Scientific Research

Seasonal Unemployment and Voluntary Out-Migration from Northern Bangladesh

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Received December 3, 2010; revised March 12, 2011; accepted March 28, 2011

Abstract

This paper explores the major push-pull and self-selective factors of seasonal rural-urban migration during the lean period using survey data from northern Bangladesh. Among all other factors, probit estimates reveal that the choice of destination, per capita monthly food expenditure, availability of social safety net benefits are affecting individuals' decision of being seasonal migrant to a significant extent.

Keywords: Northern Bangladesh, Seasonal Unemployment, Voluntary Out-Migration

1. Introduction

The northern region of Bangladesh is a rather backward part of the country owing to, *inter alia*, its near absolute dependency on agriculture and almost non-existence of other significant sources of employment. Accordingly, rural-urban migration on temporary and voluntary basis frequently occurs in quest of employment due to seasonal unemployment during the lean period from mid- September to mid-November [1]. Furthermore, the region is also vulnerable to a wide variety of climaterelated shocks, e.g. frequent flood and resultant crop damage, river bank erosion, drought, etc. To reduce the risk emanated from income fluctuations mainly caused by seasonal unemployment, primary income-earners of many households temporarily migrate to outside of their usual working areas to diversified labor-intensive sectors of urban areas to smooth out income flow [2-4].

The growing incidence of temporary out-migration is a standard and voluntary coping strategy of the unemployed poor households. Therefore, voluntary out-migraon can be, and indeed is regarded as a significant risk-reduction strategy that explains the scale, duration and effectiveness of in-built 'push-pull factors' leading to voluntary outmigration [5]. The 'push' factors are mostly associated with the declining opportunities in agriculture, and 'pull' describes economic opportunities in urban-based industry and services [6,7] and comparative advantage to earn more in urban locations [8].

The objective of the study is to identify the major determinants of rural-urban migration of the seasonally unoyed during lean periods. Finally, different policy interventions will be explored. The major limitation of the study is mainly related to sample size. But according to the rule of thumb about sample size, it is likely to be acceptable.

2. Seasonal Unemployment, Rural-Urban Out-Migration and Transformation of Household Income Patterns

During seasonal unemployment rural poor's per capita income falls. Many of the poor are concentrated in norern areas such as the districts of Kurigram, Gaibandha, Nilphamari, Lalmonirhat and some part of Jamalpur district [9] (**Table 1**). For the most part, migrants are predominantly young, male household head and with marginal land ownership.

Voluntary migrants are sometimes referred to as 'economic migrants'. Furthermore, migration is 'selective' [5]. The reason behind this selectivity is that individuals respond differently to the prevailing factors associated with origin and destination areas. Reference [10] point out that seasonal migration takes place as an optimal endogenous response to individuals' comparative advantages of costs, returns, and welfare maximization and higher income opportunities which contribute to urban pull. Moreover, negative environmental conditions consistently encourage out-migration [11].

2.1. Factor Affecting Seasonal Rural-Urban Migration

Empirical evidence shows that northern districts in Bangladesh are economically weaker and per capita gross district product of these regions are far below the national average [12]. More than one-third of the households in these areas face food shortage throughout the year, and another one-third face temporary food shortage during the lean periods due to higher incidences of poverty compared to the rest of the country [13]. People of these areas take temporary migration during lean periods to maintain their income and consumption levels.

It is interesting to note that the greater Rangpur in the northern Bangladesh is a food surplus area, but agriculture alone cannot provide enough employment opportunities for the surplus agricultural labor force, which leads to a very low wage rate [14]. In 2004, the daily average wage for male laborers was found to be 50.9 BDT (Bangladeshi Taka) per day without meals that made up only 68% of the average wage rate in Bangladesh which was 74.5 BDT in other parts of the country [15]. This situation also stimulates to take temporary migration during the local lean periods.

Widespread flooding during this period intensifies this crisis every year. In accordance with the World Food Program's estimation, 80% to 90% of the people in this region are agricultural day laborers and they do not have any alternative source of employment during and immediate after any flood incidence. During this flood period, income earners of any vulnerable family try for alternate income generating activities taking temporary migration to urban areas. Moreover, rural demographic changes, low level of human capacities, changes in cropping patterns and intensities have significant impacts on the rural economic activities of the regions [16].

2.2. Seasonal Out-Migration as a Livelihood Coping Strategy

Rural poor optimally choose to migrate for short spells of time. The seasonal migrants, usually getting employed as wage labors at destination areas, can be grouped based on four pre-migration occupations. **Table 2** indicates to the pre and post migration earning capacity and resultant changes. Reference [17] argued that migrants benefited from temporary migration by higher or regular income than their rural counterparts who do not migrate. Reference [17] point out that the livelihood strategies are heterogeneous. Migration, especially rural-urban, has long been a significant livelihood strategy of Bangladeshi rural inhabitants because rural poor can earn outside of their traditional sector [18]. The growing incidence of temporary movements also explains eventual return-igration following short duration of stay.

Table 1. Percentage of poor and extreme poor of the study area.

Area	% Poor	% Extreme Poor
Upazila of Kurigram district		
Bhurungamari	68.20	52.00
Char Rajibpur	73.90	58.80
Chilmari	69.00	53.10
Phulbari	65.80	49.10
Kurigram Sadar	66.10	49.90
Nageshwari	70.30	55.00
Rajarhat	64.00	47.30
Raumari	73.50	58.10
Ulipur	66.90	50.00
Kurigram average	68.63	52.59
Districts of northern region		
Gaibandha	53.04	36.07
Lalmonirhat	53.46	33.82
Nilphamari	70.15	55.00
Kurigram	68.63	52.59
Northern region average	61.32	44.37
Bangladesh average	41.63	26.65

Source: Bangladesh Poverty Map, VAM, 2009.

Table 2. Changes in family income, before and after migration (%).

Pre-migration occupation	Major occupation at destination	Economically active people[*] of the household (% of all members)	Contribution to total family expenditure (pre-migration)	Contribution to otal family xpenditure (post-migration)	Change
Marginal farmer	Wage labor & rickshaw puller	1.00 - 1.99	58	71	↑ 13
		2.00 - 2.99	65	79	↑ 14
		3.00>	72	89	↑ 17
Agricultural wage labor	Agri. & non-agri. wage labor	1.00 - 1.99	59	73	↑ 14
		2.00 - 2.99	64	75	↑ 11
		3.00>	70	86	↑ 16
Non-agricultural wage labor	Non-agri. wage labor	1.00 - 1.99	62	81	↑ 19
		2.00 - 2.99	72	83	↑ 11
		3.00>	76	87	↑ 11
Small business	Wage labor & hawker	1.00 - 1.99	61	73	↑ 12
		2.00 - 2.99	69	81	↑ 12
		3.00>	74	88	↑ 14

[*]Eligible individuals who either are employed or are actively seeking employment.

2.3. Migration as a Driver of Rural Transformation

Seasonal migration can benefit areas of origin and destination, as well as migrants and their families. With all other stimulating factors, out-migration is a key process of rural transformation in the developing world. Thus, rural-urban temporary out-migration is a fundamental part of rural livelihood strategies and transformation. These reflect the push-pull effects of the northern areas and developed rural areas of Bangladesh in terms of economic development and regional endowments.

3. Data and Methodology

The empirical basis of this paper is a household survey conducted in 2009 in northern areas. A three-stage stratified random sampling, followed by a structured questionnaire was employed to collect micro-level data from nine different primary sampling units of study areas (Kurigram District) to obtain the required information regarding out-migration.

A probit model is used to identify the socio-emographic "push-pull" factors of individual's decision about the likelihood of undertaking voluntary migration. Related continuous explanatory variables, including binary response and composite dummy are considered to investigate and compare the probability of person's deci-

[1]See (**Table 4**).

sion to voluntarily migrate to reduce income fluctuations[1]. The responses which are needed to construct the composite dummy (migrant's choice about destination area) is obtained by another three different dummy variables that are, availability of higher income sources, lower cost of migration, and favorable shelter at destination areas.

The zero-one response variable is used to estimate the probability that an individual is migrating, in the following way, whether an individual will decide to be an out-migrant with the value 1 represented by "go for temporary out-migration" and otherwise 0.

$$\Pr(y=1) = \Phi(\beta'x)$$

where Pr denotes probability and Φ is the cumulative density function of the standard normal distribution with $\varepsilon \sim N(0, 1)$, which gives us the likelihood for both cases $y = 0$ and $y = 1$; and $\beta'x$ is called the probit score/index. A one-unit change (either increase or decrease) in the x coefficient leads to a change in the probit score/index by β standard deviations. **Table 3** describes the definitions of the model variables.

4. Results and Discussions

This paper estimated a probit model using continuous, single dummy and composite dummy for household, household head, area and migration characteristics to understand the selectivity of migration decision [19]. Here, age is positively related to the seasonal migration

decision, whereas the quadratic term remains negative that refers to a number of physical as well as socio- demographic factors [20]. This reveals that the seasonal migrations occur frequently at early stage of life, and also reflects that migration decision increases with age of household head, and then decreases. **Table 4** presents the results of the probit model with standard errors.

The second determining factor of the decision of being a seasonal rural-urban migrant is the individual's educational qualification. The primary education dummy (hh_tys_l) shows that individuals' who attended the primary schools have less probability to migrate during the lean period.

The model consists of the dummy variable "spcmfe_l" that equals 1 if the "spcmfe_l" does not exceed the lower threshold. A positive and significant "spcmfe_l" dummy shows that household with lower level of food expenditure has a probability of being seasonal migrant. Probit results also exhibit some significant impacts on total outstanding debt, enrollment in social safety net programmes and choice of destinations by the migrants.

Furthermore, total household members and the dependency ratio act as crucial determining factors for migration decision during lean period. Household head of a large family size have more probability to migrate than a smaller family head. The study shows that individual's with more family members or high dependency ratio has higher probability to be a seasonal rural-urban migrant during lean periods than his counterparts.

Households' need to take loan frequently to cope up with reduced income level due to seasonal unemployment, viable alternative income generating opportunities (leads to consume less food) and other basic needs during any lean period. The regression result of debt dummy shows that households' who have outstanding debt have a tendency to migrate more.

Moreover, households living in the mainland are less likely to go for temporary migration during the lean period than those living on riverbanks (**Table 4**).The study also reveals that urban areas with better opportunities attract more such migrants than cities as income opportunities are comparatively higher there. The dummy of "cho_des_l" shows the same. **Table 2** reflects that income earnings of the migrants' families increase after migration take place compare to pre-migration periods.

5. Conclusions and Policy Recommendations

Individual rural-urban migration decision is modeled here using micro-level data, focusing on "push-pull" factors and self-selectivity of migrants due to seasonal unemployment from northern Bangladesh.

Conclusion 1: Seasonal rural-urban migration occurs frequently at early stage of life of an individual and then decreases with age.

Table 3. Descriptions of variables of probit model.

Explanatory variables	Type	Description
Household head's characteristics		
hhh_age	Continuous	Age of household head
hhh_age_sqr	Continuous	Age squared
hh_tys_l	Binary	1 if household head attended primary school, otherwise 0
Household characteristics		
spcmfe_l	Binary	1 if household's share of per capita monthly food expenditure exceeds lower threshold, otherwise 0
tot_mem	Continuous	Total household member
dep_rto_l	Binary	1 if dependency ratio is equal to or more than one, otherwise 0
hh_debt_l	Binary	1 if household have outstanding debt, otherwise 0
ssnp_l	Binary	1 if household under social safety net programmes, otherwise 0
Area characteristics		
river_bank	Binary	1 if household lived in riverbank, otherwise 0
Migration characteristics		
cho_des_l	Composite Dummy	1 if individual have favorable choice of destination, otherwise 0
hh_chn_l	Binary	1 if migrant's income increases after migration, otherwise 0

Table 4. Probit regression results of migration decision of household head.

Explanatory variables	Description	Probit estimates	Std. Err.
	Household head's characteristics		
hhh_age	Age of household head	0.02	0.05
hhh_age_sqr	Age squared	–0.00013	0.004
hh_tys_l	1 if household head attended primary school, otherwise 0	–0.10	0.43
	Household characteristics		
spcmfe_l	1 if household's share of per capita monthly food expenditure not exceeds lower threshold, otherwise 0	3.15*	1.79
tot_mem	Total household member	0.08	0.13
dep_rto_l	1 if dependency ratio is equal to or more than one, otherwise 0	0.50	0.39
hh_debt_l	1 if household have outstanding debt, otherwise 0	0.03*	0.32
ssnp_l	1 if household under social safety net programme, otherwise 0	0.58*	0.32
	Area characteristics		
river_bank	1 if household lived in riverbank, otherwise 0	0.27	0.35
	Migration characteristics		
cho_des_l	1 if individual have favorable choice of destination, otherwise 0	2.23***	0.53
hh_chn_l	1 if migrant's income increases after migration, otherwise 0	–0.50	0.36
cons	Constant	–4.57**	2.24
LR chi2(11)		46.76	
Prob > chi2		0.0000	
Pseudo R2		0.3203	
Log Likelihood		–49.62	
Observation		106	

Notes: Dependent variable: Migration decision of household's head. ***< 0.01, **< 0.05, *< 0.10.

Conclusion 2: Choice of favorable destinations consisting availability of higher income opportunity, lower cost of migration, and the favorable shelter at destination areas are significantly related to individual decision of being a migrant.

Conclusion 3: Lower per capita food expenditure is another determining factor of voluntary migration.

Conclusion 4: The probability of temporary migration decreases, if migrant's income increases after the migration is taken place.

Short term: In view of the upcoming momentum of seasonal unemployment, short term measures (employment/income generating programmes, social safety net etc.) before the onset of the lean period may increase resilience to preliminary shocks from socio-demographic constraints and subsequent fluctuations of income.

Medium term: Linked channels of connectivity involving strategic/buffer stock of food at the *Upazila* level, convenient supply chain management and allocation of sufficient food aid may reduce seasonal difficulty.

Long term: Investment in agro-based industries is also likely to generate employment opportunities which would reduce the seasonal unemployment in northern regions.

To conclude, voluntary out-migration, apparently a li-velihood strategy of the poor that changes household's income following rural transformation to accommodate with wage differentials, reduces consumption risks.

6. Acknowledgements

7. References

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