ISTANBUL TECHNICAL UNIVERSITY ★GRADUATE SHOOL OF ARTS AND SOCIAL SCIENCES

THE IMPACT OF UNCONDITIONAL CASH TRANSFER PROGRAMS ON CHILDREN: AN EXAMPLE OF PILOT SOCIAL SAFETY NETS IN CAMEROON

M.A. THESIS

Mehmet YAVUZ

Department of Economics

Economics M.A Programme

JUNE 2019

ISTANBUL TECHNICAL UNIVERSITY ★GRADUATE SHOOL OF ARTS AND SOCIAL SCIENCES

THE IMPACT OF UNCONDITIONAL CASH TRANSFER PROGRAMS ON CHILDREN: AN EXAMPLE OF PILOT SOCIAL SAFETY NETS IN CAMEROON

M.A. THESIS

Mehmet YAVUZ
(412151007)

Department of Economics

Economics M.A Programme

Thesis Advisor: Assist. Prof. Dr. Quentin Stoeffler

JUNE 2019

İSTANBUL TEKNİK ÜNİVERSİTESİ ★SOSYAL BİLİMLER ENSTİTÜSÜ

ŞARTSIZ NAKİT TRANSFER PROGRAMLARININ ÇOCUKLAR ÜZERİNDEKİ ETKİSİ: KAMERUN'DA PİLOT SOSYAL GÜVENLİK AĞI ÖRNEĞİ

YÜKSEK LİSANS TEZİ

Mehmet YAVUZ
(412151007)

Ekonomi Anabilim Dalı

Ekonomi Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr.Üye. Quentin Stoeffler

HAZİRAN 2019

Mehmet YAVUZ, a M.A. student of ITU Institute of Social Sciences student ID 412151007, successfully defended the thesis entitled "THE IMPACT OF UNCONDITIONAL CASH TRANSFER PROGRAMS ON CHILDREN: AN EXAMPLE OF PILOT SOCIAL SAFETY NETS IN CAMEROON", which he prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

Thesis Advisor: **Assist. Prof. Dr. Quentin Stoeffler……..**
Istanbul Technical University

Jury Members: **Assoc. Prof. Dr. Hasan Tekgüç……..**
Kadir Has University

Assist. Prof. Dr. Quentin Stoeffler……..
Istanbul Technical University

Assist. Prof. Dr. Aysun Hızıroğlu Aygün……..
Istanbul Technical University

Date of Submission: 3 May 2019
Date of Defense: 11 June 2019

To all children living on the streets,

FOREWORD

This thesis is a result of the long story. Since my Bachelor period, I always wanted to contribute to the economics literature and thus to touch the people's lives. If this thesis helps to ensure a better life for a child, this will be my biggest success in life.

I am extremely grateful to my advisor Assist. Prof. Dr. Quentin Stoeffler for his support and patience during my M.A. thesis study. I am also grateful to Betül Çubukcu for her precious advices during this process. I would like to thank to my family for their priceless support. I am also grateful to my dear friends Erçağ and Zeliha for their encouragement. Lastly, I would like to thank my supervisor Ferda Günaçtı and Alperen Bozkurt for making this process easier for me.

June 2019 Mehmet YAVUZ

TABLE OF CONTENTS

Page

FOREWORD ..... **v**
TABLE OF CONTENTS ..... **vii**
ABBREVIATIONS ..... **ix**
SYMBOLS ..... **xi**
LIST OF TABLES ..... **xiii**
LIST OF FIGURES ..... **xv**
SUMMARY ..... **xvii**
ÖZET ..... **xxi**
1. INTRODUCTION **1**
2. FINDINGS OF THE IMPACT OF CASH TRANSFERS **9**
3. PROJECT DESCRIPTION AND DATA **15**
3.1 The Project Description 15
3.2 Data 17
4. METHODOLOGY **19**
4.1 Impact Evaluation **19**
4.2 Difference in Differences 20
4.3 Propensity Score Matching combined with Difference in Differences 24
4.4. Balance Test 26
5. EMPIRICAL RESULTS **29**
5.1 Education 29
5.2 Labor 30
5.3 Balance Table 36
6. CONCLUSION AND POLICY RECOMMENDATION **41**
7. REFERENCES **44**
APPENDIX **49**
APPENDIX A **49**
APPENDIX B **54**
CURRICULUM VITAE **57**

ABBREVIATIONS

CBT: Community-Based Targeting
CCT: Conditional Cash Transfer
CFA: Central African Franc
CTP: Cash Transfer Project
CWG: Community Working Group
DID: Difference in Differences
DOL: US Department of Labor
ECAM3: Third Cameroon Household Survey
GDP: Gross Domestic Product
IDA: International Development Assistance
ILO: International Labor Office
LMICS: Low and Middle-Income Countries
MDG: Millennium Development Goals
NGO: Non-governmental Organizations
ODI: Overseas Development Institute
OLS: Ordinary Least Squares
PAD-Y: Phase 2 of the Yaounde Sanitation Project
PMT: Proxy Means Test
PSM: Propensity Score Matching
RGPH3: Third General Population and Housing Cencus
SDG: Sustainable Development Goals
SSA: Sub-Saharan Africa
UCT: Unconditional Cash Transfer
UN: United Nations
UNICEF: United Nations International Children's Emergency Fund
WB: World Bank

SYMBOLS

A: coefficient for treated group before the program

B: coefficient for treated group after the program

C: coefficient for control group before the program

D: coefficient for control group after the program

i: household

P(X): the probability of enrolling the program

$\mathbf{R^{2:}}$ R-square

t: time

$\mathbf{X_{it}}$: control variables for i^{th} household in time t

$\mathbf{Y_0^C}$: the outcome for control households before treatment

$\mathbf{Y_0^T}$: the outcome for treated households before treatment

$\mathbf{Y_1^C}$: the outcome for control households after treatment

$\mathbf{Y_1^T}$: the outcome for treated households after treatment

$\mathbf{Y_{it}}$:the outcome for i^{th} household in time t

$\boldsymbol{\beta_{0:}}$ the average outcome for control group before the program

$\boldsymbol{\beta_{1:}}$ the difference between treatment group and control group

$\boldsymbol{\beta_{2:}}$ the time trend for a group not enrolled the program

$\boldsymbol{\beta_{3:}}$ the program effect estimator

$\mathbf{P_i}$**:** a binary variable to show whether household is beneficiary or not

$\boldsymbol{\varepsilon_{it}}$: error term

LIST OF TABLES

Page

Table 1.1: Educational Indicators for Cameroon **5**
Table 3.2.1: Distribution of Household Status According to Baseline and Follow-up Survey **18**
Table 3.2.2: Distribution of Households at Impact Evaluation Sample **18**
Table 4.2.1: Summary of Difference in Differences Approach **21**
Table 4.2.2: Summary of Difference in Differences Approach in a Regression Framework **23**
Table 5.1.1: Comparison of beneficiary and non-beneficiary households for education **31**
Table 5.1.2: Comparison of beneficiary and non-beneficiary households for education with control variables **33**
Table 5.1.3: The Results for Propensity Score Matching for education **35**
Table 5.1.4: The Results for PSM combined with DID for education **35**
Table 5.2.1: Comparison of beneficiary and non-beneficiary households for child labor **36**
Table 5.2.2: Comparison of beneficiary and non-beneficiary households for child labor with control variables **37**
Table 5.2.3: The Results for Propensity Score Matching for labor **38**
Table 5.2.4: The Results for PSM combined with DID for labor **39**
Table A.1: List of beneficiary regions and departments **49**
Table A.2: Descriptive Statistics comparing beneficiary and non-beneficiary households **50**
Table A.3: Descriptive Statistics comparing households from Soulédé-Roua and Hina **52**
Table B.1: Comparison of Soulédé-Roua and Hina for education **54**
Table B.2: Comparison of Soulédé-Roua and Hina with control variables for education **54**
Table B.3: Comparison of Soulédé-Roua and Hina for labor **55**
Table B.4: Comparison of Soulédé-Roua and Hina with control variables for labor **55**

LIST OF FIGURES

THE IMPACT OF UNCONDITIONAL CASH TRANSFER PROJECT: AN EVIDENCE OF PILOT SOCIAL SAFETY NETS IN CAMEROON

SUMMARY

Poverty, with its consequences and alternative solutions, is still one of the most attention grabbing issue for the national governments, international organizations and non-governmental organizations. As its impacts are visible in different aspects of life, the priority of solutions still keeps its chair in the top of the government agendas, policy makers, academics and non-governmental organizations. In this context, different types of solutions have been introduced in the way of fight against the poverty.

The increasing importance of poverty brings variety of solutions to the concept of poverty. Cash transfer programs are one of those important solutions especially after its first appearance in the late 1990s. By definition, it refers to cash payment to vulnerable individuals to meet their basic needs whether with a condition or without setting any condition. The payment provided by international organizations, development banks, donors or NGOs with the aim of protect vulnerable individuals or enable them to meet their basic needs.

Concordantly with increasing belief in the effectiveness of cash transfer, there is a broad literature studying the effectiveness and implications of cash transfer programs. This paper aims to contribute to the wide literature in several ways. Differently from other studies, this thesis analyses the impact of unconditional cash transfer as the majority of impact evaluation studies deal with the impact evaluation of conditional cash transfer. Secondly, the implementation area of the project is the far north of Cameroon that is the poorest part of the country. Moreover, the project subjected to this thesis is a pilot project, which in turn makes the results of this paper worthwhile when the project is decided to be extended. Lastly, the interested group in the case of impact evaluation is children aged between 5 and 14. Therefore, this paper distinctively focuses on specific population group.

The pilot unconditional cash transfer project discussed in this paper was started in 2013 by the government of Cameroon within the scope of 2035 Emerging Vision. The project provides cash to households living in Soulédé-Roua, the far north of Cameroon with the aim of increasing the number of poor and vulnerable households accessing to social safety nets, improving education, health and nutrition, establishing well designed management information system and create increasing in the managing household resources. The selection of beneficiary households consists of 6 stages. First, the choice of regions and departments is made and then beneficiary communities are selected. The next stage is the selection of beneficiary communities. The households living in these villages were selected as the potential beneficiary households. Finally, the methods called Community Based Targeting (CBT) and Proxy Means Test (PMT) were used in order to choose beneficiary households. In this context, 2000 families from 15 villages were chosen as beneficiary household for

unconditional cash transfer project. Households received 360,000 CFA in total during 24 months. Payments to households made between November 2013 and January 2016. In average, every households get 15,000 CFCA corresponding 20% of the households' expenditure for living in a month. In the process of selecting beneficiary households the combination of Proxy Means Test (PMT) and Community-Based Targeting (CBT) were used.

In brief, this study asks the question of how children affected from social assistance programs when their parents have no obligation to spend cash they received for them. The dimensions used to evaluate child wellbeing are child education and child labor.

The number of children going to school, the number of children dropping out of the school, the number of children going to school last two years and the households' expenditure for education are indicators for education while the number of children engaged in any economic activity last 12-months and the number of children engaging with family business, household chores and working as student are the indicators for child labor in this thesis. Baseline survey from 2013 and endline survey from 2016 provided by National Institute of Statistics are the main data sources for this study. As a statistical method to evaluate the impact of unconditional cash transfer pilot project, Difference in Differences methods were used. In order to compare beneficiary households with control group, households from Hina was selected, as it is located in the same region, called Mayo Tsanaga, with Soulédé-Roua. Moreover, they show the similarity in the case of poverty, culture and behaviour. Lastly, as they are geographically far away from each other, this enables to avoid contamination since they do not share the same market. Firstly, comparison of beneficiary households from Soulédé-Roua and non-beneficiary households from Hina were introduced without adding any covariates into the regression and afterwards the same comparison was introduced with covariates to isolate the impact of unconditional cash transfer pilot project from the other differences between two comparison groups. Moreover, the same comparison with and without control variables was introduced for all households from Soulédé-Roua and non-beneficiary households from Hina. Lastly, the results gained from Propensity Score Matching (PSM) and its combination with Difference in Differences (DID) are presented.

The result of this paper provides that there is statistically significant increase in the number of children going to school and decrease in the number of children dropping out of the school concordantly. By providing their schooling last two years, this thesis shows that there is also statistically significant increase in their stability for participating the school. Naturally, these increases in schooling bring extra cost for households. Hence, beneficiary households' total expenditure for education increases as well. However, this study also provides that there is an increase in child labor among beneficiary households. This increase is seen in both the number of children working in paid works and the number of children engaging with family business, household chores and working as student. Considering both results together, increase in child education brings extra costs to households' budget, which, in turn, corresponds to increase in households' expenditure for education. To defray this increase, households are tend to send their children to work. Hence, there is an increase in the number of working children. Finally, the paper provides that the concepts of child education and child labor show a complementary characteristic rather than substitutes.

KOŞULSUZ NAKİT TRANSFER PROGRAMLARININ ÇOCUKLARA ETKİSİ: KAMERUN'DA PİLOT SOSYAL GÜVENLİK AĞI ÖRNEĞİ

ÖZET

Yoksulluk, sonuçları ve alternatif çözümleriyle hala ulusal hükümetler, uluslararası kuruluşlar ve sivil toplum kuruluşları için en dikkat çekici konulardan biri olmaya devam etmektedir. Etkileri insan hayatının farklı yönlerinde görülebildiğinden, çözümlerin önceliği halen hükümet gündemlerinin, politika belirleyicilerinin, akademisyenlerin ve sivil toplum kuruluşlarının en temel gündem maddelerinden biri olmaya devam etmektedir. Bu çerçevede, yoksullukla mücadelede farklı çözüm yolları ortaya konmuştur.

Yoksulluğun öneminin artmasıyla beraber, yoksulluk kavramına çeşitli çözümler ortaya konmuştur. Nakit transferi programları, özellikle 1990'ların sonlarında ortaya çıktıktan sonra önemli çözüm yollarından biri olmuştur. Tanım olarak, korunmasız durumdaki bireylere, şartlı veya şartsız olmak üzere temel ihtiyaçlarını karşılamak için nakit ödeme anlamına gelmektedir. Bu ödemeler uluslararası kuruluşlar, kalkınma bankaları, bağışçılar veya STK'lar tarafından korunmasız bireyleri korumak veya temel ihtiyaçlarını karşılamalarını sağlamak amacıyla sağlananmaktadır.

Nakit transferinin etkinliğine olan inancın artmasıyla birlikte, nakit transfer programlarının etkinliğini ve etkilerini inceleyen geniş bir literatür de ortaya çıkmıştır. Bu makale, hâlihazırda geniş olan literatüre çeşitli şekillerde katkıda bulunmayı amaçlamaktadır. Diğer çalışmalardan farklı olarak, etki değerlendirme çalışmalarının büyük çoğunluğu koşullu nakit transferleri ile ilgilenirken, bu tez, koşulsuz nakit transferinin etki değerlendirmesi ile ilgilenmektedir. İkincisi, burada incelenen projenin uygulama alanı, Kamerun'un en kuzeyindeki ülkenin en fakir bölgesidir. Dahası, bu teze konu olan proje bir pilot proje olduğundan, projenin uzatılmasına karar verildiğinde, bu yazının sonuçları daha değerli bir hal alacaktır. Son olarak, etki değerlendirmesi durumunda ilgilenilen grup, 5-14 yaşları arasındaki çocuklardır. Bu nedenle, bu makale spesifik bir şekilde belirlenmiş belli bir nüfus grubuna odaklanmaktadır.

Bu yazıda tartışılan koşulsuz pilot nakit transferi projesi, 2035 Yükselen Vizyon kapsamında Kamerun hükümeti tarafından 2013 yılında başlatılmıştır. Proje kapsamında, Kamerun'un en kuzeyindeki Soulédé-Roua'da yaşayan hanelere nakit para sağlanarak korunmasız ve fakir durumdaki hane halklarının sosyal güvenlik ağlarına erişiminin arttırılması, eğitim, sağlık ve beslenme koşullarını iyileştirilmesi, iyi tasarlanmış bir bilgi yönetim sisteminin kurulması amaçlanmıştır. Projeden faydalanacak hane halklarının seçilmesi 6 aşamadan oluşmuştur. İlk olarak, bölge seçimi yapılmış ve ardından faydalanıcı topluluklar seçilmiştir. Bir sonraki aşamada ise proje kapsamında faydalanıcı köyler belirlenmiştir. Bu köylerde yaşayan hane halklarından potansiyel faydalanıcı hane halkları seçilmiştir. Bu kapsamda, toplamda15 köyden 2000 aile proje kapsamında koşulsuz nakit transferinden faydalanmıştır. Hane halkları 24 ay boyunca toplamda 360.000 CFA nakit yardımı

almıştır. Ödemeler 2013 yılının Kasım ayı ile 2016 yılının Ocak ayı boyunca yapılmıştır. Ortalama olarak, her hane halkı aylık 15.000 CFCA almıştır ve bu tutar aylık asgari geçim harcamalarının %20'sine tekabül etmektedir. Projeden faydalanacak hane halklarının seçiminde ise hem Temsili Ortalama Değerlendirmesi (TOD) hem de CBT'den faydalanılmıştır.

Kısaca, bu çalışma, ebeveynlerinin, proje kapsamında aldıkları paraları kendileri için harcamak zorunda olmadıkları durumda, çocukların bu sosyal yardım programlarından nasıl etkilendikleri sorusunu sormaktadır. Çocuk refahını değerlendirmek için kullanılan boyutlar ise çocuk eğitimi ve çocuk işçiliğidir.

Okula giden çocuk sayısı, okulu bırakan çocuk sayısı, son 2 yılda okula gitmeye devam eden çocuk sayısı ve hane halkının eğitim harcamaları eğitim göstergeleri olarak kullanılırken; son 12 ayda herhangi bir ekonomik aktiviteye katılmış çocuk sayısı ve ev işlerinde, aile işlerinde ya da öğrenci olarak çalışan çocuk sayısı bu tez çalışmasında çocuk işçiliği göstergeleri olarak kullanılmıştır.

Ulusal İstatistik Enstitüsü tarafından 2013'te yapılan başlangıç anketi ve 2016'da yapılan son anket, bu çalışmanın ana veri kaynaklarıdır. Pilot koşulsuz nakit transferi projesinin etkisinin değerlendirilmesinde istatistiksel bir yöntem olarak, Farkların Farkı yönteminden yararlanılmıştır. Sonrasında ise Eğilim Skoru Eşleştirmesi yöntemi ile Farkların Farkı yöntemi kaynaştırılarak kullanılmıştır. Yararlanıcı hane halklarını bir kontrol grubu ile karşılaştırmak için Soulédé-Roua ile aynı bölgede, Mayo Tsanaga, bulunan Hina'daki hane halkları seçilmiştir. Dahası, bu iki bölge yoksulluk, kültür ve davranış durumlarında da benzerlik göstermektedir. Son olarak, coğrafi olarak birbirlerinden uzak olduklarından, aynı piyasayı da paylaşmamakta ve bu sayede pilot koşulsuz nakit transferi projesinin etkilerinin Hina'ya da yansımaması sağlanmıştır. İlk olarak, Soulédé-Roua'daki yararlanıcı hane halklarının ve Hina'daki yararlanıcı olmayan hane halklarının karşılaştırılması, regresyona kontrol değişkenleri eklenmeden tanıtıldı ve sonrasında aynı karşılaştırma, pilot koşulsuz nakit transferi projesinin etkisini hane halkları arasındaki diğer farklılıklardan izole etmek için Farkların Farkı regresyonuna kontrol değişkenleri eklenerek yapılmıştır. Son olarak ise, Eğilim Skoru Eşleştirmesi Modeli ile Farkların Farkı modeli kaynaştırılarak elde edilen sonuçlar sunulmuştur. Ayrıca, Soulédé-Roua'daki tüm haneleri ve Hina'daki yararlanıcı olmayan haneleri karşılaştırmak için de Farkların Farkı regresyonuna sırasıyla kontrol değişkenleri eklemeden ve kontrol değişkenleri eklenerek yapılmıştır.

Bu yazının sonucu, okula giden çocuk sayısında istatistiksel olarak anlamlı bir artış ve okuldan ayrılan çocuk sayısında ise istatiksel olarak anlamlı bir düşüş olduğunu göstermektedir. Bu tez, son iki yıldaki okula giden çocukların sayısını da göstererek bu çocukların aynı zamanda istikrarlı bir şekilde eğitimlerine devam ettiğini ortaya koymaktadır. Doğal olarak, okullaşmadaki bu artışlar hane halkı için ek bir maliyet de getirmektedir. Dolayısıyla, yararlanıcı hane halkların eğitim için yaptıkları harcamalarda da istatistiksel olarak anlamlı bir artış olduğu görülmektedir. Bununla birlikte, bu çalışma yararlanıcı hane halkları arasında çocuk işçiliğinde de bir artış olduğu ortaya koymaktadır. Bu artış, hem ücretli işlerde çalışan çocuk sayısında hem de ev işlerinde, aile işlerinde ya da öğrenci olarak çalışan çocuk sayısında görülmektedir. Her iki sonuç birlikte ele alındığında, çocuk eğitimindeki artışın hane halkı bütçesinde ek bir maliyet yarattığı ve bunun da hane halkının eğitim harcamalarında artışa tekabül ettiği görülebilir. Bu artışla başa çıkmak için ise hane halkları çocuklarını çalışmaya gönderme eğilimindedirler. Bu nedenle çalışan çocuk sayısında da bir artış görülmektedir.

Son olarak, bu yazı çocuk eğitimi ve çocuk işçiliği kavramlarının ikame değil aksine tamamlayıcı bir özellik gösterdiğini ortaya koymaktadır.

1. INTRODUCTION

Finding a robust solution for poverty is still one of the most important conflicts of 21th century. Although the fight against the poverty is in progress, it unfortunately still stands as a life fact issue, especially for the poor countries. It is commonly thought that poverty is completely income-related issue, however factual reality of poverty imposes difficulties on a daily basis in every aspect of life. Unhealthy living conditions, malnutrition, higher infant mortality, insufficient drinkable water resources and poor health conditions suggest that poverty continues to be a very serious problem in many countries. From social life to economic life, from health, education or human capital to the basic needs of human lives, the effects of poverty are highly visible. In definition, poverty means more than lack of money; it corresponds to the lack of meeting basic needs of someone. As there are different definitions of poverty, there are also different perspectives of how to define it. Most known methods are absolute poverty and relative poverty. By definition, the former one is about income and whether it is sufficient to meet basic needs of someone or fall behind of it, the latter one is a moving target and it takes the rest of a society into account and other economic and cultural needs. However, both concepts are mostly interested in income and consumption although poverty is much more than both.

As the multifarious impacts of poverty are observable at different aspects of life, it is still priority for countries to find a solution to poverty in order to accomplish their development goals. For this purpose, fight against the poverty is still listed in the top at government agendas, policy makers, academics and non-governmental organizations. In the way of achieving development goals, especially for undeveloped and developing countries, poverty and the possible ways of its solutions play a key role. Even Sustainable Development Goals (SDG) accepted by the members of United Nations (UN) includes poverty and the tools take part in the struggle with it. Social protection finds place under the first goal of SDG, which is "End poverty in all its form everywhere", and the social protection programs are deemed as the most important tools to achieve this goal. In the same report by UN, it is found that 45% of the

population in the world benefits from at least one social protection cash assistance. (The Sustainable Development Goals Report, 2018).

The main role of the social protection programs is to help vulnerable people protect themselves from poverty and destitution through the tools that in turn improve resilience, equity and opportunity (Mundial, 2012). The types of social protection generally categorized as social assistance, social insurance and labor market programs (Arnold et al., 2011). The social assistance from these categories is one of the most used one all over the world and it generally refers to money assistance, food assistance, fee waivers or school feeding for children to provide their basic needs (ILO, 2010). Either in cash or in-kind every benefits to vulnerable can be categorized under social assistance. In another words, social assistance programs come to the forefront as "redistribution programs" (Woolard & Leibbrandt, 2013).

Additionally, the recent economic crisis and increasing inequality among countries put emphasis on social protection programs named as "smart investment" by Lin and Phumaphi because it is an effective way of fight against poverty (Lin and Phumaphi, 2009).

Although there are different ways of implementing social assistance programs, one of its forms, called cash transfer, is spreading all over the world parallel with a belief that it is most effective tools in the way of reducing poverty. In the simplest term, by definition, cash transfer is a cash payment to vulnerable individuals to meet their basic needs (Garcia & Moore, 2012). The cash payment is generally provided by governments, international institutions, development banks, donors, NGOs or sometimes by partnership of a few of these organisations (Garcia, 2012). The main driving force behind this transfer is that providing additional income to poor individuals prevents those individuals from negative income shocks; protect their living standards and more generally enabling them to meet their essential needs (Arnold, 2011). Apart from providing additional income for individuals or households, cash transfers have also another impact on human capital, savings or access to loans. With the help of getting cash transfers, whether conditional or unconditional, individuals can ensure the investment on their education and health which in turn increasing human capital (Bastagli et al., 2016). Generally, the aim of the assistance is to decrease poverty, in some cases, the targeted aim of the project might be specified

beforehand such as health, education, child labor, saving, investment and other more specific areas. However, the main difference between cash transfer programs occurred in the difference of their design. More specifically, there are two main difference according to their conditionality set before the project. The condition is set on where beneficiary individuals or households can spend cash they get in the context of cash transfer program. By definition, conditional cash transfer (CCT) requires certain specifically determined conditions to be met by beneficiaries (Doetinchem et al., 2008) while unconditional cash transfer programs (UCT) allow beneficiaries to have freedom of choice about on what they can spend cash they receive (Bastagli, et al., 2016). The theory behind using CCT is based on the lack of full information of poor households about the long-term benefits of monetary assistance (Fiszbein&Schady, 2009) and in order to maximize the benefit gained from the project, the projector set the condition to be fulfilled by beneficiaries. In this context, UCT uses that beneficiaries are rational actors and there is no need to set any condition for individuals or households receiving cash transfer, the transfer amount will result in increased use of public services (Arnold, 2011). It is still not clear to decide which one of these cash transfer types are better or create greater impact in the way of alleviating the poverty. Apart from the difference on setting conditions or not to be able to benefit from the project, there are also some other differences in applying the cash transfer although the main intuition behind is almost the same. Since the main target group is poor and vulnerable individuals, it is also important to identify those individuals who is not able to afford their basic needs. In the process of identifying beneficiaries, the most commonly used methods are Proxy Means Test and Community Based Targeting. The former one is basically relied on statistical method to generate predictor and the letter is basically based on community participation in deciding who to benefit from cash transfer project (Stoeffler, Mills and Del Nino, 2016). The other differences in designing the project occur in the level of the transfer (Bastagli, 2009), timing and frequency of the payment (Fiszbein&Schady, 2009), duration (Sabates-Wheeler & Devereux, 2011), recipients of the transfer (Fiszbein&Schady, 2009). These four factors are main differences in designing the cash transfer project and therefore the results of project on outcomes may differ related to these differences in design (Bastagli, Francesca et al., 2016).

The popularity of cash transfer projects increased firstly in the late 1990s in South American countries and afterwards spreading over low and middle-income countries

(LMICS) especially in the early 2000s (Arnolds, 2011). Currently, its implementation areas are South America, South-East Asia, Africa, Eastern Mediterranean and Western Pacific (Garcia, 2012). As it can be seen from aforementioned, the implication of CT projects starts covering not only middle-income countries but also low-income countries. In 1997, there were just 3 project implementing in Brazil, Mexico and Bangladesh (Kabeer&Waddington, 2015), by 2008, the number of the projects became 30 (Fiszbein&Schady, 2009) and currently there are 130 operating cash transfer project all over the world (Hagen-Zanker, Jessica, et al., 2016).

Considering its progress in economic growth during the last years, poverty level still stands as a problem for Cameroon. Safety nets programs implemented in Cameroon have a problem of limited resources, weak coverage and poor targeting, hence its only 0.23% of Cameroon's GDP which makes the country one of the lowest ranked in the SSA (Stoeffler, 2015). According to Nguetse-Tegoum (2011), there are 4.7 million chronic poor in Cameroon in addition to 9.9 percent transient poor and 4 percent progressive poor. With the motivation of decreasing poverty in the country, the government in Cameroon started Unconditional Cash Transfer Pilot Project in 2013. The main motivation of the project is to help poor households satisfy their short-term needs without any condition to be able to receive cash payment. The project involve poor and very poor households in the far north of the country. Cameroon is today categorized as lower-middle income country (categorized by the World Bank) and despite of its variety of natural resources such as oil, natural gas, mineral and agricultural products and recent progress of growth over the last few years, it is still struggling with income inequalities among its regions especially between south and north. According to the latest data from World Bank (2010) and UNICEF (2013), 49.81% of total population is under 18 in Cameroon although just 3.2% of total GDP is allocated for their education. In the case of education, Table 1.1 shows the detail according to US Department of Labor (DOL, 2011-2014). It shows that child labor have been serious problem for the country while the percentage of children combining work and school were also increasing during the years project implemented. The rate of primary education according to UNICEF statistics is just 46.4% in 2012 while the percentage of children combining work and school is substantially increasing year by year which actually shows that child labor is still serious problem for the country. Although the rate of school attendance is high relatively to the other countries in

Africa, there is substantial difference between south and north part of the country. Adding the reality of child labor to these statistics create a worse picture for children in Cameroon as the rate of child labor estimated to be 56% by US Department of Labor (DOL, 2017).

Apart from being categorized as lower-middle income category, poverty and inequality are on the top list of government agenda in Cameroon. In order to decrease inequality among its regions and alleviate poverty from people's life, Cameroon shows a moderate advancement according to US Department of Labor published in 2017 (DOL, 2017).

Table 1.1: Educational Indicators for Cameroon

	2011		**2012**		**2013**		**2014**	
	Age	**Percent**	**Age**	**Percent**	**Age**	**Percent**	**Age**	**Percent**
Working (% and population)	5-14 years	36.5	5-14 years	36.5	5-14 years	56.2	5-14 years	56.2
Attending School (%)	5-14 years	80.4	5-14 years	80.4	5-14 years	79.7	5-14 years	79.7
Combining Work and School	7-14 years	34.1	7-14 years	34.1	7-14 years	52.7	7-14 years	52.7
Primary Completion Rate (%)	78.3		78.3		72.9		72.2	

Source: The reports published by US Department of Labor in 2011 and the following years

However, the severity of poverty takes more effects on life of children. Them being most vulnerable population category of society, their dependency and the importance of basic needs for the early years of life causes poverty to be terminally dangerous for children. Additionally, the effect of poverty on human capital presents worse situations for countries dealing with this problem. According to Brooks and Duncan (1997), the effects of poverty in the long-time is greater than its effect in the short run for children. Poverty has negative impacts on children's education, health and even their cognitive development (Treanor, 2012). In particular, the importance of investing in human capital, resulting from the negative impact of poverty, has long-term impacts at both

the individual level and national level. Therefore, it is vital for countries to improve conditions for children in decreasing the intergenerational poverty.

Since the rate of return of human capital investment is at its highest level in the early stage of childhood, this issue is highly attention grabbing for academics, policy makers and the governments. A growing literature shows that there is a positive correlation between child development and human development indexes through changes in education, health, social capital and inequality (Van der Gaag, 2010). The early years in the life of a child is the most important stage for them and due to the importance of this stage, their needs have to be met in order to increase their well-being for the rest of the life (Merrick, 2008). In this context, different kind of social safety nets projects are implemented such as cash transfers, in-kind transfers, scholarships and free lunch for students have been implemented and cash transfers are one of the most common tools conducted by many governments in order to increase child wellbeing. Cash transfer projects play a key role in decreasing intergenerational poverty between parents and children (Kabeer et al., 2015).

All of these consequences of poverty and the tools mentioned above constitute of the main motivation for of this paper. The main goal of the paper is to analyse the impact of UCT implemented in SSA on children in the context of education and labor. Increasing importance of social protection program, specifically cash transfer programs, increases the importance of analysing the effectiveness and consequences of these projects. Therefore, in the most general form, this paper asks the question of how children affected from social assistance programs when their parents have no obligation to spend the cash they received. Hence, the paper aims to shed light on that how children affected when their parents are the beneficiary of unconditional cash transfer programs. Since there is an increasing popularity of cash transfer projects, there is still lack of papers evaluating the impact of unconditional cash transfer in especially Sub-Saharan Africa. The recipients of this pilot project are the poorest individuals in the northern part of Cameroon; these characteristics of beneficiary households also make a study important to contribute the literature. Lastly, the importance of children especially for poorest countries because of their intergenerational chronic poverty in and its high return of investment on children increases the necessity of evaluating the impact of cash transfer programs implemented there.

The first contribution of this paper is to the literature. Although there is a broad literature about the concept of cash transfer programs and their implication, the paper aims to contribute it by analysing the unconditional cash transfer program as the majority of studies are about the conditional cash transfer programs. Secondly, the implementation area of the project is meticulously defined, and it is the poorest of the poor. Hence, the study is analysing the impact of unconditional cash transfer when the poorest households have no obligation for spending of the assistance. Thirdly, the project analysed in this study is the pilot project, which means that if it works in the poorest region of Cameroon, it can be implemented any other region as well. Lastly, the interested group of this study is specifically defined as children. Hence, the analysis focus on the specific category of population instead of the general impact evaluation of the project.

After introducing the importance of cash transfer programs for LMICs and giving the current situation in Cameroon, the literature review comes afterwards in Section 2. In Section 3, the pilot project introduced and the data used in the analysis is explained. The next section is based on the methodology and methods used in the process of impact evaluation. It firstly presents impact evaluation and then difference in differences and its combination with propensity score matching methods introduced. Section 5 is about the empirical results of this study and divided into two parts as education and labor. Section 6 is the last part of this study and in this part, conclusions and policy recommendations introduced in order to increase the effectiveness of Pilot Social Safety Net Project in Cameroon.

2. FINDINGS OF THE IMPACT OF CASH TRANSFERS

Income poverty and vulnerabilities in LMICs present central concerns for national governments, international organizations, nongovernmental organizations and civil society. After at first appearance in the 1900s, cash transfer, projects are currently spreading all over the world. There is growing increasing belief conditional and unconditional cash transfer projects are most effective tools used in the process of alleviate poverty and help vulnerable individuals (Gentilini et al., 2014).

In the first instance, the popularity of cash transfer projects increased firstly in the late 1990s in South American countries and afterwards spreading over LMICS (low and middle-income countries), especially in the early 2000s (Arnolds, 2011). Nowadays, the implementation areas are South American, South-East Asian, Africa, Eastern Mediterranean and Western Pacific (Garcia, 2012). Additionally, the implication of CT projects starts covering not only middle-income countries but also low-income countries. In 1997, there were just three projects implementing in Brazil, Mexico and Bangladesh (Kabeer&Waddington, 2015); by 2008, the number of the projects became 30 (Fiszbein&Schady, 2009) and currently there are 130 operating cash transfer project all over the world (Hagen-Zacker, Jessica, et al., 2016).

The main difference between the type of cash transfers occurs regarding there is any condition that receivers must fulfil or not. This difference also shows up in the literature in analysing whether setting a condition has any significant impact on the output. The findings differ across study and the output measured in the studies. Fiszbein and Schady (2009) provides that it is still unconvincing whether adding to condition to the project gives better results or not. Supporting to this idea, Arnold (2011) says that it is sufficient to provide cash alone to beneficiaries without needing any condition since these conditions create additional costs for providers.

Furthermore, World Bank-led project in Malawi provides that adding a condition to cash does not produce any improved outcome (Baird, S. Et al., 2010). As opposed to this idea, evidence from Mexico provides that condition lead better impact of cash transfer (Arnold, 2011). De Brauw and Hoddinott (2011) in their paper studying the

impact of cash transfer implemented in Mexico (Oportunidades) provides that conditionality has greater effect on children attendance and enrollment the school. Then again, another study by Baird, Craig and Ozler (2010) found that although conditionality creates greater effect on education output for children, UCTs is more effective in the case of pregnancy and child marriage. Moreover, Luseno (2013), Miller and Tsoka (2012) and Boone (2013) ensure that unconditional cash transfer can also be effective in output measure such as health, child labor and productivity relatively. Another idea supporting not set any condition approaches to the subject fom the perspective of human rights. They recommend that cash transfers are tools to decrease poverty and it aims to enable individuals to meet their basic needs, therefore setting a condition to be able to receive is just violating the human rights (Künneman et al., 2008). Consequently, setting a condition in the design of cash transfer is not necessarily needed to observe positive or greater effect on the outcome measured.

Collaterally to increasing literature studying the impacts of cash transfer projects, the indicators used to analyse of cash transfer projects differ substantially. In the broad literature, the most used outcomes measured are monetary poverty, education, health and nutrition, savings and investment, employment (for both adults and children) and empowerment. In 2016, Overseas Development Institute (ODI) reported that 35 studies find an increasing in total expenditure while one study found a decrease in total per capita consumption (ODI, 2016). In the case of health and nutrition, 9 studies showed statistically significant increase in using of health facilities whereas Evans et al. (2014) contributed that there is a decreasing in health consultation after 31-34 months but due to health improvements. Additionally, 7 studies show statistically significant improvement in dietary diversity but no improvement in anthropometric outcomes. As for savings and investment, five studies found statistically significant increase in household savings that takes its source from cash transfers. Nevertheless, the case of borrowing is mixed in the literature, according to the ODI's report (ODI, 2016) 4 studies provide an increase in households' debt while 3 studies provide a decrease and 7 studies provide no significant results. Lastly, empowerment is another output used to measure the effect of CTPs. 6 studies out of 8 provide significant decrease in abuse by a male partner while 2 studies suggest that there is a positive relation (Eswaran&Malhotra, 2011). In the case of empowerment, pregnancy is one of the most used outcomes. In the literature there are 5 studies providing that cash

transfers have a role in decreasing the likelihood of pregnancy (ODI, 2016). In addition to that, marriage is another component in the context of empowerment. 5 studies using the marriage in school-age girls found significant decrease and 3 of them provided delayed marriage (Baird et al., 2010 and 2011).

Since cash transfer projects are expected to encourage vulnerable households to invest also in human capital (Hoop&Rosati, 2014), education is one of the most used indicators to observe whether households using cash they received from the project for their children or not. Therefore, there is a broad literature analysing the effect of cash transfer on child education. The most commonly used indicators are school attendance (Evans et al., 2014), test scores (Akresh et al., 2013), enrollment (Romeo et al., 2014), dropout (Saavedara&Garcia, 2012), absenteeism (Seidenfeld&Handa, 2011) and cognitive development (Macours et al., 2012). According to Bair et al (2013) school attendance and school enrollment are immediate results of cash transfers while its impact on test score is final outcomes. The findings on education suggest that cash transfers have a positive impact on school attendance by removing financial barriers on education (ODI, 2016). It is prevalently seen that CTPs have highly impact on school attendance. Duryea and Morrison (2004) showed that there is an increase in the probability of school attendance in paper they studied the program in Costa Rica. The report by ODI provides that 13 studies out of 20 studies found statistically significant impact on school attendance (ODI, 2016). Additionally, Akresh et al., (2013) and Benhassine et al. (2015) found statiscally significant increase in school attendance among children whose families received cash transfer. As for other indicators, Schultz (2004) found that enrollment rate increased after the cash transfer project in Mexico and Baird et al., (2013) reported that both UCTs and CCTs have significant and positive effect on school enrollment. However, enrollment does not guarantee that children enrolled the school will keep attending the school. Another output that can also be an indicator for the difference between enrollment and attendance is dropping out the school. Findings suggest that cash transfer is an effective tool in decreasing the dropout rate (Kilburn et al., 2017). Although it is not easily observable in the short time, there are a few studies reported the positive effect on test scores as well. Benhassine et al. (2015) and Evans et al., (2014) reported positive impact of cash transfer on test scores. Lastly, the positive effect of cash transfer programs are also observable in cognitive scores as found by Tommasi (2015).

In contradiction with these findings, there are other studies found opposite results in their analysis. For example, Akresh et al., (2013) did not find any significant impact of CTPs on test scores while Baez and Camacho (2011) found negative impact on test scores. Fernald and Hidrobo (2011) and Paxson and Schady (2007) no significant effect of cash transfer on cognitive development. Additionally, Merttens et al., (2015) found that proportion of children attending to school decreased after CTPs implemented.

Child labor is another highly attention grabbing field to measure the effect of cash transfer projects on. In the literature, the most used indicators for measuring the effect of cash transfer programs are child work, child labor intensity, child work and intensity by sectors and working hours in a week. The most of articles studying measuring the impact on labor are from Latin America, and afterwards sub-Saharan Africa is next most studied area for the concept of labor (ODI, 2016). For adults' work, which is not the concern of this paper, the evidence from the literature are still complicated and there is limited evidence providing that adults work less after receiving payment. The fact remains that; child labor is another important indicator even when measuring human capital investment. The important thing to emphasize here is that child labor is not a concept that easily appear in the statistics (Hoop&Rosati, 2014). The studies showing the effect of cash transfers on school participation presents relatively less evidence about the effect on child labor (Rawlings&Rubio, 2005) and moreover increases in school participation does not mean that there has to be decrease in child labor as child labor and school participation can be carried out simultaneously (Hoop&Rosati, 2014). Another paper emphasised that increasing in school enrollment cash transfers have an effect in decreasing labor force participation of children (Kabeer et al., 2012). Reduction in child labor as a result of CTPs are mostly seen in Latin America while in sub-Saharan Africa there is no study founding significant reduction in child labor. This shows the parallelism with the idea of Hoop and Rosati (2014) indicating CTPs are also affected from the area where project implemented. Another related paper suggested that increasing opportunity cost of education change priorities of households which in turn increase the number of children labor (Agiogbu-Kemmer, 1992).

Although it effects variety of fields, there is no guarantee that CTPs always change the preferences of households in the case of child labor. AIR (2014), Daidone et al.,

(2014a) and Merttens et al., (2015) provided no significant effect on child labor resulted from CTPs in SSA. A few studies found statistically significant reduction in children's working hours while studies from SSA do not show any significant effect resulted from CTPs (Benhassine et al., 2013). As can be seen everywhere around the world, the difference between boys and girls engaging the economic activity is present in SSA. Although there is no study provided the evidence form SSA, there are some a few study from Latin America showing the different effect of CTPs on boys and girls in the case of hours worked (Maluccio, 2005; Alam et al., 2011). Apart from these positive results on child labor, there is still something to take into account: household chores. Miller and Tsoka (2012) shows that participation of children in household chores increases although pay for work among children decreases. At first appearance, it might seem like CTPs are effective on decreasing the child labor but not household chores, which still keep children out of school, should be kept in mind.

As can be seen above, the effect on any outcome resulted from CTPs depend on differences in designing the project. Conditionality, the level of transfer, timing and the frequency of the payment, duration, recipients of the transfer and the area where project is implemented are the factors effecting the direction and size of the impact of CTPs on measured outcomes. One study suggests that the positive effects of CTPs on children are greater when cash received by female (Quisumbing&Maluccio, 2000). Therefore, the size and the direction of the impact can vary according to designing and place of implementation which in turn leading to a broad literature of impact evaluation of CTPs.

3. PROJECT DESCRIPTION AND DATA

3.1 The Project Description

In 2013, the government of Cameroon implemented the project of unconditional cash transfer within the scope of 2035 Emerging Vision that gives a monetary assistance to poor and very poor households in the far north of Cameroon in an attempt to decrease poverty and enable households to provide their short-term needs. More specifically, UCT launched by the Government of Cameroon with the help of World Bank and aims to increase the number of individuals taking advantage of social safety nets, develop national capacity in the management of social safety nets and improve the living conditions of beneficiary households (Stoeffler, 2018). The authorities aim to reduce poverty to less than 28% by 2020 and in turn, achieve the MDGs as a part of another strategy named Growth and Jobs Strategy. Although, there were some other social safety net programs implemented in Cameroon (such as school feeding programs, nutrition programs, PAD-Y public works programs and food-for-work-programs) Social Safety Net Survey found the lack of well-designed social safety net projects in Cameroon, expensiveness of the existing programs and, not targeting the vulnerable individuals accurately and provided that in order to extend the coverage of social safety nets projects in Cameroon, there has to be well designed social safety net project.

The expectations from the Social Safety Net Project are increasing in the number of poor and vulnerable households accessing to social safety nets, improving the education, health and nutrition, establishing well-designed targeting system, increasing in productive assets, establish well-designed management information system and create increasing in the managing resources for households. The project is also the first step of 5 years project by WB and IDA and afterwards it is planned to expand three other regions in Cameroon. In the process of choosing beneficiary household, the implementation used 6 different stages. The first one was choosing regions and departments that was based on poverty rate. More specifically, it was based on poverty rate map provided by the RGPH3 and ECAM3. Thus, 10 departments in 5 regions and Doula and Yaound*é* were chosen. The table providing the characteristics of beneficiary regions and departments is in the Annex 1. The second

stage was choosing beneficiary communities which was based on three criteria the poverty rate, physical accessibility and the sharing of the community's population according to their village. In line with these criteria, Soulédé-Roua was chosen since 9 out of 10 households were categorized as poorest. The third stage was choosing beneficiary villages that was done according to the list of criteria defined by Community Working Group and consisted institutional, socio-economic and cultural context of districts. Based on these criteria 15 villages from Soulédé-Roua and 7 villages from Ndop were chosen.

The next and the fourth stage was choosing potentially beneficiary households which was done according to list created by CWG consist of poverty criteria. The criteria included basic infrastructure, health, education, housing conditions, economic activity, population density, access to land and lastly geographical access. After this stage potential beneficiary households were selected from Soulédé-Roua (extreme north of the country) and Ndop. The next stage included statistical technique called Proxy Means Test (PMT), which formed a score predicting the conditions of households to be chosen. The survey aiming to collect necessary information about the households made in Soulédé-Roua between November and December 2012 and in Ndop between August and September 2012. As a result, 2000 households were randomly selected with the combination of PSM and CBT in Social Safety Net Project. After all stages done, from 15 poorest villages of Soulédé-Roua, 1500 households (corresponds to 35% of the population) were chosen by the combination of PMT and CBT to be beneficiary of the project.

In the project scope, beneficiary households were paid 360,000 CFCA Franc in the period of 24 months. They got 12 payments between the dates of November 2013 and January 2016. The payment was 20,000 CFCA in two months and 80,000 CFCA in 12th and 24th months. In average, every beneficiary households received 15,000 CFCA corresponding to 20% of the household expenditure for living in a month (Stoeffler&Nguetse-Tegoum, 2012). The payment design that included small and big payments made consciously in order to balance households' expenditure (Stoeffler, 2018). As study suggests that when it is a female of households who get the amount of payment, it is distributed more equally among household members (Quisumbing, 2000) the payment was made to female during the project.

3.2 Data

The data form the basis of this analysis provided from Baseline Survey and Endline Survey done by National Institute of Statistics. The first payment was made in November 2013 and the last one was July 2016. The baseline survey providing data about the households were firstly done in January 2013 to provide households in four categories. The first category was beneficiary households from the poorest 15 villages of Soulédé-Roua. The second category is non beneficiary households from Soulédé-Roua who were not selected by PMT despite of being selected by the community. The third category is non-beneficiary households who were not selected by the community and the fourth category is control households chosen among the poorest households in Hina. The endline survey was done 6 months after the last payment as planned in the protocol. The endline survey was done in August 2016 with the beneficiary households from Soulédé-Roua, non-beneficiary households from Soulédé-Roua and non-beneficiary (control) households from Hina. The second and the third category of baseline survey was gathered within a category in endline survey.

In the case of impact evaluation, as non-beneficiary households from the same region with beneficiary households also benefit from the treatment, comparing beneficiary with non-beneficiary households from the same region will underestimate the impact of the treatment. Instead, choosing another comparison region, which is geographically far away, and showing similarity with the region where treatment is implemented enable to avoid selection bias. In line with this purpose, Hina was selected as the control group. Hina is located in the same region, Mayo-Tsanaga, with Soulédé-Roua and actually they share the same characteristics on the subject of poverty, culture and behaviour and they are also far away from each other. Lastly, choosing Hina enables to avoid contamination, as they do not share the same market.

Baseline survey was used not only for impact evaluation design but also for PMT while endline survey was just used for impact evaluation. In the baseline survey, 2350 households were surveyed but as can be seen in Table 3.2.1 below, the data was executable for 2315 of them. Within the scope of this impact evaluation, 2315 households were surveyed in the baseline. 610 of these households were beneficiary households from Soulédé-Roua that got cash transfer, 580 of these households were selected for cash transfer but did not get any help. Additionally, 563 households from Soulédé-Roua were not targeted and did not get any cash transfer during the

programme. So for Hina, 562 households were non beneficiary meaning that these households are from Hina and did not get any help during the programme implementation

In follow-up survey, 1814 households were surveyed. 621 of them were beneficiary households from Soulédé-Roua. 320 households were from Soulédé-Roua and they did not get any cash during the program. Additionally, 307 households were from Soulédé-Roua and they were not selected for cash transfer programme and they did not get any cash. So, for Hina, 566 households were from Hina and they did not get any help within the scope of cash transfer programme.

Table 3.2.1. Distribution of Household Status According to Baseline and Follow-up Surveys

	Group 1: Beneficiary Household in *Soulédé Roua*	**Group 2: Targeted but not beneficiary households in *Soulédé Roua***	**Group 3: Household not targeted and not beneficiary households in *Soulédé Roua***	**Group 4: Non-beneficiary households in Hina**	**Total**
Baseline Survey	610	580	563	562	2315
Endline Survey	621	320	307	566	1814

Source: 2013 baseline and 2016 endline surveys

The final sample used for impact evaluation is shown in Table 3.2.2 below. 1744 households were followed from both Soulédé Roua and Hina. 605 of these households are beneficiary households from Soulédé Roua and 619 households are non-beneficiary households from Soulédé Roua. Additionally, 520 households are non-beneficiary households from Hina.

Table 3.2.2: Distribution of Households at Impact Evaluation Sample

	Beneficiary Households in Soulédé Roua	**Non-Beneficiary Households in *Soulédé Roua***	**Non-Beneficiary Households in Hina**	**Total**
Baseline Survey	610	1143	562	2315
Endline Survey	621	627	566	1814
Followed Households	605	619	520	1744

Source: 2013 baseline and 2016 endline surveys

4. METHODOLOGY

4.1 Impact evaluation

In order to measure the effect of Pilot Social Safety Nets of Cameron, the impact evaluation methods will be used. By definition, it is a method of program evaluation (Rogers et al., 2015) and trying to answer the impact of program on an interested outcome (Gertler et al., 2016). It is widely used for deciding whether scale up the program intervention or not, informing policy makers, observing efficiency of program, choosing the most effective type of program and even changing the targeted group of programs. These programs are generally designed to achieve certain goals hence the impact evaluation has an important role in understanding how effective the program work in the way of achieving its intended goals (Khandker et al., 2009).

According to Morra Imas and Rist (2009), three questions can be addressed by evaluation. The first one is descriptive questions, which is concerned with what is taking place. It is generally about processes, conditions and organizational relationships. In this method internal validity, showing the quality of data and its collection, and external validity, showing in what extent results can be confidently generalized are important (Rogers et al., 2015). The second one is normative question which is related with efficiency of targeting and whether it is resulted well or not. The last one is cause and effect questions that generally focuses on attribution. It is about the difference occurred because of implementation.

Although the main difference occurs in the form of quantitative and qualitative evaluations, there are many different forms of impact evaluation. Basically, qualitative evaluation is an evaluation method expressing the effect of treatment by no numbers but by words or images. On the other hand, quantitative evaluation is a numerical and generally based on scales or metrics (Gertler et al., 2016). Apart from that, monitoring, operational evaluation and impact evaluation are another different method used.

Monitoring tracks the key indicator in the progress; operational evaluation is about the effectiveness of program and lastly, impact evaluation deals with whether differences on the interested outputs are due to program implementation or not (Khandker et al, 2009).

This paper focuses on quantitative impact evaluation by using difference in differences method and its combination with propensity score matching with its quasi-experimental design. The important feature of this method is its decreasing selection bias problem and hence, any differences between treatment group and control group can be said because of program implementation (Shadish et al., 2002).

4.2 Difference in Differences

In the case of impact evaluation, there are different ways to analyse the impact of shock, policy change, project implementation or any other kind of changes on a population. Among these different ways, DID method is most used one in the process of impact evaluation. Especially when assignment rule is clear enough. The main idea of DID method is that it compares a group that is enrolled in a program with a group that is not enrolled in the program (Gertler et al., 2016). To do that, instead of comparing the same individual or region both before and after the implementation or measuring the difference between treated (beneficiary) and control (non-beneficiary) groups after the implementation, DID methods provides results that are more reliable by comparing treatment and control group not only after the implementation but also before the implementation. The average difference over time between before and after the treatment for non-exposed (control) group is subtracted from the average difference over time between before and after the treatment for exposed (treatment) group (Imbens&Wooldridge, 2009).

While using DID we cannot just simply subtract the measured outcome in the treatment area before the program from the measured outcome in the treatment area after the program because some of this change might occur because of time-invariant factors that we do not take into account. It weakens the comparison assuming that treatment group does not change from baseline to endline (Greene, 2012). This comparison also fails to capture casual impact. In order to cancel out this weakness, it is needed to find comparison group. Naturally, this time invariant differences will affect the size of the difference between two groups. Additionally, we cannot just

compare the region where the program is implemented and the region where the program is not implemented after the treatment. There might be another unobserved reason causing such differences that in turn causes selection bias in impact evaluation. (Gertler et al., 2016).

In order to avoid these problems, DID methods combine two differences. By combining the comparison of before and after difference in output for treatment group and before and after difference in output for control group, double differencing method enables to remove biases occurring from the permanent differences between those groups in the endline period. On the other hand, it removes biases occurring from the comparison between baseline and endline period in treatment group that could be because of time trend (Imbens&Wooldridge, 2009).

In Table 4.2.1, every possible outcomes are represented by a letter. Here, A shows the measured outcome for treatment group (those who exposed to the program) before the program, B shows the measured outcome for the same group but after the program. Similarly, C shows the measured outcome for Control Group (those who is not exposed to the program) before the program and D shows the measured outcome for the same group but after the program.

Table 4.2.1: Summary of Difference-in-Differences Approach

	Before Program	**After Program**	**Difference**
Treatment Group	A	B	(B-A)
Control Group	C	D	(D-C)
Difference			= (B-A) - (D-C)

Using the equation of DID method, the program effect after the implementation equals the equation of (B – A) – (D – C).

As shown in the table, it is possible to get more reliable program effect estimator by combining both difference. The first difference (B-A) shows the difference between the measure of outcome after the program and before the program for a group enrolled the program. It enables equation to control for constant factors over time. The second

difference enables us to cancel time-varying factors since we are comparing the measure of outcome for a group not enrolled the program. By combining this both equation, it will be possible to have more reliable estimator in impact evaluation. In summary, impact of intervention measured by using DID method is as follows:

$$DD= E\ (Y_1^T - Y_0^T \mid T = 1) - E\ (Y_1^C - Y_0^C \mid T = 0)^1$$

The result is the same in this equation. Here, Y_1^T and Y_0^T represent the outcome for treatment group after and before the treatment respectively. Y_1^C and Y_0^C represent the outcome for control group after and before the treatment respectively. $T = 1$ represents the time after implementation and T=0 represents the before implementation. Taking the difference above will provide difference in differences estimator.

To show DID model in a regression framework, we can write it as follows:

$$Y_{it}= \beta_0 + \beta_1 Treatment_i + \beta_2 Post_t + \beta_3 (Treatment_i * Post_t) + \varepsilon_{it}$$

In a simplest way, the equation showed above is the basic equation used in difference-in-differences model. In the equation, *i* refers to the household and *t* refers to the time. β_0 represents the average outcome for control group before the program. *Treatment* is the dummy variable that takes a value 1 if a group is exposed to the program and 0 otherwise while β_1 represents the difference between treatment group and control group. *Post* is another dummy variable that takes a value of 0 if the time is before program and 1 if the time is after the program while β_2 represents the time trend for a group not enrolled the program. The interaction of Post and Treatment is another dummy variable and the coefficient of the interaction term β_3 is the program effect estimator. It shows the difference in average between the beneficiary groups and non-beneficiary groups.

As shown in Table 4.2.2, when we combine both differences for treatment group and control group and afterwards use another difference, we are just left with β_3 which is program effect estimator according to difference in differences model.

[1] Notations taken from Khandker, S., B. Koolwal, G., & Samad, H. (2009). *Handbook on impact evaluation: quantitative methods and practices*. The World Bank.

Table 4.2.2: Summary of Difference in Differences in a Regression Framework

	Before Program	**After Program**	**Difference**
Treatment Group	$\beta_0+\beta_1$	$\beta_0+\beta_1+\beta_2+\beta_3$	$(\beta_2+\beta_3)$
Control Group	β_0	$\beta_0+\beta_2$	(β_2)
Difference			β_3

Although the general logic behind difference in differences model is as mentioned above, we are still left with some nonignorable factors to take into account. There are some characteristic features for both treatment and control groups both before the program and after the program. In this case, observed characteristics between treatment and control group in both time periods are included. These differences, with no doubt, have an effect on measured outcome in difference in differences outcome. In order to remove their effect and get more precise estimator for program effect we had better add them into the regression. By doing that, we will be able to lower confound bias and residual variance since these variables have an effect on dependent variable and we want to remove this effect (Gertler et al., 2016). As mentioned before, we cannot simply calculate the difference of value of outcome interest before and after the program for treatment group. To control other differences effecting the size of impact of the program on outcome interest, we need to add them into the regression and remove their effect on the dependent variable. So for that, we can add them into the regression as they captures the difference between treatment group and control group at baseline which in turn enables to get lower confound bias and residual variance since these variables have an effect on dependent variable and we want to remove this effect (Gertler et al., 2016).

Lastly, the regression model for difference in differences analysis will be as follows:

$$Y_{it}= \beta_0 + \beta_1 P_i + \beta_2 .t + \delta P_i .t + \beta_3 . X_{it} + \varepsilon_{it}$$

Y_{it} : the outcome Y_{it} for an individual i at time t in group g (treatment or control)

Pi *:* a binary variable denoting exposure to the program and taking a value P=1 for beneficiaries, and P=0 for nonbeneficiaries.

t: constitutes a binary variable taking the value 0 for pre-program measures, and 1 for post-program measures.

β_0, β_1, β_2 and δ are the regression coefficients to be estimated

X_{it} : control varibles (other characteristics for both treatment and control groups in both time periods.)

ε_{it} *: error term*

Lastly, there are also some assumptions must hold in using difference in differences estimation method. These assumptions suggest that error term needs to be uncorrelated with the other variables in the regression.

- Cov (ε_{it} , P_i) = 0
- Cov (ε_{it} , t)= 0
- Cov (ε_{it} , P_i. t) = 0

The last assumption is also known as parallel trend assumption. In short, it holds that unobserved characteristics between treatment and control group which in turn effect the participation of the program does not change over time according to the treatment status (Khandker, 2009).

4.3 Difference in Differences combined with Propensity Score Matching

Propensity Score Matching (PSM) calculates a score based on observed characteristics before the program implementation that shows the possibility of enrolling the program for treatment group and control group and afterwards match them according to this score. Rosenbaum and Robin (1983) firstly used propensity score matching in order to balance intervention and comparison groups by using observed baseline characteristics. To balance the groups, matching, weighting and sub classification are the ways used in the process (Stuart, 2010). The aim of using it is to make comparison groups as similar as possible (Stuart et al., 2014). With matching, according to observed characteristics, control group is developed that is similar to treatment group. In propensity score matching, it is not necessary to match every observation from treatment group with an observation from control group. Instead, propensity score is

calculated for every observation for both groups that shows the probability of enrolling the program (Gertler et al., 2016). Observations are matched with similar observations based on observational characteristics and then the mean differences between treatment group and control group gives the average treatment effect (Khandker, 2009). In the process of calculation, observed characteristics before the intervention is used since the values after the intervention may be affected from the intervention.

Two conditions must hold to verify the validity of PSM. The first one is conditional independence suggesting that participation is not affected from the unobserved characteristics; the second one is sizable common support across the participant and non-participant samples (Khandker, 2009).

$$P(X) = Pr\ (T= 1 \mid X) = \alpha + \beta X_i + \varepsilon_i$$

In the equation above, T is a dummy variable representing whether an observation is beneficiary or not. Given the observable characteristics X, the probability of enrolled the program gives the propensity score. The variables forming X should come from data collected before the implementation. As seen, the propensity score model is a probit/logit model with T as the dependent variable and X as independent variable. In another words, the propensity score is the conditional probability of being beneficiary of the intervention given before treatment characteristics X.

One of the reasons using DID is its flexibility as it can be combined with propensity score matching such as Kernel Propensity Score Matching (Villa, 2012). In order to avoid potential of selection bias problem DID combined with PSM enables analysis to avoid this problem (Khendkar, 2010). One way to use DID is combining it with PSM gained from the baseline data to make comparison groups similar and afterwards run double difference to matched groups. PSM by its own are not able to consider unobserved characteristics, which in turn effect being enrolled the program. Therefore, matching is used to reduce heterogeneity between the groups before the intervention. It is not always valid that matching provides more similar comparison groups comparatively randomized selection (Center for Effective Global Action, 2016). However, when the scores generated by PSM for both groups are in the same range, PSM performs better in matching the groups not directly according to their observed baseline characteristics but according to the probability of their being enrolled in the program. In this, the condition named as “common support condition” is hold. As a

result, the combination of PSM and DID is one of the most used method in the impact evaluation as it provides comparison and treatment groups as similar as each other and afterwards treatment is randomized within those matched groups.

4.4. Balance Test

Comparatively to randomized assignment rule, regression discontinuity design or IV (instrumental variable), DID needs stronger assumptions to be valid (Gertler et al., 2016). The most important assumption while using DID is that it is assumed that control group and treatment group are similar enough at baseline. In another words, it means that the difference between treatment group and control group is the same if there were no intervention. In order to estimate more precise impact evaluation, we should firstly verify that treatment group and control group have similar trend in basic characteristics before the program implemented. As mentioned, DID method compares the trend between beneficiary and non-beneficiary households rather than the comparing the same household before and after the implementation (Gertler et al., 2016). The test is needed to see whether treatment group and control group have the same trend before the program or not. These two groups are not necessarily needed to be the exactly the same but they are expected to show at least close trend in the absence of program.

The most crucial part of comparing two groups is that they are highly required to provide that they both would show the same reaction if any of them was exposed to the program. In other words, the condition of independence of potential outcome must hold. It means that there should be no difference at their baseline characteristics. Otherwise, selection bias will occur if they are not the same at basic characteristics that are correlated with the dependent variable used to estimate the impact of the program.

To do that, we can use the equation written below. As it can be seen, time is zero because we focus on the similarity at baseline.

$$Y_{i,\,t=0} = \beta_0 + \beta_1\,(\,Treatment_i) + \varepsilon_i$$

In the regression model shown above, β_0 represents the value for control group before the project and and β_1 is the mean value for treatment group. If this assumption of similarity does not hold, the estimated impact of the program will be biased. By using OLS, we test the equality of coefficient that refers to the baseline differences between

treatment group and control group. Y_i represent the baseline characteristics that we are looking for them to have at least similar trend and by regressing them on binary variables shown in the equation we will be able to verify the similarity of beneficiary group and non-beneficiary group at baseline.

5. EMPIRICAL RESULTS

The results are divided into two parts as education and labor. In the empirical results both the comparison of beneficiary households in Soulédé Roua and Hina and all households from Soulédé Roua and Hina are presented for DID method and the combination of PSM and DID are presented for the comparison of beneficiary households in Soulédé Roua and Hina. Additionally, the application of difference in differences method without controlling any variable and difference in differences method with control variables are presented for every comparison. Before proceeding to disclose the results, the explanation of results gained from testing the similarity of two groups are explained.

5.1 Balance Table

To interpret the results of this analysis, Table 2 and Table 3 in Annex 1 provide descriptive statistics for beneficiary households in Soulédé Roua and nonbeneficiary households in Hina comparison and all households in Soulédé Roua and households in Hina comparison respectively. The first column shows the average value for all households. The second column shows the same information for households living in Hina and the third column shows the average values for beneficiary households in Soulédé Roua and all households in Soulédé Roua respectively. In Table 2 in Annex 1, the third column shows all households living in Soulédé Roua. In both tables, the last column shows the difference between control group and treatment group and the standard errors are given in the parenthesis.

It can be seen from the tables that both groups, those beneficiary households from Soulédé Roua and non-beneficiary households from Hina, are relatively but not completely similar. In the case of education, both groups show similarity both for children and their parents especially in dropping out of the school, primary level of education, secondary first cycle of education, secondary second cycle of education and the number of children do not go to school. Additionally, the characteristics of head of

households show similarity between the two groups in the case of age, sex, married polygamy and being separated. Moreover, the number of persons between 0 and 4 and the number of persons aged over 60 are another similarity between two groups. In the case of household heads with no religion, both groups show similarity. Lastly, beneficiary households from Soulédé Roua and non-beneficiary households Hina show similar characteristics in the case of unemployment.

However, there are also some differences worth to mention between those groups. Household size is smaller in Hina comparing to beneficiary households in Soulédé Roua while there are more persons between 5 and 14 and more persons between 15 and 59 in Soulédé Roua. The number of Muslim household heads is greater than Soulédé Roua while there are more Christian household heads in Soulédé Roua. In the case of marital status of household heads, there are more single and widow household heads in Hina and more monogamy married household heads in Soulédé Roua. In terms of education, beneficiary households living in Soulédé Roua spend much more than non-beneficiary households living in Hina. Concordantly, the number of children going to school and years spent for education are larger in Soulédé Roua comparatively to Hina. There are some differences in employment between two regions. The number of adults and children who have permanent job are larger in Soulédé Roua and there are more working children in Soulédé Roua as well. Children and adults living in Soulédé Roua work more than children and adults living in Hina per week.

5.2 Education

In order to analyse the effect of Unconditional Cash Transfer Pilot Program on education of households living on the far north of Cameroon, four different indicators are used. The first one is the number of children going to schooling last two years. Since baseline data from 2013 and endline data from 2016 used in the process of evaluating, this dependent variable is generated from the surveys asked to every individual whether they participate school this year and whether they participated school last year. Children who was going to school a year before survey done and the year of surveying considered as going to schooling last two years. The second dependent variable is the number of children dropping out of the school. In the way of generating this variable, time interval was taken as one school year which means whether a child drop out of school in a year or not. The third indicator for evaluating the education is the number of children going to school. The variable is based on

whether a child goes to school in the year of surveying or not. The last indicator for evaluating education is the household expenditures for education.

In Table 5.1 below, the results of the regression without any control variables provided. According to results, there is statistically significant increase in the number of children going to school last 2-years and the number of children going to school. Additionally, although not statistically significant, there is also increase in the number of children dropping the school and increase in households' expenditures for education. These regressions as noted below Table 5.1.1 do not contain any control variable. Standard errors are shown in the parenthesis and clustered at village level. Hence, R^2 for these regressions are quite small which corresponding to the explained variance in dependent variables.

Table 5.1.1: Comparison of beneficiary and non-beneficiary households for education

Variables	The number of children participating the school last 2-years	The number of children dropped the school	The number of children going to school	Households expenditure for education
estimator	0.550***	0.006	0.667***	0.319
	(0.108)	(0.051)	(0.096)	(1.015)
treatment	0.145	-0.033	0.184	5.096*
	(0.291)	(0.044)	(0.305)	(2.738)
time	-0.726***	-0.019	-0.783***	0.555
	(0.085)	(0.043)	(0.055)	(0.831)
Constant	1.695***	0.144***	1.912***	6.177**
	(0.277)	(0.039)	(0.290)	(2.259)
R^2	0.05	0.0015	0.05	0.03
N	2047	2047	2047	2250

* $p<0.1$; ** $p<0.05$; *** $p<0.01$
Note: The regressions do not contain any control variable.
Note-2: The standard errors are clustered at village level and shown in the parenthesis

The importance of adding control variables that correspond to the observed differences for treatment and control groups occur here. By adding them into the regression used above, their effect on dependent variable will be removed and reducing in confounding bias and residual variance will be provided. These control variables are thought to have an effect on dependent variables in measuring the effect of project for beneficiary households. In order to remove their effect and get more precise estimator for program effect we had better add them into the regression

In Table 5.1.2, the results showing the effect of intervention on educational indicators gained by using DID including control variables presented. In the regressions used for

measuring educational indicators, household size, age of household head, the number of children in the household and dummy variables for female household head, educated household head, unemployed household head and single household head are used as control variables. Household size corresponds to the number of individuals in households, the number of children shows how many children between age of 5 and 14 are in household and age of household head shows household head's age while dummy variable for single household covers single, separated or widow household heads together and dummy variable for educated household head is equal 1 if household head has ever attended a school and 0 if otherwise. Last, the variable named as female household head is equal to 1 if household head is female and 0 if it is male.

To interpret the results presented in Table 5.1.2, for the first regression, it is seen that there is an increase in the number of children going to school last 2-years and the coefficient for this increase is 0.203 and statistically significant. By adding control variables into the regression, R^2 is 0.58 which means that the variables taken into the regression can explain 58% of variation in the dependent variable. Among control variables, household size, age of household head, female household head, number of children in the household and educated household head are statistically significant. The sign of these variables shows that in which direction dependent variables are affected from these variables. Lastly, it can be deduced from this regression that the children living in beneficiary households show more stable education life considering 2 years after intervention.

The third regression in Table 5.1.2 shows the parallel results with the first regression in the same table. It is seen that the number of children going to school increased by 0.264 for those beneficiary households and this result is statistically significant as well. By adding control variables into the regression, R^2 is 0.63 which means that the variables taken into the regression can explain 63% of variation in the dependent variable. Among control variables household size, age of household head, female household head, number of children in the household and educated head of household are statistically significant. Lastly, it is seen that, concordantly to first results, the number of children going to school increased for beneficiary households after intervention.

Although the results are not statistically significant, the second and the fourth regression show the number of children dropped the school and the expenditure of households for education. For the number of children dropped the school, it seen that there is a decrease in the number of children dropped the school by 0.02 for beneficiary households after intervention. Although the estimator is not statistically significant, it is seen that there is a decrease in dropping the school. Among control variables, only household size and the number of children in the household are statistically significant. R^2 for this regression is 0.04 that is relatively small and means the variables added into the regression can explain only 4% of variation in the dependent variable. Lastly, the forth column in Table 5.1.2 shows the total expenditure of households for education. Although the estimator is not statistically significant, total expenditure of households increased by 0.836 for beneficiary households after intervention. Among control variables household size, age of household head, educated household head and single household head are statistically significant. R^2 for this regression is 0.27 and it means that the variables taken into the regression can explain 27% of variation in the dependent variable. Lastly, the inference from this regression is that by elevating the liquidity constraints for households living in Soulédé Roua, although there is no condition for that, total expenditure of households for education increased after intervention.

Another important point to mention about is the number of observation. For the first three regressions, the number of observations presented in the last row is 2047 and the number of observations is 2250 for households' expenditure since the expenditure is calculated in the context of education without considering children defined in the context of this study.

Table 5.1.2: Comparison of beneficiary and non-beneficiary households for education with control variables

Variables	The number of children participating the school last 2-years	The number of children dropped the school	The number of children going to school	Households expenditure for education
Estimator	0.203**	-0.020	0.264***	0.836
	(0.092)	(0.053)	(0.077)	(0.942)
Treatment	0.201	-0.023	0.251**	4.096**
	(0.124)	(0.038)	(0.112)	(1.875)
Time	-0.363***	0.007	-0.350***	-0.575
	(0.078)	(0.047)	(0.059)	(0.704)
Household Size	-0.019*	0.005*	-0.017*	2.096***
	(0.009)	(0.004)	(0.008)	(0.402)
Age of Household Head	0.004***	0.001	0.003**	0.151***
	(0.001)	(0.000)	(0.001)	(0.043)

Table 5.1.2 (continued): Comparison of beneficiary and non-beneficiary households for education with control variables

Variables	The number of children participating the school last 2-years	The number of children dropped the school	The number of children going to school	Households expenditure for education
Female Household Head (1=Yes, 0= No)	0.203**	-0.019	0.183*	1.452
	(0.107)	(0.022)	(0.097)	(1.521)
Number of children in the household	0.532***	0.028***	0.622***	-0.307
	(0.027)	(0.008)	(0.029)	(0.526)
Educated Head of Household (1=Yes, 0= No)	0.365***	0.005	0.375***	5.241***
	(0.079)	(0.024)	(0.069)	(1.565)
Household Head is Unemployed (1=Yes, 0= No)	0.801	-0.048	0.438	7.229
	(0.717)	(0.701)	(0.424)	(5.481)
Single Household Head (1=Yes, 0= No)	-0.032	0.038	-0.037	3.488*
	(0.106)	(0.031)	(0.09)	(1.753)
Constant	-0.191***	-0.037	-0.199*	-16.428***
	(0.133)	(0.053)	(0.106)	(4.048)
R^2	0.58	0.04	0.63	0.27
N	2047	2047	2047	2250

* $p<0.1$; ** $p<0.05$; *** $p<0.01$
Note: The standard errors are clustered at village level and shown in the parenthesis

Table 5.1.3 shows the results of using matching method for the same four indicators. In this table, the results are gained as follows: Firstly, a probit model is estimated by running a regression based on before treatment characteristics of households. From this first stage, the propensity score is obtained by computing the predicted values. With the help of calculating propensity score, the next step is to find a comparable match for every treated households from those controlled households with a similar propensity score. Hence, a household with characteristics such that its likelihood of beneficiate from the project are the same as the treated household for which a match is sought. In practice, matching generally occurs when propensity scores for treatment group overlap with propensity scores for control group that is called as common support. Once matching is performed, differences in the values of indicators within pairs are computed and the averages of these differences are gained in order to estimate the effect of treatment. As mentioned, in table below, differences are shown in bold.

Table 5.1.3: Results for Propensity Score Matching for education

Variable	Sample	Treated	Controls	Difference	S.E.	t-stats
schooling for 2-years	**Unmatched**	1.75880282	1.37288136	0.385921461	0.096973099	3.98
	ATT	1.75880282	1.27992958	**0.478873239**	0.151798032	3.15
dropping school	**Unmatched**	0.103873239	.18079096	-0.076917721	0.029219684	-2.63
	ATT	0.103873239	.193661972	**-0.089788732**	0.051108037	-1.76
going to school	**Unmatched**	2.09540636	1.61016949	.485236869	.1124711259	4.31
	ATT	2.09540636	1.41696113	**.67844523**	.184105054	3.69
total expenditure	**Unmatched**	12.8908451	9.54985876	3.34098633	1.24276906	2.69
	ATT	12.8908451	10.3953345	**2.49551056**	2.02261679	1.23

In Table 5.1.4, the results gained by using PSM combined with DID presented. In this context, the indicators are compared at follow-up between treated households and a set of matched control households from both treatment and control households.

After using nearest neighbour propensity score matching, DID method applied to get the results above. According to these results, increase in the number of children going to school last 2-years, the number of children going to school and households expenditure for education increased while the number of children dropped the school decreased after their families received cash transfer. All estimators are statistically significant when using PSM combined with DID.

Table 5.1.4: Results for Propensity Score Matching combined with DID for education

	PSM combined with DID			
	The number of children going to school last 2-years	**The number of children dropped the school**	**The number of children going to the school**	**Households expenditure for education**
Estimator (PSM+DID)	0.181** (0.080)	-0.105*** (0.036)	0.267*** (0.077)	1.835** (0.897)
Coefficient	-0.262*** (0.056)	0.098*** (0.025)	-0.270*** (0.054)	-0.889 (0.634)
R-square	0.36	0.06	0.53	0.28
N	1136	1136	1136	1136

*** p<0.01 ** p<0.05 * p<0.1 (Standard errors are in parenthesis)

Apart from comparing beneficiary and non-beneficiary households, comparison of households living in Soulédé Roua and Hina are additionally presented in the Annex. In comparison of all households in Soulédé Roua instead of comparing just beneficiary households, there are relatively but not completely similar results. Although, there is an increase in the number of children participating the school last 2-years, this increase

is not statistically significant when comparing all households from Soulédé Roua and Hina. Additionally, in spite of increase in the number of children going to school and the expenditures of households for education, there is an increase in the number of children dropping the school. Further details are presented in the Annex about this comparison.

5.3 Labor

As it still stands as a fact for children living the far north of Cameroon, child labor is another dimension analysed in this paper. To observe whether Unconditional Cash Transfer Pilot Project impact children living in beneficiary households in Soulédé Roua, two indicators have been used. The first one is the number of children, at age of 5 and 18, engaged in any economic activity last 12-months. This activity consists of paid or unpaid work or self-employed. The second indicator is named as the number of working children who are at age of 5 and 18. The difference between these 2 indicators are that the second one consists of households' chores, helping a family business and working as student additionally.

Table 5.2.1: Comparison of beneficiary and non-beneficiary households for child labor

Variables	The number of children engaged in any economic activity last 12-months	The number of working children
Estimator	0.088	0.121
	(0.162)	(0.191)
Treatment	0.191	0.692**
	(0.201)	(0.307)
Time	-0.0717	-0.057
	(0.131)	(0.143)
Constant	1.322***	1.768***
	(0.183)	(0.291)
R^2	0.06	0.03
N	2166	2216

*p<0.1;**p<0.05;***p<0.01

Note: The regressions do not contain any control variable.

Note-2: The standard errors are clustered at village level and shown in the parenthesis

In Table 5.2.1, comparison of beneficiary households and non-beneficiary households are presented without using any control variables. Although positive increases are seen after the implementation of the project, the results suggested in Table 5.3 are not statistically significant. The value of R^2 for the first regression is just 0.06 while it is 0.03 for the second regression, which means the variation in dependent variable, is just explained by 1 percent for the first regression and 3 percent for the second one.

Again, it is better to add control variables in the regression to isolate the effect of the project from other differences between comparison groups. The control variables used in the regressions are household size, age of household head, the number of individuals between age of 15 and 59 in the households, number of persons between age of 5 and 14, maximum years spent for education in households, years spent for education and dummy variables for single household head, female household head and whether household head is ever attended school. Differently from those used in measuring education, years spent for education are generated by calculating the maximum education level reached by any member of households and then transformed to years.

Table 5.2.2. Comparison of beneficiary and non-beneficiary households for child labor

Variables	The number of children engaged in any economic activity last 12-months	The number of working children
Estimator	0.115	0.113
	(0.165)	(0.173)
Treatment	-0.226	0.152
	(0.139)	(0.159)
Time	-0.164	-0.209**
	(0.132)	(0.119)
Household size	0.045***	0.103***
	(0.014)	(0.024)
Age of household head	0.007***	0.026***
	(0.001)	(0.002)
Number of persons between 15-59	0.080**	0.713***
	(0.029)	(0.043)
Single household head (Yes=1, No=0)	0.011	0.223**
	(0.061)	(0.083)
Female household head (Yes=1, No=0)	0.098	0.569***
	(0.064)	(0.098)
Number of persons between 5-14	0.560***	0.491***
	(0.028)	(0.033)
Educated household head (Yes=1, No=0)	-0.115**	-0.045
	(0.040)	(0.070)
Years spent for education at household level	-0.038***	0.075***
	(0.012)	(0.011)
Constant	-0.144	-2.032***
	(0.097)	(0.154)
R^2	0.53	0.69
N	2166	2216

*p<0.1;**p<0.05;***p<0.01
Note: The standard errors are clustered at village level and shown in the parenthesis.

When adding control variables in the regressions above, although substantially increase in R^2 is seen, there is an increase both in the number of children engaged any economic activity last 12-months and the number of working children as can be seen

in Table 5.2.2. The results provided here are statistically insignificant.

Although it is not statistically significant, the first regression suggest that the number of children engaged in any economic activity last 12-months increased by 0.115 for those beneficiary households after intervention. By adding control variables into the regression, R^2 is 0.53 which means that the variables taken into the regression can explain 53% of variation in the dependent variable. Among control variables household size, age of household head, the number of persons between age of 15 and 59, the number of persons between age of 5 and 14, educated household head and years spent for education are statistically significant.

The second regression suggest that the number of working children increased for those beneficiary households after intervention although not statistically significant. By adding control variables into the regression, R^2 is 0.69, which means that the variables taken into the regression can explain 69% of variation in the dependent variable. Among control variables household size, age of household head, the number of persons between age of 15 and 59, the number of persons between age of 5 and 14 and years spent for education are statistically significant.

In the Annex, comparison of all households from Soulédé-Roua and Hina provided as well both for the regression without any control variables and with control variables. The findings of this comparison show parallelism with the results of comparing only beneficiary households from Soulédé-Roua and Hina. The positive increase on both regressions show increase in this comparison as well although for the first regression increase in smaller. Further details provided in Annex for this comparison.

Additionally, Table 5.2.3 shows the results of using matching method for the same four indicators. As shown below, the number of children engaged in any economic activity last 12-months decreases by 0.183 for beneficiary households and the number of working children increases by 0.093 for beneficiary households.

Table 5.2.3: Results for Propensity Score Matching

Variable	Sample	Treated	Controls	Difference	S.E.	t-stats
children engaged economic activity	**Unmatched**	1.53078203	1.2505176	0.280264432	0.091018383	3.08
	ATT	1.53078203	1.71381032	**-0.18302**	0.165851287	-1.10
working children	**Unmatched**	2.52412646	1.71014493	0.813981528	0.133904872	6.08
	ATT	2.52412646	2.43094842	**0.093178037**	0.240038889	0.39

Table 5.2.4: Results for Propensity Score Matching combined with DID for labor

	PSM combined with DID	
	The number of children engaged in any economic activity last 12 months	**The number of working children**
Estimator (PSM+DID)	0.288** (0.113)	0.221* (0.122)
Coefficient	-0.272*** (0.080)	-0.158* (0.86)
R-square	0.45	0.19
N	1200	1202

*p<0.1; **p<0.05; ***p<0.01

In Table 5.2.4, aforementioned process is implemented for propensity score matching and afterwards DID method implemented to get the results. As seen, there is an increase in the number of children engaged in any economic activity last 12 months by 0.288 and this result is statistically significant. R^2 is 0.45 for this regression which shows that 45% of variation in dependent variable is explained by the model. The second regression presents that there is an increase in the number of working children for those households who beneficiate from pilot project. The increase is by 0.221 and the result is statistically significant. R^2 is 0.19 for this regression which shows that 19% of variation in dependent variable is explained by the model.

6. CONCLUSION AND POLICY RECOMMENDATIONS

This thesis analyses the impact of Unconditional Cash Transfer Pilot Project of Cameroon on children in the case of education and labor. Since the implementation area of the project struggle with chronic poverty, these two indicators play a key role in the way of achieving its goals for Cameroon. In short, the question "How children living in beneficiary households are affected from Unconditional Cash Transfer Pilot Project in the context of education and labor?" is asked in this study.

The thesis provides that there is a positive increase in the number of children going to school and decrease in the number of children dropping the school concordantly. By providing their school life for last 2 school years, this thesis shows that there is also increase in their stability going to school. Naturally, this increase in schooling brings extra cost for families. Hence, the educational expenditure of beneficiary households for their children increases as well. The results of the paper are verified by different studies providing improvement in education and increase in the number of children going to school (Bastagli et al., 2016; Baird et al., 2013 and Akresh et al., 2013). Likewise, the result of this paper about the number of children dropped the school is also consistent with the results provided by Kilburn et al.(2017), as they also provided decreasing in the dropping. However, this study also provides that there is an increase in the number of child labor among households received cash. This increase is seen in both the number of children working in paid works and the number of children engaging with family business or household chores. An explanation for these results can be made by saying that it always takes more time to observe labor statistics especially for the case of children. Since the implementation area of the project is the poorest region of Cameroon, the priorities of households might change according to reality of the region and in turn, they encourage their children to work which in turn might increase child labor. Since the region struggle with chronic poverty, decrease in child labor may take longer time to be observed in statistics.

The conclusions for simultaneous increase in child education and child labor provided by US Department of Labor as its reports provides increasing the combination of work

and school in Cameroon (DOL, 2011-2017). Moreover, the result of this paper is consistent with the study by Hoop and Rosati (2014) as they found that increase in the indicators for child education does not have to mean decrease in child labor. Rowlings and Rosati (2005) also found increase in education while they could provide less evidence for decreasing in child labor. Considering both results together, increase in child education brings extra costs to households' budget, which, in turn, corresponds to increase in households' expenditure for education. To defray this increase, households are tend to send their children to work. Hence, there is an increase in the number of working children. The results provides that children living in beneficiary households combine work and school together. The striking result of this paper is that child education and child labor are not substitutes but rather complementary. Since, the implementation area is the poorest part of Cameroon, opportunity cost of education is substantially high for households living there as it can be seen from the increase in child labor as well. For this reason, it will cause decreasing in household budget when they give up from sending their children to work. For instance, Rosati (2016) provided that investing in productive assets instead of human capital might increase child labor as the relative prices of children's time use changes.

There are a few limitations of this thesis worth to mention. Firstly, the project was designed to get short-term results. However, the indicators used for education and labor are those that can be observed in long term. Known that there are about 2.5 years between baseline and endline surveys, it might be needed longer term to be seen because of its very nature. Secondly, far north part of Cameroon is the poorest part of the country. Therefore, priorities of households are determined by life-sustaining needs rather than investing in human capital. Hence, opportunity cost of education plays a key role in deciding whether investing in education or having them in work. Lastly, in the case of method used to evaluate the impact, since households are not selected randomly, one might get better results by using the combination of Difference in Differences with Propensity Score Matching with more effective baseline characteristics to match the households according to their propensity score. Lastly, the effect of pilot project is of relevance with transfer size as Davis et al. (2002) presented,

so providing 20% of monthly expenditure of households is relatively small amount to observe its effect on long-term indicators such as child education and child labor.

Finally, to give recommendations at the end of this paper, since the number of children going to school was increased with Unconditional Cash Transfer Pilot Project, the government should give more emphasize on child labor as increase in education comes with the combination of child labor. In order to that, it can be suggested that instead of providing cash to people, it might be more efficient to invest in structural reforms which, in turn, will be helpful change households' expectations for future. When expected rate of return on education is higher, child labor will lose its attractiveness for households. In order to fight against the chronic poverty in the region, the government should combine its policies with other contributively and protective policies specified for children to decrease intergenerational poverty. Hence, this combination of policies will in turn increase the expectations and return on education while causing structural change in the region. The last suggestion is to the amount of transfer. As mentioned before, providing 20% of their monthly expenditure to households is not high enough to change their decision on children. As a result, in order to increase well-being of poor households and especially children living in those households, the government or international organizations should focus more on well-designed and goal-specified projects which aims to solve the structural problems of the country.

7. REFERENCES

Adato, M., De la Briere, B., Mindek, D., & Quisumbing, A. R. (2000). The Impact of Progresa on Women's Status and Intrahousehold Relations: Final Report (No. 600-2016-40133).

Agiobu-Kemmer, I. S. (1992). Child survival and child development in Africa. Bernard van Leer Foundation.

Akresh, R., De Walque, D., & Kazianga, H. (2013). Cash transfers and child schooling: evidence from a randomized evaluation of the role of conditionality. The World Bank.

American Institutes for Research (AIR) (2014). Zambia's Child Grant Program: 36-Month Impact Report. Washington, DC: American Institutes for Research.

Arnold, C., Conway, T., & Greenslade, M. (2011). Cash transfers literature review.

Baez, J. E., & Camacho, A. (2011). Assessing the long-term effects of conditional cash transfers on human capital: evidence from Colombia. The World Bank.

Baird, S., Chirwa, E., McIntosh, C., & Özler, B. (2010). The short-term impacts of a schooling conditional cash transfer program on the sexual behavior of young women. Health economics, 19(S1), 55-68.

Baird, S., Ferreira, F. H., Özler, B., & Woolcock, M. (2013). Relative effectiveness of conditional and unconditional cash transfers for schooling outcomes in developing countries: a systematic review. Campbell systematic reviews, 9(8).

Baird, S., McIntosh, C., & Özler, B. (2011). Cash or condition? Evidence from a cash transfer experiment. The Quarterly journal of economics, 126(4), 1709-1753.

Bastagli, F. (2009). Conditionality in public policy targeted to the poor: promoting resilience?. Social Policy and Society, 8(1), 127-140.

Bastagli, F., Hagen-Zanker, J., Harman, L., Barca, V., Sturge, G., Schmidt, T., & Pellerano, L. (2016). Cash transfers: what does the evidence say. A rigorous review of programme impact and the role of design and implementation features. London: ODI.

Benhassine, N., Devoto, F., Duflo, E., Dupas, P., & Pouliquen, V. (2015). Turning a shove into a nudge? A" labeled cash transfer" for education. American Economic Journal: Economic Policy, 7(3), 86-125.

Boone, R., Covarrubias, K., Davis, B., & Winters, P. (2013). Cash transfer programs and agricultural production: the case of Malawi. Agricultural Economics, 44(3), 365-378.

Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. The future of children, 55-71.

Cook, T. D., Campbell, D. T., & Shadish, W. (2002). Experimental and quasi-experimental designs for generalized causal inference. Boston, MA: Houghton Mifflin.

Daidone, S., Davis, B., Dewbre, J., & Covarrubias, K. (2014). Lesotho's Child Grant Programme: 24-month impact report on productive activities and labour allocation. Food and Agriculture Organization of the United Nations, Rome.

Davis, B., Handa, S., Ruiz-Arranz, M., Stampini, M., & Winters, P. (2002). Conditionality and the impact of programme design on household welfare: comparing two diverse cash transfer programmes in rural Mexico (No. 02-10).

De Brauw, A., & Hoddinott, J. (2011). Must conditional cash transfer programs be conditioned to be effective? The impact of conditioning transfers on school enrollment in Mexico. Journal of development Economics, 96(2), 359-370.

De Hoop, J., & Rosati, F. C. (2014). Cash transfers and child labor. The World Bank Research Observer, 29(2), 202-234.

Devereux, S., McGregor, J. A., & Sabates-Wheeler, R. (2011). Introduction: social protection for social justice. IDS Bulletin, 42(6), 1-9.

Doetinchem, O., Xu, K., & Carrin, G. (2008). Conditional cash transfers: What's in it for health?. Technical briefs for policy-makers, 1, 1-3.

Duryea, S., & Morrison, A. (2004). The effect of conditional transfers on school performance and child labor: Evidence from an ex-post impact evaluation in Costa Rica.

Eswaran, M., & Malhotra, N. (2011). Domestic violence and women's autonomy in developing countries: theory and evidence. Canadian Journal of Economics/Revue canadienne d'économique, 44(4), 1222-1263

Evans, D., Hausladen, S., Kosec, K., & Reese, N. (2014). Community-based conditional cash transfers in Tanzania: results from a randomized trial. The World Bank.

Fernald, L. C., & Hidrobo, M. (2011). Effect of Ecuador's cash transfer program (Bono de Desarrollo Humano) on child development in infants and toddlers: a randomized effectiveness trial. Social science & medicine, 72(9), 1437-144

Fiszbein, A., & Schady, N. R. (2009). Conditional cash transfers: reducing present and future poverty. The World Bank.

Garcia, M., & Moore, C. M. (2012). The Rise of Cash Transfer Programs in Sub-Saharan Africa.

Gentilini, U., Honorati, M., & Yemtsov, R. (2014). The state of social safety nets 2014. The World Bank, Washington, DC.

Gerber, A. S., & Green, D. P. (2012). Field experiments: Design, analysis, and interpretation. WW Norton.

Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., & Vermeersch, C. M. (2016). Impact evaluation in practice. The World Bank.

Hagen-Zanker, J., Bastagli, F., Harman, L., Barca, V., Sturge, G., & Schmidt, T. (2016). Understanding the impact of cash transfers: the evidence. ODI Briefing. London: Overseas Development Institute.

IDO, (2011-2014). 2017 Findings on the Worst Forms of Child Labor

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. Journal of economic literature, 47(1), 5-86.

International Labour Office (ILO) (2010), Social Security for social justice and a fair globalization (Geneva) and (2010), Extending Social Security to All, A Guide Through Challenges and Options, (Geneva)

Kabeer, N., & Waddington, H. (2015). Economic impacts of conditional cash transfer programmes: a systematic review and meta-analysis. Journal of Development Effectiveness, 7(3), 290-303.

Kabeer, N., Piza, C., & Taylor, L. (2012). What are the economic impacts of conditional cash transfer programmes? A systematic review of the evidence. Eppi Centre, Social Science Research Unit, Institute of Education & University of London (eds.).

Khandker, S., B. Koolwal, G., & Samad, H. (2009). Handbook on impact evaluation: quantitative methods and practices. The World Bank.

Kilburn, K., Handa, S., Angeles, G., Mvula, P., & Tsoka, M. (2017). Short-term impacts of an unconditional cash transfer program on child schooling: Experimental evidence from Malawi. Economics of education review, 59, 63-80.

Künnemann, R., & Leonhard, R. (2008). A human rights view on the potential of social cash transfers for achieving the millennium development goals. Germany: Brot für die Welt and Evangelischer Entwicklungsdienst.

Lin, Justin/Phumaphi, Joy (2009): «Foreword». En: Fiszbein/ Schady et al. Conditional Cash Transfers. Reducing present and future poverty. Washington DC: The World Bank. Pp. xi-xiii.

Luseno, W. K., Singh, K., Handa, S., & Suchindran, C. (2013). A multilevel analysis of the effect of Malawi's Social Cash Transfer Pilot Scheme on school-age children's health. Health policy and planning, 29(4), 421-432

Macours, K., Schady, N., & Vakis, R. (2008). Cash transfers, behavioral changes, and cognitive development in early childhood: evidence from a randomized experiment. The World Bank.

Maluccio, J., & Flores, R. (2005). Impact evaluation of a conditional cash transfer program: The Nicaraguan Red de Protección Social. Intl Food Policy Res Inst.

Merrick, Joav (2008). Child Health and Human Development Yearbook

Merttens, F., Pellerano, L., O'Leary, S., Sindou, E., Attah, R., Jones, E. and Martin, S. (2015). Evaluation of the Uganda Social Assistance Grants for Empowerment (SAGE) Programme:impact after one year of programme operations 2012–2013. Evaluation Report. Oxford: Oxford Policy Management and Kampala: Department of Anthropology and Sociology, University of Makerere.

Miller, C., & Tsoka, M. (2012). Cash transfers and children's education and labour among Malawi's poor. De velopment Policy Review, 30(4), 499-522.

Morra Imas, L. G., & Rist, R. (2009). The road to results: Designing and conducting effective development evaluations. The World Bank.

Mundial, B. (2012). Resilience, equity and opportunity: The World Bank's social protection and labor strategy 2012–2022. Informe de Consultorías, Banco Mundial, Washington DC.

Nguetse-Tegoum, P., & Stoeffler, Q. (2012). Programme de transferts monetaires sociaux: Le ciblage des pauvres chroniques. Unpublished, World Bank, Yaoundé.

Rawlings, L. B., & Rubio, G. M. (2005). Evaluating the impact of conditional cash transfer programs. The World Bank Research Observer, 20(1), 29-55.

Rogers, P., Hawkins, A., McDonald, B., Macfarlan, A., & Milne, C. (2015). Choosing appropriate designs and methods for impact evaluation. Office of the Chief Economist, Department of Industry, Innovation and Science, Australian Government.

Romeo, A., Dewbre, J., Davis, B., and Handa, S. (2014). The Long Term Impacts of Cash Transfers in the Context of Inflation: The Case of the CT-OVC Programme in Kenya. Mimeo, unpublished. Rome: FAO.

Rosati, F. C. (2016). Can Cash Transfers Reduce Child Labor? IZA, World of Labor.

Saavedra, J. E., & García, S. (2012). Impacts of conditional cash transfer programs on educational outcomes in developing countries: a meta-analysis. RAND Labor and Population Working Paper Series, WR-921-1.

Schady, N., & Paxson, C. (2007). Does money matter? The effects of cash transfers on child health and development in rural Ecuador. The World Bank.

Schultz, T. P. (2004). School subsidies for the poor: evaluating the Mexican Progresa poverty program. Journal of development Economics, 74(1), 199-250.

Seidenfeld, D., & Handa, S. (2011). Results of the three-year impact evaluation of Zambia's Cash Transfer Program in Monze District final report. Washington, DC: American Institutes for Research.

Stoeffler, Q., Mills, B., & Del Ninno, C. (2016). Reaching the Poor: cash transfer program targeting in Cameroon. World Development, 83, 244-263.

Stoeffler, Q., Nguetse-Tegoum, P., & Mills, B. (2015). Generating a system for targeting unconditional cash transfers in cameroon. Effective Targeting Mechanisms for the Poor and Vulnerable in Africa. Washington, DC: World Bank.

Stoeffler, Quentin (2018). From Safety to Productive Net: Unconditional Cash Transfer and Agricultural Outcomes in Cameroon. (working paper)

The Sustainable Development Goals Report 2018 (2018). United Nations, New York.

Tommasi, D. (2018). How Cash Transfers Improve Child Development. Available at SSRN 2610515.

Treanor, M. (2012). Impacts of poverty on children and young people. Scottish Childcare and Protection Network Research Briefing, Edinburgh.

Van der Gaag, J. (2010). From child development to human development. In Development and Prevention of Behaviour Problems (pp. 231-242). Psychology Press.

Woolard, I., & Leibbrandt, M. (2013). The evolution and impact of unconditional cash transfers in South Africa. Development Challenges in a Postcrisis World, 363.

APPENDIX A

Table A.1: List of beneficiary regions and departments

Region	Department	Population	Overall Poverty Rate (%)	Chronic Poverty Rate	Number of chronic poor	Population in the region	Number of chronic poor in the region
Adamaoua	Djerem	81,556	39,6	28,1	22,917	926,383	258,543
	Faro et Deo	111,616	47,7	32,4	36,614		
	Mayo Banyo	**217,367**	**68,9**	**60,0**	**130,420**		
	Mbere	153,111	48,8	37,2	56,957		
	Vina	362,733	49,8	30,9	112,084		
East	Boumba et Ngoko	106,514	32,7	16,1	17,149	832,850	310,971
	Haut Nyong	194,889	41,7	29,1	56,713		
	Kadey	**189,429**	**71,3**	**56,2**	**106,459**		
	Lom et Djerem	342,018	49,3	38,2	130,651		
Far North	Diamare	695,304	62,6	50,0	347,652	3,237,986	1,739,629
	Logone et Chari	586,268	24,7	22,8	133,669		
	Mayo Danay	**602,475**	**81,6**	**61,2**	**368,715**		
	Mayo Kani	**282,913**	**75,8**	**60,2**	**170,314**		
	Mayo Sava	**417,406**	**76,2**	**64,9**	**270,896**		
	Mayo Tsanaga	**653,620**	**81,0**	**68,6**	**448,383**		
North	Benoue	949,453	55,3	45,7	433,900	1,759,972	911,928
	Faro	**71,208**	**83,3**	**66,7**	**47,496**		
	Mayo Louti	**342,796**	**71,7**	**53,3**	**182,710**		
	Mayo Rey	**396,515**	**73,1**	**62,5**	**247,822**		
Western North	**Boyo**	**136,157**	**75,9**	**47,5**	**64,675**	1,814,017	476,757
	Bui	441,727	61,7	26,5	117,058		
	Donga Mantung	146,284	63,5	38,7	56,612		
	Menchum	304,285	66,2	35,9	109,238		
	Mezam	449,826	25,2	10,2	45,882		
	Momo	166,314	55,4	29,3	48,730		
	Ngo Ketunjia	169,424	31,5	20,4	34,562		

Source: Social Safety Nets Manuel Implementation by the Cameroon Government
Note: The regions showed in bold are beneficiary departments

Table A.2: Descriptive Statistics comparing beneficiary and non-beneficiary households

Descriptive Statistics, baseline

Variables	(1) All	(2) Control Group	(3) Treatment group	(4) Difference	(5) N
Household size	6.75	6.151	7.2984	-1.1471*** (0.2311)	1172
Number of persons between 0-4	1.37	1.3630	1.3721	-0.0091 (0.0787)	1172
Number of persons between 5-14	2.31	1.9217	2.6705	-0.7488** (0.1144)	1172
Number of persons between 15-59	2.73	2.5463	2.9082	-0.3619* (0.0996)	1172
Number of persons >60	0.33	0.3203	0.3475	-0.0273 (0.0344)	1172
Muslim household head	0.21	0.4342	0.0016	0.4325*** (0.0202)	1172
Female household head	0.21	0.2082	0.2049	0.0033 (0.0237)	1172
Christian household head	0.30	0.1584	0.4213	-0.2629*** (0.0256)	1172
Animist household head	0.30	0.1940	0.3951	-0.2011*** (0.0261)	1172
No religion household head	0.20	0.2135	0.1787	0.0348 (0.0232)	1172
Household head is married monogamy	0.48	0.3932	0.5672	-0.1740*** (0.0288)	1172
Household head is married polygamy	0.33	0.3488	0.3131	0.0356 (0.0275)	1172
Household head is single	0.026	0.0480	0.0066	0.0415*** (0.0093)	1172
Household head is widow	0.11	0.1530	0.0705	0.0825*** (0.0170)	1172
Household head is separated	0.041	0.0498	0.0328	0.0170 (0.0116)	1172
Age of household head	47.0	46.4181	47.5049	-1.0868 (0.9397)	1172
The number of children dropped the school	0.10	0.0996	0.1066	-0.0069 (0.0240)	1172

Table A.2 (continued): Descriptive Statistics comparing beneficiary and non-beneficiary households

Descriptive Statistics, baseline

Variables	(1) All	(2) Control Group	(3) Treatment group	(4) Difference	(5) N
Maximum education level of household	1.23	1.0996	1.3574	-0.2577*** (0.0429)	1172
Maximum education level of household=primary	0.59	0.5819	0.5885	-0.0067 (0.0288)	1172
Maximum education level of household=secondary 1st cycle	0.23	0.2028	0.2590	-0.0562 (0.0247)	1172
Maximum education level of household=secondary 2nd cycle	0.058	0.0302	0.0836	-0.0534 (0.0136)	1172
Years spent for education at household level	3.51	2.6797	4.2721	-1.5924*** (0.1926)	1172
Total fee	8.73	5.9804	11.2721	-5.2917** (0.8890)	1172
Total fee for education	60.1	16.3719	100.4656	-84.0937*** (23.6309)	1172
Number of children going to school within the household	1.43	1.1157	1.7246	-0.6089*** (0.0869)	1172
Number of children don't go to school	0.062	0.0569	0.0672	-0.0103 (0.0163)	1172
The number of persons who have permanent job	4.07	3.8025	4.3131	-0.5106*** (0.1453)	1172
The number of children who have permanent job	1.35	1.2482	1.4507	-0.2025** (0.0902)	1164
Economic activity in the last 12-months	4.17	3.8995	4.4260	-0.5265*** (0.1482)	1165
Number of children engaged in economic activity last year	1.41	1.2908	1.5197	-0.2289** (0.0925)	1165
Number of working children	2.09	1.6868	2.4525	-0.7656*** (0.1196)	1172
Working days	3.05	2.6014	3.4639	-0.8625*** (0.1602)	1172
Average working day per child	1.51	1.6940	1.3855	0.3085*** (0.1023)	940
Household head is unemployed (Yes=1, No=0)	0.034	0.020	0.011	0.008 (0.0042)	1172

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

Source: 2013 Baseline Survey

Table A.3: Descriptive Statistics comparing households from Soulédé-Roua and Hina

Descriptive Statistics, baseline

Variables	(1) All	(2) Control Group	(3) Treatment group	(2) – (3) Difference	(4) N
Household size	6.07	6.1512	6.0405	0.1107 (0.1713)	2315
Number of persons between 0-4	1.25	1.3630	1.2173	0.1456** (0.0606)	2315
Number of persons between 5-14	2.03	1.9217	2.0593	-0.1376 (0.0882)	2315
Number of persons between 15-59	2.43	2.5463	2.3902	0.1561** (0.0752)	2315
Number of persons >60	0.36	0.3203	0.3736	-0.0534* (0.0284)	2315
Muslim household head	0.11	0.4342	0.0006	0.4336*** (0.0119)	2315
Female household head	0.25	0.2082	0.2693	-0.0611*** (0.0211)	2315
Christian household head	0.35	0.1584	0.4050	-0.2467*** (0.0225)	2315
Animist household head	0.36	0.1940	0.4164	-0.2225*** (0.0228)	2315
No religion household head	0.19	0.2135	0.1763	0.0373** (0.0188)	2315
Household head is married monogamy	0.49	0.3932	0.5180	-0.1247*** (0.0241)	2315
Household head is married polygamy	0.30	0.3488	0.2864	0.0624*** (0.0222)	2315
Household head is single	0.022	0.0480	0.0143	0.0338*** (0.0072)	2315
Household head is widow	0.12	0.1530	0.1101	0.0429*** (0.0158)	2315
Household head is separated	0.060	0.0498	0.0633	-0.0135 (0.0115)	2315
Age of household head	47.1	46.4181	47.2641	-0.8460 (0.8111)	2315
The number of children dropped the school	0.076	0.0996	0.0685	0.0312* (0.0166)	2315
Maximum education level of household	1.14	1.0996	1.1552	-0.0555 (0.0366)	2315
Maximum education level of household=primary	0.58	0.5819	0.5744	0.0074 (0.0240)	2315

Table A.3 (continued): Descriptive Statistics comparing households from Soulédé-Roua and Hina

Descriptive Statistics, baseline

Variables	(1) All	(2) Control Group	(3) Treatment group	(2) – (3) Difference	(4) N
Maximum education level of household=secondary 2nd cycle	0.051	0.0302	0.0570	-0.0268** (0.0106)	2315
Years spent for education at household level	3.03	2.6797	3.1432	-0.4635*** (0.1593)	2315
Total fee	7.00	5.9804	7.3292	-1.3487* (0.8031)	2315
Total fee for education	51.5	16.3719	62.7764	-46.4045*** (17.4041)	2315
Number of children going to school within the household	1.21	1.1157	1.2464	-0.1308* (0.0669)	2315
Number of children don't go to school	0.054	0.0569	0.0531	0.0039 (0.0124)	2315
The number of persons who have permanent job	3.60	3.8025	3.5311	0.2714** (0.1078)	2315
The number of children who have permanent job	1.11	1.2482	1.0722	0.1760*** (0.0676)	2287
Economic activity in the last 12-months	3.70	3.8995	3.6303	0.2692** (0.1097)	2288
Number of children engaged in economic activity last year	1.16	1.2908	1.1144	0.1765** (0.0695)	2288
Number of working children	1.75	1.6868	1.7741	-0.0873 (0.0913)	2315
Working days	2.75	2.6014	2.7912	-0.1898 (0.1348)	2315
Average working day per child	1.53	1.6940	1.4882	0.2058** (0.0961)	1804
Household head is unemployed (Yes=1, No=0)	0.0030	0.020	0.0034	-0.0016 (0.0030)	2315

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

Source: 2013 Baseline Survey

APPENDIX-B

Table B-1: Comparison of Soulédé-Roua and Hina for education

Variables	The number of children participating the school last 2-years	The number of children dropped the school	The number of children going to school	Households expenditure for education
Estimator	0.410***	0.031	0.488***	0.300
	(0.098)	(0.033)	(0.076)	(0.909)
Treatment	-0.099	-0.059	-0.081	1.897
	(0.285)	(0.043)	(0.299)	(2.492)
Time	-0.728***	-0.029	-0.078	0.555
	(0.085)	(0.045)	(0.056)	(0.831)
Constant	1.695***	0.145***	1.914***	6.177**
	(0.278)	(0.040)	(0.291)	(2.258)
R^2	0.03	0.004	0.03	0.005
N	3132	3132	3132	3488

* $p<0.1$; ** $p<0.05$; *** $p<0.01$
Note: The regressions do not contain any control variable.
Note-2: The standard errors are clustered at village level and shown in the parenthesis.

Table B.2: Comparison of Soulédé-Roua and Hina with control variables for education

Variables	The number of children participating the school last 2-years	The number of children dropped the school	The number of children going to school	Households expenditure for education
Estimator	0.153	0.011	0.188**	0.793
	(0.092)	(0.057)	(0.072)	(0.875)
Treatment	0.118	-0.040	0.179*	2.329
	(0.106)	(0.038)	(0.090)	(1.477)
Time	-0.340***	0.002	-0.323***	-0.529
	(0.082)	(0.049)	(0.064)	(0.740)
Household Size	-0.022**	0.005**	-0.019**	1.966***
	(0.009)	(0.004)	(0.008)	(0.365)
Age of Household Head	0.004***	0.001*	0.003***	0.129***
	(0.001)	(0.000)	(0.001)	(0.028)
Female household head (Yes=1, No=0)	0.177**	0.008	0.189***	0.952
	(0.063)	(0.019)	(0.068)	(0.927)
Number of children	0.556***	0.029*	0.651***	0.000
	(0.022)	(0.006)	(0.025)	(0.390)
Educated Head of Household (Yes=1, No=0)	0.296***	0.001	0.329***	3.798***
	(0.060)	(0.019)	(0.057)	(1.156)
Household head is unemployed (Yes=1, No=0)	0.828	-0.009	0.475	7.418
	(0.607)	(0.059)	(0.367)	(4.294)
Single Household Head	-0.040	-0.002	-0.060	2.293*
	(0.066)	(0.022)	(0.058)	(1.276)
Constant	-0.205	-0.020	-0.261***	-14.329***
	(0.146)	(0.048)	(0.122)	(3.127)
R^2	0.58	0.04	0.63	0.24
N	3132	3132	3132	3488

* $p<0.1$; ** $p<0.05$; *** $p<0.01$ Note: The standard errors are clustered at village level and shown in the parenthesis.

Table B.3: Comparison of Soulédé-Roua and Hina for labor

Variables	The number of children engaged in any economic activity last 12-months	The number of working children
Estimator	0.462**	0.597**
	(0.206)	(0.241)
Treatment	-0.542**	-0.309
	(0.192)	(0.336)
Time	-0.672***	-0.795
	(0.191)	(0.220)
Constant	1.949***	2.508***
	(0.184)	(0.328)
R^2	0.02	0.01
N	3121	3142

* $p<0.1$; ** $p<0.05$; *** $p<0.01$ **Note**: The standard errors are clustered at village level and shown in the parenthesis.

Table B.4: Comparison of Soulédé-Roua and Hina with control variables for labor

Variables	The number of children engaged in any economic activity last 12-months	The number of working children
Estimator	0.193	0.147
	(0.200)	(0.187)
Treatment	-0.382*	0.027
	(0.181)	(0.192)
Time	-0.262	-0.244
	(0.181)	(0.165)
Household Size	-0.047***	-0.092**
	(0.011)	(0.025)
Age of Household Head	0.006***	0.024***
	(0.001)	(0.001)
Number of persons between 15-59	0.094***	0.713***
	(0.023)	(0.033)
Single Household Head (Yes=1, No=0)	0.012	0.197**
	(0.053)	(0.066)
Female Household Head (Yes=1, No=0)	0.084*	0.632***
	(0.053)	(0.072)
Number of persons between 5-14	0.536***	0.479***
	(0.024)	(0.033)
Educated household head (Yes=1, No=0)	-0.121*	-0.080
	(0.047)	(0.069)
Years spent for education at household level	0.037**	0.073***
	(0.009)	(0.009)
Constant	0.053	-1.982***
	(0.174)	(0.207)
R^2	0.48	0.66
N	3121	3142

* $p<0.1$; ** $p<0.05$; *** $p<0.01$ Note: The standard errors are clustered at village level and shown in the parenthesis.

CURRICULUM VITAE

Name Surname: Mehmet Yavuz

Place and Date of Birth: İzmir – 12th of November, 1991

E-Mail: mmehmetyyavuz@gmail.com

EDUCATION:

- **B.Sc.** **:** 2015, Istanbul University, Economics in English
- **M.A.** **:** 2019, Istanbul Technical University, Economics

PROFESSIONAL EXPERIENCE AND REWARDS:

- July, 2017- Today Assistant Auditor, DenizBank
- February, 2016 – October, 2016 Research Assistant, İstanbul Commerce University , Department of International Trade