

Univerzita Palackého v Olomouci, Olomouc, Czech Republic
Université Clermont Auvergne, Clermont-Ferrand, France
Università Degli Studi di Pavia, Pavia, Italy

MASTER THESIS

Analyzing Remittance Patterns in the Kyrgyz Republic

Laila JIWANI

Supervisors: Dr. Jean-Francois Brun

Professor Kiyalbek Akmoloev

GLODEP 2020

Analyzing Remittance Patterns in the Kyrgyz Republic

MASTER THESIS

Submitted by

Laila JIWANI

Supervised by

Dr. Jean-Francois Brun

Université Clermont Auvergne, Clermont-Ferrand, France

CERDI

Kiyalbek Akmoldoev

Dean, Faculty of Economics, International Ala-Too University

Erasmus Mundus Joint Master's Degree in Global Development Policy

2018-2020

Declaration

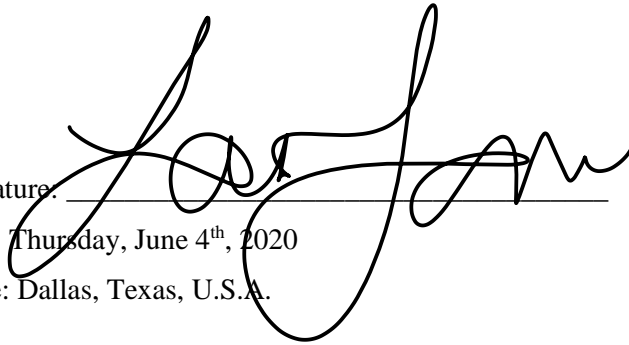
I declare that this thesis, which I submit to GLODEP Consortium for a pre-requisite of “Erasmus Mundus Joint Master’s Degree in Global Development Policy” is original and my own personal effort.

Furthermore, I have taken reasonable care to ensure that the following work is original, and, to the best of my knowledge, is not in violation of copyright law, and has not been taken from other sources except where such work has been cited and acknowledged within the text.

Signature: _____

Date: Thursday, June 4th, 2020

Place: Dallas, Texas, U.S.A.

A handwritten signature in black ink, written over a horizontal line. The signature is highly stylized and cursive, with large loops and flourishes. It appears to be the name 'Luis' followed by a surname that is difficult to decipher due to the cursive style.

Acknowledgements

This thesis is written with many thanks to my primary supervisor, Dr. Jean-Francois Brun of L'Université Clermont Auvergne and the Centre d'Etudes et de Recherches sur le Développement International (CERDI), for guiding the methodology of this research and helping detail the observations of my work.

My sincerest gratitude also to Professor Kiyalbek Akmoldoev and the Department of Economics at International Ala-Too University for hosting me and facilitating access to the data used in this research. Professor Akmoldoev has been essential in providing the social and demographic context for this paper while assisting with the writing and structure, as well.

Additional thanks go towards the teams and funders of the Life in Kyrgyzstan Study as well as the National Bureau of Statistic of the Kyrgyz Republic for the data provided. I would also like to thank the GLODEP consortium, including the consortium directors – Dr. Miroslav Syrovátka, Dr. Pascal Motel Combes and Dr. Maria Sassi – for providing the opportunity to establish the academic foundation for conducting this research and completing the Master in Global Development Policy.

A special thank you also to the friends and family that supported my own migration and adjustment back to my country of citizenship amidst the coronavirus pandemic.

Abstract

The Kyrgyz Republic has experienced slow and steady GDP growth in recent decades. However, according to World Bank projections, the economy is expected to contract in recent years. At the same time, the country experiences steady high rates of emigration, particularly for economic purposes. Consequently, remittances have long been a significant and important source of income for the national economy. Overseas remittances made up 29% of the GDP of the Kyrgyz Republic in 2018 (World Bank, 2020). Therefore, money sent from abroad has a massive potential to positively affect the development of the economies of lower income and lower middle income transition countries that depend highly on it. The proposed thesis aims to analyze how money transfers from labor migrants affect the economic livelihoods of households in the Kyrgyz Republic and present its implications for remittance and migration related policy through assumptions outlined in Revenstein's Laws of Migration. Through a mixed methods approach, this paper compares averages of the standards of living of households based on the presence of remittances in their income while contextualizing the differences based on demographic and sociopolitical phenomena. In particular, the research intended shall focus on the correlations between receiving remittances and a household's standard of living along with patterns of household expenditure including rates of consumption, savings and investment, if any

Keywords: Central Asia, Migration, Remittances, Kyrgyz Republic

UNIVERZITA PALACKÉHO V OLMOUCI

Přírodovědecká fakulta

Akademický rok: 2019/2020

ZADÁNÍ DIPLOMOVÉ PRÁCE

(projektu, uměleckého díla, uměleckého výkonu)

Jméno a příjmení: **Laila JIWANI**
Osobní číslo: **R180546**
Studijní program: **N1301 Geography**
Studijní obor: **International Development Studies**
Téma práce: **Analyzing Remittance Patterns in the Kyrgyz Republic**
Zadávající katedra: **Katedra rozvojových a environmentálních studií**

Zásady pro vypracování

The Kyrgyz Republic has experienced a deceleration of GDP growth in the last decade (World Bank Group, Country Economic Updates). At the same time, the country experiences steady high rates of emigration, particularly for economic purposes (Bollard et. al.,2009). Consequently, remittances have long been

a significant and important source of national income in the national economy. Overseas remittances made up 29% of the GDP of the Kyrgyz Republic in 2018

(World Bank Group). Therefore, money sent from abroad has massive potential to spur the economies of lower income countries that depend highly on it. The

proposed thesis aims to analyze how money transfers affect the economic livelihoods of households in the Kyrgyz Republic and present its implications for

remittance and migration related policy. In particular, the research intended shall focus on the correlations between receiving remittance and a household's

standard of living along with patterns of household expenditure including rates of consumption, savings and investment, if any.

Rozsah pracovní zprávy: **20 – 25 tisíc slov**
Rozsah grafických prací: **dle potřeby**
Forma zpracování diplomové práce: **tištěná**
Jazyk zpracování: **Angličtina**

Seznam doporučené literatury:

Haas, Hien De. ?Migration, Remittances and Regional Development in Southern Morocco.? *Geoforum*, vol. 37, no. 4, 2006, pp. 565-580., doi:10.1016/j.geoforum.2005.11.007.

Hipsher, Scott A. ?Central Asia: Afghanistan, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan and Uzbekistan.? *The Private Sectors Role in Poverty Reduction in Asia*, 2013, pp. 227-244., doi:10.1016/b978-0-85709-448-3.50013-9.

Ostropolski, Christopher. ?International Labour Migration, Remittances and Remittances-Based Spending: Quantitative Study of Decision-Making in the Kyrgyz Republic.? doi:10.22215/etd/2016-11485.

Wang, Donghui, et al. ?Remittances and Household Spending Strategies: Evidence from the Life in Kyrgyzstan Study, 2011?2013.? *Journal of Ethnic and Migration Studies*, Feb. 2019, pp. 1?22., doi:10.1080/1369183x.2019.1683442

Vedoucí diplomové práce: **Jean-Francois Brun**
University of Clermont Auvergne

Datum zadání diplomové práce: **3. února 2020**

Termín odevzdání diplomové práce: **7. června 2020**

L.S.

doc. RNDr. Martin Kubala, Ph.D.
děkan

doc. RNDr. Pavel Nováček, CSc.
vedoucí katedry

Table of Contents

Introduction	8
Research Objective	8
Theoretical Framework and Assumptions	9
Kyrgyz Migration in Context	9
Literature Review	13
Data and Methodology	14
Challenges and Limitations	16
Findings	17
Significance Tests	34
Discussion, Conclusion and Implications for Further Research	36
Works Cited	39

List of Tables

Table 1: Education Indicators by Remittances	21
Table 2: Education Indicators by Remittances, 2012 and 2013	21
Table 3: Health Indicators by Remittances	22
Table 4: Access Indicators by Remittances	23
Table 5: Asset Indicators by Remittances	23
Table 6: Expenditure by Currencies Received	25
Table 7: Education Indicators by Remittances, Currency	26
Table 8: Health Indicators by Remittances, Currency	27
Table 9: Access Indicators by Remittances, Currency	27
Table 10: Asset Indicators by Remittances, Currency	28
Table 11: Education Indicators by Remittances, Region	29
Table 12: Health Indicators by Remittances, Region	30
Table 13: Access Indicators by Remittances, Region	31
Table 14: Asset Indicators by Remittances, Region	32

List of Figures

Figure 1: Internal migration flows	11
Figure 2: Per Capita Income by Remittance Receiving Households per Region	18
Figure 3: Unemployment Rate by Remittance Receiving Households per Region	19
Figure 4: Per Capita Income by Remittance Receiving Households per Region	20
Figure 5: Remittance Amounts Received by Currency (valued in USD)	24
Figure 6: Subjective Remittance Reliance	33

Introduction

As one of the five Central Asian Republics, the Kyrgyz Republic is a country with rugged terrain, little access to water routes and currently facing a transition economy, providing ample opportunity with even more challenges. Central Asian Republics and their economies face the intriguing challenge of existing as transition economics since their independence from the Soviet Union. As a Soviet Socialist Republic less than three decades ago, the now independent Kyrgyz Republic is in a continuous process of shifting from a centrally planned economy to encouraging a mixed or market economy. In such economic conditions, it is unsurprising to find informal or alternative sources of income being used to sustain households and their livelihoods. In the case of the Central Asian Republics, many continue to rely on relations with its former hegemonic power of Russia. Migration of labor within the Kyrgyz Republic and to Russia is a common theme in the country and serves as an opportunity to earn incomes that may not be available or sufficient in a worker's own region. The patterns of this income earned, its expenditure and impact can provide insight on the attainment and effects of a relatively overlooked source of income. At the national level, the Kyrgyz Republic depends significantly on the flow of remittances for foreign income to supplement its flailing GDP. At the household level, some scholars argue that remittances have the potential to alleviate poverty (Murodova, 2018) and encourage consumption (Samuel, 2013). The following research is intended to gain a deeper understanding of remittances and if they are, indeed, a means of raising the standard of living of households.

Research Objective

The Kyrgyz Republic has experienced a deceleration of GDP growth in the last decade (World Bank Group, 2017). At the same time, the country experiences steady high rates of emigration, particularly for economic purposes. Consequently, remittances have long been a significant and important source of national income in the national economy. Overseas remittances made up 29% of the GDP of the Kyrgyz Republic in 2018 (World Bank Group, 2020). Therefore, money sent from abroad has a massive potential to positively affect the economies that depend highly on it (Ratha & Mohapatra, 2012). The proposed thesis aims to analyze how money transfers from labor migrants affect the economic livelihoods of households in the Kyrgyz Republic and present its implications for remittance and migration related policy. In particular, the research intended shall focus on the correlations between receiving remittances and a household's standard of living along with patterns of household expenditure including rates of consumption, savings and investment, if any.

Theoretical Framework and Assumptions

Theories regarding individuals' and groups' decisions to migrate extend from studies of refugee migrations to economic migrants. For the purposes of this study, the following methods and averages presented refer to some assumptions made in Ernst Ravenstein's "Laws of Migration". According to Ravenstein's Laws, a large portion of migrants move short distances. Ravenstein also theorizes that much of migration tends to flow towards urban and trade centers. He notes that regions surrounding urban centers experience a "pull" effect wherein people are likely to migrate to the most dynamic city closest to them. Another law of migration theorized by Ravenstein which remains relevant to the following research is that migrants who travel long distances, perhaps to cities and towns further from them or to other countries, tend to be involved in major industries of economic activity. Therefore, it can be assumed that economic opportunities tend to provide important incentives for people to travel and move. Ravenstein also hypothesizes that the majority of migrants are young adults and male. He suggests that most migrants, especially considering economic migrants, travel alone and that families are less likely to migrate than individuals. Another relevant theory presented by Ravenstein is that of "step migration", in which he observes that migration occurs progressively as people from rural areas tend to gravitate towards urban centers and those from urban centers tend to shift further, usually internationally. Ravenstein also notes that urban residents tend to have higher economic opportunity where they already are, the same economic opportunities that attract rural populations, and, therefore, are less likely to migrate (Ravenstein, 1885). These theories are reflected practically in the patterns of migration seen in the Kyrgyz Republic in recent decades.

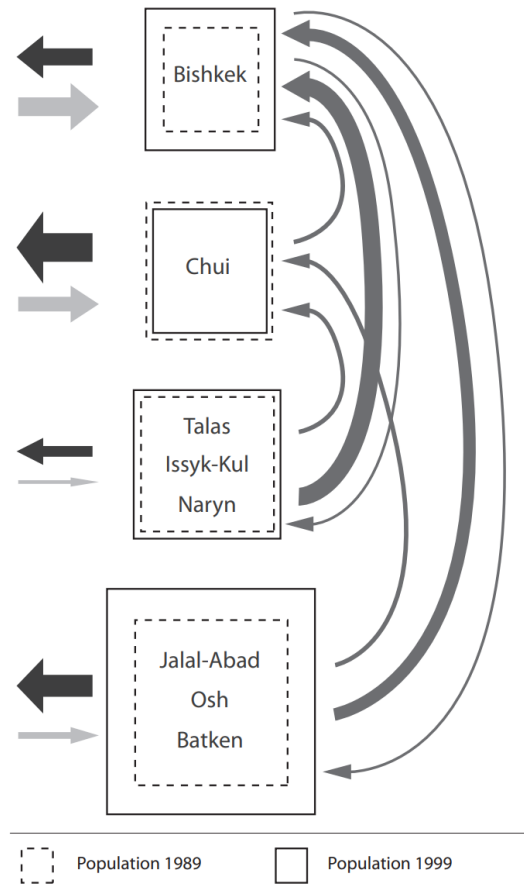
Kyrgyz Migration in Context

Situated between the key Asian world powers of Russia, China and India, the Kyrgyz Republic is part of a geostrategic region in the continent. At the same time, the country continues to face economic challenges after its transition from being a Soviet Socialist Republic to an independent one. During the era of the Soviet Union, migration among the Soviet Socialist Republics (SSRs) happened often and was even legally mandated to encourage assimilation among different ethnic groups across the SSRs and spur development. Ethnic Kyrgyz, Germans and Uyghurs were settled in the northern regions whereas Russians, Ukrainians and Koreans lived mainly in the south of the republic (Schuler, 2007). Migration flows within the Kyrgyz Republic have since been defined largely through movement between its regions particularly between the north and the south of the country. Flows of international migration have

predominantly been to neighboring countries with which the Kyrgyz Republic already had a history of labor movement.

The movement of the country's population has changed over time through the provinces, or oblasts, which are further divided into districts, or raions. The republic consists of seven oblasts which are further divided into raions regulated by government appointed officials. Rural communities within the oblasts are governed by their own elected leaders. The seven provinces of the Kyrgyz Republic are Chui, Batken, Jalalabad, Naryn, Osh, Talas and Issyk-Kul. The two largest cities, Bishkek and Osh, are considered administratively independent. The national capital, Bishkek, also operates as the capital of Chui while Osh also operates as the capital of its own namesake province. Migration within the country is significantly tied to the trends of urbanization since the 1960s. The decade saw a rapid period of industrialization and, consequently, the creation of employment for skilled labor in newly built factories. This led to higher migration to new urban centers in both the north and the south, particularly near the capital of Bishkek and in Osh. The sixties also saw a considerable difference in population growth between urban and rural areas. As urban centers grew more populous, rural areas became sparsely populated. A decade later, in the 1970s, an influx of investments in both agriculture and in industry, especially in the southern region of Osh, provided means for the region to flourish economically. This, in turn, did not lead to much increase in migration to Osh at the time. Rather, it prevented emigration from the region and, therefore, an increase in population due to natural circumstances. The 1980s saw a period of little movement between regions, suggesting that population dynamics were largely due to natural growth and death rates. However, migration from rural to urban centers picked up again in the 1990s. Most raions that were rural did not receive any migrants. Rather, those with main urban centers and even smaller and burgeoning towns did experience population growth due to income migrants from other regions. Beyond population flows between oblasts and raions of the Kyrgyz Republic, migration to neighboring countries also picked up in the nineties. In recent decades, populations in the country have been migrating from urban to rural and, further, from urban centers to other countries (Schuler, 2007). The diagram below depicts the general inflows and outflows of migrants between all regions of the country as well as the direction in which they flow. The straight arrows to the left of the diagram illustrate the incoming and outgoing populations. The curved arrows to the right depict the directions in which populations have been migrating. The thickness of the arrows indicates the magnitude of inflows and outflows.

Figure 1: Internal migration flows



Source: Schuler, 2007

Much of the internal emigration originates mainly from the southern regions of Jalal Abad, Osh and Batken oblasts. However, these oblasts have had the highest population growth despite high levels of emigration due to natural growth rates. The northern areas of Talas, Issky Kul and Naryn oblasts also face a high degree of emigration. The net migration to Bishkek is overwhelmingly positive, meaning all regions show an imbalance of inflows and outflows with the exception of the urban administrative unit of Bishkek. The largest share of internal immigrants travels to Bishkek, which has also seen overall population growth as a result.

In the case of the Kyrgyz Republic, the regions of Batken, Jalalabad and Osh tend to have the highest percentage of households with migrants in recent decades. Batken, simultaneously, has consistently had unemployment rates above the national average since 2006 (National Statistical Committee of the Kyrgyz Republic, 2020). The region is consistently the highest in unemployment and tends to have the highest number of migrating labor, as well. These correlations can serve to highlight the possibility that high rates

of unemployment in the home region incentivize individuals to seek opportunities elsewhere. Batken, in particular, because of its shared border with Tajikistan, has faced economic consequences as a result of conflicts between border posts and the ensuing militarization of nearby communities. Soviet era settling of nomadic groups followed by post-Soviet land reforms have left a dismal legacy of a declining agricultural sector. Due to faltering agrarian infrastructure that leads to labor-intensive field work for insufficient yields, those in the Batken Province may have little reason to remain (Murzakulova, 2017). Further analysis is required to understand the specific impact of border conflict on migration and economic opportunity. However, the aforementioned factors provide some context to better understand the following statistical findings. The patterns of migration incentivized by economic interests seen in the Kyrgyz Republic also support the theories presented by Revenstein that much of migration occurs as a result of “pull” factors that exist in socioeconomically dynamic areas. We can also see some presence of “step migration” as rural residents shift to urban areas and urban residents migrate less.

Regarding international migration, The Kyrgyz Republic has consistently had negative net migration since the 1970s (World Bank, 2017). For decades, there have been more people leaving the country than entering it. Although the gap between international immigrants and emigrants has fluctuated over time, at its largest in the early 1990s immediately after the fall of the Soviet Union, there is still a case of negative net migration and, potentially brain drain, affecting the country to the present day. The largest share of migrants are incentivized by opportunities for work in neighboring countries. The countries that receive the greatest share of Central Migrants are Kazakhstan and the Russian Federation. Despite the shared history between the Central Asian Republics and the Russian Federation, labor migrants from the Kyrgyz Republic and Uzbekistan struggle to attain dual citizenship if they are working in Russia. No dual citizenship agreement exists between the Russian Federation and the Kyrgyz Republic. Although policies and procedures have been simplified for Kyrgyz nationals in Russia to obtain Russian citizenship, the lack of cross border cooperation presents a key issue for migrants. In order to attain Russian passports, Kyrgyz citizens must revoke their citizenship in their home countries. As a result, they are required to give up their rights to vote, own property and enjoy visa free entry in the Kyrgyz Republic. Furthermore, labor migrants that do not acquire citizenship in the Russian Federation must face a number of inconveniences including a requirement that foreign workers regularly fulfill a registration as a foreigner. Such policies that inhibit Kyrgyz citizens from having the benefits of dual citizenship between their origin country and destination country lead to a high degree of informal immigration (Malyuchenko, 2015).

Due to the continuous movement of labor within and outside the country, remittances have become an important source of household income. Remittances are the funds sent by migrants back to their place of origin. Remittances can be sent through a myriad of channels, formal and informal, to support a migrant worker’s family and permanent household. Also referred to as personal transfers, remittances can be

internal or external depending on the destination of the migrant. In the Kyrgyz Republic, international remittances have contributed to a steadily rising share of the country's GDP since 2001, making up over 33% of the GDP in 2018 (World Bank, 2020). This displays the importance of personal transfers towards national economic activity as well as the Kyrgyz Republic's high dependence on economic activity abroad. To understand the impact of these transfers at a more granular level, the following study analyzes the standards of living of remittance receiving and non-remittance receiving households across all seven provinces and the two urban centers of Bishkek and Osh.

Literature Review

It is undeniable that remittances are stable, key resources of revenue for the Kyrgyz Republic. In countries that are part of the Commonwealth of Independent States (CIS), which include all Central Asian Republics, remittances have become a more important medium of foreign cash flow than trade channels. Personal transfers from migrants, both internally and abroad, have an indirect effect towards encouraging consumption and bolstering GDP. Annual remittance flows to the Kyrgyz Republic have steadily increased since the early 2000s despite a slight dip around the time of the global financial crisis in 2008 (Brownbridge & Canagarajah, 2016). Contrary to other sources of foreign financial flows like FDI, trade, or aid, remittance flows are not significantly affected by political instability in the receiving nation. Rather, international personal transfers have a counter-cyclical effect in that they tend to increase in times of economic shock. At the same time, the flow of remittances is dependent on the economic performance of remitter countries. In the case of the CIS countries, economic slowdown in Russia resulted in negative fluctuations of remittances in the CIS recipient countries (Shelburne & Palacin, 2007). Such results also indicate how a dependence on transfers from Russia help perpetuate its economic hegemony over its formerly controlled states. Remittances worldwide may be more significant for poverty alleviation than foreign aid and debt. Due to the fact that remittances are transferred directly from household to household or individual to individual, they affect people's income more directly than macro-level transfers between governments and development banks (Azam, Haseeb, & Samsudin, 2016). In the case of Ghana, another low income country receiving significant portions of remittances, personal transfers have a positive effect on national income and savings. The influx of foreign currency raises the value of national accounts while spurred household incomes help smooth consumption patterns (Samuel, 2013). Money sent from workers abroad also tends to have a "multiplier effect" on economic activity in the home country due to the way it is spent. Because remittances go directly towards household expenditures, increased household spending on things like food, healthcare and retail spur economic activity in recipient countries. The movement of labor abroad also eases the rate of unemployment in the home county itself, particularly in the case of the

Kyrgyz Republic wherein most migrants find opportunities in Russia and Kazakhstan. Some figures also estimate that migrant workers in the Kyrgyz Republic provide the majority of income for their households and, consequently, their salaries serve as the majority of household expenditure (Aitymbetov, 2006). More recent statistical evidence also finds that international migration and the resulting remittances do, indeed, have a positive effect on poverty reduction in Central Asia. Marginal estimates of a probit model determine that the rate of remittances decreases the probability that a household will live in poverty. In the case of Tajikistan, compared to a modeled situation in which households do not receive remittances, the poverty headcount was 38% higher while the squared poverty gap was 37% higher than the existing remittance receiving Tajikistan. The poverty headcount ratio is 10% higher in a simulated situation of no migration in the Kyrgyz Republic while the poverty gap, squared poverty gaps and Gini coefficients were also higher if assumed the country has no migrants (Murodova, 2018). As such, migration is a key factor in potential poverty reduction for the region. In more general analysis of 77 countries that are considered to have developing economies, the impact is even higher for nations for whom remittances contribute over 5% of GDP (Banga & Sahu, 2010). Banga and Sahu's study demonstrated how a 10% average increase in remittances affected about a 3% decrease in the poverty headcount ratio and a 3-5% decrease in the poverty gap of such countries. Existing literature theorizes and validates the substantial effects of remittances and their importance to countries with high rates of emigration. At the national level, the transfers' contribution to economic activity is undeniably positive, bolstering and diversifying its national accounts. At the household level, remittances have been essential to increasing the quality of life of people in recipient countries. The following research aims to analyze the effects of remittances at the household and regional level particularly on factors that improve poverty measure and increase standards of living. By dissecting the standard of living and expenditure patterns of households that do and do not receive remittances in the Kyrgyz Republic, we can support existing literature while contributing a foundation for further analysis.

Data and Methodology

Throughout the analysis of personal transfers and their household level impact, it is important to keep in mind that remittance flows and household income are often underreported due to social concerns and asymmetric information (Seshan & Zubrickas, 2015). As such, even the most reliable sources of data may simply give a window of understanding of the full phenomenon. Data regarding remittances remains relatively ambiguous as countless personal transfers are not done through official channels and, therefore, lack documentation. It is possible that migrants are working illegally in host countries or that the costs of transfers proves too high to incentivize formal methods of remitting funds. For working migrants

unfamiliar with formal banking services or those who are not fluent in the language of their host country, the barriers of sending money home in a documented way remain even stronger.

The following research aims to understand the potential impact of remittances received and the expenditure patterns therein. As such, household level surveys provide the most comprehensive and appropriate source of data. The Life in Kyrgyzstan (LIK) Study, conducted by various institutions across Europe and Central Asia, includes household survey data across all seven provinces of the country as well as the independently administered urban centers of Osh and Bishkek. The household surveys have been conducted annually from 2010-2013 by the German international aid agency, Gesellschaft für Internationale Zusammenarbeit (GIZ), and the World Bank. The surveys did not occur in 2014 and 2015, but were reinstated in 2016. A survey for 2019 is anticipated but yet to be published. The survey uses an initial sample size of 3000 households in the first year it was conducted and adds households with each consecutive year. The study includes 6300 households in total throughout its lifetime, 3000 of which are the original households that are tracked over time. The survey asks questions related to all aspects of a household's well being including but not limited to child education, child health, employment, migration, remittances and subjective poverty (The 'Life in Kyrgyzstan' Study, 2020). The brevity of the time period ensures that the data is the most up-to-date and relevant. For the purposes of this study, households are generally categorized as remittance receiving (RR) and non-remittance receiving (NRR). The attention to detail of the survey questions help in identifying remittance receiving and non-remittance receiving households as well as their standards of living. In this way, the following model looks at the impact of remittances from the perspective of the recipients. Through the use of panel data across the 5 years, the following analysis explores the significance of differences in standard-of-living indicators between remittance receiving (RR) and non-remittance receiving (NR) households. The research explores correlations in categories of standard-of-living indicators that are further categorized as child education, child health, household access and household asset indicators. All child education indicators are regarding school-aged children defined in the LIK questionnaire as children aged 6-17 years. Among the education indicators, the research will use the school enrollment, school attendance, average weeks of school missed as well as average household expenditure on education (including tuition and fees, books, uniforms and other school-related expenses). All child health indicators are regarding household children aged 0-17 years. The child health indicators will measure the average number of doctor's consultations and nights spent in a hospital due to illnesses or infections. Access indicators will include physical distances in kilometers of households to various access points as proxies. The distances to the nearest main road, agricultural marker, town hall, school and hospital provided in the survey will serve as the means to analyze the degree of access households have to government services at an average. Due to the variety of types of assets in Kyrgyz households, including everything from livestock to household appliances, the

most widely held and simply measured asset is land. Although the values and sizes of land plots vary, land ownership is a key resource of capital and economic security. Therefore, land ownership is included as an indicator to best reflect the long term assets of a household.

Another source of data used through the following research enables comparisons across regions to help provide a more contextual understanding of the factors that influence remittance receiving and remittance expenditure. The official statistics provided by the National Statistical Committee of the Kyrgyz Republic serve as a cohesive source of information on regional level and national level socioeconomic conditions. The nationally provided statistics are compared with household level indicators to provide a better understanding of how regional and national patterns affect the flows and use of personal transfers. Furthermore, additional literature relevant to the region, its socioeconomic conditions, and its political incidents is referenced to provide context to trends seen in the data.

Challenges and Limitations

The time period in which this study was conducted placed unique challenges on the availability of primary data sources for the following research and analysis. Firstly, due to the winter season, much of the country, which is made up of mountainous regions and remote valleys, is inaccessible because of dangerous road conditions. The icy and snowy roads pose extreme difficulties especially for foreign researchers who are less familiar with the weather patterns and terrain of different regions of the Kyrgyz Republic. Secondly, the ongoing coronavirus pandemic has led to strict travel restrictions that prevent surveying first hand. The primary researcher of this paper evacuated Kyrgyzstan one month into the research time period to her country of citizenship and completed the research remotely through secondhand surveys. Therefore, the paper relies heavily on the Life in Kyrgyzstan Study to provide sufficient, thorough and accurate data. Regarding the study itself, a portion of the households that are surveyed in the Life in Kyrgyzstan Study are the same through all 5 years. However, additional households were added into the sample with each consecutive year. Because of this, the sample size changes in every dataset, potentially diluting the accuracy of averages of all 5 years. The study has been conducted by different agencies over the course of its lifetime. At its conception in 2010, the study was first funded by the Volkswagen Foundation and led by German Institute for Economic Research, also known as DIW Berlin. From 2012 to 2014, the funding was taken over by the Department for International Development (DFID) and the study was conducted in partnership with a greater number of institutions including the Stockholm International Peace Research Institute and the University of Central Asia as a local partner. The fifth year of the study was conducted in part by the Food and Agricultural Organization of the United Nations, the International Food Policy Research Institute and the University of

Central Asia. Consequently, as the leadership of the study changed hands between organizations of different focus, some of the questions and coding of the survey changed along with it. For example, questions regarding land ownership were not included in the 2016 survey. Therefore, the data for the year 2016 is not included in the averages for standard of living indicators on asset and land ownership. In a similar fashion, some questions that were not in earlier versions of the survey are included in following years.

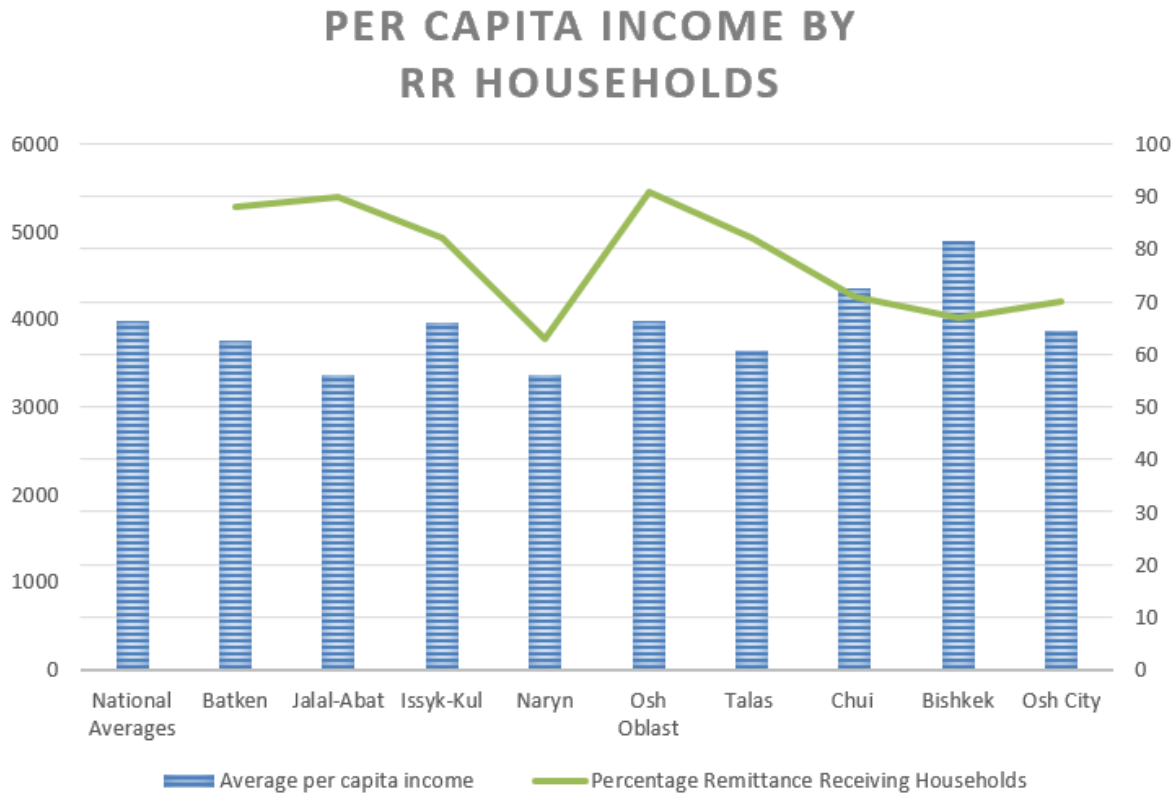
The following analysis is also assembled with multiple data sources. The Life in Kyrgyzstan Study has a limited sample of three thousand households. The data from this study is compared to data from the Statistical Committee of the Kyrgyz Republic which is compiled as a census of national and regional statistics. Therefore, the sample size is much larger than that of the household surveys of the Life in Kyrgyzstan study. The discrepancy in sample sizes may serve as a challenge for further accuracy of the significance of the data. Some data, including qualitative data, is published in Russian or Kyrgyz. Therefore, the data was translated to English, posing challenges of losing accuracy in meaning of data. This issue is particular to qualitative data and literature referred to in the research. The calculation of migrants and the consequential remittances remains incomplete despite the use of multiple data sources. Much of the migration of labor from Central Asia, which is in large part to the Russian Federation, remains covert and undocumented (Stefanik). A large portion of migrants to Russia prefer to live and work informally and, therefore, the money they send to their households in their home country is sent informally, as well.

Findings

The following findings summarize descriptive statistics analyzed using regional level economic indicators in correlation with the percentage of households receiving remittances. To gain a comprehensive understanding of the economic conditions of a region, each oblast's income per capita in soms and poverty rate are noted. Additionally, each oblast's unemployment rate helps reflect the possible lack of opportunity for labor. In the following graphs and tables, "RR" refers to households that are remittance receiving and "NRR" refers to households that are non remittance receiving. Regional income per capita, poverty rate and unemployment rate are averaged using statistics from 2011-2018 collected by the National Statistical Committee of the Kyrgyz Republic. The national average is included as a benchmark to compare regions not only to one another, but also to the country overall. Data from the results of the Life in Kyrgyzstan household surveys has been used to calculate the percentages of households receiving remittances in each region from the years recorded. Percentages from 2010, 2011, 2012, 2013 and 2016

have been averaged to serve as a cohesive indicator of recent personal transfers.

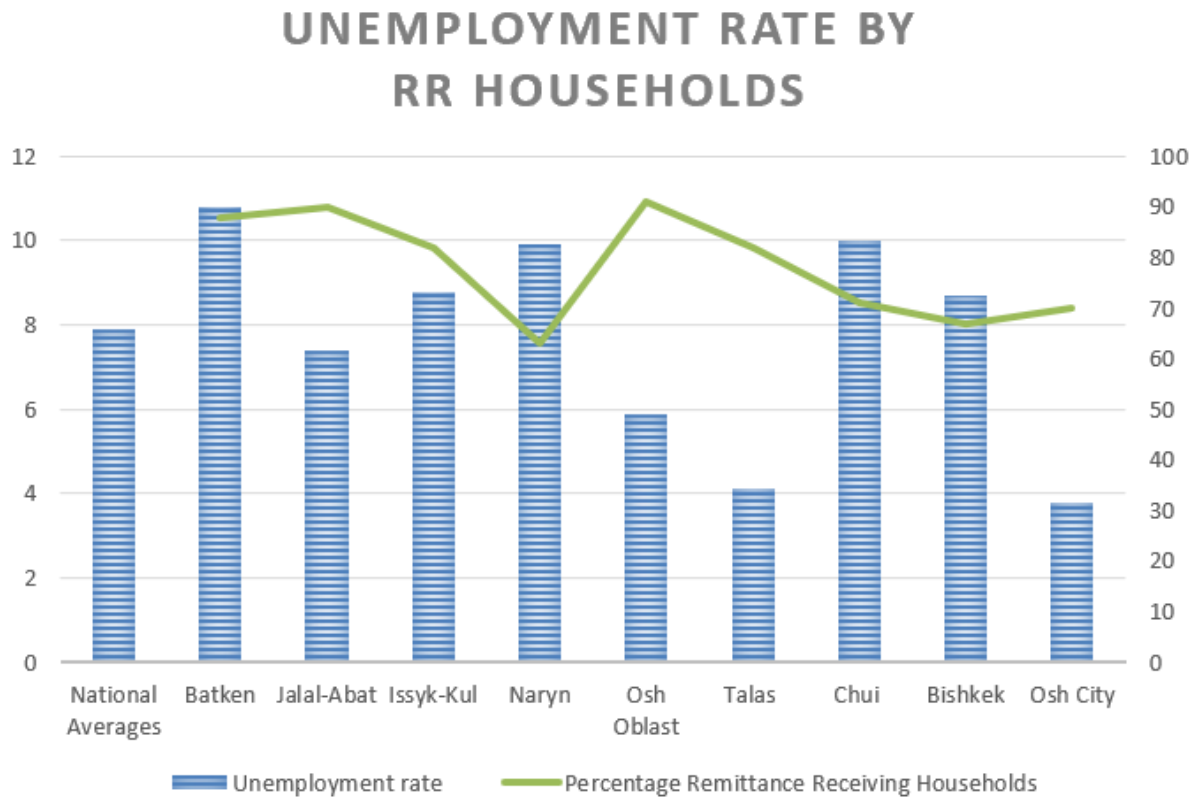
Figure 2: Per Capita Income by Remittance Receiving Households per Region



Sources: National Statistical Committee of the Kyrgyz Republic, Life in Kyrgyzstan Study, own calculations

The data depicted above shows an inverse correlation between income per capita of a region and the prevalence of remittance receiving households. Regions with an income per capita higher than the national average tend to have lower percentages of households receiving remittances. Consequently, regions with an income per capita lower than the national average tend to have higher percentages of personal transfers received from migrants. An exceptional case is the region of Naryn where we see a positive coincidence. In Naryn, despite an income per capita lower than the national average, the region also sees significantly less households that receive remittances.

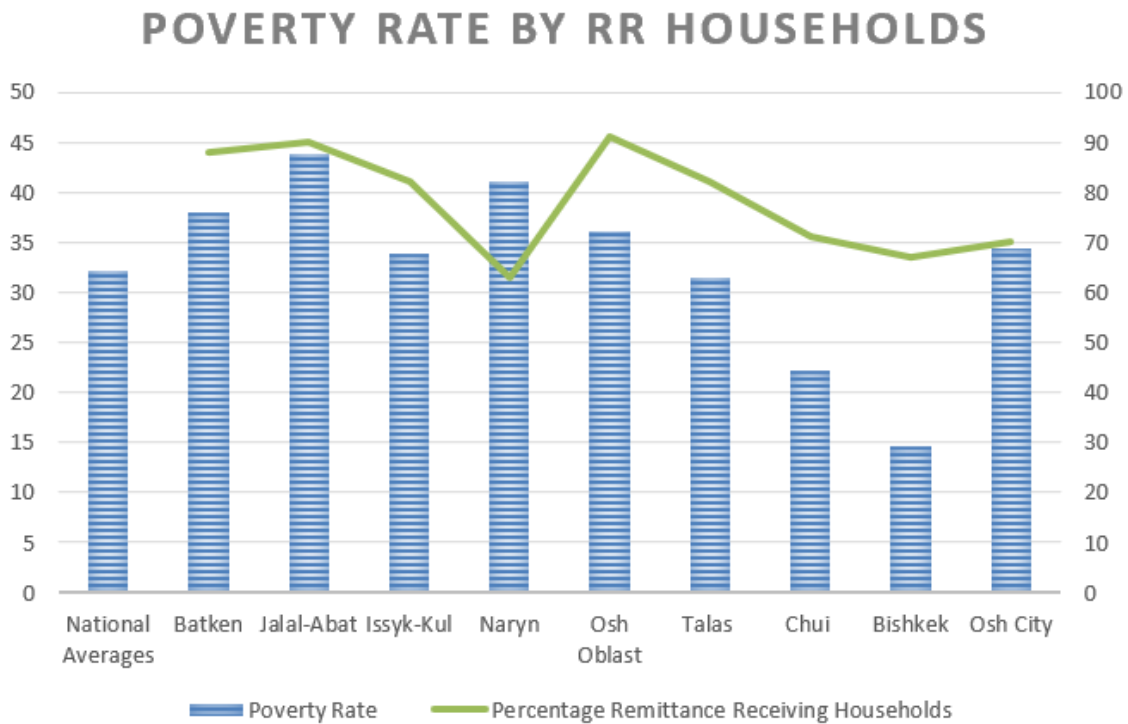
Figure 3: Unemployment Rate by Remittance Receiving Households per Region



Sources: National Statistical Committee of the Kyrgyz Republic, Life in Kyrgyzstan Study, own calculations

The graph above shows a trend wherein we see a positive correlation between the two indicators. Regions in which the unemployment rate is relatively higher coincide with higher percentages of remittance receiving households. Naryn and Talas, however, serve as the greatest exceptions. In the case of Naryn, we see a higher unemployment rate correlating with lower percentages of remittances. With Talas, we can note a lower unemployment rate coinciding with higher percentages of remittance receiving households. The same can be said of Osh Oblast.

Figure 4: Per Capita Income by Remittance Receiving Households per Region



Sources: National Statistical Committee of the Kyrgyz Republic, Life in Kyrgyzstan Study, own calculations

We see a similar and more clear positive correlation between a region’s poverty rate and the percentage of remittance receiving households. Again with the exception of Naryn, the graph above shows that regions with higher percentages of remittance receiving households coincide with higher poverty rates. Labor migration from Naryn makes up less than five percent of the total population due to the fact that many residents of the region are employed in its agriculture and livestock sector. Naryn is one of the mountainous regions of the Kyrgyz Republic and, due to its rugged terrain, remains physically remote from the rest of the country. At the same time, the farming and animal husbandry sectors of the regional economy have attracted much of the labor and, perhaps, prevented the migration of many of its residents (Alymbaeva et. al., 2013). The prior information points to the possibility that households in regions with lower incomes, higher unemployment and higher rates of poverty tend to have more migrants. In assessing the correlations between the occurrence of personal transfers to a household’s standard of living, each standard of living indicator is averaged or shown as a percentage against the remittance receiving and non remittance receiving households. The averages include all households surveyed from 2011 to 2013 and 2016.

Table 1: Education Indicators by Remittances

	School enrollment (percentage)	School attendance (percentage)	Average school weeks missed	Education Expenditure (soms)
Non-Remittance Receiving	91	86	0.70	3900
Remittance Receiving	88	84	0.71	2493

Child enrollment and attendance indicators see little difference between remittance receiving and non remittance receiving households. Conversely, the household surveys show average higher attendance and average lower weeks missed in households not receiving remittances. In another seemingly contradictory circumstance, non-remittance receiving households spent the most on education followed by households that receive remittances from internal migrants.

Table 2: Education Indicators by Remittances, 2012 and 2013

	School enrollment (percentage)	School attendance (percentage)	Average school weeks missed	Education Expenditure (soms)
2012				
Non-Remittance Receiving	88	99	.256	3302
Remittance Receiving	88	100	.619	3678
2013				
Non-Remittance Receiving	89.92	34	1.7	4698
Remittance Receiving	87.34	23	1.6	4267

From 2012 to 2013, the data also showed a dip in school attendance with school age children missing more weeks of school despite similar rates of enrolment. Around the same time, in the later months of 2012 and into 2013, controversy surrounding the Canadian-owned Kumtor gold mine led to protests and political unrest. The mining industry in the Kyrgyz Republic is a critical component of the country's economy and provides employment across multiple regions (Guillette & Kalybekova, 2014). However, some of the largest mining operations, including Kumtor, are done by foreign owned companies. The operations of the Kumtor Gold Company, part of Centerra Gold Incorporated, make up nearly ten percent of the national GDP and almost twenty one percent of the Kyrgyz Republic's aggregate industrial output, reflecting the enormous influence of the single corporation (Centerra Gold, 2020). The company is heavily taxed and has given funds for the development of its surrounding communities as well as the Issyk Kul region. Nonetheless, the ownership of the mining companies had become a strategic political point for the leadership of nationalist parties (Guillette & Kalybekova, 2014). Movements to nationalize the mine led to negotiations and parliamentary discussions sparked public unrest. Unrest regarding corruption began in the Issyk Kul province and rippled into Talas where other foreign-owned gold mines halted operations as protesters called for nationalization of mines (Horrocks-Taylor, 2018). Protest campaigns, including sit-ins by the Ata-Zhurt opposition party, blocked main roads in the Jalal Abat Oblast. More detailed analysis is required to further understand the effects of political instability on personal transfers and child education. However, the above results serve to support the hypothesis that political instability in this case affected school attendance to a more significant degree than the occurrence of remittances.

Regarding health indicators, we see greater differences between households that do receive remittances and households that do not.

Table 3: Health Indicators by Remittances

	Average number of Doctor visits for illness	Average number of nights spent in a hospital
Non-remittance receiving	.49	.33
Remittance receiving	.29	.24

The average number of visits to a doctor in households that do not receive remittances is nearly double that of households that do receive them. The average number of nights spent in a hospital is also notably

higher in non remittance receiving households than in remittance receiving ones. The above results show that there is a general difference in the health standards of household members depending on whether the households do or do not receive personal transfers.

At the same time, such indicators as the aforementioned education and health variables can also point to a difference in access to human services such as schools and hospitals. In looking at access indicators, the distances between the households surveyed to the nearest access points are compared.

Table 4: Access Indicators by Remittances

Distance to the nearest... (km)	Main Road	Agricultural Market	Town Hall	School	Hospital
Non-remittance receiving	1.17	6.9	4.2	1.4	4.2
Remittance receiving	1.58	6.9	4.6	1.8	5.0

In comparing remittance receiving and non remittance receiving households, we can see slight differences in the distances to access points. Non remittance receiving households on average are closer or equidistant to access points than remittance receiving households. This may imply that households that do not have migrants sending back personal transfers have higher access to human services that increase their standard of living.

To compare asset ownership, the possession of plots of land serve as a way to gauge the economic safety of a household. Below is a detailing of land ownership by remittance receiving and non remittance receiving households.

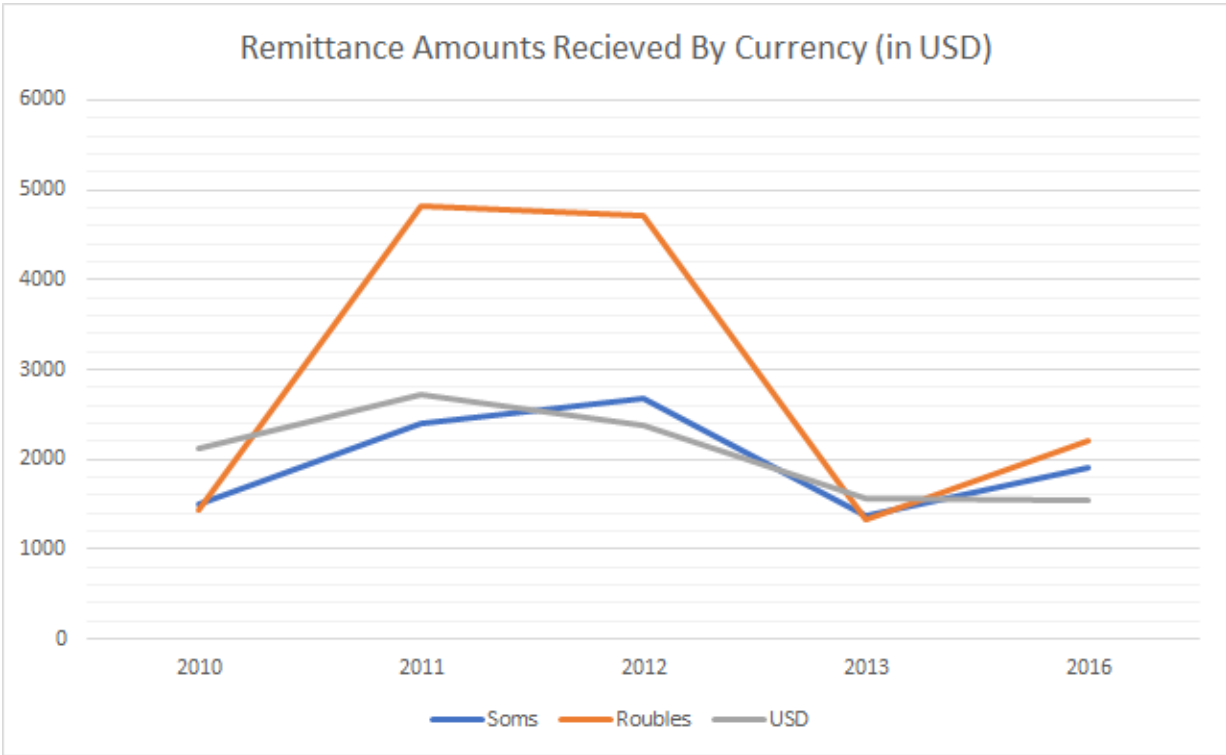
Table 5: Asset Indicators by Remittances

	Percentage of households owning land	Percentage of households with multiple plots of land
Non-remittance receiving	86.9	64.1
Remittance receiving	95.2	73.7

Because land ownership is common among households in the Kyrgyz Republic, it is essential to not only note the households that own land, but those that own more than one plot. In line with the previous statement, we see that a majority of the households surveyed do own some sort of land. Over half of the households surveyed own more than one plot with slightly more of a difference between remittance receiving and non remittance receiving households. Whereas there is an 8.3% difference between households that own land at all depending on their receiving remittances, there is a 9.6% difference when households are asked if they have multiple plots of land. The difference is slight, suggesting that remittances are not a key resource for asset ownership. The results may also imply that remittances are not necessarily what provides the means for a household’s investments.

Of the remittances received, we can disaggregate to have a better understanding of the currencies and amounts of remittances per household.

Figure 5: Remittance Amounts Received by Currency (valued in USD)



Source: Life in Kyrgyzstan Study, own calculations

The above amounts are calculated in U.S. dollars at the currency exchange rates on December 31st of each respective year. Data from the household survey shows that the highest amounts of remittances are

received in Russian roubles. Over the course of all five years, households surveyed reported an average amount of soms received as the equivalent of 1978 USD. The average of roubles received averages as the equivalent of 2898 USD. The average of U.S. dollars received equaled to 2068. All amounts also show a sharp decrease in 2013 coinciding with the time of the Kumtor riots.

A household’s expenditure of remittances provides further insight into the economic livelihood of a household and how personal transfers potentially influence the patterns of spending. Expenditure of remittances differs slightly but shows similar patterns. Expenditures of remittances are recorded in the Life in Kyrgyzstan surveys in the following categories: educational, medical, wedding, funeral, purchase of durable goods, current expenditures (i.e. food, travel, utilities, etc.), helping other households, investment in enterprise and savings. In an effort to simplify the categories of expenditure, we can group the categories into three: savings, investment and consumption. The savings category will be limited to the “savings” category. The investment category includes the “investment in enterprise” category and “educational” category, as the former serves as financial capital and the latter can be considered an investment in human capital. The category of consumption includes medical expenses, wedding expenses, funeral expenses, purchase of durable goods, current expenditures and helping other households. Categories were consolidated and analyzed. It is pertinent to keep in mind that a single household can spend in more than one and up to all categories. Therefore, in displaying percentages, the percent refers to the percentage of households that reported “yes” in spending in each category. Thus, the displayed information does not refer to the percentage of remittances spent in each category. Rather, it is the percentage of households that reported spending part or all of the income from remittances in each type of expense. The percentages of households spending in the top three currencies received was averaged for years 2010 to 2013 and 2016.

Table 6: Expenditure by Currencies Received

	Savings	Investment	Consumption
Soms	48%	28%	86%
Roubles	33%	23%	86%
USD	32%	19%	91%

Across all currencies received, the largest number of households reported spending on consumption goods. The smallest share of households reported spending in investment. The statistics show that

households receiving soms and roubles make up the higher percentages of those that spend remittances on savings and investment.

If we assume that migrants' destinations are dependent on the currencies they send back, we can see that the largest share of households surveyed with migrants have household members in Russia. Data from the Life in Kyrgyzstan Study also confirms that an average of about ninety percent of households with migrants over the entire course of the study had members in Russia, followed by a meager average of seven percent in Kazakhstan. A significant amount of households also reported members abroad in Turkey and Europe. The smallest share of migrants in households surveyed travel to the United States. However, the share of U.S. dollars that flows into these households is significant enough to be compared to the two other currencies that make up the largest share of foreign personal transfers.

In looking at the currencies received by households with migrants, the Kyrgyz Republic also shows a high degree of internal migration. Therefore, it serves well to explore differences in standard of living indicators between internal and external migrants. Because not all migrants are able to send back money, it is inconclusive to measure internal and external migrants themselves. The Life in Kyrgyzstan Study includes information on the currencies that come into each remittance receiving household. Therefore, it is more advantageous to disaggregate by currencies rather than simply migrants' destinations. The local currency of soms is used as a proxy indicator for the transfer behavior of internal migration and Russian roubles are used as a proxy indicator for that of the majority of external migration.

Table 7: Education Indicators by Remittances, Currency

	School enrollment (percentage)	School attendance (percentage)	Average school weeks missed	Education Expenditure (soms)
Non-Remittance Receiving	91	86	0.70	3900
Remittance Receiving	88	84	0.71	2493
Som Receiving	88	82	0.65	3365
Rouble Receiving	88	84	0.75	3292

School enrollment and attendance show a similar situation in which there is little difference between currencies. The main difference is seen in average school weeks missed and educational expenditure. In

both child education indicators, households receiving local somms show more favorable averages. Som receiving households tend to have 10 percent less school weeks missed and higher expenditure on education. Nonetheless, regardless of currency, non remittance receiving households surveyed spend the most on education.

Table 8: Health Indicators by Remittances, Currency

	Average number of doctor's visits for illness or infection	Average number of nights spent in a hospital due to illness or infection
Non-remittance receiving	.49	.33
Remittance receiving	.29	.24
Som receiving	.26	.19
Rouble Receiving	.32	.27

Regarding health indicators, households that receive somms have 6% less average doctor's visits than households that receive roubles and 8% less average nights spent in a hospital. Similar to child education indicators, health indicators show that households receiving funds from internal migrants show slightly more favorable averages.

Table 9: Access Indicators by Remittances, Currency

Distance to nearest... (km)	Main Road	Agricultural Market	Town Hall	School	Hospital
Non-remittance receiving	1.21	6.9	4.2	1.4	4.2
Remittance receiving	1.58	6.9	4.6	1.8	5.0
Som receiving	0.89	5.9	3.8	0.9	4.3
Rouble Receiving	0.82	7.5	5.0	1.4	4.2

Regarding access indicators, som receiving households have lower distances to access points and, therefore, higher access to most human services.

Table 10: Asset Indicators by Remittances, Currency

	Percentage of households that own a plot of land	Percentage of households that own multiple plots of land
Non-remittance receiving	86.9	64.1
Remittance receiving	95.2	73.7
Som receiving	96.7	72.9
Rouble Receiving	95.4	67.9

Households that receive remittances from migrants within the Kyrgyz Republic show a higher average percentage of land ownership with 5% more owning multiple plots of land.

In the above analysis, we can note that households that do not receive remittances exhibit more favorable standards of living across most indicators. Of households that do receive remittances, those who receive funds of local currency, thereby implying that they have internal migrants, fare better across most standard of living indicators.

It may also help to see if a household's region affects the same indicators in some way. To address the factor of regions, keeping in mind the economic conditions of each one, the same indicators were analyzed with the added condition of the region. This is to explore a hypothesis that households in regions that are worse off in terms of income per capita, poverty rate and unemployment rate are more inclined to have migrants in order to increase and diversify sources of income.

Regarding education indicators, the region makes nearly no difference for the average enrollment and attendance of school aged children of a household. Similar to the results displayed earlier in the paper, both enrollment and attendance are consistently above 85%. Below are the averages for child education indicators for the same five year period as in the tables above.

Table 11: Education Indicators by Remittances, Region

	Child enrollment		Child attendance		Average school weeks missed		Average expenditure (soms)	
	RR	NRR	RR	NRR	RR	NRR	RR	NRR
Issyk Kul	88.68	88.90	99.65	99.34	.3192	.6185	3422	3680
Jalal Abat	89.12	88.86	99.55	99.38	.2481	.5971	2955	3595
Naryn	88.26	88.87	100.00	99.33	.3605	.6189	3517	3679
Batken	88.62	88.82	100.00	99.34	.3266	.6160	3397	3682
Osh	88.80	88.82	99.07	99.36	.5315	.5996	2981	3680
Talas	89.76	88.86	100.00	99.34	.3523	.6190	3445	3680
Chui	88.37	88.92	99.89	99.34	.4662	.6186	3995	3697

It is evident that although there is little discernible difference in enrollment and attendance by province, the average number of school weeks missed and the average expenditure show notable differences. Regions to note include Jalal-Abat and Osh. Across all other provinces, the average amount of school weeks missed in non remittance receiving households is one to less than two times higher than remittance receiving households. The averages for Jalal Abat, on the other hand, display that school aged children in households that do not receive remittances miss nearly 2.5 times the amount of school weeks than those in households that do receive remittances. Jalal Abat shows the greatest difference in this indicator while simultaneously being one of the regions with the highest rate of remittance receiving households. Osh oblast, another region with the highest percentage of remittance receiving households, shows peculiar results, as well. Although it shows the least difference in average school weeks missed, it has the greatest difference in average education expenditure. Osh is followed by Jalal Abat as the region with the second greatest difference in average education expenditure. Such a circumstance also highlights that households receiving remittances in regions that rely on them most are able to spend the least on education.

Health indicators by region show a similar pattern. When categorized as averages based simply on whether or not a household receives remittances, we do not see notable differences. However, we can see some variation in the averages between provinces. The degree of remittance receiving households in some regions generally correlates positively with the average number of doctor visits and nights spent in a hospital due to illness or infection.

Table 12: Health Indicators by Remittances, Region

	Average number of doctor visits due to illness or infection		Average number of nights spent in a hospital due to illness or infection	
	RR	NRR	RR	NRR
Issyk Kul	.4492	.5391	.2669	.3284
Jalal Abat	.3412	.5290	.1913	.3237
Naryn	.3540	.5409	.2069	.3299
Batken	.5261	.5413	.3842	.3367
Osh	.2554	.5266	.3837	.3209
Talas	.3413	.5379	.2110	.3271
Chui	.7115	.5409	.2785	.3298

Overall, we see that remittance receiving households fare better in this case than non remittance receiving ones. The general phenomenon is that households in which migrants send remittances tend to have less doctor visits and less nights spent in a hospital due to illnesses or infections. For the average number of doctors visits related to illness or infection, the greatest differences are seen in Osh and Talas. In Osh, households that receive remittances have over twice the average number of doctor’s visits. Remittance receiving households in Osh also show over one and a half times more average nights spent in a hospital. In both regions, a relatively higher percentage of households receive remittances. However, Osh and Talas remain at about the national average in terms of per capita income and poverty rate. Both regions even have unemployment rates less than the national average. The region of Chui presents an exception in which remittance receiving households have more doctor visits than non remittance receiving households.

Regarding nights spent in a hospital, Jalal Abat, another region that receives one of the largest portions of remittances, displays the largest difference. In this indicator, we can also see Osh and Batken as exceptions. The discrepancies between these three regions that rely heavily on remittances make it difficult to ascertain any clear trends. Despite as such, we can see that the presence of remittances in a household seem to have generally positive correlations in regards to the established health indicators.

Table 13: Access Indicators by Remittances, Region

	Main Road		Agricultural Market		Town Hall		School		Hospital	
	RR	NRR	RR	NRR	RR	NRR	RR	NRR	RR	NRR
Issyk Kul	1.4	1.2	7.2	6.4	4.3	4.1	1.8	1.39	4.8	4.2
Jalal Abat	1.6	1.2	7.0	6.4	4.6	4.3	1.8	1.42	4.4	4.2
Naryn	1.3	1.2	8.1	7.5	4.6	4.1	1.7	1.39	6.7	4.2
Batken	1.5	1.2	7.7	7.7	5.9	4.1	1.7	1.38	4.7	4.2
Osh	2.0	1.2	5.4	6.5	4.6	4.4	1.7	1.38	5.0	4.4
Talas	2.0	1.2	7.3	6.4	4.3	4.1	1.8	1.39	5.6	4.1
Chui	1.3	1.2	5.4	7.5	3.7	4.1	1.7	1.39	3.7	4.1

Asset ownership shows slight differences between certain provinces, as well. In the table below, we can see that the average land ownership is in line with the national averages. At the same time, we can see variations across individual provinces.

Table 14: Asset Indicators by Remittances, Region

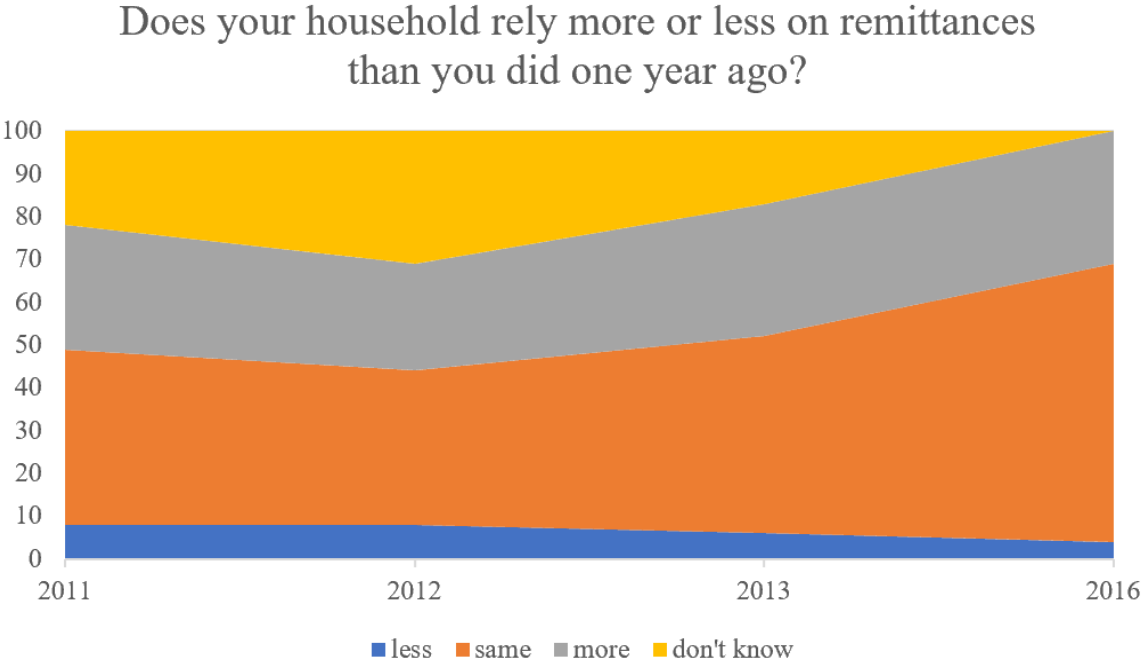
	Percentage households owning land		Percentage households owning multiple plots of land	
	RR	NRR	RR	NRR
Issyk Kul	93.13	79.46	81.11	68.17
Jalal Abat	95.47	80.20	76.89	68.40
Naryn	93.00	79.34	76.80	68.40
Batken	95.38	79.89	80.99	68.66
Osh	97.89	80.48	83.61	69.47
Talas	96.18	79.46	81.99	68.38
Chui	73.79	79.40	62.05	67.76

Contrary to other standard of living indicators, asset ownership shows a positive correlation between households receiving remittances and the ownership of one or more plots of land. The region of Talas boasts the greatest discrepancies between remittance receiving and non remittance receiving households followed closely by Batken. In Talas, nearly 17% more households own a plot of land if they receive remittances. Almost the same can be said of Batken where the difference in the share of households that own land is about 16.5% if they receive remittances. Around 14% more households in Talas own more than one plot if they receive remittances as opposed to households that do not receive remittances. In the case of Batken, roughly 12% more households own more than one plot of land if they receive remittances. Chui again serves as an exception in which barely 6% more households own land at all if they are remittance receiving and, of those, 6% more of non remittance receiving households own multiple plots.

The results of averages disaggregated by region show unclear trends. However, we can see that on a general note, the regions that generally have a higher percentage of remittance receiving households rank lower across most standard of living indicators. The inverse correlations between receiving remittances and standard of living indicators do not necessarily imply that remittances lower a household’s quality of life. Such outcomes can also point to a possibility that households in regions with lower per capita income, higher unemployment rates and higher poverty rates are more likely to have lower standards of living and, therefore, more incentive to seek economic security elsewhere.

To understand further the households’ reliance on remittances, a subjective view is also beneficial. Over the course of the LIK Study, household respondents were asked after the first year if they rely more or less on remittances than the previous year. The results are graphed below.

Figure 6: Subjective Remittance Reliance



The averages show that households have generally relied more on remittances with each passing year. The dip in 2012 coincides with the same time as the Kuntor mine riots. However, political instability tends to have little effect on remittances or increased sending and spending of them. This could explain the increase in 2013, the year after the initial riots and the year of a second wave of unrest, as the economic consequences of strikes and closures are felt after the occurrence itself.

Although further analysis is required to have a detailed understanding of the relationship between migration and a household's quality of life, the correlations between standard of living indicators can serve to present the possibility that households more vulnerable to poverty are more likely to have household members abroad. As mentioned earlier, the majority of Kyrgyz migrants move within the country from rural to urban areas or from regions that are less well off to those that provide more economic opportunity. Furthermore, those who have moved internationally from households surveyed tend to work labor jobs in neighboring countries and get paid relatively low wages. Such a phenomenon implies that low wages in another location grants more desirable opportunities than a migrant's location of origin and, therefore, creates incentive for household members to migrate. In this way, the patterns of migration seem to reinforce the idea that remittances provide means for poverty alleviation and prevention.

Significance Tests

The averages of all indicators show some differences based on whether a household receives or does not receive remittances, receives remittances in a certain currency by internal or external migrants, or is affected by the socioeconomic conditions of its region. To understand better whether or not the differences are meaningful, it serves well to do significance tests on the differences of the means. For the purposes of the selected data, the significance tests will compare the difference between two groups. With the given data, we can perform an independent t-test, also known as a two sample t-test. This test is performed to determine if the difference in averages of two groups is statistically significant or not. To note that the groups are independent is to assume that the groups are unrelated and have no effect on each other. With the given results of the Life in Kyrgyzstan household surveys, we can separate the groups as remittance receiving and non remittance receiving. In the case of an independent t-test for two samples, the null hypothesis is that the means of the population are equal and that the difference in them can be determined to be zero. Therefore the null hypothesis can be defined as $H_0: \mu_R = \mu_N$ where μ_R refers to the averages of remittance receiving households and μ_N refers to the average of non-remittance receiving households. In this t-test, we are looking to see if we can accept or reject the null hypothesis in favor of the alternative hypothesis. The alternative hypothesis would assume that the averages of remittance receiving households and non remittance receiving households are not the same. Therefore, $H_1: \mu_R \neq \mu_N$ where μ_R refers to the same averages of remittance receiving households and μ_N refers to the same averages of non remittance receiving households. In order to accept or reject the null hypothesis, we must also make a few assumptions. First, we must assume that the scale of measurement of the data follows a continuous or ordinal scale. We must also assume that the variance of the sample

sets in the two groups is equal. This assumption would infer that the number of observations in each group is about the same. Another assumption required is that the sample used has a normal distribution. Because the group of households in the Life in Kyrgyzstan study are surveyed using a process of random sampling, we can assume that the data for all households yields a normal distribution for both remittance receiving and non remittance receiving households.

For each year of the study, independent group t-tests were conducted between remittance receiving and non remittance receiving households. To determine the significance of the t-test, the t-value, degrees of freedom and p-values are used. The t-value is the ratio of the difference between the mean of the two sample sets and the variation that exists within the sample sets. While the numerator value exhibits the difference between the mean of the two sample sets whereas the denominator value displays the variation that exists within the sample sets. Therefore, a higher t-value indicates that the groups are different and a lower t-value indicates that the groups are similar. The degrees of freedom refer to the values that can vary without consequence and typically are dependent on the number of values that are present in the sample set. The p-value is most essential to determining statistical significance in relation to the null hypothesis that there is no difference between the two means. The p-value is often a value between 0 and 1. If the p-value is less than or equal to 0.05, we can determine that the difference in means is statistically significant.

The t-tests displayed a variety of results with some key patterns. In most years, education indicators tested - education expenditure and average school weeks missed - displayed t-values, degrees of freedom and p-values that determined that the difference in means is different from zero. Therefore, we can conclude that the differences in average expenditure on education and the average school weeks missed between remittance receiving and non remittance receiving households are significant for nearly all years the survey was conducted. Regarding health indicators, one can be determined to be mostly significant and can be determined to be mostly insignificant. For three out of the five years the study was conducted, the average number of doctor's visits showed high t-values and p-values less than 0.05. Therefore, we can conclude that the differences in average number of doctor's visits is statistically significant between remittance receiving and non remittance receiving households. As for the average number of nights spent in a hospital, the means for each year show p-values greater than 0.05, determining that the difference in means is not statistically significant. Regarding access indicators, for most indicators for most years, the differences in distances between households and main access points was statistically insignificant. The access indicators whose means were generally significant for two out of the four years include Road Distance and Town Hall Distance. Asset ownership averages were tested for significance based on the average number of plots owned by households for each year. For nearly all years surveyed, the average number of plots owned showed statistically significant differences.

Overall, the averages calculated and the significance test results support the argument that households that receive remittances are notably different from households that do not receive remittances. However, we are unable to determine if remittances truly increase the standard of living of households that receive them. In tables 1 to 5, we see that households not receiving remittances generally fare better across indicators regarding education and access indicators. In these dimensions, households receiving remittances are still unable to “catch up” to those not receiving remittances. These differences are significant for education indicators and insignificant for access indicators. On the other hand, households that receive remittances fare better in indicators related to health and land ownership with some significance in health and significant differences in land ownership. The aforementioned points may suggest that remittances, although they can be a key resource for supporting households that are already relatively vulnerable, may not lead to a meaningful impact in improving standards of living. Because the significance tests include all households surveyed across the country, counting those receiving in all currencies and across all regions, we can assume the significance to be the same throughout all categories analyzed.

The significance tests mentioned above serve to magnify the degree to which receiving remittances affect the standard of living of households. This can serve to show in which realms households benefit from receiving them and where remittances have little or no effect. The analysis above notes that remittances may be beneficial towards improving health outputs and bolstering economic security in the form of asset ownership. The results of the correlations and their significance can also point to the possibility that households that are already better off in standard of living indicators do not have as much incentive as more vulnerable households to send members to other regions or other countries. The migration patterns, along with the insight on households’ quality of life, can suggest that Kyrgyz migrants are generally from less privileged areas or households and migrate to seek better standards of living elsewhere.

Discussion, Conclusion and Implications for Further Research

The rapid surge of migration in recent decades, both internally within the country’s borders and beyond them internationally, in the wake of a globalized society has led to a rise in labor mobility and, therefore, a consequential rise in remittance flows. Scholars, economic practitioners and policymakers are increasingly studying their effects on national level indicators of prosperity and paying attention to their potential for development. Rather than presenting the results of a hypothesized model, the prior research shows the actual incidences of expenditure and their correlations with standards of living. The findings outlined in this research serve to provide insight on patterns related to remittance receiving and remittance expenditure in a country that relies heavily on them. Migration is a key part of labor dynamics in Central

Asia as a whole since the time of the Soviet Socialist Republics. Furthermore, the Kyrgyz Republic remains vulnerable to the fluctuations of neighboring higher income economies due to its continued dependence on international remittances. Personal transfers make up an essential part of this transition economy and a fascinating way to understand the way households make and spend incomes. Although migration is seen as an important source of foreign income for national accounts, at the household level, it serves as an essential source of income in general. For households in the Kyrgyz Republic, it may serve as a risk mitigation tool, providing a financial buffer rather than a means of savings or long term asset building. There is little evidence of remittances serving as a form of income diversification, spurring enterprise, investment or any type of sustainable economic advancement. Rather, personal transfers in the Kyrgyz Republic are used mostly for day to day expenses such as food, electricity and gas, transportation, housing costs, wtc. Regardless of whether labor migration is internal or external, Kyrgyz households with migrants show to have lower average rankings in key standard of living indicators. This implies that large portions of remittances seem to not necessarily improve standards of living, but rather keep households afloat. In this way, policymakers can be informed to take action in multiple directions. Based on this research, policy encouraging international migration from the Kyrgyz Republic at a large scale may not increase standards of living or alleviate poverty. If policies are meant to encourage migration to increase household security, they should consider targeting households in poorer regions with higher unemployment. As households of internal migrants see higher gains than those of external migrants, programs and policies encouraging the population to leave the country should be modified or reconsidered. Simultaneously, methods to incentivize and ease the process of movement between regions have greater potential to increase households' standards of living. This can include securing employment partnerships in schools of one region to employers in another. It can also include interregional educational exchange programs to familiarize future workers with other parts of the country. As Kyrgyzstan is largely an agriculture based economy, cooperatives and partnerships between farmers and livestock owners of different regions can encourage the expansion of markets and movement of human capital and encourage regional growth. If policies are meant to discourage migration, action towards developing economic opportunity and increasing environmental standards to prevent infection and illnesses should be considered. However, policies that ease and encourage internal migration, either from rural areas to urban areas or between regions, may be more likely to bolster households that are already vulnerable. At the moment, the Kyrgyz Republic continues to be one of a number of CIS countries that is in transition from being a socialist republic to an independent capitalist economy. Instances such as the Kumtor riots serve to show the challenges and instability that comes with such transitions and, therefore, flows of remittances are an important form of insurance. It is possible that decades from now, remittances may

serve as forms of income diversification, added financial security and capital for investment as they do in lower middle, middle and upper middle income countries (de Haas, 2006).

Ultimately this paper serves to support existing literature that argues for the potential of remittances to support households susceptible to poverty. Many of the remittance receiving households displayed throughout the paper rely on personal transfers as a source of income to fulfill very basic needs. This research also presents a potential hypothesis that the marginal benefits of migration are highest for households in lower income brackets or regions with relatively lower income per capita. The correlations and results presented in this paper may serve as a foundational understanding of the relative significance of remittances in the Kyrgyz Republic at a household level. Other factors besides migration and remittances may help go beyond simply alleviating poverty to increase all standards of living to a more significant degree. Therefore, further analysis and econometric modeling could serve to help determine the causes and consequences of the hypotheses presented in this paper as this research simply presents correlations.

Works Cited

- (n.d.). From <https://www.worldbank.org/en/country/kyrgyzrepublic/publication/economic-update-spring-2017>
- Aitymbetov, S. (2006). Emigrant Remittances: Impact on Economic Development of Kyrgyzstan.
- Azam, M., Haseeb, M., & Samsudin, S. (2016). The Impact of Foreign Remittances on Poverty Alleviation: Global Evidence. *Journal of Economics and Sociology*, 9, 264-281.
doi:10.14254/2071-789X.2016/9-1/18
- Banga, R., & Sahu, P. K. (2010). Impact of Remittances on Poverty in Developing Countries. *Working Paper*.
- Brownbridge, M., & Canagarajah, S. (2016). Remittances and the Macroeconomic Impact of the Global Economic Crisis in the Kyrgyz Republic and Tajikistan. From <http://documents.worldbank.org/curated/en/451371468000304262/Remittances-and-the-macroeconomic-impact-of-the-global-economic-crisis-in-the-Kyrgyz-Republic-and-Tajikistan;jsessionid=7BRXon5NE9cEcXNteH8Y3aYY>
- Centerra Gold, I. (2020). *Operations - Kumtor*. From Centerra Gold:
<https://www.centerragold.com/operations/kumtor>
- de Haas, H. (2006). Migration, remittances and regional development in Southern Morocco. *Geoforum* 37, 565-580.
- Guillette, D., & Kalybekova, A. (2014). *Agreement Under Pressure: Gold Mining and Protests in the Kyrgyz Republic*. Friedrich Ebert Stiftung.
- Horrocks-Taylor, J. (2018). Dirty Water, Muddied Politics: Hybridisation of Local and National Opposition to Kumtor Mine, Kyrgyzstan. *Open Access Journal*, 7, 1-18.
- International Data Service Center of the Institute for Study of Labour (IDSC IZA). (2010, 2011, 2012, 2013, 2016). The Life in Kyrgyzstan Study. *Life in Kyrgyzstan*. Open Access.
- Malyuchenko, I. (2015). Labour Migration from Central Asia to Russia: Economic and Social Impact on the Societies of Kyrgyzstan, Tajikistan, and Uzbekistan. (C. A. Briefs, Ed.)
- Murodova, S. (2018). Impact of Remittances and International Migration on Poverty in Central Asia: The cases of the Kyrgyz Republic, Tajikistan, and Uzbekistan. *Journal of Applied Economics & Business Research*, 8(1), 38-56.
- Murzakulova, A. (2017). Contextual Factors of conflict in Border Communities in Batken Province, Kyrgyzstan.

- National Statistical Committee of the Kyrgyz Republic. *Employment; Living Standards*. Retrieved from <http://www.stat.kg/en/statistics/>.
- Ratha, D., & Mohapatra, S. (2012). *Remittances and Development*. John Wiley & Sons, Inc.
- Revenstein, G. E. (1885). *The Laws of Migration*. London: Royal Statistical Society .
- Samuel, A. &. (2013). Remittances and the Poverty Nexus: Evidence from Ghana. *International Journal of Academic Research in Economics and Management Sciences*, 206-223.
- Schuler, M. (2007). Migration Patterns of the Population in Kyrgyzstan. *Espace populations sociétés*.
- Seshan, G., & Zubrickas, R. (2015). Asymmetric Information about Migrant Earnings and Remittances.
- Shelburne, R., & Palacin, J. (2007). Remittances in the CIS: Their Economic Implications and New Estimation Procedure. *ECE Discussion Papers Series*, 52.
- World Bank Group. (2017). *Kyrgyz Republic – A Resilient Economy... On a Slow Growth Trajectory : With a Special Focus on Kyrgyzstan's Ailing Energy Sector*. Washington, D.C.: World Bank.
- World Bank. "Personal remittances, received (% of GDP) - Kyrgyz Republic." World Development Indicators, The World Bank Group, 2020. Retrieved from <https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=KG>.
- World Bank. "Net migration - Kyrgyz Republic." World Development Indicators, The World Bank Group, 2020. Retrieved from https://data.worldbank.org/indicator/SM.POP.NETM?locations=KG&name_desc=true