DETERMINANTS OF INTERNAL MIGRATION AND ITS IMPACT ON HOUSEHOLD INCOME IN SOME SELECTED AREAS OF BANGLADESH

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JUNE, 2022

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REGISTRATION NO.: 15-06891

A Thesis
Submitted to the Department of Development and Poverty Studies,
Sher-e-Bangla Agricultural University, Dhaka-1207, in
partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

IN

DEVELOPMENT AND POVERTY STUDIES

SEMESTER: JANUARY-JUNE, 2022

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This is to certify that thesis entitled, **"DETERMINANTS OF INTERNAL MIGRATION AND ITS IMPACT ON HOUSEHOLD INCOME IN SOME SELECTED AREAS OF BANGLADESH "***submitted to Sher-e-Bangla Agricultural University, Dhaka-1207, in partial fulfillment of the requirements for the degree of* **MASTER OF SCIENCE IN DEVELOPMENT AND POVERTY STUDIES,** *embodies the result of a piece of bona fide research work carried out* **MD. SABBIR HOSSAN**, *Registration No.* **15-06891** *under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.*

I further certify that such help or source of information, as has been availed of during the course of this investigation has duly been acknowledged.

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ACKNOWLEDGEMENT

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June, 2022*

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LIST OF ACCRONYMS AND ABBREVIATIONS

FAO= Food and Agriculture Organization
WHO= World Health Organization
OLS= Ordinary Least Square
BBS= Bangladesh Bureau of Statistics
%= Percentage
et al.= And others
etc.= Etcetera
No.= Number
NELM= New Economics of Labor Migration
SDG= Sustainable Development Goal
UN= United Nations
NGO= Non-Governmental Organization
COVID-19= Coronavirus Disease 2019
CDF= Cumulative Distribution Function
P=Probability

ABSTRACT

Rural-urban migration is a prevalent demographic occurrence observed in developing nations. Among the South Asian countries, Bangladesh has experienced the most substantial urbanization rate over the past forty years, largely fueled by the movement of people from rural to urban areas. This form of migration brings significant economic and social consequences for individuals residing in both the rural regions and the urban destinations. The main objective of this study was to explore the determinants of rural-urban migration and its impact on household income for analyze the socio-economic condition of migrants and non-migrants. Focusing on the Bogura and Gaibandha districts, the researcher collected primary data from 80 rural households, with 40 identified as migrants and 40 as non-migrants. A structured interview schedule was used for data collection from January to June 2022. The study employs a binary Probit regression model to identify the determinants of migration and an Ordinary Least Square (OLS) model to assess the impact of migration on household income. The results from the probit model revealed that, gender, earning members, member of societal group and receiving training had a positive impact on migration decision and household size of the family had a negative impact on migration decision. Based on the findings from OLS model, migration had a positive and significant impact on household income. The findings revealed that, migrant households have an income that is 42.2 percent higher than non-migrant households. Finally, the findings will shed light on the dynamics of migration and its relationship with household income, emphasizing the need to consider multiple factors when analyzing migration patterns and their consequences.

CHAPTER 1

INTRODUCTION

1.1. Background

Bangladesh is one of the most densely populated countries in the world with an estimated 169 million people living in an area of 147,570 square kilometers (BBS, 2022). In Bangladesh, 66% of people live in rural areas (World Bank, 2015). Bangladesh employs approximately 50% of its population primarily through agriculture, with more than 70% of its land dedicated to crop cultivation, with rice, jute, wheat, tea, pulses, oil-seed, vegetables, and fruits being the most important crops (FAO, 2015). In addition, large numbers of small and marginal farms with low financial resources make up Bangladesh's agricultural sector (Wadud, 2013). A number of negative circumstances, such as adverse climatic conditions, low agricultural productivity, and poverty, have a negative impact on local agricultural production. These factors are likely to contribute to widespread food insecurity among the population (FAO, 2015) and also driven them to migrate.

Migration is one of the oldest natural processes and practices of humankind. It is an important factor in the advancement of progressive livelihood and overall development of the society (Chowdhury et al. 2012). People migrate from one place to another in search of their self needs and to protect their existence. Migration could be temporary or permanent depending on the causes (Azam et al. 2006; Nagetsav et al. 2018). While migration is frequently adopted by impoverished individuals as a means of livelihood, there has been a noticeable rise in rural-to-urban migration. This trend can be attributed to the availability of employment opportunities in the urban informal sector and, more recently, in garment manufacturing units (Hossain et at. 2022). It is projected that the urban population will double by 2025, owing to the escalating urbanization (Farhana et al. 2012). The decision to migrate is typically influenced by a combination of factors that push individuals away from their place of origin and pull them towards urban areas (BBS, 2015). Poverty, unemployment, low level of livelihood are considered as push factors (Farid et at. 2019) and employment facilities in the host communities, possibilities of economic structure, standard livelihood and standard geographical condition of migrants are considered as important pull factors (Islam et al., 2021) But in the migration process, the push

factors are more active than pull factors as poverty and unemployment always push the poor villagers to change their residence to the cities (Farhana et al.2012).

The mobility of people has a tremendous impact on the development process. Even if migration benefits migrants, it is not always good to society. Migration in developing nations may result in high population density in urban areas, unemployment, and a divide between rural and urban areas (United Nations, 2016). Bangladesh, which had a population of 265 million in 2018 (BBS, 2018), had the highest pace of urbanization in Asia over the previous four decades, with an average annual urban population growth of 4.4%. In the following ten years, it is anticipated that 68% of the people would reside in an urban region. Nevertheless, unlike in other nations, urbanization in this one does not necessarily increase the economic well-being of society (in both urban and rural areas). In case of the migration of ordinary people, rarely it was considered as a potential means of economic development in case of the receiving country or destination (Islam et al., 2021).

Internal migration has become a means of subsistence for the underprivileged in Bangladesh. For better work and income, they are moving to new cities (Alam and Islam, 2014). In Bangladesh, internal migration is being influenced by a variety of socioeconomic, demographic, and cultural factors (Ishtiaque and Ullah, 2013). According to Ishtiaque and Mahmud (2011), economic crisis, food insecurity, unemployment, low income, poverty, inequality, loss of land, demand for a new job, expectation of higher earnings, and previous migration pattern are all factors that influence household migration decisions in Bangladesh. According to Shonchoy (2010), the most common reasons for relocation include seasonality of income, natural disasters, and agricultural downturns. This study attempts to identify the elements that contribute to the internal migration of impoverished households in Bangladesh.

In developing nations, migration is crucial for lowering poverty and enhancing household welfare (Ramos, 2018). As a result, it has continuously brought development challenges to light during recent decades (Nguyen et al. 2017). The welfare of households that send migrants has frequently been the subject of research (Martey and Armah, 2021). Migration is predicted to improve household income and consumption through a variety of means, including cash and goods remitted by

migrants to family members remaining in the country of origin (Adams and Cuecuecha, 2010). Changes in the household's migration status and consumption expenditure patterns can be used to examine this impact (Nguyen et al. 2017). This is important because changes in household consumption expenditure patterns can shed light on whether remittances from migrants improve household welfare or not. Additionally, long-term human capital development is facilitated by elements allocated to health and education spending (Nguyen et al. 2017).

However, according to Sharma et al. (2016), migration may pose a danger to the productivity of the local agricultural sector. Migration, according to Cuong and Linh (2018), is the result of labor shortages in domestic homes. According to Taylor and Lopez-Feldman (2010), migration is causing a labor shortage, which lowers the amount of labor-intensive household output. In a nutshell, migration is a deliberate action taken by a person or group of people that make up a household that affects the wellbeing of that household. This influence may be assessed by looking at the consumption patterns of those households. In their attempts to comprehend migration, social scientists frequently overlook the variation in migration patterns and motivation that present in many sending groups. Migration can benefit both the migrant and the members of a larger family unit. Individuals migrating alone as well as entire families can migrate. Motives and actions are influenced by life phase transitions as well as migrant and household factors. Numerous review articles recognize these distinctions, and some research uncover empirical evidence of multiple migration incentives in the same community. Few publications, however, have investigated how the causes of migration differ amongst different types of migrants within the same community.

Multiple researchers have suggested that migration takes place in pursuit of improved opportunities and better employment prospects (Farhana et al., 2012). Upon migration, a significant portion of migrants experiences an enhancement in their overall living conditions within the urban setting. Despite their noteworthy contributions to economic growth and their ability to secure higher wages in more productive regions, economically disadvantaged migrants continue to face social and economic exclusion from the broader advantages associated with economic development, such as access to food, education, housing, sanitation, and freedom (Farhana et al., 2012).

Human migration refers to the act of individuals relocating from one place to another, aiming to establish a lasting or semi-lasting home, often crossing political borders. An instance of semi-permanent residence can be observed in the seasonal movements of migrant farm workers. Migration can occur by personal choice ("voluntary migration") or due to circumstances beyond one's control ("involuntary migration"). Throughout the course of human history, migrations have taken place, starting from the initial journeys of early human tribes who migrated from East Africa to their present locations around the world. Interregional (among countries), intercontinental (between countries on the same continent), and intercontinental (across continents) are only a few of the scales at which migration can take place. Rural to urban migration has been one of the most major migratory trends. the flow of people looking for opportunity from rural areas to cities. Rural farms that are self-sufficient have been badly impacted by unfavorable environmental and economic conditions. Throughout the 20th century, many resourceful farmers sought out the numerous rural manufacturing opportunities that were available to supplement their declining farm income. These manufacturing jobs were among the first to go during the recent period of severe economic turmoil. Many of these rural families can't make ends meet on farm income alone, so they are forced to look for work in larger cities. Due to a lack of training and education, they are forced to work odd occupations, minor trades, and self-employment.

In the context of developing countries, two primary motivations are often emphasized when considering why individuals choose to migrate. Firstly, migration can serve as a
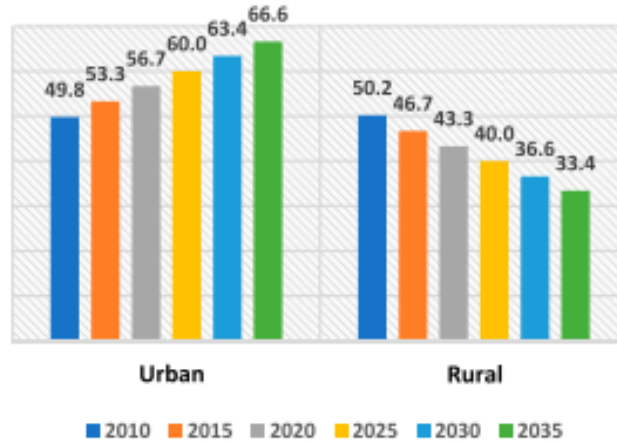
means to mitigate negative income shocks. In situations where households face adverse circumstances like agricultural setbacks due to natural disasters or price fluctuations, they may opt to send a member of the household to a distant location to earn additional income. This migration strategy is seen as an alternative to other risk management methods such as depleting savings, selling assets, enhancing local labor supply, or reducing consumption. Secondly, migration can be viewed as an investment strategy aimed at increasing and diversifying future expected income, as well as benefiting from higher wages available in different locations, such as urban areas. However, this technique frequently entails a hefty upfront fee, much like investing. Therefore, even though it is profitable, such an investment cannot be made by a household with limited money.

Figure 1. Projected Distribution of the Urban and Rural Population, 2010–2035. Source: BBS, (2015).

1.2. Justification of the Study

Bangladesh as a nation recently elected to migrate from the Millennium Development Goals to the Sustainable Development Goals (SDGs) regarding policy. The first goal of SDG is "NO POVERTY," where countries are expected to work toward eradicating extreme poverty for all people everywhere by 2030 is a pivotal goal of the 2030 agenda for Sustainable Development. Between 2015 and 2018, global poverty

continued its historical decline, with the poverty rate falling from 10.1 percent in 2015 to 8.6 percent in 2018.

Migration is a complex phenomenon influenced by various factors such as economic, social, and political conditions. By studying the determinants of migration, researchers can gain insights into the underlying reasons why people move from one place to another. By investigating the economic determinants of migration, researchers can identify the factors that drive individuals and households to migrate in search of better economic opportunities. Migration can have profound social and demographic effects on both the origin and destination communities. For instance, it can alter the population composition, cultural dynamics, and social networks of these communities. By examining the determinants of migration, researchers can shed light on how migration patterns influence social and demographic changes and help policymakers understand and manage these effects. Migration can significantly impact household welfare, both positively and negatively. It can lead to improved income, access to better education and healthcare, and enhanced living standards for some households. However, it can also create challenges such as family separation, social integration difficulties, and increased vulnerability for certain groups. Studying the impact of migration on household income allows policymakers to develop targeted interventions that mitigate negative effects and maximize the positive outcomes of migration for households thorough understanding of the determinants and impacts of migration is essential for effective policy formulation and planning and insights from migration studies to implement programs that enhance the income and well-being of households affected by migration.

Migration research has been looked at from a variety of perspectives. Numerous studies have examined how migration affects household income (Tang, 2020; Nguyen et al. 2011), household investment (Xu et al. 2017; Monnet and Wolf, 2017), food security (Abebaw et al. 2020; Hasanah et al. 2017), division of labor (Xu et al. 2018; Zhang et al. 2017), psychological health (Agadjanian et al. 2020) Unfortunately, studies on the impact of migration on household income are scarce (Nguyen et al. 2017). As a result, the study aims to analyze this topic from the perspective of Bangladesh, a South Asian country.

In summary, studying the determinants of migration and its impact on household income provides valuable insights for policymakers, researchers, and society at large. It helps understand migration patterns, economic implications, social and demographic effects, and enables evidence-based policy formulation and planning. Ultimately, this research contributes to the creation of inclusive and sustainable migration policies that benefit individuals, households, and communities.

1.3. Objectives

The objectives of the study are as follows:

(a) To analyze the socio-demographic condition of migrants and non-migrants;

(b) To explore the determinants of rural-urban migration; and

(c) To assess the effect of migration on the household income.

1.4. Limitations

Migration is available in all divisions of Bangladesh. However, due to time and financial constraints, data for this study was only gathered from two districts (Bogura & Gaibandha) in the Rajshahi and Rangpur division respectively. Future studies could include more study areas that take into account socioeconomic and regional factors in order to generalize the accurate findings.

1.5. Organization of the Thesis

The rest of the thesis is structured as follows: A review of the literature is presented in Chapter 2. The materials and methods are provided in Chapter 3. The results and discussion are outlined in Chapter 4. The summery, conclusion and recommendation are provided in Chapter 5.

CHAPTER 2

REVIEW OF LITERATURE

The primary goal of this chapter is to review several related studies in relation to the current investigation. Some of these researches might not be totally relevant to the current topic, but their analytical methods, conclusion and suggestions have a significant impact on it. The following discussion provides a review of several recent research studies that are relevant to the current study.

Ackah *et al.* (2010) found that migration likelihood is influenced by a combination of individual-level factors (pull) and community-level factors (push). Younger and more educated individuals are more likely to migrate, whereas communities with higher literacy rates, increased access to subsidized medical care, and improved water and sanitation facilities have a lower likelihood of producing migrants. The study reveals that households with migrants generally experience better overall well-being compared to similar households without migrants, even after accounting for the non-random sampling of Ghanaians represented by migrant households. However, this positive relationship is specifically observed in households with at least one migrant residing in urban areas.

Ackah *et al.* (2012) conducted a study and found that the likelihood of migration is higher among younger individuals and those with higher levels of education. However, communities with higher literacy rates, greater access to subsidized medical care, and improved water and sanitation facilities are less likely to generate migrants. The analysis reveals that households with migrants generally experience better economic conditions compared to similar households without migrants, even when accounting for the non-random sample of Ghanaians represented by migrant households. Nonetheless, this positive relationship is observed specifically for households with at least one migrant residing in urban areas, while the income of households with migrants solely in rural areas does not differ from households without any migrants.

Amfo *et al.* (2022) found that workers employed on cocoa farms faced significant deprivation across various welfare indicators. These laborers not only had low levels of education but also suffered from inadequate nutrition and lived in unfavorable

living conditions. While both migrants and non-migrants working on cocoa farms experienced multidimensional poverty, the welfare of non-migrants was comparatively better than that of migrants. The well-being of both migrants and non-migrants on cocoa farms was influenced by similar factors, including secondary employment, income levels, access to credit, the nature of their employment contracts, and proximity to social amenities.

Amina (2010) conducted a comprehensive study titled "Labour Out Migration and Its Impact on Farm Families in the Mid Hills of Nepal." This research involved empirical and methodological approaches, including a six-month field study conducted between 2006 and 2009, leading to the author's attainment of a Ph.D. degree. The study focused on evaluating the effects of migration on farm families, specifically on farm production, household food security, and gender roles. Various econometric models were employed to analyze the data. The findings indicated a positive influence of migration on household food security. However, the impact on farm production and gender roles exhibited variations across the two study districts. The author concludes the research by providing a set of policy recommendations to incorporate migration into development strategies in Nepal.

Amuakwa-Mensah (2016) observed to have a positive effect on migration decisions in the period 2005/2006, the authors find a negative effect of educational attainment on migration decisions in the period 2012/2013. The effect of educational attainment on migration decisions in 2005/2006 for urban in-migrant is higher than the effect for rural in-migrant, with its significance varying for the different stages of educational attainment. In absolute terms, whereas the effect of secondary educational attainment on migration decisions for urban in-migrant is higher than that of rural in-migrant, the reverse holds for higher educational attainment during the period 2012/2013.

Edmonds *et al.* (2008) found that one million children have been observed to migrate from their homes. On average, about 3 percent of children between the ages of 5 and 14 in these communities are living away from their households, but the proportion of children migrating varies from 0 to 29 percent across different areas. The data align with the traditional understanding of migration, indicating that children, on average, migrate from rural areas with competitive child labor markets in order to obtain a net financial benefit.

Farjana *et al.* (2019) manifested that age, dependency ratio, small land holding, seasonality, crop loss, and house damage are preponderance factors for internal migration. Meanwhile, in the case of destination preference, the data delineates that household sends migrant more toward Dhaka and Chittagong rather than different districts or different villages of the same district. Dhaka and Chittagong are the most preferred destination for migration as these megacities are endowed with employment opportunities

Hossain *et al.* (2022) revealed that migration has a positive impact on household income improvement through increases in consumption expenditures. Households with migration status are found to spend more on food, non-food (housing, durable goods, fuel, cosmetics, cleaning, transport, clothing, taxes, insurance, recreation) items, and medical. However, the authors do not find any evidence of impacts on education expenditures.

Islam *et al.* (2021) revealed that, in Bangladesh using household income and expenditure survey data and probit regression analysis to examine the factors influencing internal and external migration. Their findings revealed important determinants of migration decisions in the country. Notably, households with migrants, both internal and external, tended to possess larger areas of operating land and more assets compared to non-migrant households. The study emphasized the strong family bonds prevalent in Bangladeshi households. Gender dynamics also played a role, with an increased number of economically active females in a household leading to a higher likelihood of external migration. Socioeconomic indicators such as education, assets, and the number of economically active individuals were found to be better among religious minority households compared to religious majority households. External migration from Bangladesh primarily involved destinations like Saudi Arabia, the UAE, Kuwait, Malaysia, Singapore, Italy, and the United States. Most migrants worked as unskilled, semi-skilled, or low-skilled laborers in these countries, despite potentially unappealing earnings. These findings underscore the significance of household assets, family obligations, gender dynamics, religious affiliation, and regional disparities in shaping migration patterns. Understanding these factors can aid in designing policies that address migration

challenges and promote inclusive development for both migrants and their communities of origin.

Islam, Bodrul, and Guha (2020) discovered that even though the emigration of agricultural workers from domestic farming led to a significant reduction in household crop income, the influx of remittances helped to boost earnings from crop cultivation. The migration patterns in the studied area were notably influenced by factors such as household size, total asset value, networking connections, proximity to commercial banks, and vulnerability to flooding in the village. The number of migrants, their dependents, and their age were found to be strong predictors of remittance inflows. The findings of this study provide supporting evidence for the New Economics of Labor Migration (NELM) theory.

Jakubiak and Jerzy (2019) suggested that welfare magnet effect is observed and found to be significant in certain immigrant groups. However, in other cases, it can have a detrimental influence on location decisions. Similar outcomes are obtained when examining wage and unemployment indicators.

Kuhn and Randall S (2005) revealed that family migration, where an independent urban household is established, is more prevalent among older men and men from landless households, especially in the year following a severe flood. These findings highlight the potential impact of migration on exacerbating socioeconomic disparities in rural areas. It indicates that only households with substantial resources have a greater ability to leverage individual migration as a means to enhance mutual economic development and security.

Kumar (2006) conducted a study focusing on employment opportunities available to migrants at their destination, the socio-economic and psychological impact of migration on the household members left behind, and proposed measures to alleviate the significant challenges associated with migration. The research was conducted in the district of Dungarpur, which is known for its high rates of migration. The study encompassed seventeen villages across five development blocks within the district. The findings revealed that migration had become the primary means of livelihood for residents of tribal regions. Adult males predominantly migrated to neighboring states such as Gujarat and Maharashtra during different seasons. The migrants found employment in various sectors, including construction, brick kilns, roadside eateries,

domestic help, and other low-paying jobs. Regarding remittances, it was observed that most households utilized the funds for household expenses, while a few others used the money to invest in assets such as housing, farm animals, and agricultural equipment.

Lagakos *et al.* (2023) calibrated the model to replicate a field experiment that subsidized migration in rural Bangladesh, leading to significant increases in both migration rates and consumption for induced migrants. The model's welfare predictions for migration subsidies are driven by two main features of the model and data: first, induced migrants tend to be negatively selected on income and assets; second, the model's non-monetary disutility of migration is substantial, which we validate using newly collected survey data from this same experimental sample. The average income gains are similar in magnitude to those obtained from an unconditional cash transfer, though migration subsidies lead to larger gains for the poorest households, which have the greatest propensity to migrate.

Marta *et al.* (2020) conducted an analysis to examine the patterns and effects of rural-urban migration, focusing on the migration motives of rural households. The study utilized a difference-in-differences approach to determine the impact of migration on the income of migrant households in rural areas, taking into account their migration motives. The researchers utilized data from the Indonesian Family Life Survey (IFLS) collected in 2007 and 2014, which included samples from 2007 households across 13 provinces. The findings revealed that migration had a positive and significant impact on the income of migrant households when motivated by investment objectives. However, there was an insignificant result in terms of the impact of migration on household income when driven by risk-coping motives. Additionally, the study identified variations in migration patterns between the two different migration motives.

Mikhall and Michael (2007) aimed to elucidate the impact of migration and remittances in alleviating poverty in Nepal during the period from 1995 to 2003. The authors conducted a comparative analysis of poverty and inequality rates by considering counterfactual scenarios. They employed a model of household consumption expenditure to estimate observed and unobserved differences in returns based on migration status. Two rounds of nationally representative household survey

data were used to assess the effects of local and international migration on poverty reduction in Nepal. The research findings indicated that approximately 20 percent of the reduction in poverty in Nepal during the period studied could be attributed to the increased levels of work-related migration and remittances sent back home. The data also revealed that while the rise in overseas work migration played a significant role in poverty reduction, internal migration also had an important impact on reducing poverty levels. These findings emphasize the importance of considering the dynamics of both domestic and international migration in strategies for economic growth and poverty reduction in Nepal.

Nguyen *et al.* (2015) demonstrated that migration, particularly for employment purposes, serves as a strategy for households facing agricultural and economic challenges. Migration for educational reasons tends to be more common among households with higher levels of human capital and improved financial conditions. However, the likelihood of migration decreases when employment opportunities are available within the village. Migrants perceive themselves to have improved conditions at their destination, but the occurrence of shocks in their rural households may lead to income losses and a decrease in employment quality. The findings from the study, utilizing difference-in-difference specifications and propensity score matching techniques, indicate that migration has positive effects on income growth, with a greater impact observed in provinces with limited job opportunities. These effects not only aid migrant households in escaping poverty but also contribute to improving the overall poverty situation in rural areas.

Pulluri (2006) conducted a study aimed at understanding the factors contributing to the migration process, the socioeconomic background of migrant families, the impact of migration on land transfers and social mobility, and the influence of migrants on the rural power structure. The study focused on the Karimnagar district in Andhra Pradesh, South India, which experiences a significant number of people migrating within the country and across borders. The research utilized both primary and secondary data sources. Primary data was collected from three villages with different socioeconomic structures, interviewing fifty respondents from each village. Secondary sources, such as government gazettes, public policies, and previous studies, were also used for analysis. The study revealed that migrants, through their remittances, acquired various material possessions, and many maintained their

connection with their place of origin by investing in it. This had a profound effect on the local power structure, as migrants showed a keen interest in purchasing agricultural lands in their hometowns. The shift in land ownership also led to an improvement in their social status. Given that the rural power structure is traditionally tied to land ownership, this change brought about a new dynamic in the local politics of the Karimnagar district in Andhra Pradesh.

Sarker (2016) conducted a study that Migration Flows in South Asia, highlights the significance of remittances in the South Asian region, where they have become a crucial component of GDP, driving economic and social development. The attention of policymakers and academics has been drawn to the dynamics of international migration and remittances, recognizing their potential for promoting economic growth. However, challenges such as inadequate migration policies, poor governance, and investment environments hinder the expansion of this sector and the achievement of Sustainable Development Goals (SDGs). To fuel future development, there is a growing demand for migrant-friendly policies that prioritize safe migration, investment, and the bridging of gaps between origin and destination countries. Anti-trafficking measures and transparent money transfer policies are essential for creating a migrant and remittance-friendly environment. Governments should allocate resources for training, technical assistance, and protection of migrant workers, while also focusing on the legal, social, and psychological well-being of individuals affected by trafficking or migration-related crimes. Encouraging the use of formal channels for remittance transfers through cost-effective and efficient methods can contribute to poverty reduction and progress towards the SDGs in South Asia.

Selim, *et al*. (2009) analyzed the effects of international remittances on household consumption expenditure and poverty in Bangladesh. It finds that remittances have a positive impact on the economy and reduce poverty. The study estimates that 1.7 out of 9 percentage points of headcount reduction during 2000-2005 was due to remittance growth. Remittances also have significant impacts on food, housing, education, and health expenditures. Logit regression results show that receiving remittances decreases the probability of a household becoming poor by 5.9%. Policymakers should maximize the benefits of remittances by attracting more through formal channels and increasing their productive use.

Shelest-Szumilas *et al.* (2023) investigated the determinants of hiring migrant workers during the COVID-19 pandemic in one of the largest Polish cities. While negative consequences of the COVID-19 pandemic have been examined in different countries all over the world, relatively little attention has been paid to the impact of the crisis on migrants in regional labor markets so far. The negative impact of the COVID-19 pandemic on the labor market situation of migrants and ethnic minorities has been documented in several countries. Logistic regression is one of the regression analysis techniques and allows for estimating the relationship among variables. Negative consequences of the COVID-19 pandemic crisis on the labor market can be observed in many dimensions and have attracted the attention of researchers and institutions. In contrast, firms employing a higher proportion of foreigners are also more likely to recruit them in the future.

Tang and Shuangshuang (2020) conducted a study highlighting the significance of migration as a crucial livelihood strategy for impoverished rural households in China. They found that limited farmland and significant family events often serve as triggers for migration, with the decision influenced by the household's structure and the educational level of its members. The study also noted that poor rural households employ diverse strategies to allocate family members either within or outside their home village to enhance household income. These findings underscore the importance of migration for impoverished rural households and the challenges they commonly encounter. To effectively reduce rural poverty in China, policies should address the specific needs of rural families by providing local employment opportunities, quality education, and long-term insurance programs.

Taylor *et al.* (2011) emphasized the influence of immigration policies on the welfare of sending countries, considering not only the households that send migrants and receive remittances but also the broader interaction within the migrant-sending economy. The effects of migration on income vary across households and between the two countries involved, and they are further influenced by the gender and skills of the migrants. The paper concludes by emphasizing the significance of policies in both the destination and source countries in shaping the impacts of international migration on rural income.

White *et al.* (2023) uncovered that the appeal of certain places as origins (for retaining individuals) and destinations varies based on demographic characteristics and position within the urban hierarchy. The study also indicated changes in the significance of these predictors over time. Higher levels of education and possessing an urban hukou (household registration) strongly contribute to the selection of destinations within the higher levels of the urban hierarchy. However, selectivity based on gender becomes less pronounced over time. Although the influence of urban hukou and schooling slightly diminishes as predictors of interprovincial migration, the attractiveness of top-tier destinations increases when individual demographic characteristics are taken into account.

However, the studies provided have some research gaps that need to be addressed. While they touch on certain factors like education, age, and access to amenities, there are other potential variables that could be explored, including job opportunities, social networks, and cultural influences. Additionally, further research could focus on understanding the specific mechanisms by which migration improves household income, such as investigating how remittances are utilized and their long-term effects on reducing poverty. Furthermore, studying the dynamics of migration within specific contexts, such as rural-urban or international migration, could provide a deeper understanding of the impacts on both the communities sending migrants and the communities receiving them. In conclusion, while the reviewed studies provide valuable insights, there are still research gaps that need to be addressed in order to gain a more comprehensive understanding of migration and its effects on household income. This study aims to fill that research gap by examining the determinants of migration and its impact on the income of households in Bangladesh.

CHAPTER 3
METHODOLOGY

Any research study's methodology is both a crucial and indispensable component. Without a suitable approach very often leads to poor results. The technique of the study is used in a variety of ways to choose the optimal approach for achieving the specified research objectives. This chapter provides a thorough explanation of the study area, how it was chosen, how respondents were chosen, how the data was collected, and the analytical methods used.

The study's methodology determines how well a statistical study turns out. Excellent research requires the application of a suitable methodology. The nature, objectives, and goals of a study heavily influence the design of any survey. The availability of the needed materials, time, and resources is also a factor. There are numerous methods for gathering data for statistical study. Data collection for statistical analysis requires the analyst's judgment in selecting data collection strategies within the restrictions imposed by the work's resources. Statistical research typically involves gathering information from individual households.

3.1 Research Approach

A method of quantitative research is used to carry out the current study. It is exploratory research since it assisted in examining and identifying the determinants of migration as well as the impact of migration in household income. These occurrences are assessed using numerical data collected by the researchers utilizing a standardized questionnaire for the study's objective on the respondents' varied attributes. Despite having significant limitations when it comes to understanding the narrative aspects of human livelihoods without informing the respondents, quantitative research does present a rare opportunity to conduct research in an organized manner by using useful research instruments and appropriate analytical tools (Daniel *et al.* 2016). Consequently, the researcher concluded that the quantitative research technique was best suitable for this particular study.

3.2 Selection of the Study Area

In any statistical study, choosing the study area is an important step. These site was suitable for the study's specific objective and the potential for respondent cooperation.

The study used multistage sampling technique. First, two districts namely Bogura and Gaibandha were selected randomly considering the time, budget, and accessibility of the researcher. Second, two upazillas namely Sonatola upazilla in the Bogura district and Saghata upazilla in the Gaibandha district were purposively selected due to availability of migrants and non-migrants. The districts of Bangladesh are divided into sub-districts called upazilas (Sarker, 2010).

Source: https://bdmaps.blogspot.com/2011/09/bogra-district.html
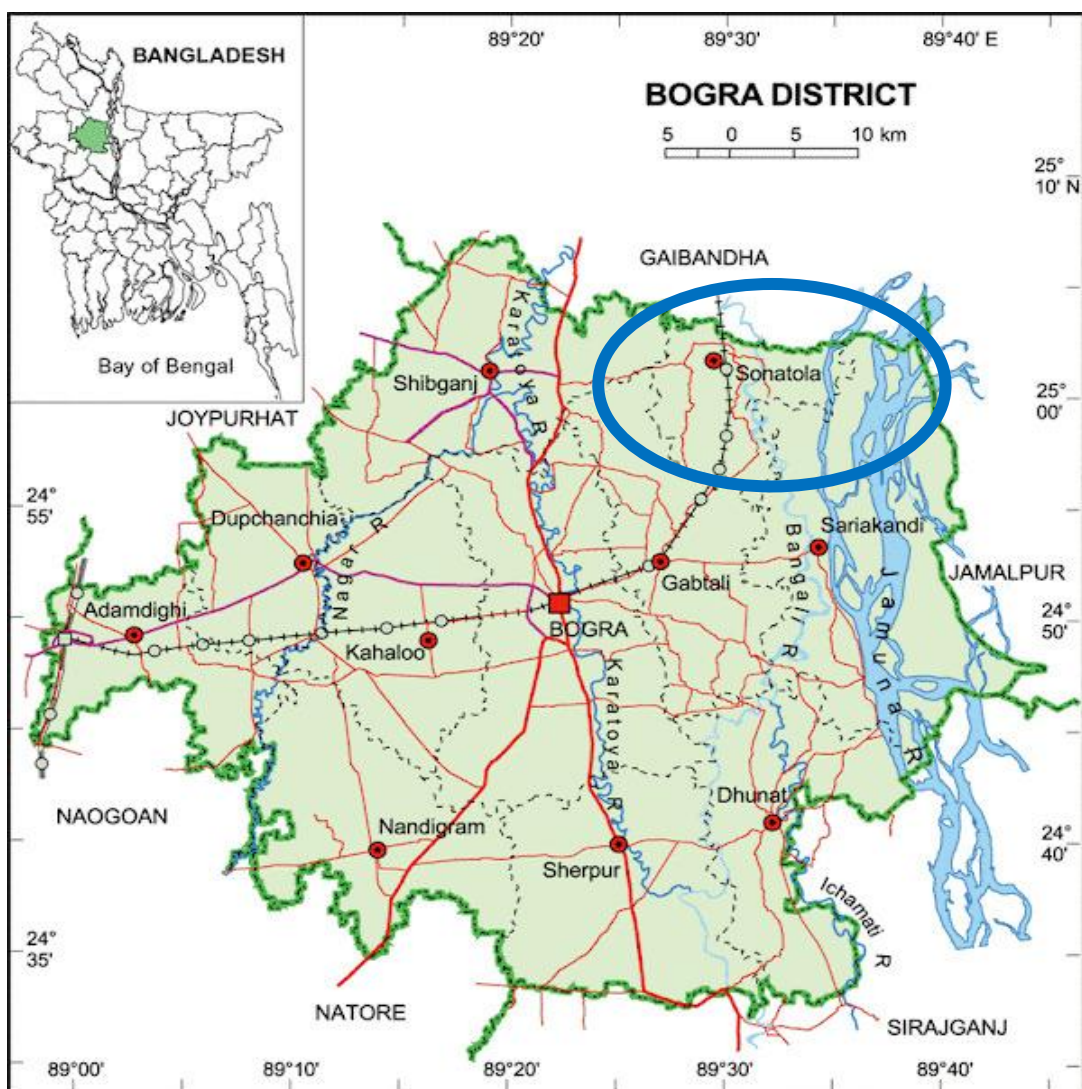
Figure 2: The Study Area Showing Sonatola Upazila of Bogura District.
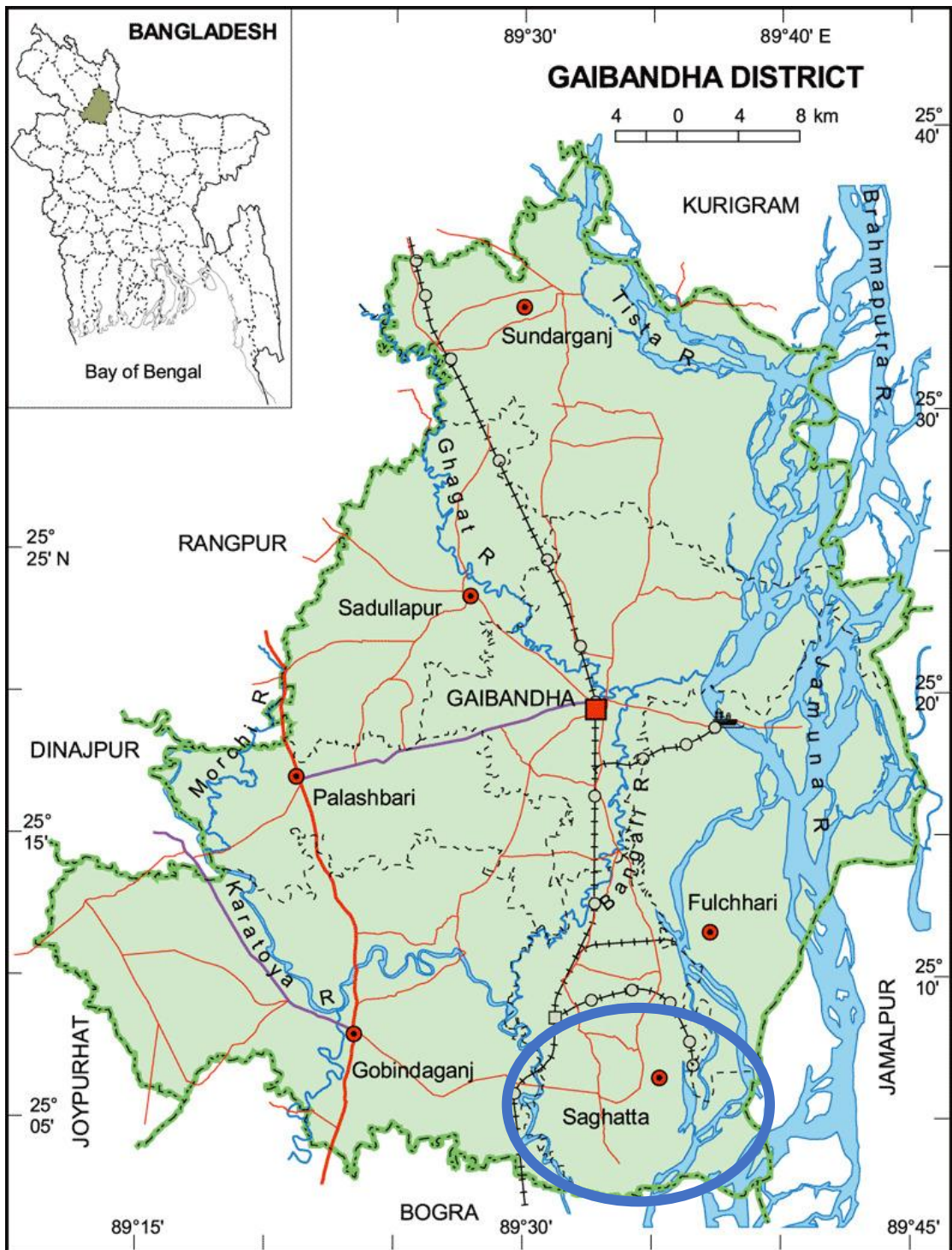
Figure 3: The Study Area Showing Saghata Upazila of Gaibandha district.

3.3 Sampling Technique and Sample Size

Sampling is a crucial aspect of conducting surveys since it is impractical to survey an entire population. When selecting samples for research, two key considerations come into play. Firstly, the sample size should be sufficiently large to provide an adequate number of data points for meaningful statistical analysis. This ensures that there are enough degrees of freedom for accurate conclusions. Secondly, due to variations in technological and human environments, a large number of individuals need to be sampled to draw reliable inferences. Consequently, sampling is employed to choose a subset of the population that is representative of the entire population (Rahman, 2000). Due to time, money, and manpower constraints, it was not feasible to enroll all of the household in the research region. A total of 80 respondents were surveyed, of which 40 were migrants and 40 were non-migrants. A purposive sampling method was followed in selecting samples and collecting data from the respondents. From the Sonatola and Saghata upazilla total 80 respondents were selected purposively for a face-to-face interview. The data was collected from January to June of 2022.

Table 3.1. Sample Distribution

SL No.	District	Upazilla	No. of migrants	No. of non-migrants	Total no. of household
1	Bogura	Sonatola	22	21	43
2	Gaibandha	Saghata	18	19	37
Total			40	40	80

Source: Field survey, 2022

3.4. Data Collection

Any study's outcome depends on the correctness and dependability of the data collected, which is a crucial stage. Data collection techniques have a big impact on the accuracy and dependability of the data. The primary source of data for the study was a set of field-level primary data that was gathered from the chosen participants using interviewing protocols that had been thoroughly tested. Through direct interviews done by the researcher himself with the chosen respondents, field level primary data were obtained. Each chosen respondent was interviewed independently after creating the interview schedule. Each respondent received a brief introduction on the scope

and goals of the study prior to the start of the actual interview. Then the inquiries were made in a straightforward order. The answers were immediately noted on the interview schedules. The researcher had to rely on the respondents' meager memories because, in general, the respondents at the grass roots level do not retain written records of their various activities. The interviewer used a systematic approach to questioning and provided explanations as needed. To ensure that the answers had been accurately recorded, the schedule was checked and validated after each interview. 80 respondents were gathered in local units to save time and make it easier to interpret. Data collecting is viewed as an important aspect of a survey since it has a substantial influence on the quality of the findings. Given its significance, the following precautions were taken throughout the development of the questionnaire as a data gathering tool.

In this study, primary data were collected through face to face interviews using a structured interview schedule. Primary data were collected in terms of respondents' demographic profile, asset ownership, the number of earning members in the household, training, technology adoption, household income, expenditure, remittance, credit management, distance from highway, and level of food consumption. The collected data was entered into an Excel spreadsheet and then imported into STATA for analysis.

3.4.1. Questionnaire Design

A questionnaire is an effective tool for gathering data since it ask questions with multiple dimensions. Without a clear objective and purpose, a questionnaire would always overlook important subjects and make respondents and enumerators waste their time by answering pointless questions. To the best of our ability, we took into account each of these concerns when creating the survey questionnaire.

3.4.2. Pre-testing the Questionnaire

Prior to the survey, a pre-test of the questionnaire was conducted to evaluate several aspects. These included determining the time required to complete the interview, assessing the reliability of the questionnaire in capturing the desired information, and checking the consistency of the acquired information with the overall objectives of the survey. Additionally, the pre-test aimed to identify any logistical requirements necessary for the smooth operation of the survey. The pre-testing phase took place in Bogura and Gaibandha districts in 2022, ensuring the questionnaire's optimal

performance in terms of data collection, processing, and analysis. During the pre-test, households were purposively selected to provide responses.

3.4.3. Finalization of the Questionnaire and Method of Data Collection

The questionnaire was sent to research supervisor after addressed all of the adjustments based on the pre-test suggestions. Supervisor also made a significant contribution by providing guideline. With the permission, the questionnaire was finally completed.

3.4.4. Data Editing and Coding

Other critical aspects of the survey included data editing and coding, both of which were required for data processing. Prior to data processing, it should be finished. In the instance of this survey, coding was done concurrently with questionnaire construction so that the enumerator could mark the correct responses quickly and precisely. The process of verifying and cleaning data that had previously been obtained from the field was referred to as data editing.

3.5. Analytical Techniques

Data were analyzed using both descriptive and econometric modeling to accomplish the objectives of this study.

3.5.1. Determinants of the Migration Decision

Probit regression model has been employed in this study to evaluate the variables influencing migration. Many response variables are binary by nature, requiring either yes or no (or 1/0) response. Ordinary least square (OLS) regression model has been shown to inappropriate when the response variables are discrete. For this reason, Probit regression model become more suitable when dealing with such situation.

The probit model restricts the predicted probabilities to lie between 0 and 1. Additionally, it loosens the restriction that the effect of the independent variable is constant for all expected values of the dependent variable. The probit model is preferable to logit models in small samples. The probit model makes the assumption that while we only observe the values of 0 and 1 for the dependent variable Z_i, there is a latent, unobserved continuous variable Z_i^* that determines the value of Z_i. For this

study, the probit model is preferred and used to determine the factors that influencing to migration.

Suppose the response variable Z_i is binary with only two possible outcomes denoted as 1 and 0. Consider also a vector of regressors X_i, which are assumed to influence Z_i. Specifically, we assume that the model takes the form:

$$Pr(Z_i= |1|)=\Phi(X_i{}' \gamma)$$

Where Pr denotes probability, Z_i is the binary choice variable, that is access to migration, Φ is the Cumulative Distribution Function (CDF) of the standard normal distribution, "|" is the symbol stands of conditional on and γ is a vector of unknown parameters.

It is assumed that Z^* can be specified as follows:

$$Z_i^*=\gamma\square+ \sum_{n=1}^{N} \gamma\square\, Xni + u_i$$

And that:

$Z_i=1$ if $Z_i^*>0$ and otherwise $Z_i=0$

Where X_i represents independent variables like (Gender, Age, Education, Family size, Earning member, Receiving Remittance, Societal membership, Training, Having computer), γ is a vector of unknown parameters and u_i is a random disturbance term. N is the total sample size. The unknown parameters are estimated by the method of maximum likelihood.

The migration status is the dependent variable for the current study. Migration accessibility cannot be quantified directly, instead it is determined by looking at observations of household borrowings, such as whether or not households migrated. The decision of the household to engage in the migration may be influenced by several factors. The explanation of the independent variables (X_i) used in the model are given in Table 3.2.

Table 3.2. Description of Independent Variables

Independent Variable	Description
Gender	1 if the respondent is male, 0 otherwise.
Age	Age of the household head expressed in years
Education	Education of household head expressed in years
Family size	Total number of members in the family
No of earning member	Total number of earning member in the family
Remittance	1 if the respondent received remittance on farming, 0 otherwise.
Societal Membership	1 if the respondent having societal membership, 0 otherwise.
Training Received	1 if the respondent received training on farming, 0 otherwise.
Having Computer	1 if the respondent having computer, 0 otherwise.

3.5.2 Migration and Household Income

The influence of migration on income and poverty is primarily determined by the probability, quantity, and regularity of remittances sent back to the migrant's household. While there may be other pathways through which migration impacts poverty, such as alleviating population pressure or increasing the average skill levels in the communities of origin if migrants improve their human capital while away, the main effect of migration is seen in its impact on income and poverty levels.

The OLS model was used by the researcher to assess whether different factors affected the household income. The continuous dependent variable's linear relationship with one or more explanatory variables can be explained using the linear regression model (Schneider *et al.*, 2010), so the OLS method is a good approach for this study. In this model, the respondent's yearly household income is used as the

dependent variable and along with the respondent's Age, Education, Household Size, Having Computer, Migration are used as independent variables. The researcher decided to use the old model for this study after getting influenced by the work of Alkire *et al.* (2013), Upadhay & Karasek (2012), Bello *et al.* (2009), Khalid *et al.* (2020), Hochwälder and Brucefors (2005), Haque and Mostofa (2013).

Define the household income function as follows:

$$\ln y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon_i$$

Where, y_i is the log of household yearly income is the dependent variable,

X_1 is Age,

X_2 is Education,

X_3 is Household Size,

X_4 is Having Computer,

X_5 is Migration,

β_0 is Intercept,

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are Slope (unknown constant),

ϵ_i is Random error component.

CHAPTER 4

RESULTS & DISCUSSION

This chapter provides results on socio-demographic character, probit model for assessing the factors affecting migration decision of households and Ordinary Least Square (OLS) to measure the impact of migration on household income.

4.1. Socio-demographic Characteristics of the Respondents

The socio-economic features of households play a crucial role in shaping migration planning and decisions. Individuals vary in many aspects, and their behavior is primarily influenced by their unique characteristics. An individual's behavior and personality development are significantly impacted by a multitude of interconnected attributes. This research examined the respondents' gender, age, educational level, spouse's education, farm size, annual household income, occupation, and other factors that potentially exert a significant influence on households' migration decisions.

4.1.1. Gender Distribution of the Migrant and Non-Migrant Respondents

Gender is one of the variables that can determine the migration of households. As indicated in Table 4.1, Out of 40 migrant people, 77.50% were male and 22.50% were female. On the other hand, out of the 40 non-migrant people, 52.50% were male and 47.50% were female.

Table.4.1. Distribution of Migrant & Non-migrant Respondents Based on Their Gender

Category	Migrant Households		Non-migrant Households	
	Number	**Percent**	**Number**	**Percent**
Male	31	77.50	21	52.50
Female	9	22.50	19	47.50
Total	**40**	**100**	**40**	**100**

Source: Field Survey, 2022

4.1.2. Age Distribution of the Migrant and Non-Migrant Respondents

The age of the migrant respondents varied from 18 to 65 years with an average of 36.45 and age of the non-migrant respondents varied from 18 to 75 with an average of 39.92. The distribution of the respondents in accordance of their age is presented in Table 4.2 and 4.3.

Table.4.2. Distribution of Migrant Respondents based on Their Age

Basis of age categorization	Migrant Households		Average year	Observed range
	Number	Percent		
18-35 years	24	60.00	36.45	18-65
36-50 years	15	37.50		
> 50 years	1	2.50		
	40	**100**		

Source: Field Survey, 2022

Table 4.2 reveals that out of the total sample migrant people, 60 percent belonged to the age group of 18-35 years, 37.50 percent belonged to the age group of 36-50 years and only 2.50 percent fell into the age group of > 50 years. The age group of 18-35 years migrant people comprised the highest proportion (60%) followed by the age group of 36-50 years (37.5%) and >50 years (2.5%) respectively.

Table.4.3. Distribution of Non-Migrant Respondents Based on Their Age

Basis of age categorization	Non-migrant Households		Average year	Observed Range
	Number	Percent		
18-35 years	13	32.50	**39.92**	18-65
36-50 years	25	62.50		
> 50 years	2	5.00		
	40	**100**		

Source: Field Survey, 2022

Again, Table 4.3 reveals that out of the total sample non-migrant people, 32.50 percent belonged to the age group of 18-35 years, 62.50 percent belonged to the age

group of 36-50 years and only 5 percent fell into the age group of > 50 years. The Table 4.6 reveals that the age group of 36-50 years non-migrant comprised the highest proportion (62.5%) followed by the age group of 18-35 years (32.5%) and >50 years (5%) respectively.

4.1.3. Educational Status of the Respondents

The level of education of the migrant people ranged from 0 to 18 years with an average of 12.45 years and the level of education of the non-migrant people ranged from 0 to 18 years with an average of 10.95 years indicates that migrant people are more educated than non-migrant people. Based on education years, the farmers were classified into four categories arbitrarily (Table 4.4 & 4.5.)

Table.4.4. Distribution of the Migrant Respondents According to Their Level of Education

Category	Basis of categorization (in years of schooling)	Migrant Households		Average years of schooling	Observed Range
		Number	Percent		
Illiterate	0	0	0	**12.45**	0-18
Primary education	1-5	0	0		
Secondary education	6-10	11	27.50		
Above secondary	>10	29	72.50		
Total		**40**	**100**		

Source: Field Survey, 2022

The Table 4.4 shows that the migrant people above secondary education category constitute the highest proportion (72.50%) followed by secondary (27.50%) education category. On the other hand, no respondent was found under the illiterate category and primary education category.

Table.4.5. Distribution of the Non-Migrant Respondents According to Their Level of Education

Category	Basis of categorization (in years of schooling)	Non-migrant Households		Average years of schooling	Observed ranged (years)
		Number	Percent		
Illiterate	0	0	0		
Primary education	1-5	2	5.00		
Secondary education	6-10	23	57.50	**10.95**	0-18
Above secondary	>10	15	37.50		
Total		**40**	**100**		

Source: Field Survey,2022

The Table 4.5 shows that the non-migrant people under secondary education category constitute the highest proportion (57.50%) followed by above secondary (37.50%) and primary (5%) education category. On the other hand, no non-migrant was found under the illiterate category. Average education level of migrant people is higher than non-migrant (Table 4.5 & 4.6). Majority of the migrant people were highly educated than that of non-migrant.

4.1.4. Family Size of the Respondents

Family size of both migrant and non-migrant households ranged from 2 to 9 members with an average of 4.37 and 4.75 respectively. The distribution of the farmers according to their family size is presented in Table 4.6 and 4.7.

Table.4.6. Distribution of the Migrant Households According to Their Family Size

Basis of categorization (no.)	Migrant Households		Average family size	Observed range (no.)
	Number	Percent		
1- 4	25	62.50		
5-6	9	22.50	4.37	2-9
> 6	6	15.00		
	40	**100**		

Source: Field Survey, 2022

Table.4.7. Distribution of the Non-Migrant Households According to Their Family Size

Basis of categorization (no.)	Non-migrant Households		Average family size	Observed range (no.)
	Number	Percent		
1- 4	15	37.50		
5-6	23	57.50	4.75	2-9
> 6	2	5.00		
	40	**100**		

Source: Field Survey, 2022

The table 4.6 showed that the family which have 1-4 members constituted the highest proportion (62.50%) followed by the family holding 5-6 members (22.50%) and > 6 members (15%) for migrant households. On the other hand, the table 4.7 showed that the family which have 5-6 members constituted the highest proportion (57.50%) followed by the family holding 1-4 members (37.50%) and > 6 members (5%) for non-migrant households. The results revealed that the non-migrant households were little more in family size distribution than migrant.

4.1.5. Main Occupation of the Respondents

The distribution of the respondents both migrant and non-migrant in accordance of their main occupation is presented in Table 4.8.

Table.4.8. Distribution of the Migrant and Non-Migrant Households According to Their Main Occupation

Category	Migrant Households		Non-migrant Households	
	Number	Percent	Number	Percent
Crop Farming	4	10.00	7	17.50
Livestock Farming	3	7.50	6	15.00
Fish Farming	2	5.00	2	5.00
Day Labor	0	0	1	2.50
Service	20	50.00	16	40.00
Business	10	25.00	5	12.50
Rickshaw puller	1	2.50	3	7.50
Total	**40**	**100**	**40**	**100**

Source: Field Survey, 2022

In this study area, peoples were working on different types of activities. It was noted that, as a major source of income, out of 40 migrant households, 50% households were engaged in service, 25% households were involved in business, 10% households were engaged in crop farming, 7.50% were engaged in livestock rearing, followed by 5% in fish farming and 2.50% in otherwise activities. No day labor category was found in migrant households. On the other hand, out of non-migrant households, 27.50% households were engaged in crop farming, 23% households were engaged in livestock farming, 10% households were involved in fish farming, 15% households

were involved in service, 12.50% households were engaged in business, 9.50% were engaged in otherwise activities, followed 2.50% in day labor (Table 4.8).

4.1.6. Yearly Income of the Respondents

The distribution of the respondents both migrant and non-migrant in accordance of their yearly income is presented in Table 4.9.

Table.4.9. Distribution of the Migrant and Non-Migrant Households According to Their Yearly Income

Category		Migrant Households	Non-migrant Households
		Average Income (TK)	Average Income (Tk)
Farming Income	Crop Farming	103750	190320
	Livestock Farming	70538	107750
	Fish Farming	12000	43000
Total Farming Income		**186288**	**341070**
Non-farming Income	Service	210435	102500
	Business	325870	112743
	Rickshaw puller	73750	33250
Total Non-farming Income		**610055**	**248493**
Total Yearly Average Income		**796343**	**589563**

Source: Field Survey, 2022

In this study area, peoples were working on different types of activities. Out of 40 migrant households, it was noted that, total farming income of migrants was Tk 186288 and non-migrants was TK 341070. The total non-farming income of migrants

was TK 610055 and non-migrants was TK 248493. Yearly average income of the households from business was TK 325870 that was the highest income among from different sources. The total yearly average income of the migrant was TK 796343 and non-migrant was TK 589563.

4.2. Factors Affecting Migration of Household

Table. 4.10. Values, Coefficient and Marginal Effects after Probit Regression

Dependent Variable	Independent Variable	Co-efficient	P Value (Co-efficient)	Marginal Effect	P Value (Marginal Effect)
	Constant	-1.793	0.492	-	-
	Gender (X_1)	1.563**	0.027	0.243**	0.013
	Age (X_2)	-0.061	0.174	-0.009	0.157
	Education (X_3)	0.167	0.212	0.025	0.193
	Household Size(X_4)	-0.555*	0.069	-0.086*	0.051
Migration Status	Earning Member (X_5)	1.434**	0.03	0.223**	0.016
	Receiving Remittance (X_6)	-0.165	0.786	-0.025	0.786
	Member of Societal Group (X_7)	1.121*	0.091	0.174*	0.074
	Receiving Training (X_8)	1.546**	0.027	0.240**	0.014
	Having Computer (X_9)	0.654	0.284	0.101	0.270
	LR chi^2 = 35.52 Prob > chi^2 = 0.0000 Pseudo R^2 = 0.320				

Note: ***, ** and * indicate significant at 1%, 5% and 10% level respectively
Note :(*) dy/dx is for discrete change of dummy variable from 0 to 1.

4.2.1. Interpretation of the Variables Based on Marginal Effect

Gender (X1)

The marginal value of gender was 0.243 which was significant at 5% level of significance. It indicates that male people have 24.3% more probability of migration compared to female.

Household Size (X4)

The marginal value of family size was -0.086 which was significant at 10% level of significance. It indicates that considering all other factors constant, one family member increment of household would decrease the probability of migration by 8.6%.

Earning Member (X5)

The marginal value of earning member was 0.223 which was significant at 5% level of significance. It indicates that considering all other factors constant, one earning member increment of household would increase the probability of migration by 22.3%.

Societal Membership (X7)

The marginal value of societal membership was 0.174 which was significant at 10% level of significance. It indicates that the people who have societal membership, have 17.4% more probability of migration compared to the people who have no societal membership.

Training (X8)

The marginal value of training was 0.240 which was significant at 5% level of significance. It indicates that the people who received training, have 24% more probability of migration compared to the people who did not receive training.

Table. 4.11. Calculated Values of the Coefficient and Related Statistics of all the Explanatory Variables of Household Income

Dependent Variable	Independent Variables	Parameter	Co-efficient	Standard Error	T-value	P-value
lnincome	Age (X_1)	β_1	0.005	0.007	0.68	0.498
	Education (X_2)	β_2	0.036***	0.011	3.25	0.002
	Household Size (X_3)	β_3	0.071	0.048	1.50	0.139
	Having Computer (X_4)	β_4	0.297**	0.114	2.60	0.011
	Migration (X_5)	β_5	0.422***	0.116	3.65	0.001
	R^2		0.356			
	F-test		8.178			

*** *p<.01, ** p<.05, * p<.1*

4.2.2. Interpretation of the Variables

Education

It is seen from table 4.10 that education has a positive and significant (coefficient of 0.036, the p-value is 0.002) with the yearly income statistically significant at 1% level of significance. The findings suggest that a one year increase in the education would increase the average household yearly income by 3.60 percent, assuming all other factors are held constant.

Computer

It is seen from table 4.10 that estimated coefficient is 0.297 which was positive and significant at 5% level of significance. This findings mean that, households with a

computer have an average yearly income 29.7 percent higher than households without a computer, assuming all other factors are held constant.

Migration

It is seen from table 4.10 that estimated coefficient is 0.422 which was positive and highly significant at 1% level of significance. This findings mean that, migrant households have an average yearly income that is 42.2 percent higher than non-migrant households, assuming all other factors are held constant.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of findings, conclusions, and recommendations of the study. The summary of the study shows the findings briefly. By conclusion, the main points of the report can be identified quickly. Recommendation draws the attention of the respective policymakers to implement some strategy for improving the situation of migrants and non-migrants to attain quality of life.

5.1. Summary

This study analyzed the link between migrants, non-migrants and household income. Urbanization is proceeding rapidly in Bangladesh. The percentage of urban growth has been estimated at about 3.5% per year and the rural to urban migration rate was 4.29 per, 1000 person per year for the whole country. Bogura and Gaibangha districts were selected as the study area due to availability of migrants and non-migrants to determine the factors that influencing migration and also its impact on household income.

This study based on primary data collected from 80 rural households (40 were migrants and 40 were non-migrants) were used as representative sample frame. Two upazilas, Sonatola in the Bogura district and Saghata in the Gaibandha district were selected for conducting field level survey from January to June, 2022. A structured interview schedule was used for data collection.

In this study, Probit regression model were used to evaluate the determinants of migration and Ordinary least square (OLS) model were used to identify the impact of migration on household income.

Firstly, this study specified binary probit regression model to assess the factors influencing migration. Where decision of migration was considered as dependent

variable (where migrant=1 and non-migrant=0) and Gender, Age, Education, Family size, Earning member, Receiving Remittance, Societal membership, Training, Having computer were considered as independent variables that determine migration decision. The marginal value of gender was 0.243 with 5% level of significance implying that male people have 24.3% more probability of migration compared to female. The marginal value of family size was -0.086 with10% level of significance indicates that considering all other factors constant, one family member increment of household would decrease the probability of migration by 8.6%.

Secondly, the study evaluated the impact of migration on household income using Ordinary Least Square (OLS) method. Where yearly income was considered as dependent variable and Age, Education, Household Size, Having Computer and Migration were considered as independent variables that determine the impact of household income. Result revealed that the migration has a highly positive and significant association with the yearly income statistically significant at 1% level of significance. The findings suggest that households with a migrants have an average yearly income 42.2 percent higher than households without migrants, assuming all other factors are held constant.

5.2. Conclusion

The study employed two statistical models: Probit regression and OLS regression. Analyzing the determinants of migration using the Probit regression model, variables such as gender, age, education, family size, earning members, remittance receipts, societal membership, training, and computer ownership were considered to influence the decision to migrate. The findings revealed that males had a 24.3% greater likelihood of migration than females. In addition, an increase of one family member decreased the likelihood of migration by 8.6%, assuming that all other factors remained constant. The study also employed OLS regression to examine the effect of migration on household income, using variables such as age, family size, education, computer ownership, and migration status to establish the impact on annual income. Along with other factors considered in the analysis, this suggests that older migrants have a tendency to have higher annual revenues. In conclusion, the research examined the causes of rural migration in Bangladesh and its effect on household income. The findings revealed that factors such as gender and family size influenced migration

decisions, while migration played a crucial role in determining annual income. The findings shed light on the dynamics of migration and its relationship with household income, emphasizing the need to consider multiple factors when analyzing migration patterns and their consequences.

5.3 Recommendation

On the basis of the study's findings, the following suggestions can be made:

(a) People should be encouraged to increase the education level of family for better financial management.

(b) Migrant people should participate in societal organization so that they can adjust the new environment and overcome any initial difficulties.

(c) Government should organize skill development training for people to increase their employability and to get higher paying jobs.

REFERENCE

Abebaw, D., Admassie, A., Kassa, H. and Padoch, C. (2020). Can rural outmigration improve household food security? Empirical evidence from Ethiopia. *World Development,*129:104879-104889.

Ackah, Charles, and Medvedev,D. (2012). Internal migration in Ghana: Determinants and welfare impacts. *International Journal of Social Economics*.

Ackah, Roy, K.C., Tisdell, C and Alauddin, M. (2010). Rural-Urban Migration and Poverty in South Asia. *Journal of Contemporary Asia* 22(1):57-72.

Adams, R. H., & Cuecuecha, A. (2010). The economic impact of international remittances on poverty and household consumption and investment in Indonesia. *Policy Research Working Paper. 5433*. Washington, DC: World Bank.

Adams, R.H. Jr and Cuecuecha, A. (2010). Remittances, household expenditure and investment in Guatemala. *World Development*, 38(11): 1626-1641.

Agadjanian, V., Hayford, S.R. and Jansen, N.A. (2020). Men's migration and women's mortality in rural Mozambique, *Social Science and Medicine*, 270:113519.

Alam, M.S. and Islam, M.S. (2014). Determinants of Male Internal Migration in Bangladesh: Is Due to Services Matter *?. Journal of Economics and Sustainable Development*, 5(7):138-144.

Amfo, Bismark, Mensah, and Aidoo,R. (2022). Migrants and non-migrants' welfare on cocoa farms in Ghana: Multidimensional poverty index approach. *International Journal of Social Economics* 49.3: 389-410.

40

Amina (2010). The determinants of family and individual migration: A case-study of rural Bangladesh. *IBS Research Program on Population Processes Working Paper*, *12*(2), 1-4.

Amuakwa,Mensah, Franklin, Louis, and William. (2016). Effect of education on migration decisions in Ghana: A rural-urban perspective. *Journal of Economic Studies*.

Awan, Sarwar,M, Javed, and Waqas,M. (2015). Migration, remittances, and household income: Evidence from Pakistan. *The Lahore Journal of Economics*, 20.1 (2015): 47.

Azam, J. P., & Gubert, F. (2006). Migrants' remittances and the household in Africa: A review of evidence. *Journal of African Economies*, 15(2):426–462.

BBS (Bangladesh Bureau of Statistics) (2011). Report of the Household Income and Expenditure Survey 2010, *Bangladesh Bureau of Statistics*.

BBS (Bangladesh Bureau of Statistics) (2015). Report on Population Census 2015.Dhaka: Planning Division Ministry of Planning.

BBS (Bangladesh Bureau of Statistics) (2018). Report on Population Census 2018.Dhaka: Planning Division Ministry of Planning.

BBS (Bangladesh Bureau of Statistics) (2022). Report on Population Census 2022.Dhaka: Planning Division Ministry of Planning.

Chowdhury, Haque, B., Rahman, K. M., Hoque, A.,(2012). Precipitating and relieving factors of internal migration versus external migration. *BMC Demographic Change*, *12*(1), 1-4.

Cuong, N.V. and Linh, V.H. (2018),The impact of migration and remittances on household welfare: evidence from Vietnam. *Journal of International Migration and Integration*,19(4):945-963.

Daniel, Eyisi, (2016). The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum. *Journal of Education and Practice*, 7(15) :91-100 .

Edmonds, Eric V., and Philip Salinger. (2008). Economic influences on child migration decisions: evidence from Bihar and Uttar Pradesh. *Indian Growth and Development Review*.

FAO (2009). Declaration of the World Food Summit on Food Security. Rome: Food and Agriculture Organization of the United Nations. *Retrieved from 18 November, 2009.*

FAO (2015). Climate change and food security: risk and responses. *Retrieved from 12 January, 2015.*

Farhana, S.A. Rahman, M. Rahman (2012). Factors of Migration in Urban Bangladesh: An Empirical Study of Poor Migrants in Rajshahi City. *SSRN Electronic Journal* 9(1):105-117.

Farid, A., Malik, M. S., Afzal, M., Khan, F. U., Mirza, B., & Waheed, M. T. (2019). Disease status of Afghan refugees and migrants in Pakistan. *Frontiers in Public Health*, 7, 185.

Farjana, Fariha, and Md Shakil Ahmed. (2019). Factors affecting internal migration of the poor household of Bangladesh. *Journal of International Migration and Integration*,17(2):945-960.

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.

Hasanah, A., Mendolia, S. and Yerokhin, O. (2017).Labour migration, food expenditure, and household food security in eastern Indonesia. *Economic Record*, 93:122-143.

Hossain, Aktar, and Gani. (2022). Impact of migration on household consumption expenditures in Bangladesh using the coarsened exact matching (CEM) approach. *Asian Journal of Economics and Banking* .

Ishtiaque, A and Ullah, M.S. (2013). The Influence of Factors of Migration on the Migration status of Rural Urban Migrants in Dhaka, Bangladesh. *Journal of Studies and Research in Human Geography*,7(2):45-52.

Ishtiaque, A. and Mahmud, M.S. (2011). Migration Objectives and their Fulfillment: A Micro Study of the Rural urban Migrants of the Slums of Dhaka city. *Malaysian Journal of Society and Space*, 7(4):24-29.

Islam S.S., Parvin M. M., Fagun A. N. and Sarker M. M. R. (2021). Determinates of Migration from and Within Bangladesh: A Household Level Analysis. *International Journal of Sustainable Development Research*.7 (4),117 – 127.

Islam, Bodrul, and Guha,P (2020). Factors Affecting Migration of Labourers from Domestic Agriculture and Its Impact on Household Crop Income in Assam. *Indian Journal of Agricultural Economics* : 458.

Islam, S. S., Parvin, M. M., Fagun, A. N., Sarker, M. M. R. (2021). Determinates of Migration from and Within Bangladesh: A Household Level Analysis. *International Journal of Sustainable Development Research*. 7(4): 117-127. doi: 10.11648/j.ijsdr.20210704.15

Jakubiak, Igor Jerzy. (2019). Does income drive international migration?–a European experience. *International Journal of Manpower*.

Kuhn, Randall S. (2005). The determinants of family and individual migration: A case-study of rural Bangladesh. *IBS Research Program on Population Processes Working Paper*.

Kumar, M. (2006). Spirits of the womb: Migration, motherhood and healthcare in Rajasthan. Contributions to Indian sociology. *Indian Economic Review,* 37 (1&2): 163-187.

Kumar,K.S (2006). Short Term Migration in South Rajasthan: Incidence and Impacts. Occasional Paper – 15. Refuge and Migratory Movement Research Unit (RMMRU), Dhaka.

Lagakos, David, Mobarak,A., and Michael E. Waugh. (2023). The welfare effects of encouraging rural–urban migration. *Econometrica* 91.3: 803-837.

Lokshin, M., Bontch-Osmolovski, M., & Glinskaya, E. (2010). Work-related migration and poverty reduction in Nepal. *Review of Development Economics*, 14(2): 323–332.

Maharjan,A. (2010). Labour Out Migration and Its Impact on Farm Families in the Mid Hills of Nepal. *Farming & rural SyStemS economic,*40.8

Marta, Joan, et al. (2020). Understanding migration motives and its impact on household welfare: evidence from rural–urban migration in Indonesia. *Regional Studies, Regional Science* 7.1: 118-132.

Martey, E. and Armah, R. (2021). Welfare effect of international migration on the left-behind in Ghana: evidence from machine learning. Migration Studies,9 (3):872-895.

Mikhall, A, S., Michael, P, B. (2007). Determinants of migration and household member arrangement among poor rural households in China: The case of North Jiangsu. *Population, Space and Place* 26.1: 29.

Mikhall,O,V and Michael,L. (2007). Work-Related Migration and Poverty Reduction in Nepal. Essay 1 of dissertation proposal. Available online at http://www.unc.edu/~bontchos/thesis/ MigrationPoverty_ essay1.pdf

Monnet, E. and Wolf, C. (2017). Demographic cycles, migration and housing investment, *Journal of Housing Economics*, 38:38-49.

Nagetsav, A, S., Adzande, P., Iorliam, S., Ogwuche, J., Gyuse, T. T., & Ujoh, F. (2018). The impact of migration on household's livelihoods in River Benue Basin. *Benue J. Soc. Sci*, *6*, 190-219.

Nguyen, C.V., Van den Berg, M. and Lensink, R. (2011).The impact of work and non-work migration on household welfare, poverty and inequality. *Economics of Transition*, 19 4:771-799.

Nguyen, D.L., Grote, U. and Nguyen, T.T. (2017). Migration and rural household expenditures: a case study from Vietnam. *Economic Analysis and Policy*, 56:163-17.

Nguyen, D.L., Grote, U. and Nguyen, T.T. (2017).Migration and rural household expenditures: a case study from Vietnam. *Economic Analysis and Policy*,56:163-175.

Nguyen, Loc Duc, Raabe,K. and Grote. (2015). Rural–urban migration, household vulnerability, and welfare in Vietnam. *World Development* 71: 79-93.

Pulluri. (2006). Does income-expenditure drive international migration?–a Asian experience. *International Journal of Manpower*.

Rahman, M.Z. (2000). Effect of spacing on the growth, yield and storability of some garlic germplasm, M.S. in Horticulture thesis, Bangladesh Agricultural University, Mymensingh.

Ramos, C. (2018). Onward migration from Spain to London in times of crisis: the importance of life course junctures in secondary migrations. *Journal of Ethnic and Migration Studies*,44(11): 1841-1857.

Sampath,P,R. (2006). The Inpact of Migration on Rural Power Structure: A Case study of Karimnagar District Andhra Pradesh, South India. *Report of the Household Income and Expenditure Survey (2010).* Bangladesh Bureau of Statistics. Statistics, Ministry of Planning.

Sarker, M. M. R. (2010). Migration Flows in South Asia. Regional Cooperation Book: Migration Flows in South Asia Chapter.1(21)

Sarker, M. M. R. (2016). Determinants of arsenicosis patients' perception and social implications of arsenic poisoning through groundwater in Bangladesh. *International journal of environmental research and public health*, 7(10), 3644- 3656.

Selim, et al. (2009). Remittances and household welfare: A case study of Bangladesh. *Asian Development Bank Economics Working Paper* 189 .

Sharma, K., Oczkowski, E. and Hicks, J. (2016). Skill shortages in regional Australia: a local perspective from the Riverina. *Economic Analysis and Policy*, 52:34-44.

Shelest-Szumilas, Olena, and Marcin Woźniak. (2023). The Determinants of (Not) hiring Migrants in Poland: The Pandemic Perspective. *Digital Labour Markets in Central and Eastern European Countries*. Routledge, 97-123.

Shonchoy, A. (2010). Seasonal Migration and the Effectiveness of Micro-credit in the Lean period: Evidence from Bangladesh.

Tang, S. (2020). Determinants of migration and household member arrangement among poor rural households in China: the case of North Jiangsu. Population, Space and Place,26 (1):2279.

Tang, S.(2020). Determinants of migration and household member arrangement among poor rural households in China: The case of North Jiangsu. *Population, Space and Place* 26.1 (2020): 2279.

Taylor, E. and Lopez-Feldman, A. (2010), Does migration make rural households more productive? Evidence from Mexico, *The Journal of Development Studies*, Vol. 46(1):68-90.

Taylor, J. Edward, and Mateusz Filipski. (2011). The impact of migration policies on rural household welfare in Mexico and Nicaragua.

United Nations. (2016). The world's cities in 2016 [Data booklet]. United Nations. https://doi.org/10.18356/ 8519891f-en.

Wadud, M. A. (2013). Impact of microcredit on agricultural farm performance and food security in Bangladesh. Inst Microfinance, 14, 47

White, Michael, Liangliang Sun, and Leiwen Jiang. (2023). Changes in migration determinants along the urban hierarchy in China. *Asian Population Studies*: 1-23.

World Bank (2015). World Bank Annual Report 2015; The World Bank: Washington, DC, USA. Retrieved from October 2, 2015.

Xu, D., Guo, S., Xie, F., Liu, S. and Cao, S. (2017),The impact of rural laborer migration and household structure on household land use arrangements in mountainous areas of Sichuan Province, China, *Habitat International*, 70:72-80.

Zhang, X., Yang, J. and Thomas, R. (2017), Mechanization outsourcing clusters and division of labor in Chinese agriculture, *China Economic Review*, 43: 184-195.

APPENDIX

DEPARTMENT OF DEVELOPMENT & POVERTY STUDIES
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207
An Interview Schedule for the Study Entitled

DETERMINANTS OF INTERNAL MIGRATION AND ITS IMPACT ON HOUSEHOLD INCOME IN SOME SELECTED AREA OF BANGLADESH

Serial number: **Date:**

Dear Respondent,
All of your information will be kept confidential and will be used for research purpose only. Please provide the following information.

    A. General Information

Name:…………………………………………………………………………….

Address:Village:………………………..Upazilla:……………………………

District:…………………………………..Mobile:…………………………………

    B. Demographic and socio-economic information

1. Gender of the respondent: …………………………………..(Use code)

(Use code: Male: 1, Female :0)

2. Age of the respondent: …………………………years

3. Education of the respondent: ……………..years

4. Household size : …………………number

5. Main source of income :……………………………………….(Use code)

(Use code: Crop farming: 1, Livestock rearing:2, Fish farming:3, Day labour:4, Service:5, Business:6, Otherwise:7)

6. Marital status of the respondent: ………………(Use code)

(single:1, married:2, separated:3, Divorced:4, widow/widower:5)

 i) If married, Education of the spouse: ………………..years

7. Owner of dwelling :…………………………………(Use code)

   (Owner:1, Rented:2, Not owner but rented:3, others:4)

8. Quality of housing:…………………………..(Use code)

(Mud/bamboo:1, Tin/Semi katch:2, Semi paka:3, Paka:4, Others:5)

9. Are you or any member involved in homestead gardening? Yes (1)   /   No (0)

10. Amount of own agricultural land : …………………………decimal

11. Total number of earning member in the family: ……………number

12. How many member of the family have mobile phone: ………………………….

13. Do you have Computer in your house: Yes (1)   /   No (0)

14. Did you receive any skill development training in last one year: Yes (1)   /   No (0)

i) If yes, which training did you receive :………………………

	Training	Put tik mark
1	Crop production related	
2	Livestock related	
3	Fisheries relate	
4	ICT	
5	Hand crafting	
6	Otherwise	

15. Sources of drinking water:…………………………….(use code)

 Pipe or wasa waterline:1, tubewell/ deep tubewell:2, pond/river:3, Rain water:4, others:5)

16. Type of toilet:………………………………………(use code)

 (sanitary with water seal:1, sanitary without water seal:2, not sanitary:3, common latrine:4, open area/ no toilet:5, others:6)

17.Use of electricity as sources of power:………………………….(use code)

 (electricity:1, solar panels:2, Kerosene:3, others:4)

18. Sources of cooking fuel:…………………………………….(Use code)

(Firewood:1, cowdung/leaf/straw:2, Gas/lp gas:3, biogas:4, kerosene:5, others:6)

19. Are you a member of any societal/cooperative society: Yes (1)   /   No (0)

20. Did you receive any remittances: Yes (1)   /   No (0)

21. Do you have any non-farm income source: Yes (1)   /   No (0)

   * If yes, amount of income earn in last one year………………………..

	Source	Amount(tk)
1	Business	
2	Service	
3	Day labor	
4	Otherwise	

22. Yearly income from farming sources: …………………………………….Taka

	Source	Amount(tk)
1	Crop Production	
2	Livestock	
3	Fisheries	

23. Distance of highway from your house: ……………………………

24. Status of migration: ……………………………………………….(use code)

(Current migration:1, returnee migration:2)

25.Who influence you for migration:……………………………..

i) Relationship with influencer :…………………………….

ii) Education years of influencer: ……………………………

26. How many family members are migrated: ……………………..

27. Duration of migration of family members: ………………….

	Migrant Member	Duration of migration
1		
2		
3		

28. No. of migration experience:……………………………….(how many times)

29. Cost of migration:…………………………………………..(Tk)

30.Sources of migration cost:………………………………….(use code)

(own/family savings:1,loan from bank/money lender:2, sale of agriculture land/ homestead land:3, others:4)

31. Social factors influencing migration decision:(put tik mark)

Due to marriage or breakdown of marriage	
Better education of children	
Enhance social status	
Better future for family	
Attraction of city life	
Others	

32. Economic factors influencing migration decision:

Lack of work in local area	
Ensure better job with increased income	
Construct house and purchase land	
Overcome poverty	
Formation of business capital	
Others	

33.Political factors influencing migration decision:

Local political problem	
Local conflict	
Avoid involvement in undesirable political activities	
Police harassment	
Others	

34. Environmental factors influencing migration:

Problem in pursuing agriculture due to flood, river bank erosion and other climatic hazards	
Decrease in income due to natural disaster	
Loss of homestead due to natural disaster	
Loss of agricultural land due to natural disaster	
Others	

If respondent is non-migrant,

35. Social reasons for not migrating:

Do not like urban life	
No other adult to loo after the family in the absence of aspirant migrant	
Children's education can suffer in the	

absence of migrant	
Children and adult female members could be insecure in the absence of aspirant migrant	
Others	

36.Economic reasons for not migrating:

Have land, homestead and work so no need to migrate	
Have business so no need to migrate	
Gainfully employed locally, so no need to migrate	
Would like to migrate but can not afford the migration cost	
Others	

37. Environmental reasons for not migrating:

Agriculture not affected by climate change	
Did not face reduction in income in the village	
Natural disaster did not affect agricultural land	
Homestead is not affected due to natural disaster	
Others	