Motivations for Remittances: A Study of Rural Bangladesh Migrants in Italy

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Abstract

The aim of the paper is to highlight the variables that determine the propensity to receive remittances and the amount of remittances by households in rural Bangladesh. The empirical model incorporated the determinants of remittances in terms of observed migrant and household characteristics that are assumed to capture the underlying motives of remitting suggested by existing theories of remittances. This paper explores the motives that account for the receipt of remittances across rural households in Bangladesh who have migrants in Italy. Unlike most of the existing literature, the research question from the perspective of the recipient household and use it to interpret the determinants/motivations of remittances. The results show that a combination of household and migrant characteristics and some community level variables are the key elements in explaining the remittance behaviour in Bangladesh. Drawing from these estimates, this study conclude that altruism investment and kinship are the three main motives behind remittance flows to Bangladesh and both community variables (NELM and presence of networks in the host country) are strong determinants of the likelihood of receiving remittances by households. .

Keywords: remittances, migration, Bangladesh, Italy

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1.1 Introduction

The overall discussion concerning migration and development, the issue of remittances is of great interest for both academics and policymakers alike. Cross-border transfers to low-income countries of origin have shown resilient growth in the face of the recent economic downturn, providing further proof of its significance for many households throughout the developing world. Still, any potential positive impact on household welfare is not automatic and likely very much related to what motivates money to be sent in the first place. A migrant remitting under the pretense of paying for a family member's education for example has different implications than if it were for building a house in preparation for an eventual return. It is with this in mind that a plethora of empirical analysis has been carried out over the years looking to identify the determinants of remittance behavior. While these studies' findings have helped advance our understanding of the issue, there still remains a great deal of ambiguity when it comes to less scrutinized forms of migration flows from environments characterized by systematic insecurity.

In this study investigate the motivations behind remittance behavior of Bangladeshi migrants in Italy, utilizing the way in which migration is financed as a discriminating factor. In line with the theoretical underpinnings of the New Economics of Labor Migration (NELM) where migration is understood as a household strategy, this paper look at whether the costs of migration are covered by taking on a loan and the influence this has on the remittance behavior of the migrant once abroad. Exploring the underlying determinants of remittances is well-understood to be highly sensitive to the local contextual environment, with the Bangladesh setting being unique for a number of reasons.

The remainder of the analysis is structured as follows. The first review the relevant theoretical and empirical literature regarding the motivations to remit, followed by a presentation of our dataset and the descriptive depiction it reveals. Then go on to explain the empirical strategy employed before turning to the results. Finally, conclude with a brief summary of the study findings.

2.1 Literature Review

Secondi (1997), using data for China, also finds that altruism alone cannot explain the transfers, and it is highly likely that exchange may be involved. A major obstacle in testing altruism is to separate it from alternative motivations to remit. Cox (1987) and Cox and Rank (1992), using inter-vivo transfer data from the US, find a positive relationship between the level of transfers and the recipient household's pre-transfer income, thus rejecting the altruistic hypothesis. So, what would seem as an altruistic behaviour on the part of migrants might simply be enlightened self-interest or some kind of contractual agreement between the migrant and the household. Therefore, other variables such as marital status, duration of stay in the host country and household size, which could all be linked.

This is consistent with the self-interest and exchange theory of remitting whereby the presence of other members increases the probability that the migrant sends money and that any contract the migrant engages in with the household should not depend on the activity of other members of the household. On the other hand, Aggarwal

and Horowitz (2002) find support for the presence of altruism. They find a negative relationship between the number of migrants in the household and the probability and the amount of remittances in Guyana.

By doing so, they are able to spatially diversify their portfolio of labour resources, thereby minimizing their overall exposure to income shock in any one place. Remittances in this case represent intra-family insurance payments against variations in incomes experienced by family members, such that their consumption levels remain smooth over time. NELM is the sole economic theory that links the motive to remit to the decision to migrate. Thus the insurance model predicts that migrants who face greater risks and uncertainties in the destination countries are likely to remit larger sums back home to either 'purchase insurance' through family members or self-insure through the accumulation of precautionary savings (Amuedo-Dorantes and Pozo, 2006; Piracha and Zhu, 2007).

Aggarwal and Horowitz (2002) analysed the effect of other migrants in the household to distinguish between insurance or other self-interest motives and altruism. The authors argue that under the insurance or other self-interest motives, the number of migrants in the household should not affect the amount of per-migrant remittances. However under altruism, the presence of other migrants will reduce the average size of remittances, as then, the first migrant is not solely responsible for the wellbeing of the household. Hoddinott (1994) and Pleitez-Chavez (2004) find a positive impact of other migrant members on the probability of receiving remittances and an insignicant effect on the size of remittances (Mannan, 2015).

The investment motive for sending remittances has been tested by including community level variables such as presence of banks, the presence of employment and business opportunities in the home country. Durand et al (1996) and Sana and Massey (2005) were the first ones to adopt this approach. The authors confirm that the more economically dynamic the market in the home country, the greater is the likelihood that the migrant remits. This clearly suggests that remittances are sent as investment under the right conditions.

3.2 Analytical Framework

In the seminal paper (Lucas and Stark 1985), initiated the current debate on the motivations to remit. Their work draws from the framework of New Economics of Labour Migration (NELM), an approach which views migration as a household decision where remittances are part of a strategy aimed at diversifying the resources of the household with a view to compensate for the risks linked to the absence of efficient insurance markets in home country. Based on this, Lucas and Stark argue that there are three broad motivations to remit, namely: pure altruism, pure self-interest, and a combination of the two extremes - tempered altruism or enlightened self-interest. Any kind of contract between the migrant and his family can be a part of the latter category, for example, insurance, exchange etc.

However, the theory of altruism posits that the migrant derives a positive utility from the well-being or consumption level of the family left behind (Becker 1974; Stark 1991). Based on this, the altruistic model

predicts a positive relationship between the immigrant's earnings and the adverse conditions of the receiving household and an inverse relationship with the recipient household's income (Funkhouser 1995). The exchange motive, on the other hand, involves a contractual agreement between the migrant and the remittance-receiving household. Under this motive, remittances represent payments to the household at home for the services provided by them e.g. childcare, managing migrant's assets or handling other financial arrangements (Cox 1987).

The altruism and exchange motives in particular, but others as well, to be discussed below, could be captured by representing the migrant's utility function as followed by Cox and Rrank (1992):

$$U_{mg}=U(C_{sum},S,F[U_h(C_h,S)]) \text{ .....(i)}$$

where, $0 > {}'mg\ U$, $h\ U' > 0$, , $0 > {}''mg\ U$ and $0 < {}''h\ U$ .Equation (1) represents the utility of the migrant which is a function of the migrant's own consumption (C_{sum}) and the consumption of the household (C_h). It is assumed that the household in the source country provides services, S, to the migrant who derives positive utility from it. F is the felicity that the migrant derives from the household's consumption such that

$$\frac{\delta U_{mg}}{\delta F} > 0$$

Under this setup migrant maximises utility subject to the constraints: $C_{sum} = P_{mgt} - T$ and $C_h = H_{pt} + T$, where P_{mgt} and H_{pt} are the migrant's and household's pre-transfer income and T is the amount of monetary transfers. Maximising the migrant's utility with respect to transfers gives us the optimal level of remittances. The key comparative static results that this generates are

$$\frac{\delta T}{\delta P_{mgt}} > 0 \quad \text{and} \quad \frac{\delta T}{\delta H_{pt}} > 0 \quad \text{or} \quad \frac{\delta T}{\delta H_{pt}} < 0$$

The important implication is that the probability that a transfer occurs is positively related to P_{mgt}. However, a change in household income could have opposing effects on the level of remittances sent. Within an altruistic structure, lower household income in the home country is associated with higher remittances in order to maintain the same level of household consumption, i.e.,

$$\frac{\delta T}{\delta H_{pt}} < 0$$

.

However, if the transfers represent payments for services rendered by the household to the migrant, then we get a positive relationship, i.e.

$$\frac{\delta T}{\delta H_{pt}} > 0$$

.

This can be explained as follows. If remittances represent payment for services rendered by the migrant from the household, the amount of transfers (T) sent can be written as T = PS, where P is the price of services and the effect of an increase in the income of the household on transfers can then be written as:

$$\frac{\delta T}{\delta H_{pt}} = \frac{\delta P}{\delta H_{pt}} * S$$

With a fixed S, the implicit price of services will rise with H_{pt} since an increase in H_{pt} is likely to increase the supply price of services rendered by the household such that

$$\frac{\delta P}{\delta H_{pt}} > 0$$

thereby generating a prediction in stark contrast to that of the altruistic model.

3.2 Empirical Model

The reduced form expression for the latent variable determining participation in remittance behaviour can be expressed as:

$$T^{*}=T(HC_{age},P_{mgt},H_{pt},V_{hc},C_{cv}) \ldots\ldots(ii)$$

where HC_{age} are the human capital variables, P_{mgt} and H_{pt} are household and migrant income, V_{hc} is a vector of household characteristics and C_{cv} captures the community variables.

Two alternative models have been put forward to account for the combined nature of the distribution of remittances. The first model uses a parametric approach and is based on strong assumptions about the conditional data distribution and the functional form. The second model maintains the assumptions about functional form but partially relaxes the distributional assumptions.

The former and most common way of dealing with censored dependent variable is to estimate a Tobit Model. We use a linear functional form for equation (ii):

$$T^{*}=\mu+\alpha_1 HC+\alpha_2 V+\alpha_3 C+\beta \ldots\ldots(iii)$$

where HC is a vector of all migrant characteristics including his income, V captures household characteristics including household income, C represents community variables and μ is a normally distributed error term.

In this paper, the occurrence and the level of remittances variables are constructed from two separate questions but the researcher only observe one type of zero i.e., only those who do not receive remittances report zeros for the level question. Since the researcher do not observe participation and zero remittances simultaneously, double hurdle model will not improve estimations in any way. The two-part model specifies one model for the censoring mechanism and a second distinct model for the outcome, conditional on the outcome being observed. Thus, it allows for a different data generation process for the two parts. However, it does not account for the possibility that those with positive levels of expenditure are not randomly selected from the population, thereby raising selection issues. On the other hand, the selection model, corrects this bias by allowing for possible dependence in the two-parts of the model.

The two-part model has three constituents – the observed outcome, participation equation and level equation. These can be represented as below:

Observed Outcome:

$$T=xT^{*} \ldots\ldots\ldots\ldots\ldots(iv)$$

X=1 for participants and 0 for non-participants and T^{**} is given in equation (vi) in below

Participation Equation:

$$Y=\alpha Z+W \ldots\ldots\ldots\ldots\ldots\ldots(v)$$

x=1 if Y>0, 0 otherwise.

Level of Equation:

$T^{**}=max[0,T^{*}]$ and $T^{*}=\alpha M+\beta$…….(vi)

Z and M are the regressors affecting the participation and level equation respectively and u and W are the disturbance terms, which are randomly distributed with bivariate normal distribution. The regressors that appear are mostly same in both parts of the model, however this can be relaxed if there are any obvious exclusion restrictions.

Thus, the first part of the two-part model is a binary outcome equation that model the Pr(T > 0) and is estimated by either a logit or a probit, while the second part uses a linear regression to model E(T | T > 0) . As the two parts are independent, the joint likelihood for the two-part is the sum of the two log likelihoods.

On the other hand, the Heckman sample selection model introduces a second latent variable *n Q *i Z to take account of the selection effects. The model can be specified in the following equations:

$Q^{*}=\alpha Z+W$ ……..(vii)

Where W ~ N(0,1)

$Q=Q^{*}$ if $\alpha Z+W>0$

$Q=0$ if $\alpha W+V<0$

$T=\alpha M+\mu$ ……(viii)

If $Q^{*} > 0$

Where $\alpha \sim N(0, \delta^2)$

$T = 0$ if $Q^{*} < 0$

Equations (vii) and (viii) are the participation and level equations respectively, with α and μ as the parameter vectors to be estimated. Additionally we assume that the unobservables in both equations have a bivariate distribution with correlation r. The selection model also involves estimating the participation decision using probit. From this we can calculate the Mill's ratio. This ratio is then used as an additional regressor in the level equation which is estimated using OLS. The rationale for including the Mill's ratio as an additional regressor in the second step is to correct for any bias that might be present due to the selectivity issues.

Therefore, this research carry out three types of estimations: The basic Tobit model, the two-part model and the selection model. The dependent variables are probability of receiving remittances and amount of remittances received by the household in the last twelve months. Remittance incidence is equal to 1 if the household is observed to have received remittances from abroad, and zero otherwise.

3.3 Data

The survey data was collected from the migrant households of 10 rural villages in the Vogeshore Union of Shariatpur District in Bangladesh. In the first phase, first-hand knowledge of the migrant-sending households was obtained by asking a single question regarding whether the household had members who had worked in Italy or not. The question was asked of each of the 4013 households in the 10 study villages. The recommendation of Krejcie and Morgan (1970) was followed in selecting a sample size for this research. The households that had at least one member in Italy were identified. There were a total of 4,013 households, 18,240 family members and 1,344 remittance-sending migrants in Italy. In the random sample selection process a total of 1,344 remittance-sending migrants in Italy were selected as the total population for this study. Three hundred

households were selected according to the average aggregate weight of each village population. Thereafter, a structured questionnaire was prepared comprising several open-ended and closed questions relevant to the research objectives. The respondents were the heads of households or senior household members. The following information was obtained in the frame of a standardised interview schedule: all household members: age, gender, education, occupation, marriage status; personal characteristics of the migrant before or during the migration period: educational level, employment status, remittances; family structure: joint or nuclear; investment in the agricultural sector: assets, value of land, investment in livestock; household income, expenditure and revenue: composition of household income, agricultural revenue from renting out, detailed break-down of the expenditures (including marriage expenditure); and land assets, purchase of land, property of houses and additional buildings.

4.1 Findings and Discussions

The log likelihood for the Tobit model (Table 1) is much lower than that of the two-part model and the selection model, implying that the latter models fit the data considerably better. In addition, the selection model (Table 2) fails the likelihood ratio test even though the results are rather similar to those of the two-part model. The ρ value of 0.62 implies that the errors of the two equations are not correlated and the hypothesis that the two parts are independent cannot be rejected and, thus, the results of the level equation of the two part model are not biased. This suggests that the two-part model is more appropriate in explaining the remittance behaviour in the study area. In addition to providing a better fit to our data it also provides greater flexibility by allowing the covariates to differently impact the two parts of the model. Thus it will therefore limit this discussion to the two-part model.

Table 1: Tobit Model

Variables	Coefficient	V(T/hc,T>0)	T(T/hc)
Household Characteristics			
Satisfactory	-0.37	-0.15	-0.02
	-0.80	-0.80	-0.89
Good/Excellent	-0.80	-0.27	-0.06
	-1.53	-1.58	-1.51
Assets	-0.20	-0.12	-0.01
	-0.27	-0.28	-0.27
Children	0.28	0.16	0.02
	0.82	0.82	0.82
Household head age	-0.02	-0.01	0.00
	-1.10	-1.10	-1.10
Household head gender	-0.22	-0.10	-0.10
	-0.30	-0.30	-0.30
Other migrants	-1.84	-0.70	-0.13
	-3.42	-3.57	-3.41
Migrant Individual Characteristics			
Age	-0.00	-0.00	-0.00
	-0.18	-0.18	-0.18
Level of Education	0.01	0.01	0.00
	0.10	0.10	0.10
As a Household Head	0.57	0.24	0.03
	0.61	0.61	0.60
As a Principal Earner	1.39	0.57	0.08
	2.42	2.60	2.40
Intent to permanent stay	-1.75	-0.71	-0.12
	-4.35	-4.22	-4.46
Community Characteristics			
NELM	2.84	1.24	0.18
	7.07	6.58	7.38
Networks	1.08	0.34	0.06
	2.16	2.24	2.14
Observations	834	834	834

Table 2 provides the estimates for the participation equation and the level equation of the two-part model and the Heckman selection model respectively. The model was estimated for the whole sample, conditional on a set of exogenous variables, to determine the probability of receiving remittances using a dummy variable for receipt. Column 1 presents the estimates for the participation equation while column 2 shows the continuous choice of the amount of remittances received.

Table 2: Two-Part Model and Heckman Selection Model

Variables	Two-Part		Selection	
	Participation	Level	Participation	Level
Household Characteristics				
Satisfactory	-0.02	-0.03	-0.06	-0.02
	-0.71	-0.38	-0.66	-0.24
Good/Excellent	-0.07	-0.00	-0.21	-0.03
	-1.61	-0.00	-1.55	0.28
Assets	-0.03	0.14	-0.11	0.24
	-0.63	1.04	-0.63	1.16
Children	0.02	0.02	0.06	0.18
	0.60	2.01	0.65	1.76
Household head age	-0.00	0.01	-0.00	-0.01
	-0.86	-2.22	-0.84	-2.03
Household head gender	-0.01	-0.25	-0.5	-0.02
	-0.40	-0.24	-0.32	-0.15
Other migrants	-0.15	-0.03	-0.288	
	-3.43	-0.23	-3.16	
Migrant Individual Characteristics				
Age	0.00	0.00	-0.00	0.00
	-0.22	1.27	-0.29	1.64
Level of Education	-0.00	0.14	-0.01	0.14
	-0.16	2.55	-0.15	2.71
As a Household Head	0.02	0.02	0.08	0.02
	0.05	0.18	0.50	0.19
As a Principal Earner	0.10	0.12	0.20	
	2.37	0.87	2.45	
Intent to permanent stay	-013	0.20	-0.26	-0.15
	-4.06	-3.01	-4.04	-1.85
Community Characteristics				
NELM	0.22	0.30	0.60	0.18
	6.78	4.12	6.52	1.67
Networks	0.06	0.20	0.18	0.17
	1.81	2.60	1.80	2.19
Observations	834	300	834	300
Rho			0.62	
			0.31	

The variable capturing the strength of ties between the migrant and the household is of the predicted sign and in accordance with the hypothesis. It find that households where the migrant is the main earner are 13% more likely to receive remittances than their counterparts. This finding lends supports to the idea that being the primary

earner of the household plays an important role in the remittance process.

On the household side, it find that the income of the household has a negative impact on the likelihood of remittances. This is consistent with the altruistic motive wherein higher the household income, lower are the remittances. Furthermore, the wealth status of the household fails to register any statistical significance, although its sign is consistent with the predictions of the altruistic model too. In addition, the variable capturing the presence of other migrant members provides additional support for the altruistic hypothesis. Thus the probability of remitting decreases with the presence of other migrant members in the household.

Both community variables (NELM and presence of networks in the host country) are strong determinants of the likelihood of receiving remittances by households. The NELM variable that captures the household's trust in the financial institutions in the home country increases the incidence of remittances by 23%. Trust in the financial institutions is an indication of the local community's economic climate and an important factor in determining if a favourable return on investment can be made or not. Thus, a significant effect of this variable lends support to the idea that remittances are sent by migrants as investment under the right conditions..

Therefore, with regard to the probability to receive remittances, the results from the two-part model suggest that the variation in remittance flows in the study area can be explained by differences in income of the household, the kinship ties between the household in the home country, migrants age, gender, his intended duration of stay and presence of networks in the host country and economic development of the home country (proxied by the households' trust in its financial institutions). From these factors, it can deduce that it is mainly altruism and investment that motivates the flows from migrants to their home country.

Furthermore, it can see that a few determinants affect the probability to receive remittances in one way and the level of remittances in the opposite way. This clearly implies that in case of the study area the two dimensions of remitting- incidence and level of remittances are independent. It is interesting to note that although the education level of the migrant had an insignificant impact on the incidence of remittances; it is an important determinant of the level of remittances. Each additional year of education increases the amount of remittances by 17%. Thus the positive coefficient on the variable confirms the first prediction and also appears to be consistent with the altruism motive. The education level of the migrant also captures the loan repayment motive. It is likely that the cost of education of such migrants has been borne by the family in the source country. Hence, remittances by such migrants can be considered as repayments for the initial investment made by the migrant's family towards his education.

Along the same lines, the presence of dependent members in the household has a significantly positive impact on the amount of remittances received by the household − increasing by 23% with each additional dependent member in the family. Comparing the impact across the incidence and the amount of remittances sent by the migrant, it see that each additional dependent member in the

family at home increases the amount of remittances sent by the migrant by eleven times more than it affects its probability. This suggests that the needs of the family at home are quite important to migrants and is also consistent.

Moreover, the age of the household head as well as the community variables positively affect the amount of remittances received. Specifically, it find that migrants with networks in the host country are not only more likely to remit but send 31% more than their counterparts. Also, households who trust the financial institutions of Bangladesh receive 39% more transfers.

5.1 Conclusion

The aim of the paper was to highlight the variables that determine the propensity to receive remittances and the amount of remittances by households in the study area. The empirical model incorporated the determinants of remittances in terms of observed migrant and household characteristics that are assumed to capture the underlying motives of remitting suggested by existing theories of remittances. The analysis is aimed to help create migration schemes that affect the way remittances are channeled into different purposes and raise awareness about how different policies will lead to different incentives to remit. General findings of this study are that the function underlying the incidence and the level of remittances received is not the same; a combination of household, observed migrant characteristics and community variables are key in explaining the remittances behaviour in the study area; and remittances from migrants are primarily sent for either altruistic or investment reasons. In terms of policy relevance of remittances, the findings can help policymakers and governments to better understand and predict the effects of international remittances.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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