Remittances and Financial Inclusion: Micro econometric Evidences from Pakistan

Abstract:

This study investigates the impact of foreign remittances on financial inclusion in Pakistan. Using the household-level data of Pakistan Standard of Living and Measurement (PSLM) for the year 2014-15, this study tests whether the remittances have any impact on households' use of formal financial services offered by the formal financial institutions or not. We specify the equation in Logit framework and estimate through the maximum likelihood method. The study finds that there are significant chances that financial inclusion will increase with the increase in the amount of remittances inflows. This is true in the case of both foreign remittances and total remittances. Pakistan's financial system needs to make it easier for migrant's to send inflows into the country in order to make the most out of remittances.

Introduction:

Indeed, the growing literature on the impact of remittances is convinced that remittances have become a major part of the economy for developing countries. Generally, the developing countries are the fund scarce countries and their external account remains in deficit therefore any finance which is coming from abroad plays a vital role in the economy. It is normal for the small emerging countries to depend on the remittances inflows because the remittances inflows make up almost 5-10 percent of the total GDP over there. Pakistan is not an exception. It is experiencing a good level of remittances over the last 15 years. In 2017, the impact of remittances in percentage to GDP is 7 percent in the case of Pakistan. This shows that the flow of remittances is quite smooth and stable.

It is also important to note that there is a direct correlation between financial exclusion and low level of economic activities in the developing countries. Therefore, State Bank of Pakistan, the monetary authority of Pakistan, is focusing on financial inclusion in her vision 2025 to improve the level of economic activities in the countries. According to the

Maya Declaration, Pakistan is ranked among the least inclusive countries of the world according to a report published by the Standard chartered in 2014[1]. Literature is convinced that remittance may increase the financial inclusion which will certainly lead to an increase in the economic growth (Meyer et al. 2017) and growth rate (Cordova, 2006 & Gabriela, 2009). Also, according to a report published by International Fund for Agriculture Development (IFAD) in Dawn newspaper in 2017, Pakistan is among the world's highest remittances receiver, which is why Pakistan is a good candidate to investigate the linkage between financial inclusion and remittances.

Some prominent studies note that the remittances may have positive effects on the economic outcomes of the developing economies such as they might increase education (Sami et al. 2016, Imtiaz et al. 2018) decrease poverty (Satti et al. 2016, Cordova et al. 2006, Olmedo et al. 2006, Catherine et al, 2009 & World Bank 2017), increase advancement and better schooling (Cordova et al. 2006), increase country's stability and steadiness (Gabriela, 2009), decrease the danger of leaving school (Ureta et al, 2003), increase development (Kuwonu F. 2017 & Catherine et al, 2009), increase the exchange rate of a country (Zuniga, 2011) and increases welfare (Javed et al. 2017). Some conclude that remittances might also shape the financial sector along with the real variable performances of the country.

For example, Oke et al. (2001) concludes that remittances may contribute in the functioning of the financial sector development of the country. Aggarwal et al.(2010) deliver the proof of a progressive, substantial and a strong association between remittances and the financial development in developing countries. Lensink et al. (2007) also note that the remittances basically lead to more development through their influence on financial inclusion. They obviously also determine the level of financial sector development in the case of Pakistan. However, according to the best of our knowledge, the impact of remittances on the financial inclusion is not discussed in the case of

[1] Maya declaration was initiated in 2011 at the Global Policy Forum in Riviera Maya, Mexico. It was signed by over 90 developing countries. These 90 developing countries represent over 75 percent of the world population that do not have a deposit account or are unbanked. Up till October 2017, 66 emerging countries have dedicated themselves to the Maya declaration by aiming for new targets that are mentioned in the Maya declaration. The aim of the Maya declaration is to increase the financial inclusion in these developing countries so that the level of poverty in these developing countries can be decreased. Over 2.5 billion people of the world are unbanked. Target of the Maya declaration is to financially include them.

Pakistan. Therefore, this study investigates the impact of remittances on financial inclusion in Pakistan.

According to World Bank (2017), developing countries need to improve financial inclusion because out of seventeen Sustainable Development Goals it is believed that if a country can increase its financial inclusion, seven out of those seventeen sustainable development goals can be achieved. There are at least two billion adults all over the world do not have a bank account (WB, 2017). For countries to achieve that, the World Bank has put forward an ambitious global goal to reach Universal Financial Access (UFA) by 2020. Since the start of 2010, more than fifty five countries have guaranteed to focus on financial inclusion, and more than thirty are developing a national strategy on how to achieve it.

Also, International Fund for Agriculture Development (IFAD) and the World Bank announced the G20 Global partnership for financial inclusion and it was recognized by the G20 leaders. Somehow, the determinants of financial inclusion are different for different countries like in Africa and China, if a person is a man, is rich, is more educated or is older to a certain extent; there is a possibility that that person is already financially included (Alexandra et al, 2016 & Zuzana et al, 2015). According to Allen et al.(2016), lower transaction costs, larger closeness of the people to financial sectors, stronger legal rights and more politically steady environment may lead to higher financial inclusion. This is something that the Government of Pakistan should also focus on because in Pakistan in the long-run, remittances have a noteworthy positive effect on the income level of the people, therefore, government should officially make it easier for people to make transfers by diminishing the transaction costs (Kumar et al, 2011).

Many studies have suggested different ways to achieve more financial inclusion like with the help of postal or the mail operators (Gautier et al, 2013), remittances by promoting the use of deposit accounts (Anzoátegui et al. 2014), remittances and technology (Kronberger et al, 2007 & Kasim et al, 2015).

This study is concentrating on the impact of remittances on the financial inclusion in the case of Pakistan at household level. Our study provides evidence of the impact the remittances have on financial inclusion in Pakistan. Our study finds that both foreign remittances and the total remittances have a positive and a significant impact on financial

inclusion in Pakistan. Moreover, our other explanatory variables education, age, no. of adults and share of female adults, all has positive and significant impact on the financial inclusion in Pakistan.

DATA AND METHODOLOGY:

The micro level data that we are using comes from the Pakistan Standard of Living and Measuring (PSLM). This data was collected by the Pakistan Bureau of Statistics in 2014-15. We are taking 'using the facility of a bank' as a proxy for measuring *financial inclusion*. The questionnaire contained information regarding both domestic and foreign remittances. Information regarding our explanatory variables was also taken from the same PSLM micro data. Our data contained 513,099 households out of which 78,635 people received remittances. These households either received domestic or foreign remittances. We are investigating the impact of foreign remittances on financial inclusion. We have also combined both domestic and foreign remittances in order to make a dummy variable 'total remittances' and we are also testing its impact on financial inclusion.

The estimations that we have conducted in order to check the impact of remittances on financial inclusion is purely established on the literature that investigates the factors that causes the households' use of financial services. Zeller (1995) concluded that having a deposit account leads to a rise in a households' with the help of smooth consumption. He also suggested that the demand of financial services is directly proportional to the income of the household. Pederson & Kiiza (2002) empirically concentrated on the usage of formal financial services. Also, empirical studies such as Diego et al (2014), Fungacova et al. (2014) investigated the impact of different variables on financial inclusion.

These studies highlighted the importance of the size of a household, the education level of a household, the average age of a household and how many male and female members does a household have. These are some of the reasons why a household would need to use financial services that are offered by the financial institutions. All these variables are envisioned to calculate the income of a household and their capacity to realize the profits of using the financial services that financial institutions have to offer.

Overall, these studies highlights the role of education, age, share of female adults, number of adults and gender as key determinants of the demand for financial services. These variables are meant to capture the earnings of the household and their ability to fathom the welfares of using financial services. Keeping the above arguments in view we specify the following equation.

$$fininc = \alpha_0 + \beta_1 rem + \beta_2 edu + \beta_3 age + \beta_4 edu^2 + \beta_5 age^2 + \beta_6 rem * edu + \beta_7 rem * age + \beta_8 adults + \beta_9 femedu + \mu \quad (1)$$

We are measuring the impact of foreign and total remittances on financial inclusion, so our two equations are

$$fininc = \alpha_0 + \beta_1 frem + \beta_2 edu + \beta_3 age + \beta_4 edu^2 + \beta_5 age^2 + \beta_6 rem * edu + \beta_7 rem * age + \beta_8 adults + \beta_9 femedu + \mu \quad (2)$$

$$fininc = \alpha_0 + \beta_1 trem + \beta_2 edu + \beta_3 age + \beta_4 edu^2 + \beta_5 age^2 + \beta_6 rem * edu + \beta_7 rem * age + \beta_8 adults + \beta_9 femedu + \mu \quad (3)$$

Where, '*fininc'* refers to financial inclusion. We are taking 'using the facility of a bank' as a proxy for measuring financial inclusion.

rem refers to remittances. Our data is composed of two types of remittances domestic and foreign. In our first equation, we are measuring the impact of foreign remittances *(frem)* on financial inclusion while in our second equation we are measuring the impact of total remittances *(trem)* on financial inclusion.

edu refers to education. We are testing the impact of education on the financial inclusion. Indeed, education is important to explain the access to banking sector. Educational achievement also functions as a proxy for growth in the recipient country. So, people having more years of schooling are less likely to seek employment abroad. We have also taken the square of age as to check its impact on financial inclusion. We are also multiplying education with remittances in order to check the impact of remittances on education and their impact on the use of formal financial services.

146 *age* refers to the age of each household. Our aim is to test whether with an increase in age
147 the use of financial services increases or not. Just like Zuzana et al (2015), we also want
148 to investigate the impact of square of age on financial inclusion in Pakistan. We are also
149 multiplying age with remittances in order to check the impact of remittances on age and
150 their impact on the use of formal financial services.
151 *Adults* refer to the number of adults in a household. We are taking this variable in order to
152 test whether the households that have more number of adults are financially included or
153 those having less number of adults.
154 *Share of female adults* refers to the earnings that the educated females make. We want to
155 see the impact of the Share of female adults because generally female earns less than men
156 and because of that what impact does this variable have on the use of financial services of
157 the household.
158
159

Variable	Definition and Construction
Financial Inclusion	Using the facility of a bank is taken as a proxy for Financial Inclusion. It is a dummy variable. People who use the facility of a bank are financially included while those who do not use this facility are financially excluded. 1 is used for people who are using the facility of a bank while 0 is used for the people who are not.
Domestic Remittances	Domestic Remittances refers to the households who are receiving remittances from within Pakistan. Data on domestic remittances is available for all the households. It is a dummy variable. People who receive remittances from within the country are taken as 1 while those who are not receiving domestic remittances are taken as 0
Foreign Remittances	Foreign Remittances refers to the households who are receiving remittances from outside Pakistan. Data on foreign remittances is available for all the households. It is a dummy variable. People who receive remittances from outside the country are taken as 1 while those who are not receiving foreign remittances are taken as 0.
Total Remittances	We generated this variable by combining both domestic and foreign remittances. It refers to the households who are receiving remittances from within or outside Pakistan. It is a generated dummy variable. People who receive remittances from within or outside the country are taken as 1 while those who are not receiving remittances from within or outside of Pakistan are taken as 0.
Education	This variable was created by taking the Question no. 4 from section C. Education refers to the maximum years of education an individual has received. Age refers to the number of years an individual has lived
Age	Data regarding age was already present in the survey and I took that from section B, question 5.

Number of Adults	We generated the number of adults in a household by adding (sum) the number of individuals who are greater than or equal to 18 years of age using the household code.
Number of Female Adults	We generated this variable by adding (sum) the number of female individuals who are greater than or equal to 18 years of age and by using the gender question.
Number of Dependents	We generated this variable by adding the number of individuals who are less than 18 years of age and I did for every household using the household code.
Share of Dependents	It refers to the share of all the individuals who are less than 18 years of age. I generated this variable by dividing number of dependents and the household size that is, Share of dependents=Number of dependents/ household size.
Share of Female Adults	We generated this variable by dividing the number of female adults and the number of adults that is, share of female adults= number of female adults/number of adults. It refers to the share of the females who are equal to or greater than 18 years of age.

160

161

Econometric Methodology:

As mentioned earlier, we are conducting a household level analysis through equation 1. Therefore, the natural start of estimating equation 1 is to estimate through Ordinary least square (OLS) method. However, OLS may provide biased and inefficient estimates along various other econometric issues in the case of dummy dependent variables. Therefore, the researchers are convinced to shift of Logit Model and Probit Model.

The estimation of the logit can be done into two steps. Hence, the problems which arise due to OLS in the case of dummy dependent variables may be resolved by using odds. First, the dependent variable will be transformed to odd ratios.

On dependent side we have dummy of financial inclusion. More specifically, 1 for using the Bank facility and 0=otherwise. If we introduce Di for 1 then the odds ratio will be:

$$oddsi = Di/1 - Di \tag{4}$$

The logistic form this odd ratio will be:

$$li = \ln(pi/1 - pi) \tag{5}$$

Using this in a linear regression we obtain the logit model as

$$\ln(fininc) = \alpha_0 + \beta_1 rem + \beta_2 edu + \beta_3 age + \beta_4 edu^2 + \beta_5 age^2 + \beta_6 rem * edu + \beta_7 rem * age + \beta_8 adults + \beta_9 femedu + \mu \tag{6}$$

Where, *fininc* is the odds ratio of financial inclusion the logit model. This is due to the reason that this will solve the problem of boundedness which is arising due to dummy dependent variable.

a) As the probability pi approaches 0 the odds approach zero and the logit (ln (0)) approaches negative infinity.

b) As the probability pi approaches 1 the odds approach +infinity and the logit (ln (1)) approaches positive infinity.

As logit solve the problem so we used the logit technique for estimating our econometric equation. Different measures are used to interpret the results like odds and odds ratio, percentage change and marginal effect but marginal effect are best to explain the logit results. The logit model is non-linear relationship between dependent and independent variables. The graph of logit distribution is "S" shape which is similar to standard normal distribution.

The analysis of logit model is not as simple as in case of simple OLS or linear probability model. In OLS the relationship is linear and simple whereas logit results are not simple as the relationship is non-linear. The estimated coefficients of logit model are not considered appropriate for interpretation. Therefore, for correct interpretation we look for the marginal effect of slope coefficients and interpret these results (Hoetker, 2007 & Kennedy, 2003).

Province-wise Inflows of Remittances

Province	Frequency	Percent
Khyber Pakhtunkhwa	13,082	16.64
Punjab	36,571	46.51
Sindh	18,735	23.83
Baluchistan	10,247	13.03
Total	78,635	100

Table showing 78,635 households living in the four provinces of Pakistan and the amount of remittances going into these provinces. Coding used in the data for KP, Punjab, Sindh and Baluchistan are 1, 2, 3 and 4 respectively.

Education:

Level of Education	Class	Observations
Never attended school	0	39,036
Primary	<5	12,801
Middle	6>=x<=8	8,125

Matric	9>=x<=10	10,223
Intermediate	11>=x<=12	3,922
Higher	13>=x<=20	4,453
Others	Polytechnic diploma and others	75
Total		78,635

Table showing the 78,635 households who are receiving remittances and the amount of education that they have received.

Region:

Region	Frequency	Percent
Rural	64,670	82.24
Urban	13,965	17.76
Total	78,635	100

Table showing 78,635 households that are living in the rural and urban areas of Pakistan and the amount of remittances in percentage that goes into these rural and urban areas.

Empirical Results:

Foreign Remittances:

We have estimated equation number 2 to find the impact of foreign remittances on financial inclusion. Table 5.1 shows the estimation results of our research. We are calculating the marginal effects for our variables. Our dependent variable is Financial Inclusion (A dummy of having a bank account). It is same for all of our 7 models.

In our first model we have an independent variable of foreign remittances. And as we can see from the above table there is a positive relationship between foreign remittances and financial inclusion. According to our results as foreign remittances increases financial inclusion is also increased. Our R-square tells us that this model is explaining 74 percent variability in the data around its mean.

In our second model we took two independent variables which are foreign remittances and also education. We added education in our model because we wanted to test whether education have any impact on financial inclusion. Our results show that foreign remittances and education both have a positive and significant relationship with financial inclusion. With an increase in education financial inclusion also increases. This means if

a person is more educated he/she is more likely to use formal financial services offered by the financial institutions. Our R-square tells us that this model is explaining 76 percent variability in the data around its mean.

From the third column you can see our third model we have added another independent variable which is age and our other explanatory variables are education and foreign remittances. We wanted to test whether age has any impact on financial inclusion in Pakistan. We think our independent variable age can tell us whether a person use the formal financial services of financial institutions when he is young or an individual use them when he/she is old. The estimates show that as the person's age increases he/she more is likely to use the formal financial services offered by the financial institution. These results are also positive and significant. Our R-square tells us that this model is explaining 79 percent variability in the data around its mean.

From the fourth column you can see the estimates of our fourth model. We have added another explanatory variable in our model. This variable is the square of age. Our estimates shows that square of age have a strong negative relationship with financial inclusion. This means when a person gets older, as he is going to retire and it is less likely that he owns a deposit account or use formal financial services offered by the financial institutions. This result is also significant at 99 percent. Our estimates show that if we take square of a person's age there is a going to be a 0.63 percent decrease in financial inclusion. Our other variables are positive and significant. Our R-square tells us that this model is explaining 80 percent variability in the data around its mean.

From the fifth column we can the marginal effects of our fifth model. We have added the variable square of education. The results are positive and significant. Increase in the education level of an individual leads to an increase in financial inclusion. This means if a person is highly educated it is more likely that he is going to take benefit from all the financial services offered by the financial institutions.

Table No. 5.1 Impact of economic foreign Remittance on Financial Inclusion							
Dependent Variable: Financial Inclusion (A dummy of having bank account)							
Regressor	**Marginal Effects**						
	Model 1	**Model2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
foreign remittance	0.22155***	0.13783***	0.12720***	0.12932***	0.12886***	0.22047***	0.15558***
	-0.005	-0.0062	-0.0065	-0.0064	-0.0063	-0.0318	-0.0035
education	*NA*	0.02909***	0.02937***	0.02921***	0.01749***	0.01711**	0.03964***
	NA	-0.0006	-0.0006	-0.0006	-0.0031	-0.0096	-0.0085
age	*NA*	*NA*	0.00450***	0.01014***	0.01003***	0.01457**	0.02537***
	NA	*NA*	-0.0002	-0.0009	-0.0009	-0.0083	-0.0056
square of age	*NA*	*NA*	*NA*	-0.00632***	-0.00624***	0.00164**	0.00238***
	NA	*NA*	*NA*	-0.001	-0.001	-0.001	-0.0003
square of education	*NA*	*NA*	*NA*	*NA*	0.00739***	0.00381***	0.00154***
	NA	*NA*	*NA*	*NA*	-0.0002	-0.0007	-0.0008
*remit*education*	*NA*	*NA*	*NA*	*NA*	*NA*	0.02030***	0.03632**
	NA	*NA*	*NA*	*NA*	*NA*	-0.0097	-0.0047
*remit*age*	*NA*	*NA*	*NA*	*NA*	*NA*	0.00942***	0.00579**
	NA	*NA*	*NA*	*NA*	*NA*	-0.0013	-0.002
No. adults	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	0.06226***

	NA	*NA*	*NA*	*NA*	*NA*	*NA*	-0.0024
share of female	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	0.07671***
	NA	*NA*	*NA*	*NA*	*NA*	*NA*	-0.0068
Diagnostic Test							
Count R^2	0.742	0.761	0.791	0.801	0.821	0.822	0.824

Our estimates show that if we take square of a person's education level it is 0.73 percent more likely that he is going to use the financial services offered by the financial institutions. This result is positive and also strongly significant. Our all other variables are positive and significant except for the square of age. Our R-square tells us that this model is explaining 82 percent variability in the data around its mean.

From the sixth column of the table we can see the result of our sixth model. In this model we have added two more independent variables education*remittances and age*remittances. As we can see these variables and all others are also positive and significant except for the square of age. Our R-square tells us that this model is explaining 82 percent variability in the data around its mean.

From the seventh column of the table we can see the estimates of our model number seven. We have added two more explanatory variables in our model. These two independent variables are the number of adults in a household and the share of females in a household. We want to test the impact of these two on financial inclusion. As we can see from the table our estimates for both of these independent variables are positive and strongly significant. If there are more adults in a household it is 6.2 percent more likely that they are going to use the financial services offered by the bank. If the share of females is more in the income of the household it is 7.6 percent more likely that they are going to have a deposit account. Our all other variables are also positive and significant except for the square of age. Our R-square tells us that this model is explaining 82 percent variability in the data around its mean.

Total Remittances

276

Table No. 5.2: Impact of economic Total Remittances on Financial Inclusion							
Dependent Variable: Financial Inclusion (A dummy of having bank account)							
Regressor	**Marginal Effects**						
	Model 1	**Model2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Total remittance	0.6390***	0.2189**	0.5986***	0.3996***	0.2889***	0.8958***	0.3489*
	(0.0988)	(0.0981)	(0.0982)	(0.0613)	(0.0924)	(0.2649)	(0.1773)
education	*NA*	0.0982***	0.0352***	0.0185***	0.0850***	0.0140*	0.0987***
	NA	(0.0068)	(0.0021)	(0.0041)	(0.0069)	(0.0085)	(0.0053)
age	*NA*	*NA*	0.0743***	0.0978***	0.0454***	0.0214***	0.0409***
	NA	*NA*	(0.0045)	(0.0016)	(0.0044)	(0.0089)	(0.0035)
square of age	*NA*	*NA*	*NA*	-0.0088***	-0.0061*	-0.0046***	-0.0011***
	NA	*NA*	*NA*	(0.0020)	(0.0032)	(0.0014)	(0.0003)
square of education	*NA*	*NA*	*NA*	*NA*	0.0069***	0.0051***	0.0015*
	NA	*NA*	*NA*	*NA*	(0.0026)	(0.0004)	(0.0009)
*remit*education*	*NA*	*NA*	*NA*	*NA*	*NA*	0.0901***	0.0728***
	NA	*NA*	*NA*	*NA*	*NA*	(0.0063)	(0.0154)
*remit*age*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	0.0048***
	NA	*NA*	*NA*	*NA*	*NA*	*NA*	(0.0020)

No. adults	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	0.0394***
	NA	*NA*	*NA*	*NA*	*NA*	*NA*	(0.0063)
share of female	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	0.0301***
	NA	*NA*	*NA*	*NA*	*NA*	*NA*	(0.0034)
R2	0.4777	0.4919	0.6601	0.6701	0.7401	0.7690	0.7744

Table 5.2 shows the estimation results of our research. Our dependent variable is Financial Inclusion (A dummy of having a bank account). It is same for all of our 7 models. In our first model we have an independent variable of total remittances. And as you can see from the above table there is a positive relationship between total remittances and financial inclusion. All the variables in our other models are also positive and significant except for the square of age which is significant but negative.

Conclusion

Financial inclusion has become the talk of the town for well-known economists and policy makers around the world. It is because of the impacts it can have on the life of a household. It can have a significant impact on the most imperative things in the life of a household like the saving capability of a household and many others. Having a deposit account, also mean taking benefit from the different financial services that the financial institution has to offer.

Remittances may help improve the level of financial inclusion in most of the developing countries. Unfortunately, the financial inclusion is not well researched in the case of Pakistan. More importantly, the case becomes more interesting when we see the increasing patterns of remittances over the last few years through the formal channels. This study is an attempt to fill this gap. Specifically, this sees the impact of the remittances on the financial inclusion at household level.

Our findings have a very clear message that the remittances have a very significant impact on the financial inclusion of Pakistan. Therefore, the smooth inflow through the formal channels will play a vital role to pursue the policy of State Bank of Pakistan of increasing financial inclusion. Similarly, the higher level of education is also necessary to improve the level of financial literacy and then the financial inclusion. We have used dummy variables to gauge the level of the financial inclusion and remittances. It is admitted in the literature that the dummy variables are not the perfect measure of the any variable and a researcher remains in the ignorance zone. Therefore, we should collect the exact measure of both variables at household level to get a clear policy implication.

REFERENCES:

Aggarwal, R., Demirguc-Kunt, A., & Martınez Peria, M. S. (2011). Do remittances promote financial development? Journal of Development Economics, 96 (2), 255–264.

Allen F., Demirguc-Kunt A., Klapper L., Martinez Peria M. S. (2016) The foundations of financial inclusion: Understanding ownership and use of formal accounts, Journal of Financial Intermediation, 27, 1–30

Anzoátegui D., Demirguc-Kunt A. and Martinez Peria M. S. (2014), Remittances and Financial Inclusion: Evidence from El Salvador, World Development, 54, 338–349

Arif I., Raza A. S., Friemann A. and Suleman T. M. (2017) The Role of Remittances in the Development of Higher Education: Evidence from Top Remittance Receiving Countries, Social Indicators Research, 1-11

Cordova L. E., Olmedo A. (2006) International remittances and development: existing evidence, policies and recommendations, INTAL-ITD, Occasional paper no. 41.

Cordova L. E., Tokman, R. A., & Verhoogen, E. A. (2005), Globalization, migration, and development: The role of remittances. Economia, 6(1), 217–256.

Cox-Edwards A. and Ureta M. (2003) International migration, remittances, and schooling: Evidence from El Salvador. Journal of Development Economics, 72 (2), 429–461

D'alcantara G., Gautier A. (2013) The Postal Sector as a vector of financial inclusion, Annals of Public and Cooperative Economics, 84 (2), 119-137.

Fungacovaa Z. and Weill L. (2015) Understanding financial inclusion in China, China Economic Review, 34, 196–206

Gupta, S., Pattillo, C. A. and Wagh, S. (2009) Effect of Remittances on Poverty and Financial Development in Sub-Saharan Africa. World Development, 37, (1), 104-115

Khan U. S. and Khan J. M. (2016) The Impact of Remittances on Child Education in Pakistan, Lahore Journal of Economics, 21 (1), 69–98.

Kiiza B. and Pederson G. (2002) Household financial savings mobilization: Empirical evidence from Uganda. Journal of African Economies, 10(4), 390–409.

Kumar R. (2011) Role of Trade, Aid, Remittances and Financial Development in Pakistan, University of the South Pacific, MPRA Paper No. 38871.

Meyer D., Shera A. (2017) The impact of remittances on Economic growth: An econometric model, Economia, 18, 147–155

Mundaca G. B. (2009). Remittances, financial markets development and economic growth: The case of Latin America and Caribbean. Review of Development Economics, 13 (2), 288–303.

Munyegera K. G., Matsumoto T.(2015) ICT for Financial Inclusion: Mobile Money and the Financial Behavior of Rural Households in Uganda, GRIPS Discussion Paper 15-20.

Murillo R. E. and Kronberger B. (2007), Poverty and Banking Exclusion in Mexico: How can remittances and technology contribute to improve access? Harvard University, MPRA Paper No. 60495, https://ideas.repec.org/p/pra/mprapa/60495.html

Satti L. S., Hassan S. M., Hayat F., Reddy S. and Paramati R.Economic (2016), Growth and Inflow of Remittances: Do They Combat Poverty in an Emerging Economy? Social Indicators Research, 127 (3), 1119-1134

Toxopeus S. H. and Lensink R. (2007) Remittances and Financial Inclusion in Development, United Nations University, World institute for Development Economics Research Paper No. 2007/49

Zeller M. (1995) The demand for financial services by rural households: conceptual framework and empirical findings. Quarterly Journal of International Agriculture, 34(2), 149–170.

Zins A., Weill L. (2016) The determinants of financial inclusion in Africa, Review of development finance, 6, 46–57.

Zuniga C. M. (2011) On the Path to Economic Growth, Do Remittances Help? Evidence from Panel VAR's. The Developing Economies 49 (2), 171–202

Appendices:

District:

The total number of households receiving remittances is 78,635. These households are from different districts of Pakistan. The following table shows us the percentage and the number of households from different districts of Pakistan.

District	Frequency	Percent	District	Frequency	Percent	District	Frequency	Percent	District	Frequency	Percent
chitral	464	0.59	t.t.singh	1112	1.41	tando mohammad khan	913	1.16	Rawalpindi	653	0.83
upper dir	536	0.68	Gujranwala	760	0.97	Matiari	670	0.85	Jehlum	550	0.7
lower dir	499	0.63	Hafizabad	943	1.2	badin	1306	1.66	Chakwal	576	0.73
Swat	452	0.57	Gujrat	582	0.74	Thatta	683	0.87	Sargodha	977	1.24
Shangla	743	0.94	mandi bahauddin	618	0.79	Sujawal	624	0.79	Bhakkar	1133	1.44
Buner	686	0.87	Sialkot	626	0.8	Sanghar	631	0.8	Khushab	1156	1.47
malakand	458	0.58	Narowal	618	0.79	mirpur khas	877	1.12	Mianwali	991	1.26
Kohistan	769	0.98	Lahore	561	0.71	umer kot	1001	1.27	Faisalabad	1370	1.74
Mansehra	460	0.58	Kasur	555	0.71	Tharparkar	1066	1.36	Chiniot	760	0.97
Batagram	752	0.96	Sheikhupura	1080	1.37	karachi	622	0.79	Jhang	1586	2.02
abbottabad	451	0.57	nankana sahib	562	0.71	Quetta	282	0.36	Jamshoro	732	0.93
haripur	464	0.59	Okara	605	0.77	Pishin	319	0.41	tando allah yar	829	1.05
tor ghar	714	0.91	Sahiwal	607	0.77	killa Abdullah	360	0.46	Kashmore	1057	1.34
Mardan	448	0.57	Pakpattan	723	0.92	Chagai	403	0.51	Shikarpur	791	1.01
Swabi	438	0.56	Vehari	611	0.78	Nushki	283	0.36	Larkana	599	0.76
Charsadda	491	0.62	Multan	1677	2.13	Loralai	340	0.43	shahdad kot	896	1.14
Peshawar	399	0.51	Lodhran	1143	1.45	Barkhan	472	0.6	Sukkur	513	0.65
Nowshera	435	0.55	Khanewal	1531	1.95	Musakhel	312	0.4	Ghotki	964	1.23
Kohat	433	0.55	d.g.khan	1624	2.07	killa saifullah	368	0.47	Khairpur	688	0.87
Hangu	426	0.54	Rajjanpur	616	0.78	Zhob	456	0.58	naushahro feroze	509	0.65
Karak	454	0.58	Layyah	676	0.86	Sheerani	592	0.75	shaheed benazir abad	748	0.95
Bannu	488	0.62	Muzaffargarh	2136	2.72	Sibbi	296	0.38	Dadu	459	0.58
lakki marwat	396	0.5	Bahawalpur	1917	2.44	Harnai	417	0.53	Lasbela	311	0.4
d.i.khan	808	1.03	Bahawalnagar	824	1.05	Ziarat	320	0.41	Gwadar	282	0.36

Tank	418	0.53	rahim yar khan	2751	3.5	Kohlu	436	0.55	bolan/ kachhi	380	0.48
attock	792	1.01	Jacobabad	1043	1.33	dera bugti	456	0.58	Jafarabad	463	0.59
nasirabad/tamboo	451	0.57	Mastung	312	0.4	Kharan	294	0.37	Hyderabad	514	0.65
jhal magsi	375	0.48	Khuzdar	328	0.42	Washuk	403	0.51	Islamabad	569	0.72
Kalat	296	0.38	Awaran	240	0.31						
Total	78,635	100									

362