The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh

Nahid Akhter[1] and Md. Kamrul Islam[2]

[1]Senior Research Associate, Institute for Inclusive Finance and Development (InM), [2]Lecturer, Department of Economics, Independent University

Bangladesh is one of the major suppliers of migrant workers especially to the Middle East, and the flow of remittances has increased from $2.8 billion in 2002 to $13.52 billion in 2017, which is more than 5 per cent of the country's GDP. This article investigates the impact of domestic and international migration and subsequent remittances on poverty. The empirical analysis reveals that there is a significant relationship between growth in remittances and different outcome variables in the economy with positive impact on poverty, household income and financial inclusion. The results indicate that both domestic and international remittances have positive impact on poverty alleviation; and these results are statistically significant. International migration and remittance supplies are important pathways out of poverty for the poor households. Considering the impact of remittances on poverty and economic outcomes, appropriate technical and vocational training are needed to utilize the full potential of the migrant workers and maximize the contributions of remittances to the domestic economy.

Keywords: Remittances, Savings, Migration, Income, Poverty, Bangladesh

INTRODUCTION

The geographical movement of labor resources through temporary migration—both domestic and international—and associated remitting money back home is largely socially and economically beneficial. In terms of the economy as whole, temporary migration enables increased marginal human resource productivity (Yuen, 2013). In practice, this boost to labor productivity is generally realized through excess manpower being released from one area to another where labor demand and wage rates are comparatively higher (Todaro, 1980; Gheasi & Nijkamp, 2017). This acts as a means of easing unemployment pressure for a labor-abundant country with limited economic opportunities. Moreover, temporary in-country or seasonal migration can reduce the wage gap between rural and urban areas. National migration can be in the direction of rural to urban industrial areas, urban to rural, rural to rural or urban to urban. Overseas migration is from one country to another for long or short periods especially where the motive is better employment opportunities.

At the national level, foreign remittance earnings can play a major role in the growth of the economy in terms of a positive impact on investment and expenditure or savings. Overseas migration and remittance earning generate substantial welfare gains for the financial and social life of the migrant-sending countries (Bayes et al., 2015). Remittances can swell up a country's foreign exchange reserves (Ali, 2014), and generally, remittances are

44

Nahid Akhter and Md. Kamrul Islam. The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh

one of the most important sources of foreign income for developing countries (Ratha, 2005). Flows of remittances can stave off balance of payment crises and act as a steady flow of foreign currency (Lopez-Cordova & Olmedo, 2006). It can generate financial stability for migrants and thereby could play an important role in reducing poverty. Receiving of remittances can also contribute to overall macroeconomic stability and reduce aid dependency (Ali, 2014; Kpodar and Le Goff, 2011). In addition, remittances are used to repay external obligations and facilitate the receipt of non-concessional borrowings from private creditors for imports bills and to repay foreign debt.

At the household level, despite temporary migration being risky and abortive migration very expensive, it provides an opportunity to earn significantly higher incomes than available at home. Migration and remittances have a positive effect on economic, social and political processes in the migrant-sending communities, even as the motives for migrating vary widely (Rapoport & Docquier, 2006). According to one IOM (International Organization for Migration) study (De Bruyn & Kuddus, 2005), remittances are used for five different purposes: (i) food and clothing; (ii) home construction and repair; (iii) purchase of land; (iv) loan repayment; and (v) savings. After consumption, the second most important use of remittances is purchasing lands. They also play a role in repaying loans. In many cases it is considered as a supportive tool to overcome crisis periods or lean seasons, where families are pushed into extreme poverty for part of the year. In any economic or cyclical crisis, an individual wage-earner may prefer to move to an urban area or abroad, because this shift offers an opportunity for the households to come out from the crisis period. Among poor households, the tendency of receiving remittances is relatively high (Hoddinott, 1994; Funkhouser, 1995; Durand et al., 1996). The use of remittances is mainly to sustain the existing assets of the households (Brown & Ahlburg, 1999) and repay outstanding loans that the households had already incurred to finance migration or other costs (Lucas & Stark, 1985; Poirine, 1997).

Both types of temporary migrants use formal and informal channels for transferring remittances. Channels usually considered formal include banks, money transferring agencies like Western Union, post and telegraph services, and so on. Informal transfers are difficult to classify since they range from hundi systems, couriers and traders or the migrant or a third party simply carrying money home. Moreover, a particular channel may be formal in one country but informal in some other country depending on the regulatory regime. Although, informal remittance channels are popular due to their potential economy, rapidity, convenience and secrecy (e.g. Pieke et al., 2007; Siegel et al., 2010), those channels also carry a higher risks of loss. For regulators, informal channels present challenges associated with criminal activities such as money laundering, the financing of terrorism and smuggling. On the other hand, formal channels have more potential for promoting economic development by improving the earnings of the domestic financial sector and by increasing resources to finance economic activities (Kosse & Vermeulen, 2013).

Bangladesh is one of the major international suppliers of migrant workers. In terms of remittance flows, Bangladesh was the 8th largest remittance receiving country in 2013 (World Bank, 2014). The flow of remittances has increased from $2.8 billion in 2002 to $13.52 billion in 2017. This represents 5.17 per cent of GDP, with remittances the second highest source (49.2%) of export earnings after the garments sector, covering 29.4 per cent of import payments (Bangladesh Bank, 2017). In one study according to Ali (2014), foreign remittances are positively affecting almost all macro-economic indicators of Bangladesh.

Despite temporary migration and remittance earning to Bangladesh, little research has been done making use of household surveys and applying micro-econometric methods to examine remittances and household poverty. Whereas there are many research papers on foreign employment, research explaining the impact of remittance on poverty using household level data and micro-econometric analysis is also urgently required.

Accordingly, this study uses data from a comparatively recent (2014) nationally representative household survey conducted in all except one of Bangladesh's 64 districts. It focuses on identifying the impact of migration and remittances on poverty in Bangladesh through employing PSM and ATT based estimates. The robustness of the results are checked by using instrumental variable and gmm based estimates. The basic objective is to shed light

on the effect of remittances on household level outcomes, such as poverty, income, savings, asset generation, access to finance etc., and the interaction of remittances on various financial inclusion indicators. The study also identifies various channels of remittance transfer.

The paper is structured as follows. After the introduction, section two describes the state of migration and flow of remittance to Bangladesh, section three presents a literature review, section four describes the data and estimation technique, section five describes the results, section six provides the analysis of remittance income distribution among different income groups, section seven presents various channels of sending remittances, and finally, section eight discusses conclusions and policy recommendations.

BACKGROUND: MIGRATION AND FLOW OF REMITTANCES TO BANGLADESH

Overseas Migration

Migration has had a remarkable impact on Bangladesh. Since 1942, and especially after the liberation war of 1971, Bangladesh has experienced significant migration and overseas remittance inflows. Currently there are three types of overseas migration from Bangladesh based on destination countries. One of these migration flows types has been to the Middle East and South East Asia, beginning in 1971. The other type of migration is directed toward Western industrialized countries, such as the UK, USA, and Canada, while the other is toward high income Asian countries like Singapore, Malaysia and Japan, which mainly started in the 1990s. (Siddiqui, 2004). The majority of labor migrants to the Middle Eastern and Southeast Asian countries are unskilled or semiskilled and the most popular destination country in the Middle East is Saudi Arabia (see Appendix A). In late 1980s and 1990s, the economic development of the Southeast Asian countries created demand for unskilled and semi-skilled workers. Bangladesh as an overpopulated country took the opportunity to send its surplus labor force to those countries. The migrants to the Western World are likely to stay permanently and tend to be skilled and semi-skilled labors and professionals (Ali, 2014). In contrast, migrants to Japan and other high income East Asian countries are generally temporary.

A total of 7.1 million people emigrated from Bangladesh from 1976 to 2010 and remittance inflows to the country have risen at an annual average rate of 19 per cent from 1979 to 2008 (Datta and Sarkar, 2014). Migration has not been uniform, but rather falling within four distinctive phases: (a) a relatively slow growth from 1976 to 1990, (b) doubling of the figure in 1991-92 from where the annual migration nearly stagnated to that level till 2005-06, and (c) a fluctuation in growth in the subsequent 5 years up to 2012, and (d) an increasing trend till 2017. Accordingly, Figure 1 shows the number of migrants growing to around eight hundred thousand in 2007-08 from a figure in the fourteen thousands in 1976-77. However, in 2008-09 out-migration declined fol-
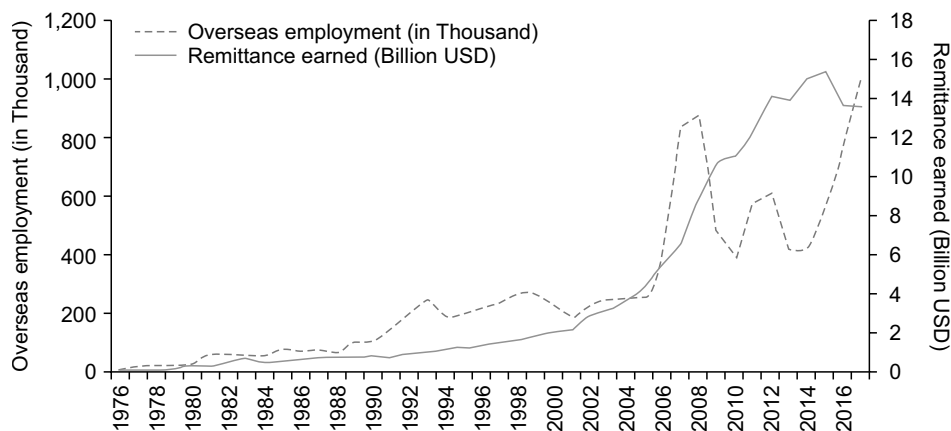

Fig. 1. Overseas Employment and Remittance Earned during 1976-2017.
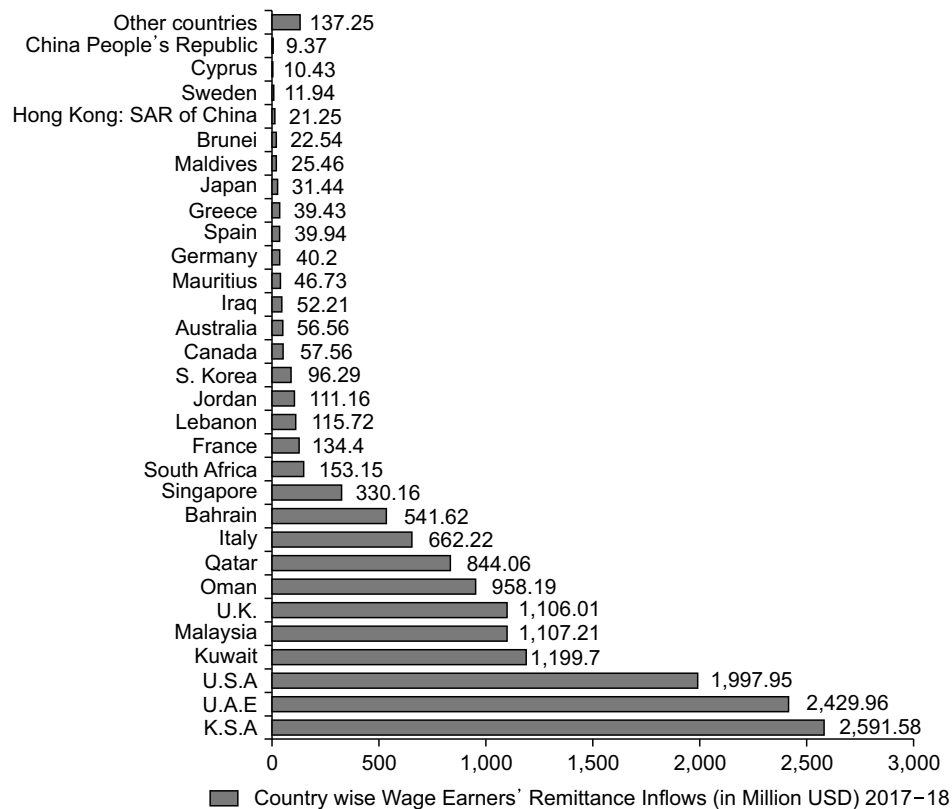Source: Own compilation from data from Bangladesh Bank (1976-2017).

Fig. 2. Country-wise Wage Earners' Remittance Inflows (in Million USD) 2017-18.
Source: Own compilation from data from Bangladesh Bank (1976-2017).

lowing the onset of global financial crisis.

In the past few years, overseas employment and remittance earned by Bangladesh has declined because of global recession, political unrest in the Middle East and fall in foreign prices. The continuous fall in oil prices and political turmoil has directly and indirectly impacted on manpower export and remittance inflows of the country. Figure 1 reveals a falling pattern of inward remittances in the recent past, but an increasing trend in the number of expatriates, particularly in fiscal year 2016-17.

Aggarwal, Demirgüc-Kunt and Peria (2006) mention that a huge amount of remittance remains unrecorded and this amount have been estimated to be about 50 to 200 per cent of the officially recorded flow. However, in terms of long term data over time, it clear that there have been discrepancies in the growth of remittance from 1976 to 2017. As we can see from Figure 1, the inflow of remittances more or less remained unchanged during 1987-1993. After 2012, a huge fluctuation is observed in the inward remittance flow to Bangladesh. Remittance earning was $2.8 billion in 2002, $15.27 billion in 2015 and $13.52 billion in 2017. Gross remittance earnings decreased by 14.5 per cent to USD 12,769.5 million in FY2017 compared to USD 14,931.16 million of FY2016. Therefore, special attention of the government is required in the manpower export sector. Bangladesh Bank has taken several major steps to facilitate remittance inflows to the country (Bangladesh Bank, 2017)[1].

If we look at the country-wise earnings for Bangladesh, we see that during 2017-18 on average, the highest amount of yearly remittances is received from Saudi Arabia followed by UAE, USA, Kuwait, Malaysia and the UK (Figure 2). After 2007, remittance inflow has increased from the new sources like USA, Canada, UK, Ger-

---

[1]Bangladesh Bank provided permission to 40 banks for establishing 885 drawing arrangements with 300 exchange houses all over the world. For quick delivery of remittances to beneficiaries through bank-to-bank clearing systems Bangladesh Electronic Funds Transfer Network (BEFTN) was inaugurated on 28 February 2011. Banks are permitted to provide remittance through mobile operator.

many, Italy, Malaysia and Japan due to an increase in migration opportunities.

Domestic Migration

In the case of domestic migration, a large number of people have migrated to the four largest cities of Bangladesh, i.e., Dhaka, Khulna, Rajshahi and Chittagong (BBS, 2015). Much of the labor force from the coastal belt, especially households affected by severe tropical cyclones Sidor and Aila and those displaced due to riverbank erosion, has migrated to the capital city of Bangladesh (Rashid, 2013). Internal migrations also occur due to poverty, loss of job, better chance for employment, education etc. In addition to region, other factors such as age, sex, marital status, and educational attainment determine the flow of internal migration. Destination and occupation of seasonal domestic migrants are not always static in nature.

Overtime a huge number of people migrated internally in Bangladesh. According to Population and Housing Census (2011) of Bangladesh, the total number of lifetime internal migrants in 2011 was 13.5 million and the net internal migration rate was 9.7% of the total population in 2011 (Appendix B). It was nearly 11 million in 1991 and 12.5 million in 2004. The rural to urban migration rate was highest in Dhaka (29.8%), followed by Gazipur (17.5%), Chittagong (8.4%) and Narayongonj (7.8%). The rate of urban to urban migration was also high respectively in Dhaka (4.3%) and Gazipur (2.7%). Urban to rural migration was very negligible.

Internal migration rate data before 1991 and after 2011 is unavailable. The trend for the extant date is shown below (Figure 3). There is no accurate national level database to show the temporary domestic migration pattern. As shown in Figure 3, there was a steady trend of domestic migration overtime (around 10%). Currently due to increased labor demand in ready-made garment (RMG) industries of Bangladesh, workers especially women migrant workers in metropolitan cities is increasing day by day.

LITERATURE REVIEW: THE REMITTANCE POVERTY NEXUS IN BANGLADESH

The decision to migrate is usually related to poverty, either directly or indirectly, even as the reasons for that decision varies from country to country and from person to person. Major reasons for long-term migration to Western countries are superior educational facilities for children, access to particular professions, improved health care systems, and broader opportunities for fulfillment of one's talents and potentialities, family reunion etc. On the other hand, a significant number of Bangladeshi living in East Asia (e.g., Japan and Korea) are temporary immigrants. The decision to temporarily migrate to the Middle East or Southeast Asia mostly depends on seeking better job opportunities and avoiding unemployment and poverty. Siddiqui et al. (2003) notes that political turmoil, violence, insecurity and corruption act as push factors for migration to another country. Exist-
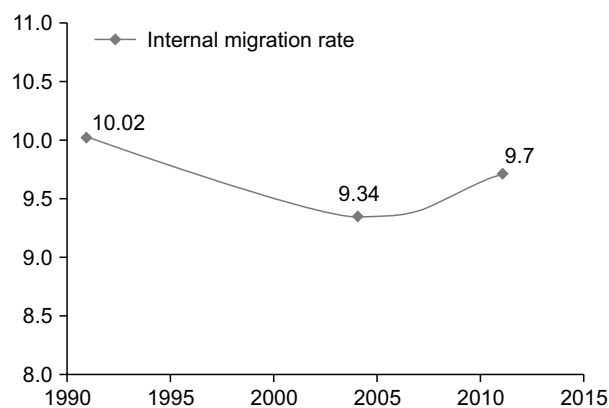

Fig. 3. Trends of Internal Migration Rate Overtime in Bangladesh.
Source: Own compilation from data from Population and Housing Census (2011).

ing information on migration, employment prospects, the available of community networks and the function of hiring organizations also impact one's decision to migrate (Abdul-Aziz, 2001; Hossain, 2001; Siddiqui et al., 2003).

Remittances received by the family are used for different purposes relevant to poverty reduction. The literature is generally positive on the impact of remittances. A large number of studies based on data from Latin America, Africa, South Asia and other regions suggest that remittances decrease the depth and severity of poverty and stimulate economic activity of the society indirectly (Azam et al., 2016; Adams, 2005; Yang, 2008; Gupta et al., 2009; Giuliano and Ruiz-Arranz, 2009; Hakura et al., 2009; Catrinescu et al., 2009; Rao and Hassan, 2012a, 2012b; World Bank, 2011; Adams and Page, 2005). One recent study by Yoshino (2017), using a sample of 10 Asian developing countries from 1981 to 2014, shows that a 1 per cent increase in international remittances as a percentage of GDP can lead to a 22.6 per cent decline in the poverty gap ratio[2]. Antwi et al. (2013), evaluating time series data for the period 1980-2010, inspect the impact of workers' remittances on poverty in Ghana. The results show that remittances have a significant impact on poverty through increasing income, smoothing consumption and easing capital constraints of the poor. However, the results do not provide any direct positive impact of remittances on economic growth of the country. Azam et al. (2015) finds a significantly positive relationship between workers' remittances and economic growth in four developing Asian countries namely Bangladesh, India, Pakistan and Sri Lanka during 1976-2012.

However, there are some reasons to be skeptical toward the impact of remittances. For example, instead of increasing investment, savings from remittances are primarily used for consumption (Stahl and Arnold, 1986). Remittance receipts can also lead to a decline in labor participation (Amuedo-Dorantes and Pozo, 2004; Chami et al., 2008; Hassan and Holmes, 2013).

Hatemi-J and Uddin (2014) conducted a study to illuminate the causal nexus of remittance and poverty in Bangladesh. Empirical findings of the study suggested that the causality nexus of poverty and remittances is bi-directional for Bangladesh over the period of 1976-2010. They also found that the causal effect of poverty reduction on remittance is stronger than the inverse effect, suggesting that remittance can be influenced through poverty reduction in the long run. Raihan et al. (2009) used HIES 2005 data and confirms the significant positive impact of remittances on poverty reduction. Siddiqui (2004) shows that in the 1990s, the remittance recipient families in Bangladesh effectively utilized the remittances by investing in nutritious food for the family members, health, education, land purchase and financing the migration process of other family members.

By using Household Income and Expenditure Survey (2005) data, Khan (2008) shows that remittance helps to reduce poverty by approximately eighteen per cent in Bangladesh. Buchenau (2008) outlines a framework for analyzing the link between migration, remittances and poverty at both the household and macro level. Another recent study by Akter (2016) shows that there is a significant positive relationship between workers' remittances and economic growth in Bangladesh.

Sharma and Zaman (2009) followed micro-econometric techniques and used a propensity score matching method to compare the welfare status of migrant and non-migrant families. They used data from a survey of 20 villages in 10 districts. The study found that international migration accrued considerable benefits to families in the form of better household consumption, income and savings. However, the study was based on only 20 villages and did not investigate the link between remittances and household poverty, which has been analyzed in the present study based on a nationally representative dataset. Raihan et al. (2009) used the HIES dataset from 2005, showing that remittances had an immediate impact on food and housing-related expenditure. On average, international remittance recipient households were 5.9% more likely to be non-poor than non-remittance recipient households.

Along with international migration, domestic migration is also considered as a strategy to combat poverty and seek better opportunities. Previously, in Bangladesh young men from the rural families migrated to urban

---

[2]Poverty gap ratio adds up the extent to which individuals on average fall below the poverty line, and expresses it as a percentage of the poverty line.

areas due to a particular set of economic and social vulnerabilities. Now, the number of female migrant workers is also increasing due to the increased labor demand in ready-made garment (RMG) industries in metropolitan cities. Their contribution to RMG sector has a great impact on national economic growth. There is no certainty that poor who have migrated from rural to urban or urban to rural areas will achieve their desired goals but it is often taken as a strategy to eradicate poverty in Bangladesh. Domestic migration as a livelihood option for extremely poor households helped to improve migrants' wellbeing if they had support from social networks and NGOs (Rahman & Rana, 2016).

Given the divergent results of different studies based on older datasets and unavailability of national level data on temporary internal migration, research on the impacts of internal and international migration and subsequent remittances on poverty using recent household level data is necessary. Therefore, this study uses a relatively recent primary household level dataset for analyzing the impact of both domestic and international remittances.

Data and Research Methodology

We carried out a household level survey[3] in 2014, covering 8,449 households drawn from all over Bangladesh through a stratified random sampling technique. The survey included 63 of Bangladesh's 64 districts, excluding only Rangamati. In the 63 districts covered, 300 sampling units (villages in rural and wards in urban areas) were selected, with 30 households randomly selected from each primary sampling unit. Among the 8449 households, more than 18 percent households have temporary domestic migrant family member and around 11 percent households have international migrant family member.

As the likely impacts of remittances—higher income, asset accumulation, savings formation and poverty reduction—would also be strongly influenced by other factors such as household and regional characteristics, drawing inferences based on tabular analysis may misstate the true impact. Therefore, propensity score matching techniques (PSM) were employed together with logistic regression. Other methodological issues such as selection bias, endogeneity, simultaneity, and heterogeneity were also addressed.

Propensity Score Matching

Perhaps the most critical issue for assessing the impact/effectiveness of remittances on poverty is managing the issue of selection bias. This requires two core elements: (i) identification of matching groups of targeted respondents for participation; and (ii) control of influence of unobservable characteristics. One of the common tools used for matching of participating and control respondents is Propensity Score Matching (PSM) using cross-sectional data set.

PSM is a statistical matching technique which attempts to estimate the effect of a treatment or any intervention by accounting for the covariates that predict receiving the treatment. If a treated subject and a control subject have the same propensity score, the observed covariates are automatically controlled for. By comparing how outcomes vary for any program participants compared with observationally parallel nonparticipants, it is more likely to estimate the effects of the intervention.

The PSM method calculates the probability of participating in the program based on some set of observable characteristics for both treated and non-treated groups. While calculating the propensity score, it assumes that participation is determined only by observable characteristics, not by unobservable characteristics. After calculating the propensity score (probability of participating in the program), each participating household with a certain score is matched with some non-participant with a similar score. Similarly, it is possible that participants with no matched score in the pool of non-participants are also dropped from the analysis. PSM generates blocks or quintiles (the number of blocks varies). The more concentrated the propensity is, the fewer the number of blocks.

---

[3]The "Access to Financial Services in Bangladesh" project (2015) of the Institute for Inclusive Finance and Development (InM). The corresponding author was one of the core research team members in this project and involved in project design, survey design, data collection, data analysis, report writing etc.
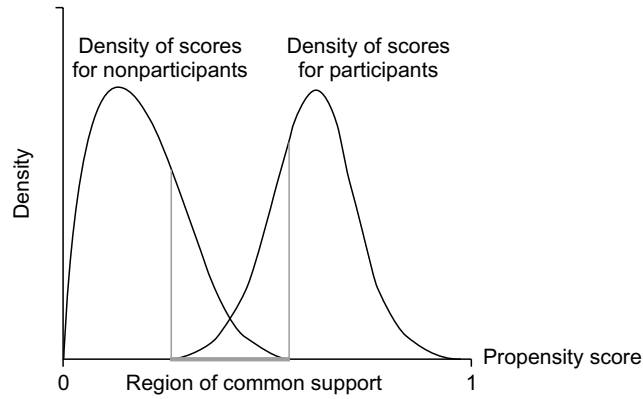
Fig. 4. Region of Common Support.
Source: Khandker et al. (2010).

Using the distribution of propensity scores of participants and non-participants, a region of common support is generated. The region of common support ensures that the propensity score of the treatment group has "nearby" comparable observations in the control group (Figure 4).

After the matching is done the only difference between the treated and control groups will be the effect of the treatment—remittance receipt. First, probit regression to estimate the propensity score was used via the following model:

$$P(X_i) = \Pr(T = 1/X_i) \qquad (1)$$

Where T is the indicator representing treatment group, if $T = 1$ then the household received remittance or had at least one national or international migrant and if $T = 0$ then non-migrant household. X_i represents a set of socioeconomic characteristics, such as family size, household head's age, education, household demographic status, geographic division and occupation and so on.

After estimating the propensity score, we estimate the average treatment effect on the treated (ATT), which gives the difference between the scores among the remittance recipient and the non-recipient households after controlling for the propensity score.

$$ATT = \{E(Y_{1i}/T = 1) - E(Y_{0i}/T = 0)\} \qquad (2)$$

Where Y_{1i} is the potential outcome if the household received remittance and Y_{0i} is the potential outcome if the respondent did not receive remittance.

Logistic Regression Model

The logistic regression model was applied to assess the impact of remittance on some outcome indicators which are binary in nature and also to obtain propensity scores as a function of a set of variables to identify the comparable groups of participants and control. ATT and Logit regression model are applied as the primary analytical tool for this purpose. Additionally, an instrumental variable is also used as a robustness test for the primary estimation results.

ESTIMATION AND RESULTS

The impact of remittance on different outcome variables was evaluated for three different groups, namely, (a) international remittance recipients vs non-recipients, (b) international migrants vs non-migrants and (c) inter-

Table 1. Impact of remittance on different outcomes (PSM and ATT based estimates)

Outcome indicators	International remittance recipients vs. non-recipient	International migrants vs. non-migrants	Internal migrants vs. non-migrants
Outcome indicators/measures	ATT	ATT	ATT
HH annual Income	109000***	129000***	34498***
Total household savings	−32000***	92154***	16204***
Total non-land asset	195000***	188000***	25435
Poverty	−0.151***	−0.177***	−0.083***
Access to financial services	0.092***	0.102***	−0.018

Note: ***p < 0.01, **p < 0.05, *p < 0.1 (***significant at 1% level; **significant at 5% level; *significant at 10% level).
Source: Own computation from InM 2014 field survey data.

nal or national migrants vs non-migrants. The outcome variables consisted of household annual income, total savings, total non-land assets, poverty status and financial inclusion. Estimation results show that international migration and remittance receipt have relatively greater positive impacts on most of the outcome variables, like annual income and non-land assets. The probability of being poor[4] among the international remittance recipient households is about 15 per cent less than the non-recipients (Table 1). Access to financial services is higher (9 per cent) among the international remittance recipients' households than the non-recipients. Similar results are found for the international migrant households. The probability of accessing financial services is 10 per cent higher for the international migrants' compared with that of non-migrant households. The positive and significant coefficients associated with remittances are found in savings, non-land assets and access to finance. These results suggest that remittances can ease credit constraints and might positively affect domestic investment. Put simply, international migration and remittance supply is a pathway out of poverty for the households.

The effect of internal migration in comparison with non-migration is also higher, except for two outcome variables: non-land assets and access to financial services. For internal migrant household annual income and savings are significantly higher than that of non-migrant households. However, the degree of impact is lower than the impact of international migrants. The probability of being poor among the national migrant households is less (8 per cent) compared to the non-migrant households.

Robustness of the Result

Instrumental variable and generalized method of moments estimation (gmm) based estimates

Due to the uncertainty in specifying an empirical model (Plümper & Neumayer, 2010), an instrumental variable was employed to further confirm the results in addition to using the propensity score matching method. Migration and remittance may be determined by some other factors not captured by the propensity score, and thus correlated with the error term leading to biased estimates in case of OLS estimation. Therefore a proper instrument is required to manage endogeneity. Here "prior information or knowledge of international or national migration within the villages" has been used as instrumental variable. In spite of relying on a single regression method, instrumental variable estimation can be applied to improve the estimate of the causal effect of the treatment on the outcome. This estimate can be interpreted as a causal effect only for the part of the population whose participation in the treatment was affected by the instrument (Becker, 2016).

Using this instrumental variable, we proceed by applying a probit model with continuous and binary endog-

---

[4]The poverty status of a household has been determined using the concept of per capita expenditure (cost of basic needs method) and the upper poverty line of "Household Income and Expenditure Survey 2010" conducted by Bangladesh Bureau of Statistics (BBS). The incidence of poverty obtained from our survey is calculated by updating the poverty lines by means of inflation adjustment. Our estimates may slightly differ from BBS because our survey was conducted in 2014; whereas the HIES survey was a year-round survey in 2010. A household is categorized as poor if its per capita annual expenditure falls below the poverty line.

52

Nahid Akhter and Md. Kamrul Islam. The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh

enous regressors (ivprobit) and the IV-based generalized method of moment (IV-GMM) in this context. Results are significantly consistent with the previous results drawn by using PSM and ATT.

The analysis of marginal effect has been done because the marginal effects for categorical independent variables are easier to understand. The coefficients of marginal effect (dy/dx) show the change in independent variables (instrumental variable and other explanatory variables like, family size, family income, savings, household head's age, education, gender, occupation, household demographic status and geographic division) on probability of being poor. The marginal effect for a dichotomous independent variable shows how the dependent variable changes as the dichotomous independent variable changes from 0 to 1, after controlling in some way for the other variables in the model. Here, in Table 2, the marginal effect for the instrumental variable shows that, on average, the probability of a household becoming poor decreases by about 14% if the household receives international remittances. In this analysis prior information of international migration within the village has been used as an instrumental variable.

The marginal affect for educational level of household head and savings also reveals important results. On average, as the educational level of household head or savings increases, probability of being poor significantly decreases for the international remittance recipient households compared to the non-remittance recipient households. There is a significant positive relationship between probability of being poor and family size as well

Table 2. Impact of international remittance on poverty (instrumental variable and gmm based estimates)

		ivprobit coefficient	Marginal effect ($\frac{dy}{dx}$)	gmm coefficient
1	International remittance recipient vs non-recipient (prior information of international migration within the village as *IV*)	−0.52***	−0.14***	−0.13***
2	Family size	0.14***	0.05***	0.05***
3	HH head's primary occupation wage earning	0.43***	0.15***	0.15***
4	HH head female	0.02	0.007	0.02
5	Education of HH head	−0.06***	−0.02***	−0.014***
6	Log of saving amount	−0.08***	−0.03***	−0.02***
7	Log of formal loan amount	0.003	0.001	−0.0004
8	Social safety net program (dummy)	0.05	0.02	0.15

Note: ***p < 0.01, **p < 0.05, *p < 0.1, Model adjusted for family size, household head's age, education, household demographic status, geographic division and occupation.
Source: Own computation from InM 2014 field survey data.

Table 3. Impact of national remittances on poverty (instrumental variable and gmm based estimates)

		ivprobit coefficient	Marginal effect ($\frac{dy}{dx}$)	gmm coefficient
1	National remittance recipient vs non-recipient (Prior information of national migration within the village as IV)	−0.26***	−0.08***	−0.08***
2	Family size	0.16***	0.05***	0.05***
3	HH head's primary occupation wage earning	0.44***	0.15***	0.15***
4	HH head female	0.06	0.02	0.02
5	Education of HH	−0.06***	−0.02***	−0.01***
6	Log of saving amount	−0.08***	−0.03***	−0.02***
7	Log of formal loan amount	0.002	0.001	−0.001
8	Social safety net program (dummy)	0.06	0.02	0.02

Note: ***p < 0.01, **p < 0.05, *p < 0.1, Model adjusted for family size, household head's age, education, household demographic status, geographic division and occupation.
Source: Own computation from InM 2014 field survey data.

as the primary occupation of household head being wage earning. The derived coefficients show that a one-unit increase in household size leads to a 5% increase in the probability of the household becoming poor. This is obvious as higher income and expenses are required for bigger families. In the case of female household head and social safety net recipient households, the coefficient is positive but insignificant. The results are unsurprising, as the social safety net recipient households are those that are financially vulnerable.

Similar results hold for national remittance recipient households (Table 3). The marginal effect for the instrumental variable shows that the probability of a household becoming poor decreases by about 8% if the household receives remittances from a national migrant family member. Expectedly, the extent of impact is much smaller than the effects of international remittance. There is a significant positive relationship between poverty reduction and household savings. The same is true for household head's education level, i.e., the probability of being poor decreases the higher the education level of the household head.

ANALYSIS OF REMITTANCE INCOME DISTRIBUTION

The analysis of remittance income distribution is divided into five income groups (Table 4). Following this breakdown, we notice that the share of total remittance earnings in total income of households is highest among the richest 20 per cent. An interesting finding is that the share of national remittance earning in household's total income is highest for the lowest 20 per cent, which gradually decreases as we move from the lowest 20 per cent to the richest 20 per cent. Conversely, the share of international remittance earning in household's total income is highest for the richest 20 per cent and lowest for the bottom 20 per cent. The findings, in general, point to households belonging to the poverty stricken groups mostly following an in-country migration strategy in order to better employment opportunities. International migration has been used as an effective earning strategy for comparatively solvent households. This is expected because international migration is quite costly and Bangladesh has a relatively high financial cost for migration (International Organization for Migration (IOM), 2018). In Bangladesh potential migrants mostly depend on middlemen rather than directly communicating with labor recruitment agencies. This raises the cost of migration, making it difficult for the more poverty stricken households to finance migration to other countries. The cost of migration indicates how much a typical migrant has to pay to finance the process of migration. The exact cost of migration is difficult to calculate as it fluctuates according to various factors such as skills, gender, type of visa, as well as the extent of involvement of intermediaries (Siddiqui, 2010). Sometimes poor migrants either borrow from relatives, neighbors or through NGO microcredit programs to finance the cost of migration.

REMITTANCE SENDING CHANNELS

From a policy reform perspective, we need a better understanding of migrants and also the current situation of various channels of sending remittances. In a developing country like Bangladesh, poor migrants often use

Table 4. Remittance share in total income for different income groups (per cent) in 2014

Income quintiles (lowest to highest)	Mean yearly total income (BDT)	Share of national remittance earning in HH's total income (%)	Share of international remittance earning in HH's total income (%)	Share of total remittance earning in HH's total income (%)
Lowest	37,872	8	2	10
Lower middle	77,695	5	2	6
Middle	111,125	4	5	9
Upper middle	166,445	5	6	11
Richest	408,409	4	14	18

Source: Own computation from InM 2014 field survey data.

54

Nahid Akhter and Md. Kamrul Islam. The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh

informal channels as those are cheaper and suitable to transmitting funds to remote areas where formal channels do not operate. But easing remittance flows and strengthening formal remittance channels would require innovative low cost financial services. The data shows significant variation among the modes of transferring remittances through formal or informal channels. Channel choice when transferring money to relatives also varies across migration types. The greater part of migrants (both national and international) depend on formal channels to transfer money. In the case of international migrants, formal channels dominate (78 per cent), with migrants mostly remitting through banks (49 per cent) and Western Union (23.5 per cent) (Table 5). Most national migrants also remit through formal channels, but to a lesser extent (55 per cent). Formal channels such as banks, Western Union, couriers and MFIs are not popular with national migrants. They mostly use mobile banking services such as bKash, mKash and so on.

The operation of the mobile banking services in Bangladesh from 2011 has brought a massive change in how national migrants transfer money. Over 50 per cent of national migrants transferred money through mobile services in 2014, a method which represented only about 3 per cent in 2010. Sending money through friends or relatives (13 per cent) is not uncommon among national migrants. The use of postal/courier service is negligible for both national (1.36 per cent) and international (1.41 per cent) migrants.

Remittance channel also varies by poverty status. Poor national migrants mainly use informal transfer mechanisms (50 per cent) due to the financial and other barriers they face accessing to formal channels. National non-poor migrants mainly use formal channels (57 per cent). Interestingly, in the case of both poor and non-poor international migrants, formal channels are more popular, i.e., 65 per cent poor international migrants and 79 per cent non-poor international migrants use formal channels for transferring remittances. However, among the informal channels, transferring money through friends or relatives is popular with national poor and non-poor migrants, whereas, hundi/agent is more popular among the poor or non-poor international migrants. Irrespective of poverty status, mobile phone is the most popular channel among the national migrants. The mobile channel is utilized by 47 per cent of poor and 52 per cent of non-poor national migrants.

The higher use of formal channels alludes to the fact that remittance increases financial inclusion. Financial inclusion may be greater if the remittance receiving households make financial transactions and savings in for-

Table 5. Channels for sending remittance (formal and informal remittances sending modes)

	Bank	Western union	MFIs	Postal/ Courier	Mobile	S.A. Paribahan	Hundi/ Agent	Friends/ Relatives	Self-arrival	Others
Migration Type										
National (n = 1175)	3.32	0	0	1.36	50.47	0.17	0.43	13.11	30.81	0.34
International (n = 851)	49	23.5	0.24	1.41	3.88	0.35	17.63	3.29	0.47	0.24
Poor										
National (n = 266)	1.13	0	0	0.75	47.74	0	0.75	12.78	36.84	0
International (n = 71)	33.8	16.9	0	4.23	9.86	0	29.58	4.23	1.41	0
Non-poor										
National (n = 894)	4.03	0	0	1.57	51.45	0.22	0.34	12.98	28.97	0.45
International (n = 763)	50.59	23.98	0.26	1.18	3.28	0.39	16.38	3.28	0.39	0.26
Rural										
National (n = 1100)	2.82	0	0	1.27	50.91	0	0.45	13.27	30.91	0.36
International (n = 759)	49.01	23.58	0.26	1.58	3.69	0.13	18.18	2.77	0.53	0.26
Urban										
National (n = 72)	11.11	0	0	2.78	45.83	2.78	0	9.72	27.78	0
International (n = 87)	51.72	22.99	0	0	4.6	2.3	10.34	8.05	0	0

Note: Percentage is taken among the number of migrants.

Source: Own computation from InM 2014 field survey data.

mal intuitions such as banks. Poor migrants often use informal channels as those are cheaper and suitable for transmitting funds to remote areas where formal channels do not operate. However, facilitating remittance flows and strengthening formal remittance channels for the poor would require innovative low cost digital financial services and using the prevailing financial infrastructure, for example, microfinance institutions and public and private banks in rural areas.

CONCLUSION AND POLICY IMPLICATIONS

Bangladesh is a country in which domestic and international migration and subsequent remittances play an outsized role in the economy. This study examines the impacts of international and national migration as well as remittance on household poverty in Bangladesh. The results clearly suggest that migration and remittances have a significant effect on poverty reduction in Bangladesh. The statistical tests and also the robustness test show both national and international remittances reduce the incidence, depth and severity of poverty. This paper has shown that on average, the probability of a household becoming poor decreases by about 14% if the household receives international remittances and the probability of household becoming poor decreases by about 8% if the household receives national remittances. Results illustrate that on average as the educational level of the household head or savings increases, the probability of being poor significantly decreases for the international and domestic remittance recipient households. Therefore, remittances play an important role in Bangladesh with regard to overall household well-being. In our analysis, remittances exerted a considerable positive impact on poverty, improved household income, savings, non-land assets and access to finance. Thus, remittance helps to increase the earnings of the poor and smooth their consumption as well as eliminate capital constraints. Accordingly, a greater inflow of remittances into the economy would do even more to improve household welfare.

In the context of the existing inadequate ability to create new employment opportunities for the large population in Bangladesh and the immense potential of manpower export, migration has become one of the important means of development. Successful national migration can offer short-term economic relief to poor households; however, that relief may not be sustained more long term. Poor internal migrants mostly live in slum areas and their jobs are not secured. Due to emergence of severe deprivations, like lack of basic livelihood facilities (e.g., food, secure housing, sanitation, health care etc.), their lives become more vulnerable. Additionally, the increasing number of people in the migrant destination areas puts additional stress on existing capacity. Therefore, increased national migration is less desirable than increased international migration. Government ease these problems through decentralizing development activities to create better employment opportunities across rural and urban areas, with a view to absorbing surplus labor.

For overseas migration, results reveal that earnings from migrant workers are increasing over time but at a lower rate than the number of migrants (Figure 1). This may be the result of a higher rate of unskilled and semi-skilled labor migration. Among the foreign Bangladeshi workers, the vast majority are unskilled or semi-skilled; therefore, they earn low wages relative to other country's workers. Appropriate technical and vocational training could help to increase wages that migrants can earn, increasing remittance inflows and further contributing to reducing poverty. Government also has an irreplaceable role in exploring and expanding new labor markets, especially as the Middle East experiences significant political disruption. Lowering the transaction cost of sending remittances and removing obstacles to accessing formal remittance channels would encourage the use of formal channels.

In addition, in order to increase the poverty reduction benefits of migration and remittances, steps should be taken to reduce barriers to migration and increase the share of wages that reaches households. Bangladesh has adopted several legal and policy actions to advocate the rights of migrant workers to participate fully in the opportunities unleashed and thereby contribute to and benefit from growth. This is a welcome step, and more needs to be done on the part of the Bangladesh government and also foreign governments and international organizations, to increase security and legal assistance for the international migrants, especially women.

56

Nahid Akhter and Md. Kamrul Islam. The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh

Further steps can also be taken to increase the impact of remittances on household welfare in the long term. This could include appropriate training activities or education programs for the returning migrants or remittance recipients on making effective investment decisions.

ACKNOWLEDGEMENTS

REFERENCES

Abdul-Aziz, A. R. (2001). Bangladeshi migrant workers in Malaysia's construction sector. Asia Pacific Population Journal, 16(1), 3-22.

Adams Jr, R. H. (2005). Remittances, household expendutire and in Guatemala. World Bank Policy Research Working Paper, (3532).

Adams Jr, R. H., & Page, J. (2005). Do international migration and remittances reduce poverty in developing countries?. World development, 33(10), 1645-1669.

Aggarwal R, Demirguc-Kunt A and Martinez-Peria M (2006) "Do Workers'Remittances Promote Financial Development?" World Bank Policy Research Working Paper 3957, Washington.

Akter, S. (2016). Remittance Inflows and Its Contribution to the Economic Growth of Bangladesh.

Akter S (2016). Remittance inflows and its contribution to the economic growth of Bangladesh.J Modern Soc. Cult. Res., Niigata University Graduate School of Contemporary Social Culture, 62: 215-245

Ali, M. A. (2014). Socio-economic impact of foreign remittance in Bangladesh. Global Journal of Management And Business Research.

Amuedo-Dorantes, C., & Pozo, S. (2004). Workers' remittances and the real exchange rate: a paradox of gifts. World development, 32(8), 1407-1417.

Antwi, S., Mills, E. F. E. A., and Zhao, X. (2013), Remittances and the poverty nexus: evidence from Ghana, International Journal of Academic Research in Economics and Management Sciences, 2(1), pp. 206-223.

Azam, M., Haseeb, M., & Samsudin, S. (2016). The impact of foreign remittances on poverty alleviation: Global evidence. Economics & Sociology, 9(1), 264.

Azam, M., Shahbaz, M., Kyophilavong, P. and Abbas, Q. (2015), External sources and economic growth-the role of foreign remittances: Evidence from Europe and Central Asia. Department of Management Sciences, COMSAT, Working Paper, 2015-014.

Bangladesh Bank (2017), "Quarterly Report on Remittance Inflows: July-September 2017", Research Department External Economics Division, Bangladesh Bank.

Bangladesh Bureau of Statistics (BBS) (2015), 'Population Distribution and Internal Migration in Bangladesh', Statistics and Informatics Division (SID), Ministry of Planning, Government of the People's Republic of Bangladesh

Bayes, A., Hossain, M., & Rahman, A. N. M. (2015). Remittances and poverty alleviation.

Becker, S. O. (2016). Using instrumental variables to establish causality. IZA World of Labor, (250).

Brown, R. P., & Ahlburg, D. A. (1999). Remittances in the South Pacific. International Journal of Social Economics, 26(1/2/3), 325-344.

Buchenau, J. (2008). Migration, Remittances, and Poverty Alleviation in Bangladesh: Report and Proposal. Preparatory Assistance for Pro Poor Trade, UNDP: Dhaka.

Catrinescu, N., Leon-Ledesma, M., Piracha, M., & Quillin, B. (2009). Remittances, institutions, and economic growth. World Development, 37(1), 81-92.

Chami, R., Barajas, A., Cosimano, T., Fullenkamp, C., Gapen, M., & Montiel, P. (2008). Macroeconomic consequences of remittances (p. 259). Washington, DC: International Monetary Fund.

Datta, K., & Sarkar, B. (2014). Relationship between Remittances and Economic Growth in Bangladesh: An Econometric Study. Available at SSRN 2375991.

De Bruyn, T., & Kuddus, U. (2005). Dynamics of remittance utilization in Bangladesh (Vol. 18). Geneva: International Organization for Migration.

Durand, J., Kandel, W., Parrado, E. A., & Massey, D. S. (1996). International migration and development in Mexican communities. Demography, 33(2), 249-264.

Funkhouser, E. (1995). Remittances from international migration: A comparison of El Salvador and Nicaragua. The review of economics and statistics, 137-146.

Gheasi, M., & Nijkamp, P. (2017). A brief overview of international migration motives and impacts, with specific reference to FDI. Economies, 5(3), 31.

Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. Journal of Development Economics, 90(1), 144-152.

Gupta, S., Pattillo, C. A., & Wagh, S. (2009). Effect of remittances on poverty and financial development in Sub-Saharan Africa. World development, 37(1), 104-115.

Hakura, M. D., Chami, M. R., & Montiel, M. P. (2009). Remittances: an automatic output stabilizer? (No. 9-91). International Monetary Fund.

Hassan, G. M., & Holmes, M. J. (2013). Remittances and the real effective exchange rate. Applied Economics, 45(35), 4959-4970.

Hatemi, J. and Sallahuddin, G. (2014), On the causal nexus of remittances and poverty reduction in Bangladesh, Applied Economics, 46(4), pp. 374-392.

Hoddinott, J. (1994). A model of migration and remittances applied to Western Kenya. Oxford economic papers, 459-476.

Hossain, M. Z. (2001). Rural-urban migration in Bangladesh: a micro-level study. In Brazil IUSSP conference. August (pp. 20-24).

Khan, M. W. R. (2008). The Micro Level Impact of Foreign Remittances on Incomes in Bangladesh-A Measurement Approach Using the Propensity Score (No. 22290). East Asian Bureau of Economic Research.

Khandker, S. R., Koolwal, G. B., & Samad, H. A. (2010). Handbook on Impact Evaluation: Quantitative Methods and Practices, the International Bank for Reconstruction and Development/the World Bank.

Kosse, A., & Vermeulen, R. (2013). Migrants' Choice of Remittance Channel: Do General Payment Habits Play a Role?.

Kpodar, K., & Goff, M. L. (2011). Do Remittances Reduce Aid Dependency? IMF Working Paper WP/11/246.

Lopez-Cordova, Ernesto and Alexandra Olmedo (2006). "International Remittances and Development: Existing Evidence, Policies and Recommendations". Occasional Paper, Integration and Regional Programs Department, Inter-American Development Bank, August 2006.Murshid et al (2002), "A Study of Remittance Inflow & Utilization", UNDP & IMO, Dhaka.

Lucas, R. E., & Stark, O. (1985). Motivations to remit: Evidence from Botswana. Journal of political Economy, 93(5), 901-918.

Pieke, F. N., Van Hear, N., & Lindley, A. (2007). Beyond control? The mechanics and dynamics of 'informal' remittances between Europe and Africa. Global Networks, 7(3), 348-366.

Plümper, T., & Neumayer, E. (2010). Model specification in the analysis of spatial dependence. European Journal of Political Research, 49(3), 418-442.

Poirine, B. (1997). A theory of remittances as an implicit family loan arrangement. World Development, 25(4), 589-611.

Population and Housing Census (2011), 'SOCIO-ECONOMIC AND DEMOGRAPHIC REPORT NATIONAL SERIES, VOLUME - 4', Bangladesh Bureau of Statistics (BBS), Statistics and Informatics Division (SID), Ministry of Planning

Rahman, A. K. M. F., & Rana, S. (2016). Migration and its effect on extreme poor households' trajectories.

Raihan, S., Sugiyarto, G., Bazlul, H. K., & Jha, S. (2009). Remittances and household welfare: A case study of Bangladesh.

Rao, B. B., & Hassan, G. M. (2012). An analysis of the determinants of the long-run growth rate of Bangladesh. Applied Economics, 44(5), 565-580.

Rao, B. B., & Hassan, G. M. (2012). Are the direct and indirect growth effects of remittances significant?. The World Economy, 35(3), 351-372.

Rapoport, H., & Docquier, F. (2006). The economics of migrants' remittances. Handbook of the economics of giving, altruism and reciprocity, 2, 1135-1198.

Rashid, M. M. (2013). Migration to big cities from coastal villages of Bangladesh: An empirical analysis. Global Journal of Human-Social Science Research.

Ratha, D. (2005). Back to Basics-Remittances: A Lifeline for Development. Finance and Development-English Edition, 42(4), 42-43.

Sharma, M., & Zaman, H. (2009). Who migrates overseas and is it worth their while? An assessment of household survey data from Bangladesh. The World Bank.

Siddiqui, T. (2004). Efficiency of migrant workers' remittance: the Bangladesh case. Asian Development Bank, Manila.

Siddiqui, T.(2010). Recruitment Cost in Bangladesh: Challenges of Governing Migration in the Countries of Origin, (Working Paper Series no. 25, Dhaka: RMMRU).

Siddiqui, T., & Abrar, C. R. (2003). Migrant worker remittances and micro-finance in Bangladesh. Prepared for Social Finance Programme, Working paper, (38).

Siegel, M., M. Vanore, R. Lucas, and C. de Neubourg (2010). The Netherlands-Afghanistan remittance corridor study, A report commis-

sioned by the Dutch Ministry of Foreign Affairs.

Stahl, C. W., & Arnold, F. (1986). Overseas workers' remittances in Asian development. International Migration Review, 20(4), 899-925.

Todaro, M. (1980). Internal migration in developing countries: a survey. In Population and economic change in developing countries (pp. 361-402). University of Chicago Press.

World Bank (2011). Migration and Remittances Factbook 2011. Washington DC: The World Bank

World Bank. (2014). Remittance Prices. Worldwide, 9.

Yang, D. (2008). International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks. The Economic Journal, 118(528), 591-630.

Yoshino, N. (2017). International remittances and poverty reduction: Evidence from Asian developing countries.

Yuen, B. (2013). Migration and Slums in Urban Asia. In Shiladitya Chatterjee (Ed.), Ending Asian Deprivations: Compulsions for a Fair, Prosperous and Equitable Asia, (page 220-238). Routledge.

Appendix A

Graph: Number of officially recorded labor migrants from Bangladesh to destination countries in 2017 (in 000s)

Misc. Clearance 12.302
Others 10.038
Iraq 3.819
Mauritius 5.942
Brunei 8.587
Egypt 0.03
Japan 0.145
Italy 0.001
UK 0.007
S. Korea 1.522
Singapore 40.401
Malaysia 99.787
Sudan 1.716
Libya 0.001
Jordan 20.449
Lebanon 8.327
Bahrain 19.318
Qatar 82.012
Oman 89.074
Kuwait 49.604
UAE 4.135
KSA 551.308

Num. of officially recorded labor migrants in 2017 (in thousand)

Source: BMET database, overseas employment of Bangladeshi workers from 1976 to 2017, http://www.old.bmet.gov.bd/BMET/viewStatReport.action?reportnumber=20 (accessed: 9-10-2018).

Appendix B

Trend of lifetime internal migration

Internal migration	1991	2004	2011
Number of total internal migrants	11167791	12564448	13488973
Internal migration rate	10.02	9.34	9.7
Rural to Rural	8.6	2.99	4.2
Urban to Rural	1.42	0.38	0.36
Urban to Urban	28.04	26.41	0.85
Rural to Urban	5.62	4.79	4.29

Source: Own compilation from data from Population and Housing Census (2011).