

# Remittances impact on girl's education

## A critical review

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# Abstract

This thesis examines remittances effect on development in less developed countries through human capital attainment, by evaluating the evidence for remittances effect on girls' primary education. Remittances, the sum of money migrants send back to a household when migrating to work, have potential to contribute to development by directly supplying families with additional income. A major inhibitor of girls' education is lack of sufficient funds, and therefore remittances should theoretically lead to increased education levels.

This thesis asks; in what way may the effects of remittances on girl's education impact development in less developed countries, and how extensive are these effects? It critically reviews 11 articles, finding a significant impact from remittances for girls in primary education; raised school attainment and lowered dropout rates. However the effect is marginal and largely restricted to specific groups. The thesis examine possible causes for the restricted effect and finds no evidence for accessibility, labor, expected migration, and migrated family to be reliable for this countering effect.

*Keywords:* Remittances, development, human capital, girls' education, poverty

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# 1 Introduction

Poverty is undeniably one of the modern world's biggest issues. It affects not only the people experiencing it, but also nations and the world as a whole. Battling poverty is a key component in solving many humanitarian devastations, such as starvation, conflict and disease – and thus is the first of the 2015 Sustainable Development Goals for the United Nations. There is a clausal link between human capital attainment and poverty relief (further discussed in chapter 3). This is especially evident in the case of raised female education levels. A hindering factor of education is low income (poverty), and added monetary funds are empirically shown to increase human capital by increasing educational investments. Therefore remittances (the sum of money migrants send back to a household when migrating to work) theoretically leads to increased education levels among people living in poverty. In theory remittances should have a significant impact on girls' education. This thesis review existing literature to find evidence for the theoretical link, and to map the effects. To understand the impacts of remittances, migrant movements need to be discussed.

Today there are close to 750 million migrants around the world (World Bank, 2016b). To put this in perspective, if all migrants shared one country it would be the world's 5th largest country. Their movements can be within or between country borders, and many move to work in the location they migrate to. A migrant worker can be anything from a seasonal ski instructor to a poor farmer moving to the city to provide for a family, but in the context of development and remittances it is the latter that is of interest. A majority of these migrants send remittances, and a majority are male. Today however, more women are migrating for work, and this has led to gender focused migration-research (Piper, 2008).

A remittance is a sum of money sent as a payment or gift. Most commonly, 'remittance' refers to personal remittance; the sum of money sent from a non-resident household to a resident household (World Bank Data, 2016). The term 'remittance' in this thesis can be summarized as the money migrants send back to a household when the migrant moved within or across county borders to work. With globalization, migrant movements have increased rapidly and so has the amount of remittances (World Bank, 2016b). It has also in many cases become a polarized political matter, for example in the case of the Qatar World Cup stadium 2022; the exploitation of migrants leading to violations of human rights and a staggering death toll on site. Migration and remittances can benefit the local and national economy; therefore, some countries openly promote migration and overseas employment. Many nations are dependent on remittances, contributing to between 10 and 20 percent of GDP. In some countries, this contribution is even higher. In Nepal for example, in 2014 30% of their GDP came from remittances (World Bank Data, 2016).

In 2014, migrants sent 580 million USD worth of remittances home, with 427 million USD directed specifically to less developed countries. This amount of

remittances exceeds all international aid collectively by more than triple the amount (World Bank, 2016b). The financial flow of remittances, although heavily fed by transaction agencies, reaches families with less bureaucracy than aid and is at the disposal of the family themselves. In many cases remittances are a more reliable income than aid; strengthening security and confidence for long term investments. It is thus of great importance to battling poverty. Past research on remittances have focused on its effect on physical capital (materialistic expenditures) and less on human capital. This body of research concludes that households primarily tend to repay debts, consume and fill materialistic needs (Tilak, 2001, p.12-14).

A problem with remittances and working migration is that the initial costs of migrating to work (including transport and living) can curtail, for some time, any benefits that a migrant's family receives from the move (Acosta et. al; Ratha, Dilip, 2014). In Bangladesh for example, migrants pay agents for overseas employment with fees as high as one or two years' salary, which needs to be loaned in able to afford the costs (Ratha, Dilip, 2014). Too often, sick migrant workers have little choice but to continue work in poor conditions to repay family debts. Working migration can trap workers into poverty, rendering them vulnerable to food insecurity and sickness, but remittances may contribute to development, balancing the downside of debts and insecurity. With remittances, goods such as refrigerators, water pumps, and electricity become affordable for the families left behind, thus bolstering their living standards. After fulfilling basic materialistic needs, families then use remittances to make investments for the future, in either business or human capital (or both).

This thesis investigates a crucial factor of development that is part of the long-term investment into human capital. The factor studied is education for primary school girls. Theoretically, an extra income leading to a relaxation of the household budget should lead to this long term investment (see chapter 3). Education has shown to be crucial in a sustainable development and by adding a gender perspective this thesis also includes the factor of equality, known to be an important factor in poverty reduction.

## 1.1 Statement of Purpose

The main question posed in this thesis is an empirical question asked to shed light on the advancements made in the field of research concerning remittances impact on human capital formation, through increased school attainment for girls. As there have been many publications within the subject, there is a need to summarize the findings and compare these to theory. The thesis searches to accumulate, compare and critically interpret knowledge on this topic. This is useful in order to overview the development potential of remittances, and thereby potential of remittances in poverty reduction. The real importance and ultimate purpose in summarizing the results is to add to the existing research on the topic by more extensively clarifying how remittances can create development. By doing so, this knowledge may be used to maximize the utility of remittances and its effect, and in the long run a more

effective development may be created, for example to better target support and aid. In sum, the purpose of this thesis is to provide a critical summary of accumulated research in remittances effect on girls' education in less developed countries, to derive a general knowledge if possible, and to map the differences and results. With this purpose in mind, this thesis poses the following research question:

- In what way may the effects of remittances on girl's education impact development in less developed countries and how extensive are these effects?

On a final note, in this thesis less developed counties refers to developing countries facing poverty, and development is here defined as rapid, large scale improvements in living standards. Girls' education is basic education that includes primary schooling. Human capital formation is education attainment by increased schooling for girls. These concepts are further discussed in the theoretical framework of this thesis.

## 1.2 Disposition

Following this chapter, Method and Material will be presented consisting of a description on material and method of examination. 2.1 Limitations outlines the criteria for which the articles were chosen. In chapter 3 Theoretical Background is presented, divided in three sections, to give an overview of relevant theory. Thereafter in chapter 4 Analytical Framework, the points upon which the critical analysis is based is presented. In following 4.2, 4.3 and 4.4 presentations of the summarized articles are given, divided by geographical area. In 4.5 comparability is investigated, and analytical conclusions are given in two parts. Chapter 5 Concluding Discussion is held to review the findings. In chapter 7 a summary table containing an overview of all articles is available to simplify for the reader.

## 2 Method and Material

To answer the question if remittances may have any effects on girls' education, this thesis uses a critical approach on empirical findings from 11 articles studying the effects of remittances on human capital formation. The critical analysis is made by summarizing, reviewing, comparing and critically discussing the articles and the findings presented. The thesis adapts a critical gender perspective as women have a key role in sustainable development, which will be further discussed in the theoretical background. The publication years on the articles range from 2003 to 2015. Four out of ten articles are published through the World Bank, seven of the articles are conducted on Central- and South America, and all of them are on less developed countries.

The purpose of this thesis is to find evidence for an effect created by remittances and to estimate the scale of the effect. In the choice of method this leads to a series of stands that can lead the thesis into one of two directions. Either the thesis will have a summarizing character stating results and present facts, or, the thesis can have a reviewing character in which comparison will be the leading objective. As stated above, this thesis has consciously chosen the latter by applying a critical analysis of the articles approach, material and results. There are principally three reasons why a critical analysis is better suited for the purpose of this thesis.

Even though the chosen articles are studying the same effects, there are differences between the studies that need to be taken in to account. The variations is not only in the data chosen (i.e. material) but also in the authors' preexisting understanding of country- or culture-specific influences, assumptions and main focus. The authors also consider causality issues created by simultaneous- and disturbing effects and attempt to counter for them in their analysis using varying methods. If these fundamentally variate the results cannot correctly be summarized and therefore the material, method and assumptions needs to be critically reviewed. The second reason is the factor of gender. As stated above gender is an important factor of sustainable development and in order to form an understanding about remittances developing effects the research needs to include gender. A critical analysis is also to be preferred for the sake of cumulative knowledge within this research field. The purpose of this thesis could aid future research by distinguishing the different approach, material and methods used and by summarizing potential issues and advantages. This way this thesis has the possibility to aid in the choice of method in future research in a way a non-critical approach would not achieve. For these three reasons this thesis will use a critical viewpoint.

### 2.1 Limitations

Remittances effect on human capital formation is widely studied but as this thesis focuses on girls' education in a developing context, it narrows down the available research. When gathering research a clear and relevant framework for the chosen articles is crucial. The thesis therefor makes following limitations:

Firstly, only articles that focused on basic education, meaning primary school should be included and the ages studied should at least include one of the ages between 6 and 11. The reason for this being that when studying the effects in a context of development and poverty, it is automatically the lowest level of education that are implied, as higher education almost exclusively is inaccessible for the poor (United Nation Goals, 2016). Therefore articles studying other age groups than primary school students will not be included (cf. Mueller&Shariff on Indias teens, Hu on Chinese high school students).

Most studies on remittances effect on human capital and economic growth include some type of variable for child education. However these articles do not primarily focus on the educational effects and have therefore unsatisfying equations leaving out variables that are necessary to account for the complexity in determining cause and effect. Another reoccurring issue with this type of articles is their use of very large sets of national data. Without information on household level, studies are at risk for structural issues that might obscure the link between remittances and education. Studies with other focus than education, and studies without data from household surveys will be excluded (cf. Barguelli et al, 2005 with panel data). At the other end of extreme some studies will exclusively use data from household surveys. There are substantial risks of households over estimating their expenditure on child education as it is an emotive question. Therefore studies using only households own preserved expenditures on child education, lacking control-variable will be excluded (cf. Vogel&Korinek, 2012 on Nepal).

This thesis focuses on the effects on girls' education. It will therefore naturally exclude all studies not separating the effects between genders (cf. Andersen 2004 on Nicaragua). A final criterion is that the article in question has to have had an impact in the field of research. For this criterion Lund University's Lubsearch and Google Scholar was used to exclude all studies cited less than 20 times if published more than 5 years ago counting from 2016 (cf. Mansour et. al. 2011 on Jordan).

An exception to the limitation is Bouoiyour and Miftah, published on paper copy 2016, as it is published too recently to have accumulated 20 citations, yet has been cited and therefore been included. Finally, comments on the choice of excluding Yang 2008 and Lopez-Cordova 2005, as both articles are prominent in the field; Yang study in the Philippines differs much from the other articles, as Yang does not primarily focus on education, and has a limited set of individual- and household specific variables and is therefore not included. Lopez and Cordova's article from 2005 does not separate between genders and is therefore not included.



# 3 Theoretical Background

When discussing remittances effect on girls' education, one is in the larger sense discussing development through human capital attainment. To understand the theory behind development through education and females in less developed countries, the concept of poverty needs to be addressed. It is also essential to characterize the female role and education's role in development in order to understand the motive of this thesis to focus on girls' education. A theoretical background in three parts will be provided to overview the theoretical terms and to provide a basic understanding for the subject.

## 3.1 Understanding poverty and measuring it

Poverty as a whole has no exact definition and is dependent on the context in which it is discussed. Poverty, as in being poor, is relative to the concept of being rich which is not only valued materialistically, but also through other aspects of human life (for example social richness or health). Even in the context of development the perception of poverty varies between disciplines. Two common terms are relative and absolute poverty. Relative poverty is a question of inequality, for example a single mother in London on minimum wage is poor relative to a single high-income earner with little family obligations. When characterizing the poorest in less developed countries, it is absolute, sometimes called extreme poverty, which is used as a definition; hence so will this thesis.

Arguably, the most pragmatic way of understanding poverty is by calculating the value of ones assets and income. By calculating the value of a currency in purchasing parity, known as PPP, economists can create a comparable, numeric measurement for poverty between nations that is applicable globally. Poverty is then defined as living under the poverty line and big organizations like the World Bank, the IMF and the UN uses this method to define a poverty line.

The UN Millennium goals use the line of 1.25 USD, but more commonly used is the World Bank's current line of 1.90 USD a day. Living with more than 1.90 USD a day is considered necessary to be properly able to satisfy the basic human needs for oneself and one's family (World Bank, 2016a). But even though poverty can be understood as living below the poverty line, this is only one definition of poverty. Income does not reflect all aspects of poverty, and can therefore not by itself explain it.

The UN's definition of absolute poverty is "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services." (United Nations, 1995). Basic human needs are often used when characterizing poverty, and is often defined and measured in having access to possessions like the ones mentioned above. Another way of understanding poverty is through Amartya Sen's capabilities approach. With many new contributions, the capabilities approach essentially conceptualizes poverty as the

lack of capabilities to function (Sen 1999). This approach argues that possessions and income are not the best way to understand poverty. A book makes no use for an illiterate, it is who someone is, can be, do or become that is of significance. The capabilities approach conceptualizes poverty as in limited capability and therefore lack of so called “functionings” (Toderó&Smith, 2011, p.16). It is what can be done with the commodities, given the abilities one has, that can be understood as functionings; therefore, poverty signifies the lack of functionings and limited capabilities. Gaining or increasing capabilities has therefore in essence the same significance as human capital formation, which is further discussed in the next chapter.

The importance to include another dimension to poverty through the capability approach is to illustrate the difficulty in pinpointing exactly what one must lack to be ‘poor’, as individuals are not identical in their ability. Thus, the standardized measurements should rightfully be met with certain skepticism and caution. Because of the difficulties in defining poverty, a very large amount of measurements are used, sometimes in very different ways, but the income measurement is still most commonly used in poverty analysis as it is quantifiable. In other words, poverty is commonly approached through a nomothetic method in economic development research. The appropriate way of approaching and measuring poverty in research is widely debated and thus beyond the scope of this thesis. However, a point is to be made that variations in measurements in some cases can lead to difficulties in comparability as they are not identical to one another. This thesis uses the same definition as its material for poverty which results in the use of standardized measurements of poverty as mentioned above. However the thesis recognize these issues by analyzing comparability in chapter 4.5.

## 3.2 Human Capital and Development

The meaning of development is highly context based, similar to how poverty is understood and measured; hence, development depends on what perspective is used. The articles reviewed in this paper are quantitative analysis that use numeric measurement. The focus will therefore be on describing the general ideas of economic development in an attempt to give a relevant theoretical background.

“Development – The process of improving the quality of all human lives and capabilities by raising people’s levels of living, self-esteem, and freedom” (Toderó&Smith, 2011, p.5). The traditional economics focuses on the most productive and cost-efficient way to promote economic growth. It is about creating a market equilibrium that is efficient, about utility and profit maximization (Toderó&Smith, 2011, p.7). The logic goes; with economic growth the income levels are increased and therefore poverty levels will go down. Political theory studies all aspects of institution (Beitz 1979, p.3-10). It conceptualizes and studies the social and institutional processes that enable development and raise living standards. Development theory uses both traditional economy and political theory, and the articles studied in this thesis are within this field. The authors focus on the

potential development that is induced by financial inflow e.g. remittances and are therefore within the sub-field of development economics. Development studies has a broad focus as it considers not only the economic but also the social, political and institutional aspects and mechanisms in their research (Toderó&Smith, 2011, p.8).

When studying the effect of remittances from a development perspective, researchers can either approach it by focusing on financial/physical capital or human capital. Human capital is “The stock of skills and productive knowledge embodied in people” (Rosen, 1989, p.682). The gain and increase of functionings, as described in previous chapter. In terms of investment, human capital is sometimes described as the ‘soft’ aspect of development and include infrastructure, social welfare, institutions for the protection of civil rights and law, which are all important for sustainable development (Rosen, 1989). This is known from experience as in the past it was general practice for poverty amelioration programs to inject monetary funds and implement liberal markets structures (Odén, 2006). Undoubtedly poverty is tightly linked to monetary wealth and economic growth, and therefore development was targeted by stimulating the market. However the implementations were not giving the results expected (Toderó&Smith, 2011, p.202). The vast majority of the poor live in rural areas, sometimes very isolated, and many lacked the means and the capability to create a sustainable development. In terms used in pervious chapter; poverty was fought with funds and material, but the lack of functionings prevented development form being sustainable. Hence the understanding of capabilities and human capital investments, such as education and equality, are today given a larger importance in development research (Odén, 2006, p.125-133). Human capital investments are in many ways a long-term investment but have a key role in successful development and poverty reduction (Piper, 2009; Tilak, 2001).

In this thesis, aspects of equality and education are placed in focus. The importance of investigating remittances effect on these factors comes from their ability to create a better lasting development, and sustainable poverty relief rather than temporary, by increasing capability as described above. This thesis uses the same definition of human capital as Rosen (cited above), but refers to human capital with more consideration to education and equality than all other aspects.

### 3.3 The role of women and girls’ education in development

The importance of understanding development from a gender perspective is not to be understated. If gender is not taken into account there are substantial risk of implementing unsuccessful policies, misinterpreting cause and effects, and only covering a narrowed part of reality, as the male perspective in many aspects of society is dominant. This is especially so in developing countries with high inequality. Moreover, gender is crucial because the majority of people living in

poverty are women (UN Women, 2016a; Welch, 2014; Knobloch, 2014; Piper, 2008). It is not possible to fully understand poverty and the prospects of poverty eradication if the female perspective is not taken into account (Comim et al., 2014, p.1-15). Today worldwide inequality leads to very different opportunities in life between the genders (Todadro&Smith, 2011, p.373-374). And the female capability is far less than the male when understood in terms of functionings, which makes them more vulnerable in all aspects of life (Welch, 2014, p.309-310; UN Women, 2016a). Understanding the female role in development is difficult as it is multilayered and globally variant, but empirical findings indicate a better, faster, more sustainable poverty relief when targeting women. All of these factors above has increased the recognition of the role of women in development (Piper, 2008, p.1-9).

Women play a particularly important role in the success of investments in human capital. So much so that aid targeting gender equality gives proportionally higher gains from investment size relative to any other type of direct aid (OECD, 2012b, p.14). This because female directed aid reaches proportionally more people; the effects ripple from economic gains to social gains (vice versa) and females reinvest more both in sum and frequency into their households and children, compared to men (OECD, 2012b; Piper, 2008; Rahman, 2012).

Human capital investment, especially education, has shown to be a particularly effective investment as it has among the largest spillover effects (Tilak, 2001, p.13). Increasing women's education has shown to lower fertility, improve both women's, mother's and children's health, prolong marriages until later ages (approximately 39000 girls a day are married underage), and have greater chances at improving life standards for the next generation (Todaro&Smith, 2011 p.373-377; UN Women, 2016b ; Unicef, 2015). These are measurable effects, but education for women also has positive effects on factors difficult to measure such as equality and self-esteem. Education raises capability and thereby the possibilities for survival, future income and poverty reduction. Improved female literacy rates has been shown to have a great influence on the economy (Richards&Vining, 2014, p.174-175). As a spillover effect, mothers' education is positively correlated to children's education (OECD, 2011, p.6-7). Female education is one of the most effective methods known in battling poverty; hence, girls' education is included in the UN's 2015 Sustainable Development Goals (previously the Millennium Development Goals).

There are many factors inhibiting girl's education. Bad infrastructure and poor access, especially in rural areas, complicates education. These technological problems are compounded by socio-economic and socio-cultural factors. Governance has a big part in development, and has an immense influence on the possibility of improved educational levels (Rajkumar&Swaroop, 2008, p.96; Richards&Vining, 2014, p.175). On a household level, the main inhibitor is the difficulty families face in financing schooling, in other words; poverty (OECD, 2012; Unterhalter&Brighouse, 2012, p.215-216). Schooling is associated with costs not only for tuition but also for uniform, material, daily food and importantly; the loss of possible income from child labor or domestic help. The cost factor inhibits

a child's schooling, but more so girls' education because of the existing gender bias prioritizing boys' schooling over girls' for many reasons (OECD, 2012, p.4). Focusing on remittances development potentials in girls' schooling does therefore not exclude boys' education potential, as they are larger than girls' and can be assumed whenever potential for girls is evident. The role of remittances in the formation of female education is its ability to relax the household budget constraints, and thus enable households to withstand the costs of education. As the family budget constraint is relaxed, families turn to invest the money. One of the most long-term contributors of higher income, education, will be invested into for future benefits. All authors assume this theoretical connection when testing for the empirical effects. The effect should according to theory be clear, with a strong connection between remittances and increased education for girls. Human capital investments as education is to a greater extent targeted by women, and as described in the introduction many migrants are male, leaving the female spouse in charge of the expenditures. This factor should also contribute to an increase in girls' education levels.

## 4 Analysis and Presentation

A total of 11 articles remain available after implementing the criteria presented in 2.1. First an analytical framework, then an overviewing presentation of all articles, their key point differences and results is presented to simplify for the readers. To further simplify the presentation, the articles have been divided into groups of three depending on their geographical location. Mexico and El Salvador are separated from Central- and South America as these countries have more than one study based on their population. To prevent confusion the main focus of this chapter is to create a platform on which the discussion can be based. As previously mentioned, a summary is necessary to establish comparability in order to fulfill the academic relevance of this thesis and answer its questions. The article's findings are presented in order to find a cumulative result.

### 4.1 Analytical framework

There are mainly four points relevant to consider when analyzing these articles: gender in the material, assumptions (choice of variables), method and results.

Gender aspects relevant for this thesis consist of three points:

- The difference in schooling levels between the boys and girls
- Differences in female and male remittances senders
- Difference in male and female receivers

As one of the criterion in 2.1, the difference in boys' and girls' schooling levels are automatically included in all articles.

Difference in assumptions are results of three main groups of conditions:

- Individual-specific (exogenously determined) effect
- Location-specific effect
- Economy-wide effect

The individual-specific effects, such as a given girl's ability, disability and parents, lead to diverting outcomes in the average studied households. The locations specific is the differences in distance to school, access and so on, leading to differences in a given region from the average. The economy-wide conditions are national influences that may lead to a different result in the studied case from another hypothetical outcome if another country had been studied in the same manner. This can be cases of labor market differences, socio-economic, political and many other differences.

The articles methodology is examined to ensure comparability and eliminate the risk of structural issues with these three points:

- Simultaneity
- Reverse causality
- Selection bias

Starting with the first issue, the decisions on schooling and migration can be made simultaneously, meaning that one might not cause the other. As decisions on

schooling have multiple influences it might not necessarily be remittances that is the cause. The difficulty in confirming a cause and effect is to eliminate other factors, challenging as some factors are unobserved. Ambition for example is very hard to account for, but influences the schooling decision, possibly leading to a problem of causality. The second issue concerns reversed causality, meaning the assumption that remittances influence on education could be the opposite. What if children from households that have been sent to school become the ones to migrate? If education affects migration, education is the cause for receiving remittances and not the opposite. These two factors are partly connected to the third problem of selection bias. The pool of migrated remittance senders is not random. To determine that remittances have a causal effect on education, the sample of remittance-receivers [henceforth RR] must in all other regards be similar to the households lacking remittances. If they do not, another effect differentiating them might be the actual underlining cause of schooling variations, and not remittances. This way one can interpret simultaneity or other structural issues the same way for both none-receiving and RR-households, and it is possible to exclude other influences as they should affect all households equally.

## 4.2 Mexico and El Salvador

Central and Latin America has mainly been studied because of its emigration movements to North America and Europe. Cox and Ureta (2003) published the first article researching remittances effect on schooling in 1997s El Salvador, Acosta follows up in 2006 examining 1998s El Salvador. Compared to all countries and regions researched in this field, Mexico has been widely studied. Hanson and Woodruff (2003) published shortly after Cox and Ureta a substantial article on 2000s Mexico. The article contained a large amount of dependent variables, such as child disability, indigenous language and religion. Their analysis therefore gives a wider insight to the remittance receiving RR-households than many other articles. Borraz (2005) followed up on Mexico with a smaller analysis based on partly the same data as Hanson and Woodruff, finding a slightly different result. The first three articles listed have made a great impact in this field of research with many authors using a similar set of variables, economic models and/or methodology.

Cox and Ureta examines the ages of 6 – 18 in the school system, finding a significant effect from remittances on education. Girls have a higher probability of schooling at any given age if living in urban areas. Cox and Ureta also find that parents are more likely to invest in girls schooling since they are not as profitable as boys in the labor market. This is visible in the result that boys have a 16% higher risk of never enrolling and dropping out after grade five. However, girls were found to be 10% more likely to drop out during the first up to the sixth year of schooling. The authors find no explanation for this but succeeding research find similar results and refer to a disrupting effect (see chapter 5). Hanson and Woodruff find having a US migrant in the household leads to a significant impact for girls' education attainment by an extra 0.9 years in ages 10-12 and by 0.7 in ages 13-15, but only

when their mothers has 3 years or less of schooling. The authors mention a possibly negative effect on school attainment created by migration and although not investigating it further, they partly provide an interesting explanation as to why the effects are much more limited than predicted, which is further discussed in the concluding discussion. Borraz (2005) finds slightly different results than Hanson and Woodruff. Examining children in the age of 10-13, the results show girls with mothers educated less than 3 years to be significant only in cities with a population below 2500 inhabitants. Acosta (2006) concludes with an extensive analysis of El Salvador that remittances increases girls' education and reduces women labor supply. Acosta addresses the issue of selection bias differently and finds slightly stronger results than Cox and Ureta, although the result shows same tendencies. The article find remittances to be significant for girls' enrollment in the age group of 11 to 14 year old but older children are unaffected.

None of the articles above controls for the effects of sender's gender, or even discusses it. It can be suspected that the data did not provide this information; however Cox and Ureta and Acosta have controlled for female headship and could therefor in theory extend their analysis to test sender's gender, this as the examined households are migrant households, meaning they have a migrated family member, presumably the male or female spouse. All articles above included family composition or/and family characteristics so it should therefore be possible to test. Cox, Ureta, and Acosta does also control headship but do not test if the receivers' gender impacts the results.

### 4.3 Central and South America

The Central and South America research consists of four key articles on Dominican Republic, Haiti, Ecuador and a collective study of 11 Latin American countries (where D.R. Haiti and Ecuador are included). The collective study by Acosta, Fajnzylber and Lopez is the biggest study of all articles analyzed, and includes effects beyond education. Published in 2007, the analysis from the World Bank is based on Latin American household surveys, and was later published in an important contribution to the collective knowledge of remittances influence on poverty. The article uses a slightly different approach from previous research. Overiewing enrollment rates the authors find that children aged 10 to 15, from RR-households (with the exception of Mexico) are more likely to be enrolled and more likely to stay in school, which is so far in line with theory and pervious research. The authors however move on to compare the RR-households to none-RR households within the same income category. They estimate the income of RR-households before migration (before remittances) and compare these to none-receivers with the same income. By the authors' estimations, in the case of Mexico, Paraguay, El Salvador, Honduras, Haiti, Nicaragua and Peru, there's only a significant effect for girls' whose mothers have less than 3 years of education. Mexico and El Salvador only sees a significant result in rural areas, and in Guatemala and Ecuador this is only in urban areas. Honduras has an overall positive



effect. Jamaica and Dominican Republic have no significant results. The most interesting part of this analysis is the result concerning children with mothers with more education than 3 years. Having 4 years education or more, combined with remittances, has in *no* country a positive result for girls' school attainment. To the contrary, there are significantly *negative* results for Mexico, Guatemala, Honduras and Peru. Meaning, if a girl has a mother with 4 years or more of education, lives in any of these countries and receives remittances, she is likely to complete less grades than the equivalent none-RR girl. Remittance that causes less schooling for girls is a very noteworthy result, contradicting all theory.

Calero, Bedi and Sparrow (2008) test, besides education, remittances effect on child labor market and child domestic work which is a known inhibiting factor of education. The authors find that remittances increase school enrollment among girls and poor, in the ages 10-17.1 USD increase of remittance per month leads to a 0.13 percent higher enrollment for girls and 0.45 percent for poor children, which overall increases enrollment rates due to remittance with 2.59%. Surprisingly little effect from remittances can be found on domestic child labor, and no effect among poor and little in urban areas. While in the labor market, remittances only affect children in rural areas.

In February 2010 Amuedo-Dorantes and Pozo published an article on the Dominican Republic followed by an article on Haiti in July by Amuedo-Dorantes, Georges and Pozo. These two articles tackle the problem of migrant effect, called 'disrupting effect' in the research, and present a new way of studying remittances and education (more in chapter 5). The authors argue that when a household experiences migration, the children are forced to make up for the monetary, as well as the non-monetary work in the home. Also, if the family expects to migrate and the local schooling has no, or low value in the future residence country, the incentive for education may decrease (Amuedo-Dorantes et al. 2010, p.17). The authors separate the RR-households with a migrated family member from RR-households with no migrants. Throughout the articles migrant households have largely been used as a synonym to RR-households, and vice versa. This is however not always the case. When studying remittances it is very understandable to intuitively think that the two are the same. As a parent leaves the household, the household will become both a migrant- and RR-household. But there are empirical facts that need to be considered in this deduction. As discussed in the main introduction of this thesis, the cost of migration in many cases is too high for a single family to support, and the extended family, sometimes entire villages invest into the migrating worker. The result is that remittances are not sent only to the migrant-household, and as the effects of remittances on education are investigated, this is important to consider. In the case of Dominican Republic a significant difference between the groups were found. When controlling the RR-households with no migration a low but positive effect could be found, but when controlling both non-migrant and migrant-households no effect could be found. In the case of Haiti remittances in areas lacking school access, only have effects in non-migrant households. In the urban area (with abundance of schools) both migrant and non-

migrant households had a positive effect. Here in Haiti, similarly to Dominican Republic, the effects were still low. Adding, one should bear in mind that the results in the Haiti articles possibly have been influenced by the limited sample size.

The same critique as the one in previous chapter is applicable here as the articles lack a gendered lens, as none of them have included any other gender focused test besides child gender.

#### 4.4 Pakistan, Nepal, Morocco

As evident in this summary, an overwhelming part of the research is based on Central- and South American countries. This is partly explained by the access to data, however countries like Nepal, Philippines and Malaysia are countries with high dependency of remittances (compared to GDP) and with high amounts of brain-drain i.e. educated migration (World Bank, 2016c; World Bank Data). When looking at the available research on remittances effect on education, the amount of articles decrease heavily with the restrictions that were made (see 2.1). However, three interesting articles remain and those are the ones on Pakistan by Mansuri (2006), Bansak and Chezum on Nepal (2009) and Bouoiyour and Miftah on Morocco (2015).

Mansuri's work on Pakistan was published 2006, the same year as Acosta for El Salvador. These two studies resemble each other as both studies have a dual focus investigating remittances effect on both education and the labor market. Mansuri's article is the only one in this thesis conducted in a Middle Eastern country and together with Bouoiyour and Miftah the only ones conducted in Muslim countries. Mansuri studies the differences between migrant and non-migrant households and between siblings in the same household. The author finds remittances to have a positive effect, especially for girls, aged 5-17. Enrollment rates rose by 54% from the average none-migrant home to migrant home for girls. Dropout rates decreased by 55% and in average they had 1.5 years more schooling than a girl from a none-migrant home. This meant that even if girls generally had less schooling than boys, the gap was narrowed by remittances and girls benefited from this greatly. The same effect was found when comparing sibling's schooling before and after migration. The effect increased girls schooling with 65%, the largest effect measured among researches. The most diverging result was that no significant difference was found in schooling levels between children that expected to migrate compared to children that did not. Something argued by Amuedo-Dorantes, Georges and Pozo among others, to be a contributor to the migrant effect (more in chapter 5). Mansuri also tests for differences in the effects with a relatively wider gender perspective. A variable controlling for the household head's gender was implemented to separate the effects from men and women. When the differences were tested, the effects were surprisingly low for female headed households compared to male. Girls in female headed households do only marginally more schooling than non-migrant household and much worse than in male headed. Mansuri argues domestic work to cause this disruption.

Bansak and Chezum separates similarly to Amureto-Dorantes, Georges and Pozo the household to test for the absenteeism created by migrant effects. The authors focuses on the disruption effect and find that even though young girls aged 5-10 benefitted less from remittances than boys, they were also less effected by disrupting effect (chapter 5). The effect was found to be 72% larger for young boys than girls, a noteworthy sum.

Bouoiyour and Miftah published online in 2015 that similarly to Mansuri (2006) the authors test for female headship and the differences resulting from gender. The author finds overall positive effects from remittances on ages 6-16 on school attendance, such as lowered dropout rates and lowered number of girls out of school. The authors find same counterintuitive results, just as Mansuri, when regarding the female headship, i.e. that girls are more likely than boys to drop out of school in female headed household and are therefore much better off with male headship. The authors explain their findings with women being overrepresented in poor households with unequal wage and unequal opportunities in the economic market in general.

Of all examined articles only Mansuri, Bouoiyour and Miftah analysis the effects after differentiating between the recipient's genders. Some of the other authors did control for female headship but used the information to describe the average recipient household or to determine the education level of the head instead of testing for differences. Sender's gender was in no article tested.

## 4.5 Conclusions: article comparability and critical analysis

### 4.5.1 Comparability

Almost all articles use education as the dependent variable, meaning the authors try explaining an education variable with other, independent variables, the main explanatory variable being remittances. To find a clausal link between the two, authors try to account for other independent variables that can affect the education variable. All authors use individual-specific variables, household-characteristics and area-specific trades. The exact variables differ, and some use a binary variable for education and remittances (0 or 1, i.e. yes or no), while other use intervals as attained school years or amount of remittances. As presented in 4.1 there are three central topics in determining comparability between this thesis' 11 articles; simultaneity, reverse causality and selection bias (cf. Dougherty, 2011; Körner&Wahlgren 2002)

There are different ways of resolving these issues and among the articles examined all but Cox and Ureta use instrument variables, IV's, which are correlated with the remittance-variable but uncorrelated with the education-variable. This way the authors can eliminate bias from selection and endogeneity (when the variables

are correlated with the error-term). Most authors follow Hansson and Woodruff with some form of historical migration patterns as IV. Other IV's are financial flows from official institutes (like Weston Union), literacy rates, number of male in the household and political unrest. Cox and Ureta does not control for selection and endogeneity. The authors argue that the political unrest in 1980's El Salvador drove people to migrate from all classes and hence prevent bias. This might not be the case as the cost of migration can be high and as not all Salvadorians can be assumed to have equal impacts from unrest and thereby be at risk of migration. Acosta also examined El Salvador during the equivalent time period but used migration networks and migration history to properly control for the issues. Acosta does not find contradicting results, but stronger.

The migration patterns and data of historical migration is not always evident to find and can be based on collections of other variables. In some cases the data is observed and noted beforehand by statistical institutions, and in other cases the migration data must be derived from other data. This goes for all variables. If big sample sizes are used one can argue that the sample variation will not divert extensively from the true variation in the population, but there is still risk with deriving a measurement from unspecific data. An example of this is the case of Haiti. Amuedo-Dorantes, Georges and Pozo uses migration networks as IV and derive this by the following procedure; they gather the information of migrant's geographic location, stated by their remittances-receiving families. They assume that the migrants work in the same area as stated living, and extract information by comparing to state-level data (U.S.) of Hispanic workers' unemployment rates and average income. Even though shown correct with a Wald (exogeneity) test, it is important to consider the potential risks in deviating variation in sample versus population. Especially when constructing a new variable like this case, or the income category case described in 4.2. This is not completely, but largely prevented by testing the IV for correlation. Instrument variables need to be uncorrelated with the dependent variable (education variable) which makes for example Bansak and Chezum's use of literacy rates and political unrest questionable. These variables are likely to be correlated to children education, making them unfit as IVs. It is a concern but as the results do not divert from other studies one can still argue its comparability to the other articles.

All articles have taken preventative measures of testing the data, the analysis preformed is adequate and the results presented are convergent. Given the material analyzed the thesis finds the articles to have resembling structures leading to comparability in the purpose of answering the thesis question and purpose. The structural issues and comments above should of course be considered, yet the articles' result can correctly be compared.

#### 4.5.2 Critical analysis: impact on girls' education

As articles in the field of development studies and human capital attainment, it is unexpected that gender has been given such a marginal role in the analysis, as it an

important factor in development. All articles inspect gender bias (girls' and boys' schooling) already, but do not extend their studies further. The lack of gender perspective limits the possible conclusions concerning gender differences. Mansuri, Bouoiyour and Miftah are the only authors to extend their analysis and use a wider gender perspective; however they, as all other authors, have no separate test concerning the sender's gender. Overall gender has not been discussed as a contributing factor to the effects except in the case of mothers' education levels. A more gender including perspective is greatly missing.

All authors agree on the theoretically ambiguous connection between remittances and increased levels of education. This is the underlining assumption in all articles. Differences in assumptions are mainly a result of pre-existing knowledge in the location- and economy-specific variables, mostly countered and tested against national data as described above. Another important assumption that differs between the articles concerns the investment in education. Simplified, the authors treat the households' decision to send children to school as an investment decision (cf. Varians 2009). The households' weigh their initial costs against the long term benefits of increased income in the future. The difference in the authors' assumptions is to what extent the decision is purely an economical decision. For example Hansson and Woodruff recognizes that the decision is not always treated as an economic investment and tests for a range of individual-specific effects (Hansson&Woodruff, 2003, p.4, 28). The same goes for the investment decisions in gender. Bansak and Chezum for example make the assumption that boys are more likely to enroll as they are future provider of elderly parents, meanwhile Acosta assumes the boys to be more attractive than girls on the labor market. Another assumption, especially evident in the studies of America, is the assumption of male migration. Although this might be mostly true for America, proved by the descriptive statistics in the articles, it makes the studies result less comparable to the rest of the world as some areas have many women that are migrant workers.

For all articles reviewed the basic variables (i.e. age, gender, schooling) are essentially equivalent to one and other. The difference is the extent of variables included, as in how many, and in the characteristics of the measurement. For example, education is included in all articles. Some measure in accumulated years, others enrollment and so on, but they are different measurements for the same variable. Not to say there is no difference between the measurements, and one can argue their suitability, however it makes the result comparable. This is especially true for the basic variables, most which are individual-specific. Gender, age, schooling of the child, measurements if the child is first born, only child or number of children in the household, is in some form included in all articles, as well as the household head or the mother's education levels.

All articles find significant results from remittances on education. The dropout rate is lowed generally over the first few years of schooling; however, increase back to average around the age of 10. The effects on school attainment ranges from approximately a month extra schooling too little over a year, but the effects on girls are rarely as high as a year. Although results show remittance to have a significant

effect, it is small and largely restricted to specific groups. The effect when living in poor and rural areas is overall larger than urban, other research in remittances effect finds similar results; however, the evidence variate between counties. Girls from household with low educated mothers/household heads are more likely to benefit the effects. However, even in these households the effect is surprisingly limited. Mansuri finds by far the largest effects with girls schooling with the average girls from migrant-home having 1.5 years more schooling than other girls. Overall the result lies well under a year's extra attainment. All authors agree on the ambiguous theoretical connection between remittances and education, but still find weaker results than what theory suggests. An explanation provided by some authors is the so called migration effect, a disrupting effect countering the positive influences of remittances. Nonetheless, the characterization and explanation for the effect remains however at large undefined by the authors.

## 5 Concluding discussion

The purpose of this thesis is to provide a critical analysis of accumulated research in remittances effect on girls' education in less developed countries, to derive a general knowledge if possible, and to map the differences and results. The question posed was: In what way may the effects of remittances on girl's education impact development in less developed countries and how extensive are these effects?

All articles find significant results for school attainment ranged around little under a year; thus this thesis concludes remittances have a positive effect on development in less developed countries through girls' education. More research is needed to further confirm these effects as the research has been mostly limited to Central and South America. However a clear tendency is evident as three of the articles are based in three different non-American regions where all authors independently find significant results. Throughout the articles the effects found from remittances on girls' education are surprisingly weak. Even though significant, the effect's size in number of years and lowered dropout rate is much smaller than what theory within the field might suggest. This leads to the conclusion that there must be a countering effect that has not been taken into consideration that is interrupting the positive impact. All articles mention this disruption in some way, with certain reservation for Cox and Ureta, as the results are somewhat contradictive to previous development research. By overviewing the articles one can conclude that the most intuitive and commonly blamed factor, accessibility, is not responsible for the disrupting effect. Urban areas with high accessibility also have low results, and rural areas tends to have the highest gain in schooling. There are no obvious disruptions that can explain these results but the author's present a few suggestions that are interesting to examine.

In some America based articles the so called 'expected migration' is mentioned as a possible disruption. When a family member has immigrated to the US, the family expects to follow and therefor it lowers the value of local education and decreases the incentive for schooling and rather, children might be expected to work to raise funds. However, Mansuri finds no effect of this factor in Pakistan when testing for it.

Hansson and Woodruff are the first to mention the 'migration effect', which with high frequency reoccurs as an explanation for the low results. "(...) the departure of wage earners from a household may disrupt family life. It reduces the number of adult role models in the home, may increase the child-rearing responsibilities of resident household members, and may place greater demands on the older children to assist in running and supporting the household" (Hanson&Woodruff, 2003, p.3). This summarizes the general ideas of what the migration effect is assumed to be; however, all but three articles only briefly mention the migration effect without further explaining or conceptualizing the term. The articles discussing the disruption are: Amuedo-Dorantes and Pozo for Dominican Republic, Amuedo-Dorantes, Pozo and Georges for Haiti, Bansak and Chezum for Nepal. Bansak and Chezum argues that the disrupting effect is caused by the loss from work that the

migrated family member could have done in the household but also outside the household in terms of labor. The authors present evidence for a disruption, but not of the cause. In the case of Dominican Republic and Haiti the migrant households were separated from non-migrant households among the RR-households. It is arguable that the separate test widens the focus, but as migration is used as an explanatory factor for weak results, separate tests are necessary. Looking at these two articles the results are still within the range presented earlier, lower than theory suggests, and therefore the migrating adult does not fully explain the limited effects.

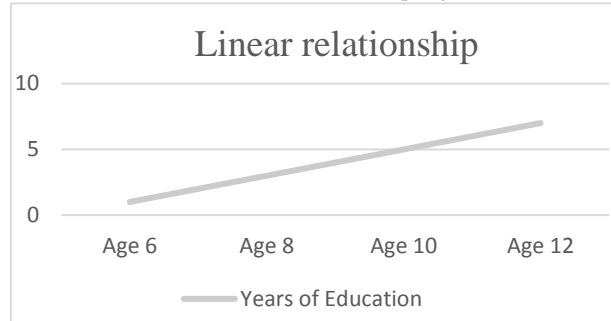
Within the theory of migrant effect, it is suggested that an increased need for the children to contribute in the labor market or with domestic work (i.e. household, agriculture, younger siblings) might cause low results. Four articles simultaneously investigate remittances effect on child labor with the same data set used for education: Calero, Bedi and Sparrow, Acosta, Mansuri, Bouoiyour and Miftah. All articles find remittances to decrease incidence of child labor. The limited effect on education is thereby not explainable by increased need of income through child labor. Calero, Bedi and Sparrow examines domestic work and find little effect in rural areas but a larger, negative effect in urban. This could therefore be an explanatory factor as the overall positive educational effect of remittances have been lower for urban areas, however the negative effects are far from big enough to fully explain the low impact displayed in the result. In a few articles there is a reference to previous research on migrant effect which consists of McKenzie and Rapoport's article from 2011 on Mexico. It is however irrelevant for primary aged students as the article only find significant results on high school students, which leaves no credible explanation to the effect being limited. Hence, another disrupting effect must influence the connection between remittances and girls' education that is yet unaccounted for.

With the analyzed material, this thesis can conclude that there is evidence for a disrupting effect, but it remains unclear what causes the impact from remittances to be much more restricted than what is to be expected when looking at the connections between poverty, human capital investment, and education. The disruption seems to even distort the connection between educated women and educated children, a connection empirically proven. Hanson – Woodruff, Borraz, Acosta, Fajnzylber and Lopez find surprisingly no effect from remittances if the mother has more than 3 years of education. Mothers education has been shown to be positively correlated with the child's education but Acosta, Fajnzylber and Lopez even found a *negative* correlation meaning that the more education the mother has, the less education the children are having in RR-households. Mansuri, Bouiyour and Miftah finds girls in female headed household to have *less* education than in male. In both cases the authors point at structural inequalities between genders as explanation for the negative influences. Mansuri suggests that because of the difficult situation in Pakistan with limited female mobility, girls' might be inquired to work domestically to a larger extent under female headship. It would have been interesting for the gender analysis to know if these female headed household had a higher incidence of domestic work but no such test was conducted.



A remark concerning the statistical approach, where there are concerns regarding articles use of linear models. As previously mentioned many authors use a 0 and 1 variable, e.g. educated or not educated, which is done in a probit model and while the use of exact model variate between the articles, the most common model is an OLS, followed by probit and sensitivity tests with IV's. A linear model (see illustration) has the same distance between ages 6-8, as 8-10. The advantage is standardized result: for every dollar increase in remittances, education rises with x amount; however it is a questionable approach as some of the data are assumingly non-linear. An example is age. Age is assumingly a non-linear variable, meaning it can be expected that the relationship between the education variable and child's age variate; thus, the effect might be larger in some ages than other. This is especially of concern when large age ranges have been examined. For example Amuedo-Dorantes and Pozo samples children between age 7 and 18, the largest range. Half of the studied articles separate into age categories when the range is large, and test in shorter intervals, which give a better representation of natural fluctuations. The linear method is commonly used in economic calculations but concern remains as the age categorize at times are quite large (Bansak and Chezum for example has a five year interval). Two authors have approached the task differently from the others: Borraz have tested all ages separately, and Bouiyou and Miftah have squared the age (non-linearity in data). In the last case the authors find a non-linear connection which straightens the argument that a linear model is not optimal. As the size of the effect found is marginal, it is possible that a non-linear model would have provided a more detailed picture of remittances impact on girls' education.

Graf 1: Illustration of a linear relationship (age and education)



A final note; in theory there is a clausal link between remittances and increased levels of girls' education by budget relaxation and human capital investments, however when reviewed by this thesis the effect is more limited than expected. A significant impact from remittances is found for girls in primary education; raised school attainment and lowered dropout rates, but the effect is marginal and restricted to specific groups. With support from examined articles, this thesis conclude the link between remittances and girls' education to be more complex than theory might suggest, complicated by an undetermined factor that counter the effects of remittances. With further examination the thesis finds no evidence for accessibility, labor, expected migration, and migrated family to be reliable for this countering effect; a conclusion that disputes theory from previous authors. With the available research it is not possible to fully map the mechanisms of remittances impact. More research is needed in order to comprehend the structures of remittances effect on school attainment; allowing a more efficient gain in human

capital formation, increase in capabilities, and thereby a sustainable development with poverty reduction.

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## 7 Article overview

<b>Publication year</b>	<b>Author/s</b>	<b>Studied country and year of survey</b>	<b>Studied ages</b>
2003	Alejandra Cox Manuelita Ureta	El Salvador 1997	6 - 24
2003	Gordon H.Hanson Christopher Woodruff	Mexico 2000	10 -15
2005	Fernando Borraz	Mexico 1992-2002	10 - 13
2006	Pablo Acosta	El Salvador 1998-2000	11-17
2006	Ghazala Mansuri	Pakistan 2001 – 2002	5 - 17
2007	Pablo Acosta Pablo Fajnzlber J. Humberto Lopez	Mexico 2002 El Salvador 2000 Guatemala 2000 Honduras 2002 Ecuador 2004 Paraguay 2003 Peru 2002 Nicaragua 2001 Jamaica - Dominican Republic 2004	10 -15
2008	Carla Calero Arjun S. Bedi Robert Sparrow	Ecuador 2005 – 2006	10 - 17
2009	Cynthia Bansak Brian Chezum	Nepal 1995 - 1996	5 – 16
2010	Catalina Amuedo- Dorantes Susan Pozo	Dominican Republic 1999-2000	7 - 18
2010	Catalina Amuedo- Dorantes Annie Georges Susan Pozo	Haiti 2000, 2002	6 – 17
2015	Jamal Bouoiyour Amal Miftah	Morocco 2006 - 2007	6 - 14