International Private Transfers and Labor Participation in El Salvador

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Abstract: International migration and private transfers by immigrant workers to their home countries have proved to be vital elements in the economic sustainability of small nations in Latin America. These transfers, identified as remittances, are one of the largest foreign financial inflows into El Salvador, exceeding garment manufacturing exports and official foreign aid. However, remittances may induce recipients to substitute job searching and labor efforts with increased leisure, hindering economic growth. Through a household survey eliciting information on remittance recipients and labor occupations, this study finds that remittances in El Salvador are associated with a reduction in labor participation, more so among women.

Keywords: Remittances, El Salvador, labor force participation, logit models

JEL Classification: F22, F24, J21, O54

1. Introduction

In El Salvador, remittances represent 16.4 percent of the GDP value. In Latin America, this country ranks as the third highest remittance recipient after Haiti and Honduras. These private transfers from immigrant workers have transformed communities by providing additional income to millions of families and by lifting several more out of extreme poverty. The remittance flow to El Salvador exceeds revenues from almost every item in the balance of payments, including garment manufacturing, commodity exports, and foreign aid (Table 1). However, these transfers can hinder the dynamic of labor market participation within the country. Remittance recipients may be advised by the remittance provider to defer job-searching activities or even resign a current job. In addition, it might be in the best interests of the recipient to substitute work effort with leisure in the presence of the additional income that remittances provide to the family group. These two opposite outcomes of remittances—poverty alleviation versus job market distortions—are subjects of public debate among recipient countries and the research community (Chami et al., 2008; Nguyen, 2008; Mishra, 2007).

Two labor-related effects emerge in the presence of migration and remittances. First, migration implies the exit of a working-age member from the labor force. Second, migration is followed by remittances that compensate forgone labor income. This new source of income invokes the labor–leisure choice, reducing the employment likelihood or the number of hours worked among other family members in the recipient household. Both of these effects have an analogous impact

on labor supply, and discriminating among them has remained a challenge in the research community. Micro data using national expenditure surveys generally do not provide specific information about the remitter and the recipients to elucidate the migration versus the remittance impact on labor participation. We contribute to the literature by collecting data about job searching activities and employment history among remittance recipients, as well as about remitter demographics to assess which of these effects governs in the labor market.

Furthermore, previous studies seem to experience a selectivity bias in which an individual's behavior in the labor market might be associated with unobserved features such as household wealth levels prior to receiving remittances. Most national surveys are not longitudinal in nature, precluding the determination of household economic conditions without the presence of remittances. Recognizing this limitation, we collected data on the immigrant/remitter family member before departure, addressing some of the selectivity bias issues and facilitating a more clear-cut regression analysis.

An extensive body of literature has provided evidence on the effects of remittances on education, health, income, growth, and poverty alleviation (Borja, 2013a; Hernández and Godínez, 2013; Acosta, 2006; Lopez-Cordoba, 2006; Cox-Edwards and Ureta 2003). Another group of studies has analyzed the factors determining remittance inflows into developing nations, such as the economic stability of the home and host countries (Diaz and Soydemir, 2013; Borja, 2012a; Sayan, 2006) and the specific characteristics of the migrant-remitter (Nziramasanga and Yoder, 2013). However, little information is available about the impact that remittances have on labor force participation rates. This study examines the relationship between remittances and the labor market by surveying 160 families in the town of Suchitoto located in the state of Cuscatlán, 47 kilometers north of San Salvador, the capital of El Salvador. We investigated the job searching activities and past and current occupational choices of 409 working-age individuals.

El Salvador was selected owing to its many regions characterized by high migration rates and remittance inflows. More specifically, the intensified migration among adults aged between 18 and 40 and the soaring remittance inflows in the small municipality of Suchitoto makes it a model region to test three hypotheses: (1) Remittances reduce labor force participation, providing evidence of the moral-hazard effect of remittances on the labor market. (2) Remittances encourage working-age individuals to shift away from the informal sector and find job opportunities in the formal sector with better working conditions and higher wages. (3) Male and female participation in the labor force are affected differently among remittance-recipient households.

We ran Anova tests to determine statistical differences between remittance recipient and non-recipient groups. We completed our analysis by applying a logit model and calculating marginal effects to determine the probability of an individual to be unemployed and be a remittance recipient.

The reminder of the paper is organized as follows. Section 2 provides preliminary evidence of remittances and labor force participation in El Salvador. Section 3 briefly summarizes previous empirical evidence on the negative effect of remittances on the labor market participation rate. Section 4 offers details on the data and methodology used in this study. Section 5 presents our

main results. As expected, these private transfers have a negative effect on labor participation, particularly among women. We did not find evidence of a relationship between remittances and the type of work activity. The paper ends with recommendations and conclusions.

2. Preliminary Evidence of Remittances and Labor Force Participation in El Salvador

A first glance at the relationship between remittance receiving families and labor force participation rate by state shows that La Union and Cabañas have the highest proportion of remittance-recipient families with 41 and 35 percent respectively; that is, one in every three households received remittances in 2011 (Table 2). More interestingly, these two states displayed the lowest labor participation rate from the group of 14 states. In the case of Cuscatlán, the state where Suchitoto is located, 16 percent of the families received remittances in 2011 accounting for an extra monthly income of $173.37 or 39.3 percent of the average family income (Table 2). In general, remittances accounted for about 30 to 40 percent of total household income per month, an estimate consistent with previous investigations (Borja 2013b, Nguyen 2008, Caceres and Saca 2006).

A standard correlation analysis provides a better picture of the relationship between remittance-recipient families and labor force participation rate (Table 3). On average, states with a higher proportion of households receiving private transfers from abroad show a lower participation rate (correlation =-0.92). A similar situation is observed in states with a higher proportion of income in the form of remittances (correlation =-0.62); remarkably, this effect is stronger among female participants (correlation =-0.73). Remittance income and the number of recipient households in the state have no statistical impact on male participation rates (correlation =0.32 with p=0.27, and correlation =0.02 with p=0.93, respectively). This trend concurs with previous studies, which demonstrated that women in the recipient household tend to alter their labor force participation to become caregivers of younger siblings, parents, or nieces and nephews (Rodriguez and Tiongson 2001).

3. Remittance and Labor Force: Literature Review

Previous studies have shown that remittances exhibit two characteristics: they are altruistic in nature and are a resilient and stable source of foreign income (Borja, 2012b). To that extent, these transfers function as an additional, non-labor income that improves the economic conditions of the recipient household. Family members benefitting from these foreign earnings may replace current "labor-income" with "remittance-income" by reducing efforts toward job-search and work (Chami, 1998). This change in behavior is a distinctive case of a "moral hazard" dilemma in which monitoring and enforcing the adequate usage of remittances are difficult endeavors owing to the altruistic nature of remittances and the distance separating senders and recipients. Recognizing this, the recipient may find it in his best interest to divert remittances toward the consumption of more leisure.

Remittance recipients may also associate these transfers with a "job-insurance" income that allows them to increase the job-searching time until a job with better working conditions and higher wages is found (Drinkwater et al., 2003).

Assessing the effect of remittances on labor force participation empirically is a challenge. Macro data such as unemployment rates or participation rates might not be suitable since remittances usually have an opposite effect on these macro indicators. An income effect reduces labor participation, but a substitution effect is also present. In this case, the remittance receiver gains more time to search for a job with better working conditions and higher wage, moving away from the informal to the formal sector of the economy. Micro data (surveys) can be effective only if the design of the questionnaire elicits specific information about job-searching activities; however, most national surveys do not provide such information.

Using three datasets on household expenditure and labor force participation among non-immigrant individuals and temporary overseas workers in the central region of Manila in the Philippines, Rodriguez and Tiongson (2001) capture the impact of remittances on labor force participation. Applying a probit model and numerous control factors from this rich dataset, their results suggest a negative effect of remittances on labor participation. This effect is stronger among male recipients. The authors recognize a possible estimation bias owing to lack of longitudinal data and limited information on permanent migration, which corresponds to a large proportion of households in the Philippines.

Amuedo-Dorantes and Pozo (2006) investigate the case of Mexico using a national household spending survey. They evaluate labor supply differences between males and females and between rural and urban areas among remittance receivers. Their findings indicate that remittances do not have an impact on male labor supply. Female labor supply, however, decreases in the presence of higher remittance income, but only in rural areas. They recognize the potential of an omitted-variable bias in standard OLS models, and thus, instead employ an instrumental variable Tobit model (IV-Tobit). The authors suggest that the impact of remittances on labor force participation might be fused with the preceding reduction of income from the emigration, but they fail to corroborate this hypothesis. Our study contributes to this analysis by obtaining information about the year the emigrant left the country and the year he or she started sending remittances, thus, capturing the possible effects purely from remittances.

Analogous to our study, Acosta (2007) investigates the relationship between labor market and remittances in El Salvador. He applies probit models using data from the National Survey of Multiple Purposes (household surveys) for several years. Similar to previous studies, Acosta acknowledges the sample-selection biases arising from omitted unobservable variables since the data lack information about the remitter and the household wealth before receiving remittances. Wealthier families might have more opportunities to access the labor market than poor families, affecting the relationship between remittances and labor participation. Actually, his results provide evidence of the presence of sample selection bias. First, Acosta identifies a set of instrumental variables (IVs). Second, he runs regressions with and without the IVs. Without IVs, remittances appear to have a negative effect on both male and female labor participation rates; however, once the IVs are incorporated, the negative effect is observed only among females.

Another limitation of the dataset used by Acosta (2007) is that it lacks specific information about each family member's relationship with the emigrant and other such features that might affect decisions to enter or exit the labor market. Our survey provides valuable information on each

individual member of the household, the remitter, and their relationship, enhancing the quality of the results.

Kim (2007) examines the impact of remittances on two different sets of labor supply indicators: the labor participation and working hours per week in Jamaica. Two household datasets are collected, one related to labor force participation and the other on household expenditure and income, enriching the available information on household, individual family members, and emigrants. Nonetheless, these surveys do not provide longitudinal data, leading to possible omitted-variable bias. The author indicates that the data "retains the same geographical clusters in the sample for three or four years" (pp. 9), and thus, a pseudo-panel data model is estimated in addition to the standard cross-sectional probit models. The results lead to the conclusion that remittances have a strong impact on labor participation, mostly among working-age males. This effect is not present when using the working-hours variable.

Jadotte (2009) unravels the impact of remittances on labor force participation in Haiti, a country with 25 percent of its households receiving foreign income from family members or friends working abroad. Similar to Amuedo-Dorantes and Pozo (2006), the author also estimates IV-Tobit models to account for selectivity and endogeneity biases. Using a survey on living conditions for 7,000 households, the results indicate that the impact of remittances on labor force participation although negative, is not statistically relevant.

Applying a "propensity score matching" approach and micro data from Mexico, Cox-Edwards and Rodriguez-Oreggia (2009) find insufficient evidence of any negative effect of remittances on labor force participation. Most estimated effects are insignificant in all three designed probit models, suggesting a "neutral effect" of remittances on labor force participation, in which this foreign income merely constitutes the replacement of the lost-income from the migrant member to the household.

These contrasting empirical results on the relationship between remittances and labor market participation in nations that heavily depend on remittances have motivated the present study.

4. Data Description and Methodology

Data were procured through a survey instrument comprising more than 40 questions. The survey was conducted throughout March and May 2013 in the town of Suchitoto, state of Cuscatlán, El Salvador. We completed 160 interviews, and most of them were in the form of casual conversations since many participants were either illiterate or had only a few years of school education. We collected information about each family member in the household, which augmented the number of observations to 639 subjects and 409 working-aged individuals.[1] The objective of the questionnaire was to elicit specific job-related activities among remittance recipients, such as previous and current jobs, efforts to find a job, and expected wages. In addition, we were interested in identifying the authority and decision-power of the remitter on how to spend these transfers, which would help us to recognize if the decision to leave the job market was a personal choice or as advised by the immigrant member. Finally, the survey compiled standard demographics such as the relationship with the immigrant, age, level of education, and the number of dependent family members.

We did not request information about the amount of money received from abroad, as this sensitive question could intimidate the respondent or prompt false information. Instead, we asked the frequency of inflows and the approximate percentage of this income spent on consumption, rents, mortgages, health, and education. We collected data on two groups of households: remittance-recipient and non-recipient families.[2]

Table 4 provides summary statistics of the collected data. Preliminary evidence indicates that only 49.5 percent of remittance recipients work, in contrast to 65.6 percent of non-recipients. The difference is statistically significant between groups and gender. For instance, only 57.3 percent of recipient-males have jobs while 77.9 percent of non-recipient males participate in the labor force. Contrary to our second hypothesis, there is no statistical incidence of employment in the formal sector, indicating that remittances might not be perceived as a job-insurance by which a person can afford postponing the search for better job opportunities.[3] The average age among recipient individuals is higher (36 years) than non-recipients (33 years), which is consistent with the loss of young individuals to migration. There is no significant difference in terms of home ownership or type of jobs. Individuals receiving remittances are equally likely to be self-employed, own a business, or work in the agriculture sector as non-recipient individuals.
It seems that there is no significant difference among male participants, except for the remittance factor. Males recipient are likely to have similar education, age, home ownership, type of jobs, and years of experience as those who do not receive remittances. In the case of the female sample, however, the situation is quite different. Recipient women are more likely to have less education and are older. These factors might have an impact on their decision to enter the labor force. Finally, non-recipient households show higher child-dependency ratios than remittance receiving households; but this value is not statistically relevant among women. Results from Table 4 are only descriptive differences with no implication of causality; thus, we develop a logit model and provide results of the probability that recipients are working, given that their households benefit from remittances.

Equation (1) is a standard OLS estimation that predicts the effect of remittances on the decision to work:

$$Y_i = \beta_0 + \beta_1 R_i + \beta_2 Z_i + \varepsilon_i \quad (1)$$

where Y_i is a binary indicator that takes the value *1* if the working-age individual is currently working, R indicates if the individual belongs to a remittance-recipient household, and Z is a vector of exogenous explanatory household and individual variables. These variables were chosen based on earlier studies on the factors affecting individuals' working choices, such as education, age, and number of dependents in the household. Z also includes household features that might function as predictors of current household economic wellbeing, such as home ownership, and the household status before migration/remittances, such as the level of education and the occupation of the migrant member before departing. The value of i represents the working-age individual i in our sample.

The objective is to estimate the probability to be employed, when conditional on several explanatory variables. We are also interested in the probability that an individual works in the

formal sector or owns a business, given that he or she belongs to a recipient household. These hypotheses were tested among male and females to determine gender differences. Evidently, using OLS with a binary dependent variable may produce biased estimators; thus, we applied a logit model and calculated Maximum Likelihood estimators. The standard logit model is defined as a response probability function of the form:

$$P[Y = 1|X] = F(X'\beta) = F(\beta_0 + \beta_1 R_i + \beta_2 Z_i + \varepsilon_i) \quad (2)$$

$$\text{where} \quad F(Z) = \frac{e^Z}{(1+e^Z)}. \quad (3)$$

The logit model identifies the determinants of labor market participation in both groups: recipients and non-recipients of remittances. To add meaningful interpretation of our results, we estimated the marginal effects of the probability of them being employed.

A persistent empirical issue regarding the impact of remittances on labor force participation is the omitted-variable bias resulting from non-observable information. Most national surveys are not longitudinal (e.g., interviewing the same individual during different periods) or lack information about the remitter; thus, factors such as the household status before receiving remittances are not observable. As indicated in the previous section, pre-remittance income levels could imply differences in accessibility to the labor market. In addition, remittances may not be randomly distributed among the sample. Traveling abroad is costly, and if only rich households can afford to send family members abroad, then remittance recipients might fit only high-income family characteristics. Lack of random selection could considerably lead to biases in the estimations.

Our survey provides key variables to account for the pre-remittance economic status of households. We use home ownership, education, and occupational choices of the remitter before migrating as key indicators of household wealth prior to migration. In our sample, we found that 34.5 percent of immigrants had at least primary education, 25.3 percent completed 12 years of education, and 7.6 percent had some years of university education. Most remitters held a job in the service sector that required no skills (29.9 percent), followed by the service sector that required some skills (22.7 percent) and agriculture (10.3 percent). Only nine percent of the immigrants were employed in professions such as teaching, nursing, or management before departure (Table 5).

5. Results

Table 6 displays the parameters of the logit model as well as the marginal values for three different assumptions. The most important fact to notice is the stability of the remittance parameter among all models. The parameter value is negative and statistically relevant, indicating that remittances tend to be a strong predictor of labor force participation. Receiving remittances reduces the probability that recipients are working by 15.7 percentage points. Education and age also emerge as good predictors: educated and older recipients are more likely to earn higher wages, and thus, experience a higher opportunity cost of not working. For

instance, each additional grade level of education raises the probability of recipients having a job by 1.5 percentage points.

Family attributes such as the number of dependents show the expected negative sign, but are not statistically relevant in any of the models. In general, the presence of children reduces labor force participation, but most individuals in our sample work in the informal sector and, thus, may take their children to their place of work (e.g., female vendors in food stands generally take their children with them).

It was expected that wealthier families might have easier access to the labor market, but the results indicate that no statistical differences are marked between individuals living in a wealthier home (e.g., individuals living in a family that owns a house) and those not living in such homes.

Gender plays a key role in the labor market participation. This factor is partially explained by the social and cultural norms framing these societies in which women are expected to be housekeepers and caregivers for the household members. The participation of men in the labor force is 28 percentage points more likely than that of women, even when receiving remittances. To confirm this result, we replicate Model 3 using data by gender (see Appendix 1). In the case of males, the marginal value of remittances drops from 15.7 percent to 11.3 percent, with the parameter losing statistical relevance. Using only data on females, remittances decrease the probability that recipients are working from 15.7 percent to 17.1 percentage points.

In summary, Table 6 illustrates the relevance of remittance and gender as determinant factors in explaining labor participation. These two factors show the highest marginal effects with 15.7 and 28.1 percentage points respectively (Model 3).

Table 7 shows results when focusing on remittance-recipients only. Similar to the previous table, male remittance recipients are more likely (by 24 percentage points) to be participating in the labor market than women. In addition, education and age are relevant attributes explaining labor market participation. It is expected that remittances would prompt a stronger income effect among those individuals with closer family ties with the remitter, such as parents or spouses. Results indicate that strong family ties (lower value of the variable "migrant relation") would reduce the likelihood of participating in the labor market, but this effect is of no statistical relevance.

In addition, family wellbeing could be a strong explanatory variable of labor market participation. Wealthier families could have easier access to the labor market and more resources to send family members abroad than poorer families. These two factors might prompt a sample selection bias in which the sample is heavily represented by wealthier families. To address these issues, we incorporate the education and type of job activity of the migrant member prior to migration (Model 3). Results show that the migrant's age, education, and type of job show the expected sign but are not statistically relevant in explaining labor market participation. Addressing pre-departure family features does not change our main results: gender is still a key factor in explaining labor participation.

In general, the logit parameters are stable across different assumptions. Tables 6 and 7 provide two post-estimation tests to confirm the validity of the results. The Wald test indicates that all explanatory variables are jointly statistically significant. The relevance of this test is maintained throughout different models and assumptions. A goodness-of-fitness test corroborates that the logit model fits our data reasonably well. We also provide the assertiveness of the model by calculating predicted values and compare them with the actual values. Table 6 indicates that the models correctly classified the sign of the parameter about 70 percent of the time. Table 7 shows a value of about 64 percent.

6. Conclusions

This study investigated the effects of remittances on labor force participation in El Salvador. Using a survey instrument, we obtained demographic information for more than 600 subjects and their labor force participation activities in a region with high migration and remittance recipient incidence. Acknowledging the drawbacks in previous studies regarding selectivity bias, we collected information about the remitter to establish households' pre-remittance economic status. In addition, we gathered data on the relationship between the remitter and each family member to determine the effect of family ties on work-related activities.

Initially, we ran preliminary Anova tests, followed by a logit model in which the dependent binary variable was defined as *one* if the individual was currently working; otherwise, it was *zero*. We proposed three hypotheses: first, remittances are perceived as additional household income, and thus, they reduce labor force participation; second, remittances encourage working age individuals to shift away from the informal sector to the formal sector or sectors that require more skills and provide better working conditions; and third, remittances affect the male and female labor forces differently.

The results indicate that remittances operate as additional household income, and thus, remittance recipients tend to enjoy more leisure and to reduce their labor force participation. This effect is more evident among women. Women are inclined to change their labor force status in response to changes in extra earnings from abroad. In general, remittances and gender are key determinants in explaining labor force participation rates. These two factors show the highest marginal effects among all explanatory variables.

We did not find statistical support for our second hypothesis. Remittances do not seem to affect the type of work activity or the number of years in the same economic activity. Thus, these foreign transfers do not induce reallocation of labor by moving individuals from the informal to the formal sector. The other explanatory variables such as education, age, home ownership, and relationship with the remitter showed the expected sign, but their marginal values were small.

In summary, the reported results indicate that remittance recipients are more likely to move out of the labor force or become less enthusiastic about finding a job, corroborating the hypothesis that some degree of moral-hazard is ignited among remittance recipients, particularly among women. Women in remittance recipient households strategically replace labor activities with more leisure or non-paid activities.

Policymakers and investigators should properly balance the positive and negative effects of remittances on the economic development of a nation. Currently, numerous Latin American countries are exploring innovative policies to leverage remittance toward development and infrastructure (Borja, 2012a), but there is less evidence of remedial policies addressing the labor market distortions triggered by these private international transfers. This should be a topic for future research and a priority item in the policy agenda of recipient countries.

Notes

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[1] Working-age individuals are those aged between 16 and 68.

[2]Although we covered a region with high incidence of immigrants and remittance revenue, we aim at expanding this investigation to states such as San Salvador, La Union, and San Miguel; locations with high migration rates and large number of remittance recipients.

[3] For the purposes of this research, formal employment refers to jobs sponsored by a firm that may or may not pay taxes, but where the worker has some type of formal contract and the employer is not a close relative.

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Table 1.El Salvador: Remittances and the Macroeconomics in 2012

Remittances	US$3.9 billions
Remittances per capita	US$629
Remittances-to-GDP	16.4%
Remittances-to-total exports	57.8%
Remittances-to-commodity exports	312%
Remittances-to-garment manufacturing exports	354%
Remittances-to-total imports	35.2%
Remittances-to-FDI	45.3%
Remittances-to-foreign aid	244%
Remittances-to-foreign public debt	54.4%
Yearly average remittance growth 2011-2012	7.2%
Yearly average remittance growth 2000-2012	8.8%

Source: Central Bank of El Salvador and World Bank Development Indicators.

Table 2.Labor Participation and Remittance Income per State (2011)

States	Labor Participation Rate	Monthly Remittance Income per Family	Remittances-to Total Income	Proportion of Remittance Recipient Families
Ahuachapán	62.8%	$ 133.47	35.5%	13.2%
Santa Ana	65.2%	$ 155.94	34.1%	18.5%
Sonsonate	63.1%	$ 184.75	40.3%	15.6%
Chalatenango	60.8%	$ 184.56	44.7%	28.9%
La Libertad	65.1%	$ 177.54	29.5%	15.4%
San Salvador	65.8%	$ 177.70	28.8%	12.6%
Cuscatlán	**65.0%**	**$ 173.37**	**39.3%**	**15.8%**
La Paz	63.8%	$ 172.84	40.9%	18.0%
Cabañas	57.9%	$ 184.90	44.4%	34.9%
San Vicente	61.6%	$ 179.29	42.0%	28.7%
Usulután	60.9%	$ 167.87	40.7%	28.5%
San Miguel	57.6%	$ 159.65	34.6%	32.9%
Morazán	60.8%	$ 170.60	43.6%	34.1%
La Union	55.6%	$ 191.75	45.1%	41.2%

Note: El Salvador is geographically divided into 14 states. Source: National Survey of Multiple Purposes (Encuesta de Hogares de Propósitos Múltiples), 2012. General Office of Statistics and Census, San Salvador, El Salvador.

Table 3.Correlation Analysis: 14 States Data

	Remittance-to Income	t-value	p-value	Proportion of Recipient household	t-value	p-value
Participation Rate	-0.62	-2.71	0.02	-0.92	-7.90	0.00
Participation Rate-Female	-0.73	-3.73	0.01	-0.85	-5.61	0.00
Participation Rate-Male	0.32	1.15	0.27	0.02	0.08	0.93

Source: Author's calculations using data from the National Survey of Multiple Purposes of 2012

Table 4. Descriptive Statistics: Differences between Remittance Recipients and Non-Recipients

Variable		Recipients	Non-Recipients	SE (P-value)
All Working Age Sample (16-68)		194	215	
	Proportion of adults in the labor force	49.5%	65.6%	**0.048 (0.00)**
	Proportion of adults in the formal sector	18.0%	24.2%	0.041 (0.13)
	Proportion of self-employed or own business	9.3%	10.2%	0.029 (0.74)
	Proportion employed in agriculture	9.8%	14.0%	0.032 (0.19)
	Average years of working in the same job	6.1	8.3	1.191 (0.07)
	Average education	7.5	7.8	0.436 (0.49)
	Average children in the household	0.89	1.09	**0.103 (0.05)**
	Age	36.4	33.5	**1.491 (0.05)**
	Owning the house	63.9%	60.9%	0.048 (0.53)
Male Working Age Sample (16-68)		82	95	
	Proportion of adults in the labor force	57.3%	77.9%	**0.069 (0.00)**
	Proportion of adults in the formal sector	20.7%	27.4%	0.064 (0.31)
	Proportion of self-employed or own business	2.4%	6.3%	0.031 (0.22)
	Proportion employed in agriculture	20.7%	30.5%	0.066 (0.14)
	Average years of working in the same job	8.1	12.1	2.156 (0.06)
	Average education	8.1	7.4	0.661 (0.29)
	Average children in the household	0.7	1.1	**0.145 (0.01)**
	Age	32.6	32.7	2.211 (0.96)
	Owning the house	67.1%	64.2%	0.072 (0.69)
Female Working Age Sample (16-68)		112	120	
	Proportion of adults in the labor force	43.8%	55.8%	**0.065 (0.07)**
	Proportion of adults in the formal sector	16.1%	21.7%	0.051 (0.28)
	Proportion of self-employed or own business	14.3%	13.3%	0.045 (0.83)
	Proportion employed in agriculture	1.8%	0.0%	0.014 (0.52)
	Average years of working in the same job	4.6	5.2	1.225 (0.61)
	Average education	7	8.1	**0.576 (0.07)**
	Average children in the household	1	1.1	0.143 (0.53)
	Age	39.2	34.2	**1.984 (0.01)**
	Owning the house	61.6%	58.3%	0.064 (0.61)

Note: SE = Standard Error of mean difference. SE and P-Values come from Anova tests of mean differences.

Table 5. Descriptive Analysis of the Immigrant/Remitter

Age	16-25	17 (8.8%)
	26-35	80 (41.2%)
	36-45	53 (27.3%)
	46-55	33 (17%)
	56-65	13 (5.7%)
Type of Job	Agriculture	20 (10.3%)
	Service-No Skills	58 (29.9%)
	Service-Skills	44 (22.7%)
	Manufacture	6 (3.1%)
	Professional	17 (8.8%)
	Self employed/ Own Business	5 (2.6%)
Education	No education	20 (10.3%)
	Primary	67 (34.5%)
	Secondary	37 (19.1%)
	High School	49 (25.3%)
	Technical	6 (4.1%)
	University	15 (7.6%)

Note: The first value in column 3 indicates the number of individuals per category and the percentages are in parenthesis. Examples of services requiring no skills are: cleaning houses, nannies, and selling food in outdoor markets. Examples of services requiring skills are: call center and customer service representatives. Example of manufacture jobs are: garment manufacture and cheese processing manufacture employee. Examples of professional jobs are: management positions, teacher or nurse.

Table 6. Probability of Labor Participation between Remittance Recipients and Non-Recipients

	Model 1		**Model 2**		**Model 3**	
Variable	Logit Estimates	Marginal Effect	Logit Estimates	Marginal Effect	Logit Estimates	Marginal Effect
Remittances	-0.642* (0.228)	-15.5	-0.647* (0.228)	-15.6	-0.651* (0.229)	-15.7
Education	0.057** (0.030)	1.4	0.056*** (0.030)	1.4	0.060** (0.030)	1.5
Age	0.362* (0.049)	8.7	0.363* (0.049)	8.7	0.369* (0.049)	8.9
Age^2	-0.004* (0.001)	-0.1	-0.004* (0.001)	-0.1	-0.004* (0.001)	-0.1
Gender	1.142* (0.242)	27.5	1.134* (0.243)	27.3	1.166* (0.245)	28.1
Children (0-15 years)			-0.038 (0.113)	-1.0	-0.062 (0.115)	-1.5
Home ownership					-0.380 (0.241)	-9.2
Constant	-6.807* (0.992)		-6.782* (0.994)		-6.705* (0.998)	
Pseudo-R^2	0.17		0.17		0.17	
Walt-Test (Prob>Chi^2)	69.23 (0.00)		68.32 (0.00)		70.48 (0.00)	
Goodness-of-fitness (P-χ^2)	338.9 (0.43)		381.9 (0.42)		390.5 (0.41)	
Correctly Classified	69.2%		68.5%		70.4%	

Note: Marginal effects are calculated at the mean. * equals significance at 1%, ** equals significance at 5%, *** equals significance at 10%. The age variable is squared to account for the expected pattern of increasing labor participation up to a certain age and then decreasing participation thereafter (Cox-Edwards and Rodriguez-Oreggia, 2009; Funkhouser, 2006). The variable 'Children" indicates the number of children under the age of 15 living in the household. The Walt-Test verifies that all estimated coefficients are statistically significant predictors of the dependent variable. P-values lower than 0.05 would corroborate the validity of the variables in the model. The goodness-of-fitness test is a Pearson-χ^2 test that validates how well the logit model fits the data. P-values higher than 0.05 would indicate that the logit model fits reasonably well the data.

Table 7. Probability of Labor Force Participation among Remittance Recipients

	Model 1		**Model 2**		**Model 3**	
Variables	Logit Estimates	Marginal Effect	Logit Estimates	Marginal Effect	Logit Estimates	Marginal Effect
Gender	0.972* (0.351)	24.3	0.972* (0.355)	24.3	0.975* (0.355)	24.4
Education	0.069*** (0.042)	1.7	0.074*** (0.044)	1.8	0.068 (0.045)	1.7
Age	0.346* (0.071)	8.7	0.348* (0.072)	8.7	0.345* (0.071)	8.6
Age^2	-0.004* (0.001)	-0.1	-0.004* (0.001)	-0.1	-0.004* (0.001)	-0.1
Children (0-15 years)	-0.053 (0.165)	-1.3	-0.046 (0.174)	-1.1	-0.020 (0.179)	-0.5
Home ownership	-0.265 (0.339)	-6.6	-0.297 (0.346)	-7.4	-0.251 (0.354)	-6.3
Migrant relation	0.056 (0.148)	1.4	0.065 (0.149)	1.6	0.072 (0.150)	1.8
Migrant age			-0.008 (0.017)	-0.2	-0.009 (0.018)	-0.2
Migrant education			-0.009 (0.042)	-0.2	-0.012 (0.043)	-0.3
Migrant type of job					0.060 (0.097)	1.5
Constant	-7.241* (1.477)		-6.924* (1.604)		-6.911* (1.600)	
Pseudo-R^2	0.13		0.13		0.13	0.13
Walt-Test (Prob>Chi^2)	27.85 (0.00)		27.87 (0.00)		28.31 (0.01)	
Goodness-of-fitness (P-χ^2)	191.2 (0.36)		190.6 (0.35)		190.9 (0.33)	
Correctly Classified	62.9%		64.4%		63.4%	

Note: Gender equals *1* if male, and *0* otherwise. Marginal effects are calculated at the mean. * equals significance at 1%, ** equals significance at 5%, *** equals significance at 10%. Migrant relation is a 5-level variable where: 1=Close relationship (mother, father, children, spouse), 2= Second grade relationship (brother, sister, nephew, niece, grandparents), 3=Third grade relationship (uncle, aunt, cousin), 4= Fourth grade relationship (step-parents, in-laws), and 5=Other relationships (ex-spouse, friends).

Appendix 1. Probability of Labor Participation between Remittance Recipient and Non-Recipient Males and Females

	Model 3-Male		**Model 3-Female**	
Variable	Logit Estimates	Marginal Effect	Logit Estimates	Marginal Effect
Remittances	-0.452 (0.297)	-11.3	-0.878** (0.377)	-17.1
Education	0.118* (0.039)	2.9	-0.039 (0.051)	-0.8
Age	0.377* (0.065)	9.4	0.382* (0.084)	7.5
Age^2	-0.004* (0.001)	-0.1	-0.004* (0.001)	-0.1
Children (0-15 years)	-0.065 (0.141)	-1.6	-0.207 (0.207)	-4.0
Home ownership	-0.338 (0.306)	-8.5	-0.516 (0.412)	-10.1
Constant	-7.279* (1.308)		-4.686* (1.496)	
Observations	232		177	
Pseudo-R^2	0.16		0.19	
Walt-Test (Prob>Chi^2)	38.16 (0.00)		30.91 (0.000)	
Goodness-of-fitness (P-χ^2)	217.5 (0.44)		194.1 (0.06)	
Correctly Classified	68.1%		77.4%	

Note: Marginal effect are calculated at the mean. * equals significance at 1%, ** equals significance at 5%, *** equals significant at 10%.