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OVERSEAS MIGRATION FROM RURAL BANGLADESH: HOUSEHOLD AND MESO-LEVEL DETERMINANTS

Abstract

According to the new economics of labour migration (NELM) theory, household characteristics have important consequences for migration decisions. The theory argues that such a decision is not an isolated affair, rather it is a result of households' income diversification strategy. However, previous literature has mostly dealt with personal attributes to explain migration (either out-country or in-country) decisions. Indeed, past studies have by and large overlooked the influences of household-level determinants of migration. The current article intends to fill this gap in the literature. Using household as a unit of analysis and utilizing a large representative secondary data set, namely, Household Income and Expenditure Survey (HIES) 2016, the current article tries to find out the household level and the meso-level determinants of migration. The paper finds the importance of some household level (dependency ratio, head's age, education and gender, and land productivity) and meso-level correlates (electricity access, length of paved roads and proximity to Dhaka) of international migration from rural households in Bangladesh. Particularly, the study finds that household heads' experience of migration and education increases the probability of international migration. Additionally, female-headed households and households with an endowment of a productive piece of farmland, access to electricity and proximity to the capital show a higher probability of migration. The findings indicate that overseas migration is a strategy for households to diversify income. Based on the findings, the paper provides some recommendations which have highlighted the need for education, arranging credit for households and strengthening the decentralization of migration facilities to encourage overseas migration from rural households.

Keywords: Bangladesh, Migration, Rural Households, New Economics of Labour Migration (NELM), Household-level Characteristics.

1. Introduction

Migration has been a subject of numerous studies on development discourse for a long time as international migration becomes a popular strategy for livelihood diversification across the world, especially in developing and least-developed

economies.¹ In fact, overseas migration stands as an influential factor behind economic growth and development.² In some countries, remittances earned by migrants constitute a significant share of foreign exchange. Even sometimes the amount of remittances exceeds the size of foreign aid.³ Thus, remittances have contributed towards poverty reduction and overall development. However, the importance of migration goes beyond generating remittances. Migration has significant consequences for the destination countries as well because it transfers “ideas, skills and knowledge,” strengthens “connectivity,” and “creates interpersonal links”.⁴

With more than 10 million expatriates, Bangladesh ranks fifth among the origin countries and ninth among the remittance-receiving countries. Remittance is the second highest source of foreign currency for Bangladesh after exports of readymade garments (RMG). However, remittance can be considered as the premier source in terms of net earnings since in the case of RMG export a significant portion of earnings is foregone for importing raw materials. In 2017-2018, remittance was 5.50 per cent of the country’s GDP and 40.86 per cent of total export earnings.

Given the importance of migration in reducing unemployment and in enhancing micro and macro-level development, the Bangladesh government considers overseas migration by workers as a thrust sector and has taken a number of steps to foster development through labour migration. The country played an important role in 2015 in integrating migration in Sustainable Development Goals (SDGs). The issue of migration has been incorporated in the Seventh and Eighth Five Year Plan (2016-2020, 2021-2025) and in Perspective Plan (2021-2041).

Migration, therefore, deserves the attention of policymakers on the eve of the celebration of the golden jubilee of the country’s independence. At this juncture, it is important not only to evaluate what role remittance played in the country’s economic development but also to chart the future path of international migration

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¹ Eliakim Katz, and Oded Stark, “Labor migration and risk aversion in less developed countries,” *Journal of Labor Economics* 4, no. 1 (1986): 134-149.

² Stephen Castles and Mark J. Miller, *The Age of Migration: International Population Movements in the Modern World*, (London: Macmillan International Higher Education, 1998).

³ Pierre Yves Beaudouin, “Economic impact of migration on a rural area in Bangladesh,” *AFSE seminar in University of Paris, France* (2006): 1-23.

⁴ Tasneem Siddiqui and Raisul Awal Mahmood, *Impact of Migration on Poverty and Local Development in Bangladesh, First Edition*, (Dhaka: Refugee and Migratory Movement Research Unit, 2015), 1-200

from Bangladesh. And, to this end, it is critical to know the profile of migrants and the determinants of migration. The ongoing COVID-19 pandemic, which warrants a recovery plan for the migration sector, has made such profiling of determinants even more important.

Literature review suggests that though there exist some studies on the profile of migrants from Bangladesh, most of the studies are limited to individual attributes of migrants. Although modern theories of migration suggest taking the household and meso-level factors into account for a comprehensive appreciation of a country's migration experience, they remain missing in the existing literature.

This study, particularly, asks the following question: which household-level characteristics and meso-level factors influence the overseas migration in rural Bangladeshi households? It attempts to identify some important household level correlates (e. g., demographic profile of household head and households' asset endowment) and some meso-level correlates (e. g., electricity access, road length, proximity to urban places), of overseas migration. To address the research question, the article resorts to the quantitative analysis of the Household Income and Expenditure Survey (HIES) data of the 2016 wave. The evidence from the current study is expected to help formulate appropriate policy responses.

The findings suggest that household-level elements like dependency ratio and household head's age (a proxy variable for experience), and education are important correlates of migration. Also, female-headed households have more probability of migration. Furthermore, household's asset like land productivity has a significant impact on migration. At the same time, meso-level features such as electricity access, length of paved roads and proximity to the capital are important determinants of migration from rural households. Overall, the findings imply that migration has become an income diversification opportunity for rural households in Bangladesh.

The study is organized as follows. The first section is the introduction. The second section presents a brief overview of overseas migration from Bangladesh. The third section deals with the literature survey. The fourth section focuses on method, data and variables. The fifth section discusses the findings, while the sixth section concludes the article.

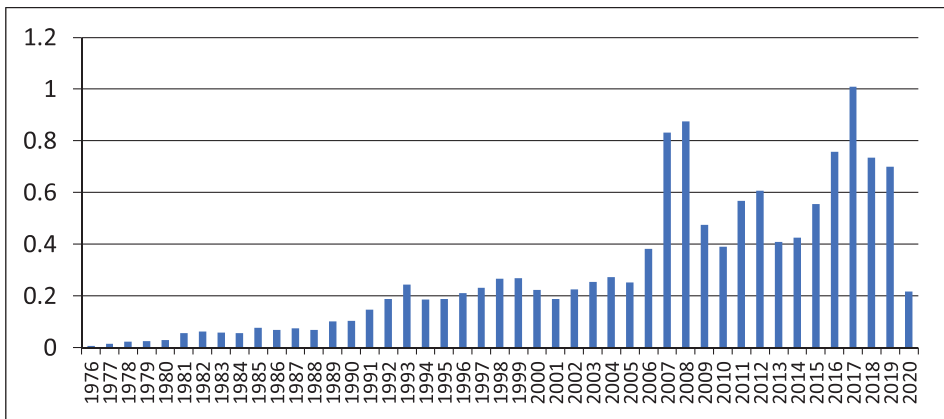
2. Overseas Migration from Bangladesh: A Brief Overview

Although historically people from Bangladesh migrate to various parts of the world, the tendency of migration increased significantly in the years following the nation's independence. The cause of migration has been championed by Bangladesh's surplus labour forces, and ever surging demand for workers in the

destination nations, particularly in the Gulf region. Migration has eased the unemployment scenario of Bangladesh and contributed to the economic development of the country by generating remittances.

Compared to 1976, overseas employment for Bangladeshi migrant workers has increased by nearly 115 folds in 2019 (see, Figure 1). Particularly in the late 1980s, migration from Bangladesh gained momentum. In 2017, for the first time, overseas employment registered one million marks. A slide in employment was evident in 2020, owing to the lockdown measures taken by destination countries to curb the Covid 19 pandemic. Needless to say that remittances generated from migration have also risen steadily over the years. While in 1976, the remittances stood at roughly USD 24 million; they amounted to USD 21,752 million in 2020.⁵

Figure 1: Overseas Employment (in Million) by Year (1976-2020)



Source: Bureau of Manpower, Employment and Training (BMET)

The Gulf countries, namely Saudi Arabia, United Arab Emirates, Kuwait, Oman, Qatar and Bahrain account for roughly three-quarters of overseas employments for Bangladeshi workers.⁶ A couple of Southeast Asian nations, Malaysia and Singapore, generated 15 per cent of the overseas employments for Bangladeshi international migrant workers.⁷

⁵ Government of the People’s Republic of Bangladesh, Ministry of Manpower, Bureau of Manpower, Employment and Training (BMET), accessed September 25, 2021, www.old.bmet.gov.bd/BMET/viewStatReport.action?reportnumber=16

⁶ BMET, accessed September 25, 2021, www.old.bmet.gov.bd/BMET/viewStatReport.action?reportnumber=16

⁷ BMET, accessed September 25, 2021, www.old.bmet.gov.bd/BMET/viewStatReport.action?reportnumber=16

Over the years, migration has helped alleviate the level of poverty in Bangladesh as remittances contribute to creating further jobs, infrastructure and services at the community level.⁸ At the household and individual level, the remittances also have positive consequences for food security, social security, literacy level, overall lifestyle, health care access, nutrition and investment.⁹

3. Literature Review

In migration literature, there exists a wide range of theories explaining the causes and drivers of migration from different perspectives, though the perspectives are not always competitive or substitute by nature. Neo-classicals, for example, explain migration through push-pull factors. At the macro level, neo-classical theories focus on wage differential between developing and developed regions causes migration.¹⁰ At the micro-level, migration takes place when an individual rational actor decides to migrate when his/her cost-benefit calculation leads him/her to expect a positive net return from migration given his/her level of skill and other resources.¹¹

Structuralists, on the other hand, emphasize on structural differences among origin and destination countries as a cause of migration and argue that migration perpetuates this gap instead of reducing it.¹² According to this school, through “brain drain” and “brawn drain,” migration undermines regional and national economies of “peripheral” countries making them more dependent on “core” countries and thus stimulating further migration.¹³ On the other hand, at the micro-level, through creating a “culture of migration,” international migration decreases the willingness of the youth of sending countries to work and build a future locally which fuels further migration.¹⁴

De Haas¹⁵ observes that most empirical work on migration from the late 1980s and 1990s finds migration impacts on development to be heterogeneous and

⁸ Md Nurul Islam, *Migration from Bangladesh and Overseas Employment Policy* (Dhaka: BMET, 2010): 1-25.

⁹ Tom De Bruyn and Umbareen Kuddus, *Dynamics of Remittance Utilization in Bangladesh* (Dhaka: IOM, 2005).

¹⁰ John R. Harris and Michael P. Todaro, “Migration, unemployment and development: a two-sector analysis,” *The American Economic Review* 60, no. 1 (1970): 126-142.

¹¹ Larry A. Sjaastad, “The Costs and Returns of Human Migration,” *Journal of Political Economy* 70, no. 5, Part 2 (1962): 80-93; Everett S. Lee, “A Theory of Migration,” *Demography* 3, no. 1 (1966): 47-57.

¹² Michael Burawoy, “The Functions and Reproduction of Migrant Labor: Comparative Material from Southern Africa and the United States,” *American Journal of Sociology* 81, no. 5 (1976): 1050-1087.

¹³ Hymie Rubenstein, “Migration, Development and Remittances in Rural Mexico,” *International Migration* 30, no. 2 (1992): 127-153.

¹⁴ Joshua S. Reichert, “The migrant syndrome: Seasonal US wage labor and rural development in central Mexico,” *Human organization* 40, no. 1 (1981): 56-66.

¹⁵ Hein De Haas, “Migration and Development: A Theoretical Perspective,” *International Migration Review* 44, no. 1 (2010): 227-264.

of non-deterministic nature which could not be established by existing deterministic theories of migration. This led to a paradigm shift in migration theory, away from a deterministic approach towards a pluralist one which takes into account both agency and structure. Recognizing the relevance of structure and agency, the pluralist theories could better deal with the heterogeneity of migration-development interaction. In this new approach, migration decision depends on individual traits as well as on various meso and macro-level factors.

One of the most important pluralist theories of migration is New Economics of Labour Migration (NELM) which is regarded as a “theoretical third way between” the “neoclassical and historical-structural approaches to migration”.¹⁶ This theory is based on the assumption that the household is the decision-making unit in the migration process, not the individual migrant.¹⁷ In other words, the household makes the decision to send its member abroad as a migrant worker. The migration decision is perceived as a way to counter a household’s “credit constrain” and “insurance constraint”.¹⁸ The remittances generated via migration can function as a safeguard against the risk of any future income failure due to uncertainty attached to agricultural produces and prices, and unemployment.¹⁹ NELM thus perceives labour migration as a livelihood strategy of households who attempt to minimize income shocks through international migration amidst uncertain employment and income situation in the country of origin.²⁰

The risk spreading motive suggested by NELM can explain why, in defiance of neoclassical theories, migration takes place in the absence of (expected) wage differential. Also, unlike the neoclassical theories, in NELM, there is scope for remittance sending and circular migration. For the attributes mentioned above, Sana and Massey suggest that NELM can better explain the migration experience of developing countries like Bangladesh where migrants keep strong ties with their family of origin and expect to return rather than settle in the host country.²¹

Another pluralist theory of migration which takes into account both micro and macro factors and conforms with circular migration is Social Network Theory.

¹⁶ Alexandre Abreu, “The New Economics of Labor Migration: Beware of Neoclassicals Bearing Gifts,” *Forum for Social Economics* 41, no. 1 (2012): 46-67.

¹⁷ Alexandre Abreu, “The New Economics of Labor Migration.”

¹⁸ Oded Stark, “Comment on “Migration and Incomes in Source Communities: A New Economics of Migration Perspective from China,”” *Economic Development and Cultural Change* 53, no. 4 (2005): 983-986.

¹⁹ Alexandre Abreu, “The New Economics of Labor Migration.”

²⁰ Oded Stark and David Levhari, “On migration and Risk in LDCs,” *Economic Development and Cultural Change* 31, no. 1 (1982): 191-196; Oded Stark and David E. Bloom, “The new economics of labor migration,” *The American Economic Review* 75, no. 2 (1985): 173-178; Md Zakir Hossain, Md Ohidul Alam Khan and Jasim Uddin Ahmed, “Determinants of Rural-Urban Migration in Bangladesh Including Its Consequences for Origin Households and Urban Amenities,” *Research & Reviews: Journal of Statistics* 5, no. 2 (2016): 47-61.

²¹ Mariano Sana and Douglas S. Massey, “Household Composition, Family Migration and Community Context: Migrant Remittances in Four Countries,” *Social Science Quarterly* 86, no. 2 (2005): 509-528.

This theory, however, is more about the perpetuation of migration than about the causes of migration. Social Network Theory attributes the rising trend of migration from developing countries to the network built by the working and returnee migrants and their friends and relatives which reduces the risk, and sometimes cost, involved with migration.²²

At present, there is a growing consensus that the heterogeneity of migration cannot be explained by a single perspective, level and assumptions.²³ In the words of Massy et. al. (1993):

“Current patterns and trends in immigration, however, suggest that a full understanding of contemporary migratory process will not be achieved by relying on the tools of one discipline alone, or by focusing on a single level of analysis... .. Given the fact that theories conceptualize causal processes at such different levels of analysis – the individual, the household, the national and the international – they cannot be assumed, a priori, to be inherently incompatible. It is quite possible, for example, that individuals act to maximize income while families minimize risk, and that the context within which both decisions are made is shaped by structural forces operating at the national and international levels.”

Review of literature explains why earlier studies on migration (internal and external alike) predominately focus on individual features as well as traits of non-migrants to explain the determinants of migration,²⁴ while the new pluralist approach including the NELM underscores the role of family and household characteristics to understand the migration phenomenon.²⁵ In this approach, migration is considered as a result of concerted support from other members of the households to improve their standard of living.²⁶ For example, migration involves considerable costs, such as relocation costs, documentation and visa processing fees

²² Reginald T. Appleyard, “Migration and Development: Myths and Reality,” *International Migration Review* 23, no. 3 (1989): 486-499.

²³ Edward J. Taylor, “The New Economics of Labour Migration and the Role of Remittances in the Migration Process,” *International Migration* 37, no. 1 (1999): 63-88; Douglas S. Massey, Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegrino and J. Edward J. Taylor, “Theories of International Migration: A review and Appraisal,” *Population and Development Review* 19, no. 3 (1993): 431-466; Hein De Haas, “Migration and Development: A Theoretical Perspective,” *International Migration Review* 44, no. 1 (2010): 227-264.

²⁴ Guillaume Haemmerli, Danièle Bélanger and Charles Fleury, “Care Needs and Migration: Household Determinants of Internal Labour Migration in Vietnam,” *Journal of Comparative Family Studies* 52, no. 1 (2021): 4-26.

²⁵ Stark and Bloom, “The New Economics of Labor Migration.”

²⁶ Ian Coxhead, Nguyen Viet Cuong and Linh Hoang Vu, “Migration in Vietnam: New Evidence from Recent Survey,” *World Bank: Vietnam Development Economics Discussion Papers* 2 (2015); Mike Douglass, “Afterword: Global Householding and Social Reproduction In Asia,” *Geoforum* 51 (2014): 313-316.

as well as communication and transportation costs. Often households finance the expenditure to make migration possible.²⁷

However, in the case of Bangladesh, household level analysis is somewhat overlooked in the studies of migration, both internal and external alike.²⁸ To the best of knowledge, only a few migration researches in Bangladesh perspective have focused on household as a unit of analysis. For example, Hossain et al. (2016),²⁹ Akhter and Bauer (2014)³⁰ and Beaudouin (2006)³¹ employed household as decision-making unit; however, the first two studies were on rural-urban migration in Bangladesh. The latter dealt with overseas migrant households in Bangladesh. This study drew on data from Chandpur, a Bangladeshi district known as having a significant share of overseas migrant workers. However, the study used an old data set, which was collected in 1996, ten years before that research came out. Another research, using the household as a unit of analysis, examines the determinants of remittances sent by expatriate workers living in Italy, in the context of ten villages of a Bangladeshi district, Shariatpur.³² But the study suffers from limited generalizability as the overall findings may not represent the whole country. To the best of knowledge, currently, an overarching view on household determinants of migration by using a latest data set is somewhat missing. Using households as decision-making units, the current article has utilized a relatively latest and large cross-country data set, HIES 2016, to assess the determinants of migration. In this way, the current study strives to fill the gap in overseas migration literature on Bangladesh.

4. Data, Variables and Method

The current study, as indicated earlier, has employed the HIES 2016 data. This is an extensive household level survey conducted by the Bangladesh Bureau of Statistics (BBS) in every five years. Resorting to stratified sampling technique, this survey collects information about income, expenditure and consumption of households from rural and urban areas of Bangladesh across eight administrative divisions. The current study considers rural households. In total, it uses information about 15,786 households.

²⁷ Pierre Yves Beaudouin, "Economic impact of migration on a rural area in Bangladesh," *AFSE seminar in University of Paris, France* (2006): 1-23.

²⁸ Guillaume Haemmerli, Danièle Bélanger and Charles Fleury, "Care Needs and Migration: Household Determinants of Internal Labour Migration in Vietnam," *Journal of Comparative Family Studies* 52, no. 1 (2021): 4-26.

²⁹ Hossain, Khan and Ahmed, "Determinants of Rural-Urban Migration in Bangladesh."

³⁰ Shamima Akhter and Siegfried Bauer, "Household Level Determinants of Rural-Urban Migration in Bangladesh," *International Journal of Humanities and Social Sciences* 8, no. 1 (2014): 24-27.

³¹ Pierre Yves Beaudouin, "Economic Impact of Migration on a Rural Area in Bangladesh."

³² Kazi Abdul Mannan and Khandaker Mursheda Farhana, "Remittance Micro Determinants and Socioeconomic Impacts: A Household Unit Analysis of Gender Behaviour of Rural Household Head in Bangladesh," *International Journal of Management Sciences and Business Research* 3, no. 7 (2014).

The dependent variable in the study is whether a rural household has an overseas migrant. It is a dichotomous variable, coded as one if a household has an international migrant. As for independent variables, the current article examines a host of household and meso-level features. The household characteristics include the dependency ratio of the household and household head's demographic information like age, gender, education, marital status, earning status, migration experience and household's asset endowment, such as land, livestock, farm assets, and land productivity. Many of these independent variables have been employed by previous studies.³³ Furthermore, the study includes electricity access, paved road and urban proximity to capture the meso-level determinants of migration.

Among the variables, some are dummy variables taking the value of 1 when the attribute is present or zero otherwise. These include head's gender (female=1), head's marital status (married=1), head's earning status (earner=1), head's migration experience (household head was living abroad =1), access to social safety net programme (access=1) and access to electricity (access=1). The rest of the variables, such as dependency ratio, head's age and education, land size, farm asset, livestock, land productivity, paved road length, proximity to the capital and divisional headquarters (HQ) are continuous.

The dependency ratio³⁴, which represents the economic compulsion of the household, is likely to encourage the household to send one or members abroad; hence its sign is expected to be positive. Household heads' age and education are used as proxies for his/her experience and are expected to have a positive influence on migration decisions. Household heads' earning status and migration experience are also expected to encourage further migration. No prior expectation can be made about the household head's gender and marital status.

The current article also tries to see whether safety-net access impacts the decision to migrate. Migration researchers used the poverty level of households as a determinant of migration.³⁵ However, the data set this article utilized does not have any direct poverty information. Hence, safety net access by any member(s) of the household is used here as a proxy for poverty and is expected to have a positive sign.

³³ Pierre Yves Beaudouin, "Economic Impact of Migration on a Rural Area in Bangladesh"; Guillaume Haemmerli, Danièle Bélanger and Charles Fleury, "Care Needs and Migration: Household Determinants of Internal Labour Migration in Vietnam," *Journal of Comparative Family Studies* 52, no. 1 (2021): 4-26; R. A. P. I. S Dharmadasa, and Rithnayake K.K.H.M, "Determinants of Migrations and Remittances: Evidence from Rural Sector of Sri Lanka," *Vidyodaya Journal of Management* 3, no. 2 (2017): 33-58.

³⁴ Dependency ratio in a household measures the ratio of number of dependents to number of non-dependent members.

³⁵ Haemmerli, Bélanger and Fleury, "Care Needs and Migration: Household Determinants of Internal Labour Migration in Vietnam."

The study also employs a few household-level assets, such as land, livestock, and farm assets. Land size is measured in hectares; while livestock and farm assets are valued in Bangladesh Taka (BDT). The farm assets include the values of agricultural equipment owned by a household. The study uses another variable, namely, land productivity, which is an indication of the farm revenue of the households. To generate land productivity, the current research divides the total value of agricultural output with the land size. The article employs the logarithmic forms of all the asset variables. No prior expectation can be made about asset variables as they can influence migration decisions either way. On one hand, by reducing economic compulsion, assets might discourage migration. On the other hand, assets might encourage migration through providing necessary capital if the motive of migration is diversification of income sources of households.

As for the meso level characteristics, the study exploits a number of variables, namely, electricity access, length of paved roads and urban proximity. Electricity access is used as a proxy for the level of development in the area of origin and is expected to show positive signs according to NELM theory. The length of paved roads in respective regions is measured in kilometers (km). More paved road means better communication which not only facilitates the procedures of migration but also implies a greater access to information and a higher level of awareness. It also increases income opportunities and eases credit constraints. The paved road is therefore expected to have a positive sign.

Urban proximity is captured by a couple of variables: distances (in km) between the respective region and Dhaka (country’s capital), and the divisional headquarters (HQ).³⁶ As overseas migration always requires extensive documentation and bank transactions, one assumes that leaving nearby an urban place would certainly reduce transaction costs and make the migration process easier. Distance from urban centres is therefore expected to have a negative influence on international migration.

The summary statistics of all these variables are displayed in Table 1. It presents, amongst other things, the mean value of the variables for the overall sample (see, column 1). Table 1 also compares the mean values of all the variables between migrant households and the non-migrant households (see, columns 2 and 3), and reports the P-values (see, column 4) associated with the mean differences. The dependency ratio in a typical household is about two persons. The mean age of household heads is 42.52 years and they have completed just over three years of schooling. Most of the heads are married and earners. However, only a small proportion (2 per cent) of them ever lived abroad. Seven per cent of households are

³⁶ The distances have been calculated from https://distancecalculator.globefeed.com/Bangladesh_Distance_Calculator.asp, accessed September 25, 2021.

headed by a female and 8 per cent of households receive benefits under safety net programs.

Table 1: Summary Statistics of the Key Variables

Variables	(1) Mean (all hh)	(2) Mean (non-migrant hh)	(3) Mean (migrant hh)	(4) P value: Mean difference (3-2)
Dependency ratio	2.11	2.1	2.5	0.000***
Head age	42.52	42.45	44.85	0.0001***
Head education	3.32	3.3	3.92	0.0008***
Head married ⁺	0.93	0.93	0.90	0.0166**
Head earner ⁺	0.93	0.93	0.86	0.000***
Head was abroad ⁺	0.02	0.02	0.03	0.1463
Female head ⁺	0.07	0.06	0.12	0.000***
Hh under safety net ⁺	0.08	0.08	0.07	0.4497
Hh farm land size	0.31	0.31	0.32	0.9616
Farm asset value	1.42	1.42	1.51	0.5698
Livestock value	1.73	1.74	1.42	0.0877*
Land productivity	2.41	2.4	2.73	0.1602
Electricity access ⁺	0.59	0.59	0.71	0.000***
Paved road	5.63	5.63	5.79	0.000***
Distance Div HQ	2.81	2.81	2.85	0.5684
Distance capital	5.28	5.29	5.08	0.000***

Note. Hh and Div HQ stand for household and divisional headquarters, respectively.

⁺The P-values associated with the mean differences are calculated from the z-test, while the rest of the P-values are calculated from the t-test. *P<0.10; **P<0.05; ***P<0.001.

As far as the household level assets are concerned, the average logged values of farm assets, livestock and land productivity are BDT 1.42, BDT 1.73 and BDT 2.41, respectively. Around 59 per cent of households have electricity access. The logged road length in the respective region is 5.63 km. While the region's

logged distances from divisional headquarters and Dhaka are 2.81 km and 5.29 km, respectively.

One can see from Column 4 of Table 1 that for a number of variables, the gap between the migrant and non-migrant households is statistically significant, mostly at a 1 per cent level. These include dependency ratio, and head's age, education, gender, marital and earning status. But, the difference in regards to livestock value is marginally significant at the 10 per cent level. Also, significant gaps are evident between non-migrant and migrant households in electricity access, road length and distance from the capital.

After examining the differences in attributes between migrant and non-migrant households, the study attempts to measure the effects of some household-level characteristics as well as some meso-level features on migration. Here, a household is the unit of measurement, and the study assumes that the probability of a household having or sending its member(s) abroad depends on the household head's demographic profiles, household-level asset endowment and meso-level characteristics. As the dependent variable, a household is either a migrant or non-migrant one, is binary, the current study estimates a probit model. Instead of the probit model, either logistic regression or an LPM (linear probability model) could have been used. However, both logit and probit models yield "qualitatively similar"³⁷ outcomes, and also the choice between these two models has become "arbitrary"³⁸ due to the advent of many improved statistical packages. At the same time, LPM suffers from limitations due to stochastic error term's non-normal distribution and non-equal variance and unreliable measure of goodness of fit (Gujarati & Porter 2009). Here, our probit equation takes the following form:

$$P_i = F[\beta(H_i) + \theta(A_i) + \gamma(M_i)] + \epsilon$$

P_i is the probability of individual rural households having overseas migrant(s). F stands for the cumulative density function of the probit model. Vector H_i includes variables representing household i and its head's demographic features (dependency ratio, age, education, gender, marital status, income status, migration experience and access to social safety net). Vector A_i is comprised of household i 's asset endowment (land size, farm asset value, livestock and productivity of land). Meso-level features such as electricity access, road length and urban proximity are included in vector M_i . From the probit equation, the study computes the marginal effects, which measure a unit change in dependent variable due to a unit change in independent variables as other things hold the same. The findings are discussed in the next section.

³⁷ Mentioned in Damodar N. Gujarati and Dawn C. Porter, *Basic Econometrics* (Fifth Edition) (McGraw-Hill: New York, 2009), 1-922.

³⁸ C. Brooks, *Introductory Econometrics for Finance* (Cambridge: Cambridge University Press, 2014), 1-716.

However, multicollinearity amongst the explanatory variables could be a concern in our model. For example, regressors such as head's age and his education or land size and land productivity could be correlated. Existence of multicollinearity questions the precision of the estimates. Value of pair-wise correlation or variance inflation factor (VIF) can be used as a rule of thumb to detect multicollinearity in a model.³⁹ A correlation coefficient of less than 0.7⁴⁰ or alternatively, VIF of less than 10 is an indication⁴¹ that multicollinearity is not a serious problem in the model. The correlation coefficients amongst the independent variables and the values of VIF of all the explanatory variables have been reported in Appendix Table A2 and A3, respectively. It is found that all the pair-wise correlation coefficients are less than 0.7 (the highest is 0.59 between Female head and Head married). Also, the VIF for none of the explanatory variables exceeds 10, and the mean VIF is only 1.46. As a result, it may be deduced that multicollinearity is not an issue in the current model.

Also, model misspecification due to the omission of variables could be a problem, which might lead to estimation bias. To address this issue, both the log-likelihood ratio (LR) test and the Wald test have been done to ensure whether adding more variables can improve the fit of the statistical model. In other words, it indicates that the inclusion of additional variables in the models is relevant; hence, the model is less likely to suffer from omitted variable bias. From both the LR test and Wald test, it is found that the p-value associated with χ^2 (chi-square) is highly significant. It implies that the null hypothesis that the effects of additional explanatory variables on the dependent variable are zero can be safely rejected. Therefore, the model is not mis specified.

5. Findings and Discussions

The study estimates three specifications of the probit equation. The first specification is controlled for dependency ratio and household heads' characteristics. The study controls the second specification for household assets, while the third specification is accounted for meso-level features as well as regional fixed effects. Seven administrative divisions are added in this specification with the Dhaka division is considered as the reference dummy. The computed marginal effects from the probit model are reported in Table 2.

³⁹ Damodar N. Gujarati and Dawn C. Porter, *Basic Econometrics*.

⁴⁰ Abu Zafar M. Shahriar and Dean A. Shepherd, "Violence against Women and New Venture Initiation with Microcredit: Self-Efficacy, Fear of Failure, and Disaster Experiences," *Journal of Business Venturing* 34, no. 6 (2019): 105945.

⁴¹ Mentioned in Damodar N. Gujarati and Dawn C. Porter, *Basic Econometrics*.

Table 2: Determinants of Overseas Migration from Rural Household (Marginal Effects from Probit Model)

Independent variables	(1)	(2)	(3)
Dependency ratio	0.006*** (0.001)	0.006*** (0.001)	0.004*** (0.001)
Head age	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Head education	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Head married (=1)	-0.001 (0.006)	-0.002 (0.006)	0.002 (0.006)
Head earner (=1)	-0.003 (0.005)	-0.003 (0.005)	0.000 (0.005)
Head was abroad (=1)	0.012 (0.009)	0.012 (0.009)	0.009 (0.008)
Female head (=1)	0.021*** (0.006)	0.023*** (0.006)	0.020*** (0.006)
Hh under safety net		-0.004 (0.005)	0.003 (0.005)
Hh farmland size		-0.000 (0.001)	-0.000 (0.001)
Farm asset value (log)		0.000 (0.000)	0.000 (0.000)
Livestock value (log)		-0.001 (0.000)	0.000 (0.000)
Land productivity (log)		0.001* (0.000)	0.001** (0.000)
Electricity access (=1)			0.009*** (0.003)
Paved road (log)			0.022*** (0.004)
Distance Div HQ (log)			-0.000 (0.001)
Distance capital (log)			-0.006*** (0.002)
N	15,786	15,786	15,786
Pseudo R-sq	0.0244	0.0265	0.0870

Note: Dependent variable: the household is an overseas migrant household (=1); zero if otherwise.” Hh and Div HQ stand for household and divisional headquarters, respectively. The third specification is controlled for regional fixed effects, but their marginal effects are not reported. *P<0.10; **P<0.05; ***P<0.001.

The results from Table 2 show that two variables (head's marital and earning status) that appeared significant in the bivariate analysis (Table 1; column 4) have turned out insignificant in the multivariate examination. However, the household's dependency ratio exerts a positive and highly significant impact ($P < 0.01$) on the probability of overseas migration. The likelihood of migration rises by 0.4 per cent to 0.6 per cent with a 1 per cent increase in dependency ratio. It is consistent with the findings of some other studies.⁴²

Both proxies of household head's experience – age and education, have significant ($P < 0.01$) and positive impact on migration probability. The finding is in line with some other studies.⁴³ Head's experience enhances the likelihood of overseas migration. Being more experienced enables the household head to establish a connection with a network of overseas migrants and gather sufficient knowledge about migration and its cost-benefits. All these, in turn, encourage the decision to migrate and benefit the migration process.

It is interesting to note that female-headed households have more probability of migration ($P < 0.01$). One previous study report such a result.⁴⁴ This might be either due to some systematic difference between male and female-headed households or might be due to the fact that in the HIES, households whose main male earning member is a migrant living abroad have been included as female-headed due to the sheer absence of the male earning member. Without further investigation, the reason for a higher probability of migration among female-headed households cannot be explained.

Among the household asset-related variables, only one, the productivity of land (in terms of BDT), has a significant ($P < 0.05$) and positive impact on overseas migration; other asset variables show no significant impact. It implies that when the yield from land rises, it creates funds for the rural household, which might be used as initial capital to support migration.

All the meso-level characteristics included in the multivariate analysis, except the distance from divisional headquarters, have appeared statistically significant ($P < 0.01$). Electricity access which has been used as a proxy for the overall development of the particular region appears to have a significant positive impact. Paved road or better communication is also found to influence migration positively. Taken together, these two characteristics suggest the opportunity of

⁴² Nong Zhu and Xubei Luo, "The impact of migration on rural poverty and inequality: a case study in China," *Agricultural Economics* 41, no. 2 (2010): 191-204; Yaohui Zhao, "Labor migration and earnings differences: the case of rural China," *Economic Development and Cultural Change* 47, no. 4 (1999): 767-782.

⁴³ Paul A. Lewin, Monica Fisher and Bruce Weber. "Do rainfall conditions push or pull rural migrants: Evidence from Malawi," *Agricultural Economics* 43, no. 2 (2012): 191-204.

⁴⁴ Paul A. Lewin, Monica Fisher and Bruce Weber. "Do rainfall conditions push or pull rural migrants: Evidence from Malawi," *Agricultural Economics* 43, no. 2 (2012): 191-204.

acquiring the necessary capital and information required for migration. The positive impact of these meso-level characteristics further supports the idea that income diversification is a major motive behind migration. The negative influence of distance from capital suggests that people from areas far from the capital are less likely to migrate – either due to lack of migration facilities or due to lack of motivation or necessary capital.

It is evident from the above discussions that overseas migration comes as a livelihood diversification strategy for households. For example, some household-level features, such as the head's experience and education play important roles in spurring migration. At the same time, electricity access, improved road conditions and proximity to capital increase the probability of migration. The findings of the present study thus suggest that overseas migration in Bangladesh is not only an individual decision taken separately but results in a set of households and meso-level conditions.

To test the robustness of the findings, the article deploys two different regression models: a logit model and an LPM. The main results are mostly robust to these different estimation methods. The findings are presented in Appendix Table A1.

6. Conclusion and Recommendations

NELM theory contests that household characteristics have a profound impact on migration decision because such decision is often an outcome of household's income diversification strategy to minimize risks. However, past literature on migration mainly dealt with personal attributes to explain migration (either out-country or in-country) decisions by overlooking the household and meso-level features. The current article attempts to fill this gap. Also, keeping the ever-growing importance of migration in the country's development in mind, reexamining this issue merits attention. Particularly, the current article tries to analyze some household level and meso-level correlates of overseas migration.

Using household as a unit of analysis, and employing an extensive and representative data set, the current article argues that overseas migration is an income diversifying strategy by households, which is driven by a set of conditions. For example, the study identifies that household-level attributes, such as household head's experience and education have paved a way for overseas migration. Furthermore, a household asset like land productivity has a positive influence on migration as it might generate excess funds to facilitate overseas migration. As far as meso-level characteristics are concerned, some elements like electricity access, roads' conditions and proximity to capital have a positive influence on migration.

Nevertheless, this study is not free from limitations. First, it suffers from limited generalizability as the results might change in different country contexts.

Second, caution is needed while interpreting the result associated with female-headed households, as the definition problem might be an issue related to the female heads in the HIES data.

Finally, based on the research findings, this article provides the following sets of recommendations to facilitate migration from rural households in Bangladesh.

- Household head's education has been revealed as an important determinant. But, the overall schooling years (3.32 years; Table 1) of the household heads are relatively low. Also, nearly 48 per cent of the heads did not receive any education.⁴⁵ Hence, importance needs to be given to education to bring in a change in the composition of migrants to ensure a better outcome of migration.
- The study finds a positive impact of farm income on migration which suggests that marginal farm households have less opportunity to send their member/s abroad. Measures can be taken to make credit available for such households.
- Negative influence of distance from capital suggests lack of decentralization of migration facilities and/or lack of motivation or necessary capital. Measures should be strengthened to address this special difference.

⁴⁵ Authors' calculation from the HIES 2016 data.

Appendix

**Table A1: Determinants of Overseas Migration from Rural Households
(Coefficients Estimated from logit Model and LPM)**

Independent variables	Logit	LPM
Dependency ratio	0.152*** (0.034)	0.005*** (0.001)
Head age	0.015*** (0.004)	0.000*** (0.000)
Head education	0.034*** (0.013)	0.001*** (0.000)
Head married (=1)	0.095 (0.227)	0.002 (0.006)
Head earner (=1)	0.042 (0.178)	-0.003 (0.005)
Head was abroad (=1)	0.274 (0.308)	0.009 (0.010)
Female head (=1)	0.786*** (0.223)	0.027*** (0.007)
Hh under safety net	0.091 (0.200)	0.002 (0.005)
Hh farm land size	-0.013 (0.033)	-0.000 (0.000)
Farm asset value (log)	0.016 (0.017)	0.000 (0.000)
Livestock value (log)	0.006 (0.014)	0.000 (0.000)
Land productivity (log)	0.024** (0.011)	0.001* (0.000)
Electricity access (=1)	0.364*** (0.114)	0.010*** (0.003)
Paved road (log)	0.914*** (0.138)	0.026*** (0.004)
Distance Div HQ (log)	-0.012 (0.037)	-0.000 (0.001)
Distance capital (log)	-0.226*** (0.072)	-0.007*** (0.002)
N	15785	15785
pseudo R-sq (adjusted R-sq)	0.0893	(0.0222)

Note: Dependent variable: the household is an overseas migrant household (=1); zero if otherwise. Hh and Div HQ stand for household and divisional headquarters, respectively. All the specifications are controlled for regional fixed effects, but their marginal effects are not reported. *P<0.10; **P<0.05; ***P<0.001.

Table A2: Pair-wise Correlation Coefficients amongst the Explanatory Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1. Migrant hh	1.00																
2. Depen. ratio	0.05	1.00															
3. Head age	0.03	0.11	1.00														
4. Head educ.	0.03	0.05	0.19	1.00													
5. Head married	-0.02	0.17	0.01	0.08	1.00												
6. Head earner	0.04	0.05	0.31	0.03	0.17	1.00											
7. Head abroad	0.01	0.04	0.02	0.03	0.01	0.12	1.00										
8. Female head	0.04	0.14	0.10	0.09	0.59	0.30	0.02	1.00									
9. Hh safety-net	-0.01	0.05	0.01	0.05	0.09	0.04	0.01	0.11	1.00								
10. Hh farm land	0.00	0.01	0.03	0.04	0.01	0.00	0.00	0.02	0.00	1.00							
11. Farm asset val	0.00	0.12	0.06	0.01	0.05	0.02	0.01	0.07	0.01	0.05	1.00						
12.	-	-	0.03	-	0.03	0.03	-	-	0.00	0.00	0.14	1.00					

Livestock value	0.01	0.03	0.04		0.01	0.05													
13. Land product.	0.01	- 0.14	0.07 0.12	0.05	0.02	0.01	- 0.08	0.02	0.09	0.31	0.14	1.00							
14. Electricity acc.	0.04	0.04	0.17	0.05	0.00	0.03	- 0.06	0.10	0.00	0.00	- 0.01	0.04	1.00						
15. Paved road	0.07	0.02	0.02	- 0.03	0.02	- 0.01	0.00	0.00	- 0.01	0.06	- 0.03	0.03	0.01	1.00					
16. Dist. Div. HQ.	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.04	- 0.01	0.02	- 0.03	0.01	0.13	- 0.17	1.00				
17. Distance capital	- 0.05	- 0.01	- 0.02	0.01	0.03	- 0.03	0.02	0.07	- 0.01	0.01	- 0.05	0.01	0.14	- 0.02	0.18	1.00			

Table A3: Variance Inflation Factor (VIF)

	VIF	1/VIF
Female head	1.67	.6
Head married	1.57	.64
Distance capital	1.53	.65
Head earner	1.27	.79
Paved road	1.25	.8
Head age	1.22	.82
Land product.	1.17	.85
Farm asset val	1.15	.87
Depend ratio	1.14	.88
Electricity acc.	1.12	.89
Head education	1.11	.9
Dist. Div. HQ.	1.1	.91
Livestock value	1.06	.94
Hh safety-net	1.06	.95
Head abroad	1.02	.98
Hh farm land	1.01	.99
Mean VIF	1.46	.