of reliable and detailed data. Several limitations are placed on this research due to data problems of which some are already mentioned in the chapter 3.4. The public administration of war-affected countries faces problems during conflict due to the lack of resources and attention. This becomes even a bigger problem when collecting data on child recruitment in rebel groups. In this case, the Colombian government is unlikely to have a complete database on which children have been recruited by the armed groups in the country. The used database collected the data on child recruitment by armed groups through the number of children demobilized through one of the governmental programs. It is highly expected that not all children recruited in 2016 in Colombia are included into the data set. Another possible influence on the results by data is the source of the database, since all databases are created by governmental organisations. As also mentioned by Vargas and Restepo-Jaramillo (2016), “using official sources to study an internal armed conflict is a debatable choice as the data and even the definition of variables may be biased”. We have controlled for the biases in definitions by comparing them to the definitions used in the theory, however due to the lack of other databases and limited availability of secondary sources, it was not possible to control for potential biases in the data.
of each municipality. Moreover, as already mentioned the research was limited by the lack of data on several control variables.

Further research should analyse whether the hypothesis was rejected due to methodological weaknesses, or because the security structures provided by safe learning spaces in Colombian municipalities are not effective enough to prevent child recruitment. Most theories in social sciences are bounded among others by space (Goetz & Mahoney, 2012). This research shows that boarding schools seem to increase child recruitment but these results are only applicable to the studied-case of Colombia. Therefore, one should be careful by generalizing this finding to other populations of cases. More research should be done to other geographical areas where child recruitment occurs in order to test the generalizability of this theory. According to the recently launched Child Soldiers World Index by Child Soldiers International, children were used in hostilities in 18 countries in 2016. When looking at relatively similar characteristics, such as the sort of actors recruiting children and the number of children recruited in 2016, as observed in Colombia, there are approximately three cases that could be used in order to test the theory. However, this does not mean that the theory cannot be tested on the other cases, but I would advise to first test whether the theory holds in relatively similar cases before testing it to cases with completely different characteristics. The potential countries that could be used for future analysis are: Mali, Democratic Republic of Congo and Myanmar. Mali is a country in conflict where several non-state armed groups are recruiting children through coercion and abduction. In 2016, 442 verified cases of child recruitment have been reported (Child Soldier International, 2018). In the Democratic Republic of Congo approximately 500 children were recruited through different armed groups in 2016. In Myanmar both state and non-state armed groups recruited children in 2016. Other cases such as Cameroon, Sudan, Libya, Pakistan and India would be interesting to analyse but possible problems with data collection could occur (ibid.).

Moreover, future research could look at the Colombian case but use a larger or other time-span, if the data availability allows this. Furthermore, it would be interesting to look at the relationship between education, safety and child recruitment with the use of a qualitative analysis. This would undermine some of the data problems, but difficulties would arise by contacting with relevant individuals and children or accessing relevant documents on the municipalities. A qualitative analysis would also give one the possibility to analyse the causal mechanism and understand the underlying thoughts on the role of safe learning spaces on the likelihood of child recruitment (Powner, 2015). Last, next research should go more into detail about the actual security provision a (boarding) school could provide to vulnerable children.
and how the level of security in a (boarding) school could be increased. This would allow us to measure the hypothesis, that child recruitment will be less common in municipalities where vulnerable children have access to education in a secure environment, in a different way.
6. Conclusion

This research intended to fill the research gap of the role of education in child recruitment, as there was no research that includes the concept of security provision in examining this relationship. Moreover, the gap was also addressed by doing a quantitative analysis as the majority of the research on child recruitment is based on qualitative analysis. The research question, under what circumstances does education decrease the likelihood of children being recruited, was hypothetically answered through the theory as: child recruitment will be less common in municipalities where vulnerable children have access to education in a secure environment. Security provision in educational institutions, measured as safe learning spaces, is, hypothetically argued, one of the circumstances whereby education decreases the likelihood of child recruitment. The theory explained that safe learning spaces provide deterrence and empowerment and therefore prevents child recruitment. The relationship between the independent and dependent variable was statistically analysed through a logit and logistic regression. A comparison between 562 Colombian municipalities resulted in an unexpected positive and statistically significant relationship between the variables of interest. In other words, the presence of safe learning spaces increases the likelihood of child recruitment in Colombian municipalities. These empirical results speculate that, security in an educational institution, measured through boarding schools, does not decrease and could even increase the likelihood of children being recruited.

The aim of this paper was to provide a statistical analysis of the role of security in an educational institution in decreasing the likelihood of child recruitment and thereby broadening the analysis of the effect of education on child recruitment. With the use of quantitative research, this paper accomplished to statistically present the role of security in an educational institution in relation to the likelihood of child recruitment in Colombian municipalities. Although the statistical empirics argued contra the hypothesis and showed that the presence of boarding schools were found to increase child recruitment, one should not completely disconfirm the hypothesis given. Due to the potential weaknesses in both the theory and methodology, further research should be conducted in order to draw any conclusion about the security concept while examining the relationship between education and child recruitment.

The results of this study could relate back to the general field of peace and conflict, in specific child recruitment, and the field of education. This research has contributed to these
fields by providing a basic understanding about the possible negative influences education can have towards child recruitment in general and more specifically in a Colombian municipality. The results follow the general argument that education only cannot decrease the likelihood of child recruitment and can even increase the likelihood as shown by the results of this analysis and research provided by several scholars. For this reason, the research contributed by showing the importance of analysing the circumstances under which education can put children on higher risks for child recruitment. Moreover, this research contributed to the introduction of the security concept while analysing under what circumstances education might decrease the likelihood of child recruitment. Although the unexpected result shows that the security provision in safe learning space might not provide the level of security needed to prevent children from being recruited, more research should be pointed towards measuring security in educational levels in different ways than through safe learning spaces.

This research was not aiming at any possible policy implication and would not recommend this research for the use of it. More research needs to be produced in order to create a more enhanced and complete notion about the role of security in educational institutions in decreasing the likelihood of child recruitment. Nevertheless, this research desired to add to the knowledge availability of the phenomenon of child recruitment in Colombia and therefore make a small but necessary contribution to the general knowledge on child recruitment. Every little contribution to this field will help to put a halt on the cruel phenomenon of child recruitment in the, hopefully near, future.
7. Bibliography


Uppsala Conflict Data Program (2018), Uppsala University, Department of Peace and Conflict Research, available at: http://ucdp.uu.se/#country/100 [accesses 13 April 2018]


### 8. Appendix I

Table 5: VIF test

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<td>Displacement</td>
<td>Boarding schools</td>
<td>Boarding schools - b</td>
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Table 6: Correlation Matrix with significance levels

Measuring the correlation between continuous variables, Pearson Pairwise Correlation is used. Measuring the correlation between binary and continuous variables, Point-biserial correlation is used. Measuring the correlation between binary variables, Cramer’s V is used.
## 9. Appendix II

### Table 7: OLS Regression

<table>
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<tr>
<th>Child Recruitment</th>
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*** p<0.01, ** p<0.05, * p<0.1

### Table 8: Probit regression

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<td>Rurality</td>
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*** p<0.01, ** p<0.05, * p<0.1