



2019

### Understanding the Characteristics of Remittance Recipients in Venezuela: A Country in Economic Crisis

Nicole A. Degla

University of Notre Dame, ndegla@nd.edu

Follow this and additional works at: <https://digitalcommons.iwu.edu/uer>

 Part of the [Econometrics Commons](#), [International Relations Commons](#), [Latin American Studies Commons](#), and the [Macroeconomics Commons](#)

#### Recommended Citation

Degla, Nicole A. (2019) "Understanding the Characteristics of Remittance Recipients in Venezuela: A Country in Economic Crisis," *Undergraduate Economic Review*: Vol. 16 : Iss. 1 , Article 3.

Available at: <https://digitalcommons.iwu.edu/uer/vol16/iss1/3>

This Article is brought to you for free and open access by The Ames Library, the Andrew W. Mellon Center for Curricular and Faculty Development, the Office of the Provost and the Office of the President. It has been accepted for inclusion in Digital Commons @ IWU by the faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.

---

# Understanding the Characteristics of Remittance Recipients in Venezuela: A Country in Economic Crisis

## Abstract

*This essay analyzes household surveys from the World Bank Global Financial Inclusion Database for the years 2011, 2014, and 2017, as a means to distinguish individual level characteristics of remittance recipients in Venezuela. Remittances are defined as “crossborder, person-to-person payments of relatively low value. The transfers are typically recurrent payments by migrant workers to their relatives in their home countries (World Bank, 2015). Through the use of a linear probability model and probit regressions, I examine the variables age, gender, education level, and income quintile. Results of the analysis find that age has a statistically significant negative effect on the probability an individual will receive remittances, holding all else constant. The influx in remittance flows alone, experienced by Venezuela since the outset of the crisis, may have long-term fiscal implications for the economy as a whole. Answering the question of who receives these international private funds transfers is noteworthy for understanding remittance behavior as a facet of the economics of immigration, as well as creating policy with the intention of maximizing the overall welfare benefits remittances provide during periods of economic crisis.*

## Keywords

Venezuela, Remittances, Migration, Economic Crisis, Economic Policy

## Cover Page Footnote

This research was supported by the Department of Economics at the University of Notre Dame. I would like to present my special thanks to economics faculty members, Forrest Spence and Nelson Mark who provided insights and expertise that greatly assisted in the development of this project.

## Table of Contents

1. Introduction.....	3
2. Background: Roots of the Venezuelan Socio-Economic Crisis.....	5
3. Literature Review.....	11
4. Data and Summary Statistics.....	16
5. Empirical Methodology.....	22
6. Results and Discussion.....	24
7. Conclusion.....	28
8. References.....	30

## INTRODUCTION

The exodus of Venezuelans fleeing the economic turmoil that has plagued the South American nation for the past 8 years has gained international attention and continues through present day. On a microeconomic level, remittances can have a considerable impact on household welfare, especially during times of financial hardship. This paper utilizes the specific socio-economic context of Venezuela as the basis for the research question it seeks to address. Namely, are there individual-level characteristics that indicate a higher likelihood a given domestic Venezuelan will receive remittances from abroad? Current remittance literature that focuses on developing countries points to an increase in remittance flows as a substantial source to ease the economic burden caused by crises (Konte, 2018). The uncertain future of Venezuela has much to gain from examining remittance behavior of its citizens and, in turn, may provide insights to developing countries in the midst of similar fiscal conditions. My paper attempts to assess the characteristics of the individuals receiving remittances as a means to further this area of research.

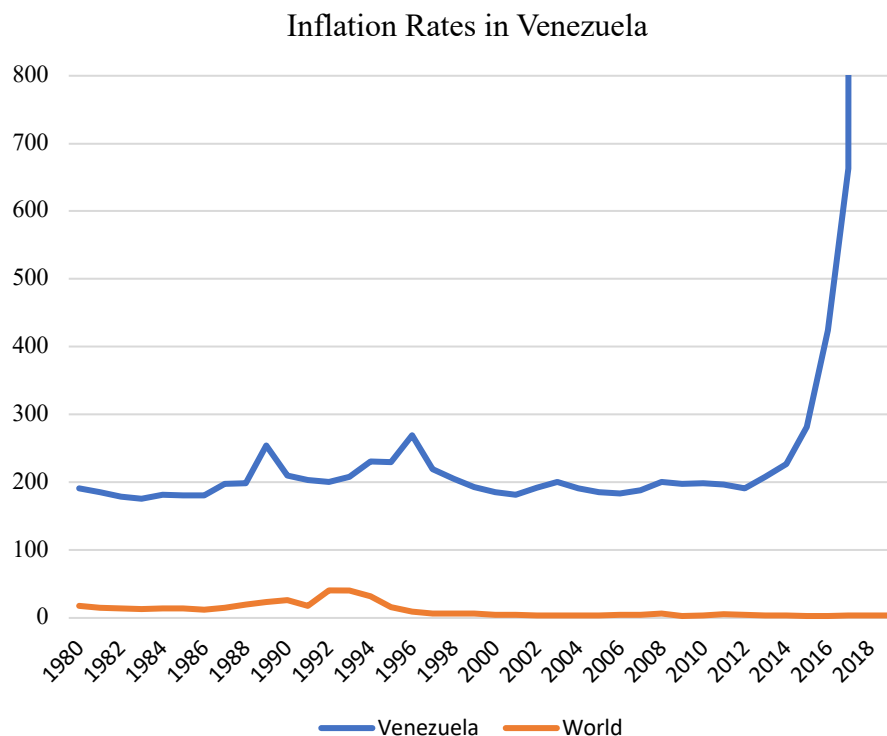
In the first part of this paper I will begin by providing a comprehensive background on the roots of the Venezuelan crisis, as a means to contextualize the current economic state of the country. Venezuela's history as a top receiving country for migrants in Latin America exhibits a stark contrast to the reality of mass emigration the region is witnessing in present day (Albahari, 2018). I continue by examining the existing literature on remittances prior to comparing it to the results of my own analysis. While much of the literature focuses on the role of remittances in the economic growth of developing countries, few examine the specific impacts had on countries in the midst of economic crisis. Due to the nature of Venezuela's instability during this crisis, both data and literature on remittances within the country are extremely limited.

Using household surveys obtained from the World Bank, I am able to establish cross-sectional time series data, which I use as the foundation of my research. Through a thorough investigation of the data, I am able to confirm that there is empirical evidence supporting an increase in remittance recipients, with the percentage of recipients nearly doubling in the brief time period between the first and third survey administered.

In the second part of the paper I provide justification for my empirical methodology as a precursor to analyzing the results of the linear probability model and probit regressions, which ultimately find that the predicted probability of receiving remittances decreases with age. I conclude by mentioning the limitations faced in the obtainment of reliable data and its influence on the scope of this particular project, while providing suggestions for future studies.

## BACKGROUND: ROOTS OF THE VENEZUELAN SOCIO-ECONOMIC CRISIS

The ongoing crisis in Venezuela, beginning in 2010, has been marked by record-breaking hyperinflation within the region and widespread shortages of basic goods. Hyperinflation is predicted to reach 10 million percent by the end of 2019, according to the IMF (Reuters, 2018). Approximately 10 percent of the population (3 million people) has fled the country since 2015 and The Migration Policy Institute has projected that by the end of 2019, as many as 5.4 million Venezuelans may be living outside of the country, with 80 percent of migrants having relocated to other countries in Latin American (Seele, 2019). As evidence of the severity of the migration problem, nations such as Colombia, Peru, and Ecuador have been forced to declare a State of Emergency given the unsustainable flow of Venezuelan migrants (Caraballo-Aries, 2018). Venezuela's increasing instability is cause for policy concerns not limited to the Venezuelan government, but the international community as a whole. The extreme migration flows have created considerable strain on social services and public finances in surrounding countries. While the influx in migrants has the potential to lead to long-term gains in the labor markets of receiving countries, contingent upon integration policies, the short-term challenges remain a sizeable concern. As more and more Venezuelans opt to leave their homeland in search of greater economic opportunity, the livelihood of family members who stay behind are increasingly dependent on remittances.



*Source: IMF, World Economic Outlook (2018)*

According to a 2016 study, over 82% of the Venezuelan population is living below the poverty line, with shortages leaving many citizens unable to purchase basic goods such as food or medicine (Landaeta-Jiménez 2016). With a crumbling public healthcare system, infectious diseases that were once nearly eradicated like malaria, measles and tuberculosis, are now on the rise (Daniels, 2019). Many Venezuelans have resorted to waiting in long lines in an attempt to receive rationed and subsidized food for their families. Predictably, the crisis has led to a mass influx in out-migration, primarily to surrounding Latin American countries. While my literature review will provide a broad overview of the economic implications of remittances, I will first address the socio-political context that has led the country to its current crisis, where the mass exodus threatens to fundamentally change the source of income for many households. I will also attempt to contextualize the role remittances play in the day-to-day lives of Venezuelans, during this humanitarian crisis, in order to facilitate a better analysis of the broader economic implications.

Venezuela is home to the largest oil reserves of any country on the globe, with a total of 24.8 percent of proven reserves, accounting for 90 percent of the country's exports (Yohama 2018). As a highly oil dependent country, the 2014 collapse in oil prices, coupled with state mismanagement of funds, harmed much

of Venezuela's public finances and contributed greatly to the current crisis. In part from this collapse, Venezuela's economy has contracted by 35 percent since 2013 (Nelson 2018). The newly implemented economic sanctions of the U.S. are projected to further reduce the country's income. This will most likely hinder Venezuela's ability to finance the country's debt commitments, adding to the substantial fiscal pressure being placed on the government.

The majority of Western leaders have recognized Juan Guaído as the Interim President of Venezuela, with the White House officially declaring the Maduro presidency as illegitimate in January of 2019 (2019). This political uncertainty still remains a driving force of the country's socio-economic conflict. The current government, lead by President Nicolás Maduro, fails to officially recognize what has been deemed a clear humanitarian crisis. A recent report by the Congressional Research Service details the credible accusations of corruption perpetrated by the Maduro regime in the form of human rights abuses as well as the establishment of an illegitimate legislative committee functioning to withhold power from opposition groups. The imprisonment of opposition leaders and violent state response to protests are just a few examples of documented injustices currently being carried out by the government. With the country's Liberal Democracy Index at a consistent decline since 1998, the increasing corruption within the Chavez/Maduro authoritarian regime is all too evident (Orrego et al. 2019).

As the world scrutinizes the future of a country facing ample uncertainty, drastic changes in the country's remittance flows have the potential to impact the Venezuelan economy at both macro and microeconomic levels. Reliance on household survey data coupled with personal accounts, will provide the infrastructure of the analysis of micro-level impacts, while macro-level observations ground these findings in a larger global context. Remittances act as the monetary link between Venezuelans at home and Venezuelans abroad. The characteristics and ties between remittance sending individuals abroad and remittance receiving Venezuelans at home may hold insights into how these flows might shift. Multiple experts predict that links to the Venezuelan diaspora will play a notable role in the transition of power and rebuilding of the government, should a conversion to a democratic government take place (Orrego et al. 2019). In recognizing the far-reaching influence of the Venezuelan diaspora, the monetary link of remittances has both political and economic significance.

A crucial feature of examining the complex Venezuelan economic situation involves looking at the current state of remittance flows from a micro-level perspective. With much of the information coming from the Venezuelan government deemed fraudulent or unreliable, and limited data available on informal remittances, I rely partly on estimates provided by experts. Economists estimate that approximately \$4 billion in remittances will be sent to Venezuelans

in 2019, with an additional \$1.5 billion of withdrawals by those with foreign bank accounts, a drastic increase from the \$1.9 billion sent in 2018 (Perez, 2019).

As noted in interviews from multiple Venezuelan citizens, the portion of the population with access to dollars via remittances or foreign bank accounts are the only individuals capable of surviving the massive hyperinflation the country faces. To illustrate this reality, one article highlights that the price of a dozen eggs in the Venezuelan currency, bolivars, is equal to two weeks' pay at the minimum wage. On the black market, those same eggs cost only 60 cents (Krygier, 2018). A small amount of remittances from abroad has the ability to stretch a household's income exponentially.

In an interview conducted by NPR, one impoverished Venezuelan claims that the only people who can afford the basic goods they need, are those receiving remittances from friends or family (Otis 2018). The same article details the story of a physical therapist from Venezuela who takes a four-hour bus ride to the Colombian border in order to obtain just \$180 from a cousin working in Panama. The financial turmoil throughout the country has led some banks to refuse to make international transfers, while other official exchange houses offer unfavorable exchange rates, increasing the difficulty of sending remittances.

As the local currency continues to lose value, access to outside funds holds an increasingly crucial role for many. One estimate from a Caracas based consulting firm, showed that nearly a third of Venezuelans have access to some form of foreign currency through either remittances, savings, or salaries that are paid in dollars (Krygier, 2018). This is comparable to the near 20 percent of remittance receiving individuals I find in my analysis, further supporting the use of this particular household survey data as a reliable proxy for continued research.

There is a complex narrative surrounding the role of remittances when viewed through a political lens. The authoritarian regime of Maduro has, in part, survived the economic burden of outside sanctions by cutting spending on basic needs of its citizens. It would be irresponsible to neglect the fact that the increase in remittances, while sustaining vulnerable households, also acts to prop up a regime by decreasing the necessity of the government to address what is a documented humanitarian crisis. Additionally, some of the funds are directly channeled to the government through the taxation of cryptocurrency and financial transfers coupled with unfavorable exchange rates (O'Neil, 2019). Remittances are just one piece of the multifaceted puzzle that is the Venezuelan conflict. While they have undoubtedly played a large role in the survival of many thus far, how remittances are understood by governments and people alike, will have a resounding impact on the economic future of this susceptible nation.

Remittances during disasters and crises have proven to be a vital form of aid to family members left behind in impacted regions. When the logistics of sending and receiving these funds is heavily intertwined with a corrupt central



government, one cannot downplay the greater implications of increased remittance flows. In the grand scheme of Venezuela's future, a peaceful transition to a democratically elected government will indisputably be central to a future that is positively shaped by additional remittances.

## LITERATURE REVIEW

I approach the review of existing literature with the intention of better understanding what an increase in Venezuela's remittance flows can reveal about the way remittance behaviors respond to economic crises in developing countries today. In this paper I will analyze data on remittances in the years 2011, 2014, and 2017 to identify trends in particular characteristics of these remittance receiving individuals. In reviewing various peer edited literature sources, I will address both the micro and macroeconomic findings related to remittances and immigration. There are currently no analyses or studies that examine the state of remittance flows in the country, leading up to, or during, the economic crisis. This is likely a result of both data limitations and the ongoing nature of the crisis.

One main area within the literature related to this project involves the assessment of diaspora networks and their contribution to family incomes. Migrant remittances help to prevent further displacement, yet leave the people remaining in the origin country vulnerable and dependent. Strict policies placed on money transfer systems, with the intention of limiting funds to support crime, can have a negative impact on remittances being sent to families. This reveals that an analysis of remittances in Venezuela must assess the ease with which migrants are able to send funds from abroad. For example, excessive difficulties in sending remittances may impact migration patterns directly. The inability to safely or reliably send remittances might influence entire families to migrate rather than solely the primary breadwinner of a household. Are people leaving the country in order to send remittances, or because of their inability to receive them? While this question is beyond the scope of this project, it may point to an area for further investigation.

Much of the existing literature points out the many inherent limits to studying remittances and their impacts in developing countries. For example, having limited data on poverty and migration flows and the transmission of remittances through unofficial channels are only a few of the challenges in comprehensively addressing the topic. Additionally, complex remittance flows among families that are dispersed, complicate analysis. The amount of remittances flowing to Latin American countries and the Caribbean experienced approximately 10 percent growth despite a less than 2 percent total rate of economic growth. This is, in part, explained by displaced Venezuelans receiving

remittances in other Latin American countries, particularly Colombia, Peru, and Ecuador (Orozco, 2018). This serves to illustrate the dynamic web of remittance flows that is not limited to the borders of Venezuela.

A study carried out by Guiliano and Ruiz-Arranz (2009), which tracked 100 developing countries between 1975 and 2002 found that remittances were able to promote growth in underdeveloped countries by acting as a way to finance investment. In these economies, remittances function as a substitute for inefficient credit markets and help to boost growth. Countries experiencing extreme hyperinflation, like Venezuela, face obvious credit constraints, which indicate that remittances have the potential to mitigate the economic strain depending on how the remittance funds are used. This journal article emphasizes that how remittances affect a country in the long-run, depends largely on whether the recipient country uses the funds for consumption or investment. Due to the inherent issues faced as a result of such a severe crisis in Venezuela, it is likely that remittances in the short term will act as a consumption smoothing mechanism rather than a source for investment. Additionally, these findings have implications for policy-makers because it reveals that minimizing the cost of remittance transfers can act as a means of stimulating growth.

Literature points to migrant remitters as being price sensitive (Orozco, et al, 2016). The World Bank has recorded the global average cost of sending remittances as 7 percent in 2018. According to the 2030 Agenda for Sustainable Development produced by the UN's Department for Economic and Social Affairs, the target transaction cost for remittances is 3 percent (as a proportion of the amount remitted). Global Organization's recognition of the benefits to both senders and receivers of remittances when transfer costs are lowered is significant. Applying this same policy approach in Venezuela may serve to assist Venezuelans both at home and abroad.

Wilfredo (2016) points out that on the contrary, the reliance of developing countries on remittances can lead to dependence that ultimately hinders sustained long-term growth. Conflicting literature shows that there is still much to be debated and analyzed in the realm of remittances and its macroeconomic effects.

Another study by Lum (2013), shows that the effect of diaspora linkages is poorly understood. The paper attempts to analyze whether support in the origin country from the larger diaspora has a positive or negative effect on instability in the home country. This study is relevant to my project because insights into the behavior of social ties during crises may also have implications for explaining the findings relating to the Venezuelan household surveys. Their paper identifies remittances as the tangible form of support that indicates a link to the diaspora. Using cross-sectional data from a variety of countries and the World Bank's fragility index, they found that a decrease in fragility was linked to higher flows of remittances. While the study was not able to discern whether or not remittances

are a stabilizing or destabilizing effect, they concluded that the most fragile states are very reliant on remittances. As the Venezuelan diaspora grows with continual outmigration, and fragility increases in conjunction with the humanitarian crisis, it may be the case that the country will become increasingly reliant on remittances leading to predictable changes for the future of the country's economy.

One case study performed in Mexico examines household surveys to determine the effects of remittances on inequality in the country by understanding how domestic and external crises impact insurance. They found that remittances were responsible for lowering inequality at the macro level and mitigated some of the effects of the shock on the poorest members of the population. The data showed that the likelihood of receiving remittances, as well as the amount received, changed across income deciles during both the internal (1994 Mexican Peso Crisis) and external crises (Global Financial Crisis) observed. The household data of Venezuelans that I will be using separates respondents into one of five quintiles to identify their socioeconomic status, which will allow me to look at changes similar to those observed in Mexico for this particular study. I will only be looking at the effects of the current Venezuelan migration crisis, and while the crisis does not peak until recent years, I categorize the data from all surveys as within the timeframe of the socio-economic crisis.

The most recent empirical research identifies multiple variables as significant determinants in explaining remittance behavior. Individual characteristics such as gender and education in addition to income and unemployment levels all play a role in a migrant's decision to send remittances. Overall, remittance literature based on micro-level surveys has shown that remittance patterns are best explained by familial, inter-temporal contracts, rather than altruism or other motives (Rapoport, 2006). Although I do not address underlying motivations to remit, this finding is significant in supporting my reliance on the survey question "In the PAST 12 MONTHS, have you, by yourself or together with someone else, borrowed any money from any of the following sources? - From family, relatives, or friends" as a proxy in my data for those who receive remittances from abroad.

This paper will explore how various characteristics influence remittance behavior at different points of the income distribution, through utilizing household-level data that provides information on remittances received by Venezuelan individuals. Here, respondents are identified by their income level, age, gender and educational attainment. I predict the extreme increase in outflow migration in Venezuela will act as a shock to the quantity of citizens receiving the remittances coming into the country and provide insights into how developing nations are impacted by migration crises. There is also a potential for differences in frequency of remittance recipients across income quintiles, as the socio-economic demographics of those leaving Venezuela are largely unknown.

## DATA AND SUMMARY STATISTICS

The data on Venezuela I will be using in this paper comes from a triennial survey established by the World Bank known as the Global Financial Inclusion (Global Findex) Database. The survey began in 2011, carried out by Gallup, Inc. and was administered via face to face interviews in Spanish, Venezuela's official language. The only area the sample excludes are the Federal Dependencies, which encompass Venezuela's offshore islands (containing approximately 5 percent of the total population). Each of the three surveys provides data on 1000 household respondents. Each year the questions added to the survey increase the variables from 50 in 2011, to 84 in 2014, and to 103 in 2017. I have only chosen to include variables which remain constant across the survey years. I will be primarily focused on the third set of indicators used in the development of the survey which are comprised of the sources of formal and informal borrowing. My analysis will focus on examining trends within the household data related to whether or not household respondents are remittance recipients.

As previously stated, remittances are "Cross-border, person-to-person payments of a relatively low value. The transfers are typically recurrent payments by migrant workers to their relatives in their home countries. Remittances are – first and foremost – a private flow of funds between family members (World Bank, 2015)." This definition of remittances is accepted by the Global Partnership for Financial Inclusion (GPFI) and the World Bank. While the survey does not explicitly ask respondents about receiving international remittances, I will be using the following question as a proxy: "In the PAST 12 MONTHS, have you, by yourself or together with someone else, borrowed any money from any of the following sources? - From family, relatives, or friends." In acknowledging that the term "borrowed" is not synonymous with the obtainment of remittances, I believe that the question will still accurately reflect the aspect of a private transfer of funds between family members.

The information collected from these surveys can be considered cross-sectional time series data, due to the survey respondents differing across the three years surveyed. The study uses data weighting to provide a nationally representative sample for the Venezuelan economy in order to account for oversampling and household size. The original purpose of the Global Findex Database is to assess how adults save, borrow, make payments and manage risk, allowing for a greater analysis of the overall barriers to financial inclusion in 144 economies. Additionally, a considerable limitation of the data is that the amount of remittances received is not reported, so remittances will have to be treated as a binary variable in my regression.

Utilizing data collected from various sources by the International Organization for Migration, I summarize the most recent evolution of Venezuelan

immigrants worldwide. Identifying the evolution of Venezuelans residing abroad allows for the assessment of annual migration outflows. The primary benefit of utilizing household surveys for my analysis is that micro-level data provides insights into household characteristics that cannot be found via population censuses or administrative data. This is specifically true in the case of Venezuela, where the validity of much of the data released by the government is contested by outside sources. My analysis is an attempt to fill the research gap in terms of understanding who the recipients of remittances in developing countries are, and how these change in times of economic crisis.

Table 1. *Percent increase since 2015 of immigrant population from Venezuela*

Country	% change*
Peru	14975.32
Colombia	1686.12
Brazil	1359.85
Chile	1221.78
Panama	668.90
Argentina	638.95
Bolivia	571.93
Paraguay	410.23
Dominican Republic	377.61
Uruguay	363.02
Ecuador	343.98
Mexico	104.16
Trinidad and Tobago	73.210
Costa Rica	38.14
Spain	25.58
Canada	16.07
United States	13.58
Portugal	1.77
Worldwide	2.35

\* Percent change is calculated from 2015 to latest data available in given country

## Venezuelan Migrants in Top Latin American Receiving Countries



*Figure 1.1*

Table 2. *Summary Statistics for relevant variables*

	Obs	Mean	Median	Std. Dev	Min	Max	Years of Data
Population		29668.94	29678.18	1850.69	26784.16	32779.87	2005- 2018
GDP per capita		10822.21	11381.69	3154.62	5432.69	15692.41	2005- 2014
Avg Educ*	1000	1.828	2	.537	1	3	2011
Avg Educ	1000	1.822	2	.607	1	3	2014
Avg Educ	1000	1.903	2	.635	1	3	2017
Income quintile	1000	3.15	3	1.43	1	5	2011
Income quintile	1000	3.197	3	1.406	1	5	2014
Income quintile	1000	3.197	3	1.39	1	5	2017
Received remittances**	1000	0.098	0	0.298	0	1	2011
Received remittances	1000	0.14	0	0.347	0	1	2014
Received remittances	1000	0.19	0	0.392	0	1	2017

\*Education is measured on a 1 to 3 scale, where 1 indicates primary education or less, 2 indicates secondary education, and 3 indicates tertiary education or higher.

\*\*Remittances are measured as a dummy variable; 1 if a household received remittances and 0 if not.



Table 1 identifies the percent increase in Venezuelan immigrants in the top receiving countries since 2015 as reported by the UN. Peru has experienced the largest increase of nearly 15,000 percent followed by other Latin American countries like Colombia, Brazil, and Chile. The chart serves to quantify the global impact of the recent influx in Venezuelan out-migration. Figure 1.1 depicts the regional impacts of out-migration in the top Latin American and Central American receiving countries. My analysis could certainly be strengthened if it were possible to obtain data on demographic characteristics of the Venezuelan population that has recently migrated to these top receiving countries. Table 2 provides the summary statistics for the most relevant variables I will be using in my analysis. In addition to information on the county's population and GDP per capita, the table includes statistics on the variables average education, income quintile, and whether or not individuals received remittances. Information on income quintiles shows that the data is marginally skewed towards the upper quintiles. The data also shows that the average number of people receiving remittances as well as the average education level is increasing over the three years being surveyed. Specifically, in 2011 9.83 percent of survey respondents were receiving remittances. This amount increased to 13.95 percent in 2014 and eventually 19 percent in 2017. While some estimates predict that this statistic is much higher, the data reflect a significant upward trend in the prevalence of remittances in Venezuelan households as the crisis continues to progress. I predict that this trend accurately aligns with the increased out-migration caused by the economic crisis.

## EMPIRICAL METHODOLOGY

In order to identify the determinants of receiving remittances (modeling a binary outcome), by income quintile, my regression will utilize both the OLS method (known as the linear probability model) and the probit model with my cross-sectional data of survey respondents in 2011, 2014 and 2017. The regression examines the role of individual characteristics including education level, age, gender, and income quintile. The purpose of using the probit model will be to determine the probability that a given observation with specific characteristics will fall into a certain category. In this case, it will be to find the probability and individual receives remittances based on their education, age, and gender given their income quintile.

$$\text{remittances}_i = \beta_0 + \beta_1 \text{age} + \beta_2 \text{male} + \beta_3 \text{educ\_lv1} + \beta_4 \text{educ\_lv2} + \beta_5 \text{inc\_quint1} + \beta_6 \text{inc\_quint2} + \beta_7 \text{inc\_quint3} + \beta_8 \text{inc\_quint4} + \varepsilon_i \quad (1)$$

$$\Pr(\text{remittances}_i = 1 | X) = (\beta_0 + \beta_1 \text{age} + \beta_2 \text{male} + \beta_3 \text{educ\_lv1} + \beta_4 \text{educ\_lv2}) \quad (2)$$

where:

remittances = a binary variable where 1 if the individual received remittances and 0 if not

inc\_quint = a categorical variable where 1 represents respondents in the bottom 20% of income and 5 represents respondents in the top 20%.

male = a binary variable where 0 if the individual is male and 1 if the individual is female.

educ\_lv1 = a binary variable where 1 indicates an individual belongs to education level 1, 2 or 3.

age = age of respondent

$\varepsilon_i$  = error term

In this regression remittances act as my dependent variable, measured as a binary variable where 1 indicates that an individual has received remittances and 0 indicates that the individual has not received remittances. The predictor variables I will use include education, age, sex, and income quintile. My analysis will contain regression results for equation (2) by income quintiles 1 through 5. As mentioned in the previous section, the proxy for remittances will be whether or not an individual has borrowed from friends or family in the past 12 months.

Both high and low skilled workers serve to gain economically from leaving the struggling country in search of greater opportunity, so there is no clear indication of who has a higher likelihood of receiving remittances. I anticipate that Venezuelans coming from a more educated household are more capable of sending remittances back to their families, while less educated households are in greater need of remittances due to higher income volatility. It is possible that households with higher education levels would be more likely to have family members abroad (as the opportunity cost of migrating may be smaller). Using these coefficients can allow for a better understanding of the effects of income level as it pertains to receiving remittances. In analyzing data from both early and peak years of the Venezuelan crisis, I may be able to contribute to existing literature on the role remittances play in fragile economies experiencing crisis.

### RESULTS AND DISCUSSION

Table 3. *Linear Probability Regression Results*

Variable	Expected Probability
age	-.0022074*** (.0003757)
male	.0181555 (.0133538)
educ_lvl 1	-.0063845 (.0229985)
educ_lvl 2	-.0019286 (.0208815)
inc_quint 1	-.0388747* (.0200103)
inc_quint 2	-.012369 (.0201613)
inc_quint 3	.0120057 (.0199168)
inc_quint 4	-.021826 (.0188489)
Constant	.2445333 (.0289041)
R-squared	0.0163

obs	2,984
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	
Table 4. <i>Probit Regression Marginal Effects</i>	
Variable	Expected Probability
age	-.0105459*** (.0017885)
male	.0819057 (.0588997)
educ_lvl 1	-.0466947 (.1047042)
educ_lvl 2	-.006055 (.0899484)
inc_quint 1	-.1858133* (.0959699)
inc_quint 2	-.0618741 (.0897088)
inc_quint 3	.0383221 (.0839032)
inc_quint 4	-.1075008 (.086989)
Constant	-.5969062*** (.1249037)
Pseudo R-squared	0.0211
obs	2,984

Table 5. Determinants of Remittances, by Quintile; 2011, 2014 and 2017

	Bottom Quintile	2	3	4	Top Quintile
age	-.0006779 (.00083)	-.0022471** (.0009165)	- .0043042*** (.0009571)	-.002764*** (.0008159)	-.0012002 (.0008342)
male	.0037955 (.0312199)	-.0248055 (.0325084)	.012356 (.0308904)	.0355235 (.0296256)	.0417584 (.0264578)
educ_lvl 1	-.1092648* (.077231)	.0565379 (.0560037)	-.0334819 (.0562778)	.0710781 (.0396946)	-.0415531 (.0447379)
educ_lvl 2	-.0309787 (.0369686)	.0273342 (.0259677)	-.0405627* (.0241706)	.0341014* (.0167794)	-.0125881 (.0204079)
Constant	.2176643*** (.0771778)	.1954465*** (.0631421)	.4049268*** (.0602134)	.1794527*** (.0475238)	.2088708*** (.0562879)
R-squared	0.0116	0.0160	0.0385	0.0279	0.0096
obs	495	532	615	623	719

Standard errors in parentheses

Dataset is a pooled cross-section of households in 2011, 2014 and 2017.

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

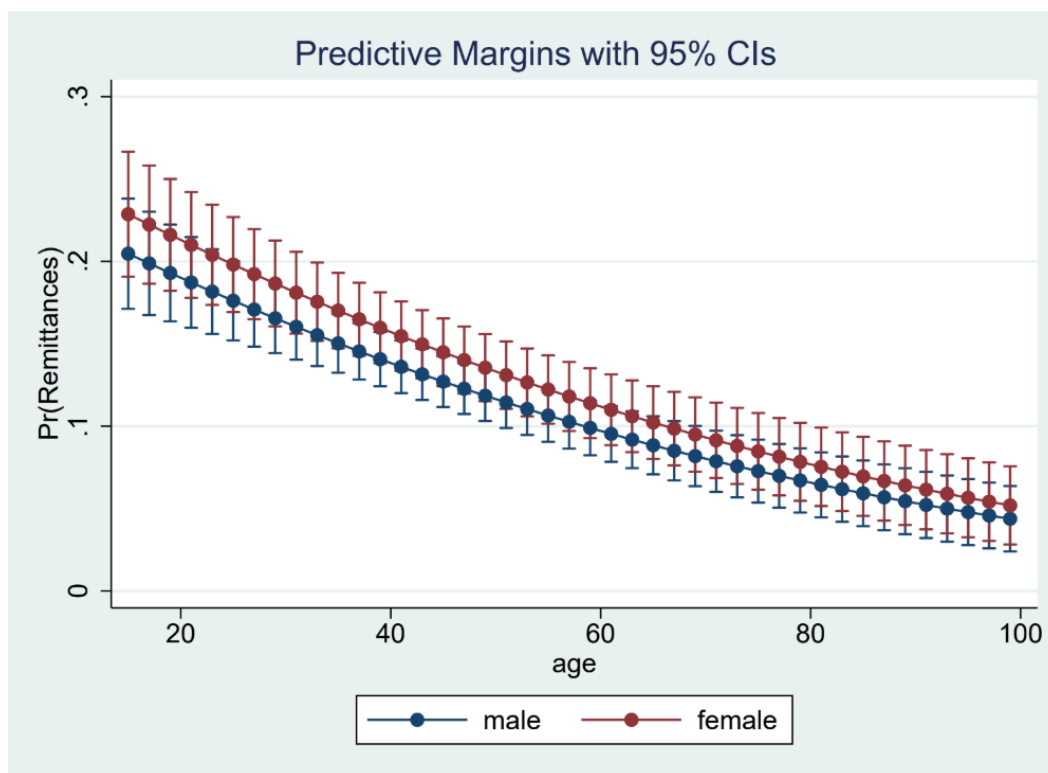


Figure 1.2

Figure 1.2 shows the predictive margins based on the standard errors of computed means. While the confidence intervals of both men and women overlap, there is a clear downward trend in terms of the predicted odds of receiving remittances. The results for regression (2) for each income quintile, are shown in each given column of Table 5. My regression results show significance for the variable age, which is exhibited in both results.

Tables 3 and 4 show the regression results for both the linear probability model and the probit regression of the pooled cross-section of survey respondents in the years 2011, 2014 and 2017. The variable age appears to be the only significant value among those I tested in the models. In the linear probability model, we can interpret the coefficient to mean that there is a 0.22 percentage point decrease in the probability that a person will receive remittances given an additional year in age, holding all else constant. Similarly, according to the probit model, an additional year of age means a decrease in the predicted probability of receiving remittances. As individuals get older, the likelihood that they receive remittances goes down. This could potentially indicate that those who are younger are receiving remittances because the older household members are more likely to have migrated and act as senders rather than receivers. Alternatively, this might

reveal that the oldest generations are disproportionately negatively affected by the economic crisis due to their lack of additional income from remittances.

One major limitation of the linear probability model is that it has the potential to predict probabilities that are outside  $[0,1]$  if restrictions are not placed on  $\beta$ , thus restricting interpretation. Additionally, the error terms in linear probability models are heteroskedastic, which I account for by using robust standard errors in my regression. I performed regressions separately for each given income quintile. The resulting coefficient  $\beta$  thus represents the change in the probability that remittances = 1 given a one unit increase of the given independent variables, holding all else constant. The coefficient results presented are given at the 95 percent confidence interval. Due to the increasing severity of the crisis, I rule out circular migration as a factor having a potential impact on my analysis. There may be multiple explanations for the insignificance of the majority of my variables.

## CONCLUSION

The purpose of this paper is to gain a greater understanding of the defining characteristics of remittance receiving individuals in Venezuela. The country is in a unique position for analysis as they face an increasingly severe socio-economic crisis where household reliance on remittances continue to hold a significant role. The literature on remittances has ample space for expansion in regard to developing countries in times of crisis. Answering the question of who receives remittances has important policy implications for how countries manage international private transfers of funds.

For a more thorough analysis I would recommend the future household surveys such as the Global Financial Inclusion Index ask households about not only the remittances they are receiving from abroad, but the dollar amounts obtained. This would allow for remittances to be treated as a continuous variable, rather than a binary variable. It is certainly possible that the fixed cost of migrating prohibits the poorest individuals from migration opportunities and thus, sending remittances back home. This study uses data solely on the receiving side of remittance transfers. For example, there is minimal data on the demographics of those who are sending remittances back. This could potentially be obtained through proper documentation of Venezuelan immigrants in surrounding countries. The logistical difficulty is notable considering the massive scale of the recent influx. Cultural norms are another important factor in the in determining remittances, making cross-cultural comparisons difficult. Other factors that my particular study cannot analyze are the relationship between the senders and receivers of remittances. While it appears there are multiple studies that look at

growth in developing countries impacted by remittances, few appear to examine countries suffering specifically from economic crises.

Using data that only looks at the receiving end of the remittance transaction limits the ability to draw conclusions about from whom they are receiving remittances. I argue that because remittances are sent from family and friends, who exist in the close network of the receiving individual, it is often likely that those who migrate, and remit, share similar characteristics to their counterparts who remain in the origin country. While much of the literature shows that more educated migrants tend to remit in greater quantities, whether or not their education makes them more likely to remit is, as shown by my results, still unclear (Bollard, 2011).

A future plagued by economic uncertainty and scarce resources has led many Venezuelan homes to suffer from income volatility. From verbal accounts from suffering Venezuelans, as well as the quantitative evidence provided through this data and research, I expose both the vulnerabilities and economic potential that lies in increasing comprehension of the remittance paradigm in Venezuela. While it is clear that remittances cannot act as a substitute for the political and economic restructuring needed to combat the current crisis, they remain a mechanism capable of mitigating financial burdens in the short term and generating investment towards recovery in the long-term. The information I analyze here does not provide insights into motives or characteristics of the remittance senders, but it remains undeniable that remittance flows and migration have economic implications during times of crises. To increase our ability to forecast remittance flows across economies and economic situations, there must be a greater understanding of micro-level determinants of those receiving remittances. Therefore, my essay attempts to add to contemporary literature by looking at the characteristics that indicate the likelihood an individual is a remittance recipient.



REFERENCES

- Albahari, M. (2018). Venezuelan Regime Takes Bite of Remittances for the Starving. *Antigua Report*.
- An Analysis of Trends in Cost of Remittance Services (2018). *Remittance Prices Worldwide*, The World Bank.
- Caraballo-Arias, Y, et al. (2018). Working in Venezuela: How the Crisis has Affected the Labor Conditions. vol. 84, no. 3, 2018, pp. 512–22.
- Cohen, L. (2018). *IMF sees Venezuela inflation at 10 million percent in 2019*. Reuters.
- Daniels, J. P. (2019). Venezuela in Crisis. *The Lancet Infectious Diseases*, vol. 19, no. 1, pp. 28.
- Fagen, P., & Bump, M. (2005). Remittances in Conflict and Crises: How Remittances Sustain Livelihoods in War, Crises, and Transitions to Peace. *The Security-Development Nexus Program*.
- Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, Financial Development, and Growth. *Journal of Development Economics*, vol. 90, no. 1, 2009, pp. 144–152.
- Inflation Rate, Average Consumer Prices. (2018). *IMF*, World Economic Outlook.
- Informe De Los Objetivos De Desarrollo Sostenible 2018. (2018). *Departamento De Asuntos Economicos y Sociales*, Naciones Unidas.
- Koczan, Z., & Loyola, F. (2018). How Do Migration and Remittances Affect Inequality? A Case Study of Mexico. *IMF Working Papers*.
- Krygier, R. (2018). In socialist Venezuela, the US dollar becomes king. *The Washington Post*.
- Landaeta-Jiménez, M., & Cuenca, M., & Ramirez, G., & Vasquez, M. (2017). La alimentación de los venezolanos. Encuesta Nacional de Condiciones de Vida 2016. *Anales Venezolanos de Nutrición*, vol. 30, No. 2.
- Lum, B., et al. (2013). Diasporas, Remittances and State Fragility: Assessing the Linkages. *Ethnopolitics*, vol. 12, no. 2, pp. 201–219.
- Newland, & Patrick. (2004). Beyond Remittances: The Role of Diaspora in Poverty Reduction in their Countries of Origin. *Migration Policy Institute*, pp. 1-40.

- Nelson, R. (2018). *Venezuela's economic crisis : Issues for congress* (Library of Congress public ed., CRS report ; R45072). Washington, D.C.]: Congressional Research Service.
- Orozco, M., et al. (2016). The Costs of Sending Money to Latin America and the Caribbean. *The Inter-American Dialogue*, Leadership for the Americas.
- Orozco, M. (2019). "Ficha Informativa: Remesas Familiares Hacia América Latina y El Caribe En 2018." *The Inter-American Dialogue*, Leadership for the Americas.
- O'Neil, K. S. (2019). Venezuelan Remittances Don't Just Save Lives. *Latin American Studies Program*, Council on Foreign Relations.
- Orrego, C., et al. (2019). Current Events Flash Panel: Venezuela in Crisis *Panel Discussion*. Kellogg Institute of International Studies.
- Otis, J. (2018). Why Some Impoverished Venezuelans May Have A Harder Time Getting Remittances. *NPR*.
- Perez, S. (2019). Venezuela's Economic Collapse Explained in 9 Charts. *The Wall Street Journal*.
- Rapoport, H., & Docquier, F. (2006). Chapter 17 The Economics of Migrants' Remittances. *Handbook of the Economics of Giving, Reciprocity and Altruism*, vol. 2, pp. 1135–1198.
- Selee, A, et al. (2019). Creativity amid Crisis: Legal Pathways for Venezuelan Migrants in Latin America. *Migration Policy Institute*.
- Wilfredo, T. (2016). Los Determinantes De Las Exportaciones, La Inversión Extranjera Directa y Las Remesas En Ocho Economías Latinoamericanas." *Atlantic Review of Economics*, vol. 1.