Remittances and its impact on poverty of migrant households: astudy with special reference to relatively less developed districts of West Bengal

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Abstract

Objective: To analyze the impact of remittances on poverty of sample migrant households in the relatively backward districts of West Bengal. It also examines the status of poverty among the migrant households and the significance of different factors determining the poverty at the household level.

Methods/Analysis: The status of poverty is measured by using the methodology of Foster, Greer and Therbecke. A Probit model is called for to analyze the status of poverty, i.e., whether the migrant household is poor or not poor where the household characteristics, socio-economic factors and regional factors are the explanatory variables. The marginal effects are also estimated to analyze extent of change of the status of poverty due to the change of the explanatory variables.

Findings: The earnings from remittances play a crucial role in determining the livelihood pattern of the households. Our study shows that the head count ratio for sample household with remittances is about 39% while it increases to 84 % without any such remittance income. The poverty gap and square poverty gap also significantly reduced with remittance income. For a migrant household the flow of remittances received from migrant members and its share in total income of the household seems to be the *sine qua non* for diminution of the intensity of poverty. Our result also indicates that higher is the share of remittances in total household income, lower will be the incidence of poverty for such migrant family.

Applications: The findings of the study help for the policy maker to design the policy to overcome the poverty of the migrant households.

Keywords: Migrant households, Livelihood, Remittance, Monthly Per Capita Consumption Expenditure, Incidence of poverty.

1. Introduction

The migrant household refers to that household of which at least one member was migrated, but the household itself was not migrated. Remittance refers to the portion of migrant income that, in the form of either funds or goods, flows back into the place of origin, primarily to support families back home. Remittance has played a significant impact on the reduction of poverty in both rural and urban regions. The distribution of migrant households according to the sources of their income has been considered for having an understanding of their occupational pattern and livelihood strategies. The distribution of migrant workers according to the remittances sent by them to the households is supposed to be crucial for estimating their contribution to the family income in any given year. Thus it appears that Monthly Per Capita Income (MPCI) of any sample households depends to a great extent on the remittances received from the migrant family member. Further, the Monthly Per Capita Remittance Received (MPCRR) by any household also seems to be dependent on factors such as number of migrant from that household, the total years of migration of the migrant member, average earnings of the migrant per month etc., these remittances are believed to have an importance bearing upon the poverty status of the migrant households.

Inflow of remittances cans also enhances the exchange the standard of living and quality of life thereby contributing positively towards improvement of Human Development Index of a region. This has happened in Kerala and many studies have hinted upon the impact of such remittances on improvement in quality of life, reduction in poverty and unemployment, improvement in income, consumption and savings and higher expenditure on healthcare and education service by the households [1-3]. Similar impacts have also been observed for Goa (based of Goa Migration Survey Data, 2011). In case of Goa more than 80 % of remittances were spent on educational services and basic consumption needs which were vital for improving the quality of life [4]. Some critics are of the opinion that these remittances can rarely benefit or improve the physical quality of life of the migrant households since the recipients might squander these income flows only for basic conspicuous consumption [5].

The NSSO published a report titled "*Migration in India: 2007-08*" in June 2010, and it provided detailed information on migration and remittances spread across various socio-economic attributes. However, the report did not furnish estimates of aggregate volumes of domestic and international remittances at the state level or across household attributes and its impacts on state economy and household development.

The present study explores the above-mentioned issues based on field survey data (2014-15) of 480 sample *migrant households* from relatively less developed districts (Paschim Medinipur, Puruliya, Koch-Behar and Murshidabad) of West Bengal.

2. Data source and Methodology

On account of limitations of the secondary data to serve the purpose of present study, a detailed primary survey has been made. Primary data have been collected (2014-15) from the households which are selected based on multistage stratified random sampling. Districts of West Bengal have different agro-climatic and socio-economic characteristics. Sixteen districts of West Bengal are ranked based on several socio-economic indicators. Based on this ranking, districts are segregated into two strata, namely, relatively developed and relatively less developed districts or backward districts. Relatively less developed districts of West Bengal have been purposely chosen for the present study due to significant growth of migrants in these districts, especially in case of male population, decentralised planning, implementation of land reforms programs and high population density. Districts of the state constitute the 1st stage sample unit while blocks become the 2nd stage and villages are the 3rd stage sample units. In the last stage (in stage four) sample households (20) have been selected from each of the sample villages and these constitute the ultimate units of sampling.

The status of poverty is measured by using the methodology of Foster, Greer andTherbecke [6] as:

$$P_\propto = \frac{1}{N}\sum\nolimits_{i=1}^{q}\left(\frac{P_L - E_i}{P_L}\right)^{\propto} \quad ; \propto = 0, 1, and\ 2$$

Where, P_L is the poverty line, $E_i$is the expenditure of the *i-th* household, N is the total number of individuals in the population and α is a measure of senility such that

α = 0, P_0implies the incidence of poverty
α = 1, P_1 (= PG) implies the depth of poverty
α = 2, P_2 (= SPG) implies the severity of poverty

The migrant household is poor or not poor has been analyzing with different household characteristics, socio economic factors and regional factors which determine the status of poverty.

The Probit model also represents a sigmoid curve. It corresponds to the CDF of a standard normal distribution. Here P_i is considered as standard normal CDF, which is evaluated as a linear function of explanatory variable(s). Thus, the Probit model is specified as [6].

$$P_i = P(Y_i = 1) = F(\alpha + \beta X_i)$$

Here $F(\alpha + \beta X_i)$ is the CDF of the standard normal distribution so that

$$P_i = F(\alpha + \beta X_i) = \int_{-\infty}^{\alpha + \beta X_i} f(Z)dz$$

Where, Z is the standard normal variable and $f(Z)$is the density faction of $Z \sim N(0,1)$

As in Probitmodel, thelog-likelihood function is:

$$\ln L = \sum_{i=1}^{n_1} Y_i \ln P_i + \sum_{i=n_1+1}^{n} (1-Y_i)\ln(1-P_i)$$

$$= \sum_{i=1}^{n_1} Y_i \ln F(\alpha + \beta X_i) + \sum_{i=n_1+1}^{n} (1-Y_i)\ln[1-F(\alpha + \beta X_i)]$$

Maximizing *log L* with respect to α and β solving, we obtain estimates of unknown parameters.

1. **Computation of marginal effect of probit model**
    For the Probit model, the marginal effect, i.e., the effect of change in *Xi* on *Pi* is computed as:

$$\frac{dP_i}{dX_i} = \frac{dP_i}{dZ_i} \cdot \frac{dZ_i}{dX_i} = f(Z).\hat{\beta}_i = \left(\frac{1}{\sqrt{2\pi}} e^{\left(-\frac{Z^2}{2}\right)}\right).\hat{\beta}_i$$

Where π = 3.141

In this model, the value of $\dfrac{dP_i}{dZ_i}$ is evaluated at the mean value of the explanatory Variable(s).

3. Sources of livelihood of the sample migrant households

(Table 1) shows that earnings from remittances constitute about 57% of the gross annual income of the migrant households from all sources. It proves that earnings from remittances play a crucial role in determining the livelihood pattern of the households.

Table 1. Percentage share of sources of livelihood among migrant households

Sources of earnings (livelihood)	Amount (₹)	Percentage Share
Agricultural income (AI)	4595500	10.4
Business income	954000	2.2
Service income/ income from rent	2468800	5.6
Interest income	505000	1.1
Livestock/machinery income	1830029	4.2
Wage earning	7297200	16.6
Other income	1472900	3.3
Remittances	24919500	56.6
Total Income	4,40,42,929	100.0
Average Annual Earning	91756	–
Average Monthly Earning	7646	–

Source: Sample Survey (2014-15)

This is particularly because the alternative earning sources,viz., agricultural income and wage income together constitute about 27% of the gross annual income of these households. Thus, it becomes obvious that earnings from service activities and borrowing remain insignificant in determining the livelihood pattern.

4. Distribution of migrant worker by amount of remittances sent towards householdduring last one year

Since the remittances sent by the migrant workers to their respective households depends on their monthly income and as we have already seen that most of these workers earn a monthly income up to ₹15, 000. So, it is quite natural that the remittances being a fractionof monthly income would be less than ₹15,000. Our sample survey clearly shows that the amount of remittance up to ₹5000 per month for about 73% cases and for only about 15% cases it remained within the range ₹5000 to ₹10000 per month (Table 2).

Table 2. Pattern of remittance sent per month by the migrant worker

Amount of Remittance (₹) Sent Per Month	No. of Migrants	Percentage Share of Total Remittances
1 - 5000	433	72.5
5001 - 10000	91	15.2
10001 - 20000	11	1.8
20001 and Above	1	0.2
Not Sent	61	10.2
Total No of Migrants	597	100

Source: Sample survey (2014-15)

5. Status of poverty of migrant households: an analysis

Whether the remittances received by a migrant family can sufficiently enhance the household income so as to enable it to cross the poverty line is a matter of great concern. So, in this section we try to analyses the status of poverty among the households with remittances income and without remittances income.

1. Status of poverty in relation to remittance

It is believed that flow of such remittance which supplements the household income and assumes, in many cases, significant portion of the household income can help many poor households to cross the cut-off line indicating the minimum monthly per capita consumption expenditure (MPCE) needed to maintain the subsistence standard of living. Our study indicates that the incidence of poverty, as estimated by Head Count Ratio (HCR), Poverty Gap Ratio (PGP) and Squared Poverty Gap (SPGP) becomes significantly different for sample household enjoying such remittance flow. Here we first estimate the rural poverty line of West Bengal for the year 2014-15 from the data published by the Planning Commission of India for the year 2012-13.

Table 3. The status of poverty of migrant households with and without remittances

Category	With Remittances	Without Remittances
Poor HHs	37.08	85.42
HCR	38.79	84.01
PGP	8.70	65.94
SPGP	2.68	71.44

Note: HCR = Head Count Ratio, PGP = Poverty Gap, SPGP = Squared Poverty Gap
Source: Sample Survey, 2014-15

The rural poverty line for West Bengal for the year 2014-15 is ₹960.27. When the sample households are devoid of such remittance flow then incidence of poverty e.g., in terms of HCR or PGP or SPGP escalates to high level compared to the sample household whose income is supplemented by such remittance income. Our study shows that the SPGP for sample household with remittances is only 2.68% while it is rises up to 71.44% (Table 3) for sample household without any such remittance income. Also when we consider HCR it has been found that the HCR for sample household with remittances is about 39% while it increases to 84% for sample household without any such remittance income. A similar result is also observed when we express such difference in terms of PGP.

2. The empirical results: Probit estimates

In our study we have resorted to a Probit model to indicate the interdependence between the possibilities of any household remaining below poverty line or not (Poor or Not Poor) and the factors responsible for such possibility including the sex affiliation of the head of the family, caste affiliation of the household, dependency ratio of the household, average years of education of the household, size of per capita operating land holding, share of remittance received to the total household income and number of migrant member(s) of the household. The notation, specification and the descriptive statistics of the dependent and independent variable are given in (Table 4).

Table 4. Notation, specification and descriptive statistics of variables used in regression analysis at the migrant household level

Notation	Specification of Variables	Max	Min	Mean	SD
Dependent Variables					
Poor or Not Poor	Whether the Migrant Household is Poor or Not Poor? Yes = 1, No = 0	1	0	0.40	0.50
Independent Variables					
HHHMF	Whether the Household head is Male or not? Yes = 1, No = 0	1	0	0.96	0.18
CASTE	ST = 1, SC = 2, OBC = 3 and General = 4	4	1	3.15	0.91
DEPRATIO	No. of dependent member(s) in migrant household.	0.8	0	0.4	0.2
AVGYEDUH	Average years of education of the households.	15	0	5.59	2.56
PCOLH	Per Capita Operating land holding size (Size in decimals).	250	0	12.88	18.50
SHAREREM	Share of remittances to total income of the households.	100	0	54.97	25.59
NOM	Number of migrant members of the households	6	1	1.20	0.50

Source: Sample Survey (2013-14)

The empirical results relating to households' poverty estimation is presented in the (Table 5) by means of Probit estimates.

However, for factors such as caste affiliation (CASTE), average years of education of the household (AVGYEDUH), size of per capita operating land holding (PCOLH), share of remittance received (SHAREREM) to the total household income have statistically significant impact upon reducing poverty level of a migrant household.

The marginal effects (ME) of these variables on the incidence of poverty are given in the following (Table 6). The result suggests that a migrating household is likely to be poorer if it belongs to SC or ST caste category. Similarly, an educational attainment, as measured by average years of education, of the household members is supposed to help the migrant household in coming out of abject poverty, i.e. higher is the average years of education of family members lower is the incidence of poverty for such a family.

Table 5. Probit estimates of poverty of migrant households

Variables	Co-efficient	Robust Standard Error	t	P>t	
HHHMF	1.177	0.891	1.320	0.186	
CASTE	-0.277**	0.136	-2.040	0.042	Number of observation = 480
DEPRATIO	0.195	0.644	0.300	0.762	LR chi^2(8) = 93.62
AVGYEDUH	-0.261***	0.052	-4.970	0.000	Prob. > chi^2 = 0.000
PCOLH	-0.045***	0.009	-4.780	0.000	Pseudo R^2 = 0.2083
SHAREREM	-0.033***	0.005	-5.960	0.000	
NOM	-0.070	0.250	-0.280	0.778	
_cons	2.845	0.932	3.050	0.002	

Source: Sample Survey, 2013-14
*Note*** 1%, **5%,* 10% level of significance respectively*

In a similar fashion the asset structure as explained by size of per capita operating landholding (PCOLH) of the migrant household is likely to reduce the incidence of poverty. In fact this is obvious, since greater size of per capita operating landholding of the migrant household is likely to reduce the incidence of poverty. Greater size of per capita operating landholding gives enough scope for any such household to earn more from agricultural activities.

However, for a migrant household the flow of remittances received from migrant members and its share in total income of the household seems to be the *sine qua non* for diminution of the intensity of poverty. Our result also indicates that higher is the share of remittances in total household income, lower will be the incidence of poverty for such migrant family.

Table 6. Calculation of marginal effects for estimated probit model

Variables	ME(dy/dx)	Delta-method Standard Error	z	P > z	
HHHMF	0.206	0.153	1.340	0.179	
CASTE	-0.048**	0.023	-2.080	0.038	Average Marginal Effects
DEPRATIO	0.034	0.113	0.300	0.762	Model VCE Robust
AVGYEDUH	-0.046***	0.008	-5.580	0.000	
PCOLH	-0.008***	0.002	-4.950	0.000	No of observations = 480
SHAREREM	-0.006***	0.001	-6.850	0.000	
NOM	-0.012	0.044	-0.280	0.778	

*Note*** 1%, **5%,* 10% level of significance respectively*

6. Concluding observations

Earnings from remittances play a crucial role in determining the livelihood pattern of the households. Our study shows that the HCR it has been found that the HCR for sample household with remittances is about 39% while it increases to 84% for sample household without any such remittance income. The poverty gap and square poverty gap also significantly reduced with remittance income. SPGP for sample household with remittances is only 2.68%, while it is rises up to 71.44% for sample household without any such remittance income. Our result also indicates that higher the share of remittances in total household income, lower will be the incidence of poverty for such migrant family.

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