REMITTANCE-RECEIVER HOUSEHOLDS' BEHAVIOUR ON AGRICULTURAL PRODUCTIVITY IN THE RURAL ECONOMY

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Abstract

Remittances in the rural economy are considered a lifeline for remittance-receiving households, as they spend their money within the local economy, helping accelerate domestic money flow and maximize social welfare. In this research, the authors surveyed 200 households across four sub-districts using a snowball sampling method. The main objective is to examine the effect of remittance-receiving households' behaviour on agro-output maximization.

In Model 01, for one-season paddy cultivation, AFS, HNP, AGH, ESH, and RHI show positive and statistically significant relationships with paddy production, indicating a favourable impact on agricultural productivity and local economic development. Conversely, HSZ demonstrates a negative and statistically significant relationship with paddy cultivation.

In Model 02, which focuses on fish cultivation, AFS, HMF, AGH, ESH, and RHI also show positive and significant effects on fish productivity, while micro-credit plays a significant role in supporting fish production.

Overall, remittance-receiving households' behaviour influences agricultural productivity in the rural economy. When a family receives remittances, the behaviour of the household head affects regional economic development. Rural welfare maximization depends partly on productive household investment behaviour, and a healthy investment climate can be fostered through a stable inflow of remittances.

Key words: remittance Inflow, rural economy, remittance-receiver households, paddy cultivation, fish cultivation.

Introduction

Remittances have a positive impact on poverty reduction and development in remittance-sending countries, mostly developing ones, substantially contributing to the achievement of the Millennium Development Goals (MDGs). Andersen (2007) analysed in their paper that remittances have boosted financial development, which in turn impacts the growth of an economy. These positive effects become greater when remittances are saved and invested in infrastructure and productive capacity. Baldé (2010) stated that although remittances are smaller in volume than GDP, they are highly important in boosting savings and investment in Sub-Saharan Africa.

Uddah (2011), as cited by Ali et al. (2013), reported that migration increases households' concern for health, which directly affects economic wellbeing in Mexico. Iheke et al. (2013) examined that remittances in developing nations have become an important source of income for

financing recipient households' livelihoods, where changes in expenditure patterns, consumption and the savings–investment nexus for long-term development lead to improvements in wellbeing and agricultural investment. Agricultural investment also includes spending on education.

The author classifies educational investment as expenditure on books, school supplies, uniforms, registration/admission fees, travel to school, tuition fees, lodging and boarding, etc. Health investment is also considered a separate category of investment. Household spending on health, including doctor fees, medicines, diagnostic tests, hospitalisation costs and health insurance premiums, is categorised as health investment.

Financial investment in this paper refers to the placement of money in a bank or financial institution. Bank deposits, investment in shares/bonds, post office deposits, cooperative savings, life insurance, etc., are categorised as financial investments for both remittance-receiving and non-receiving households.

Investment in furniture, electronics and domestic appliances is defined as investment in durable goods. Highly durable goods such as refrigerators, cars, and mobile phones remain useful for many years. Furniture, electronics, televisions, refrigerators, computers, video and DVD players, stoves, and mobile phones are all considered investments in durable goods.

Investment in real assets refers to spending on land, vehicles, machinery and buildings. Business investment refers to money invested in a business; in this paper, business costs are categorised as business investment, whether the business is new or existing.

Human migration is the physical movement from one place to another, either permanently or temporarily, for the purpose of residence and/or employment (Refugee and Migratory Movement Research Unit, 2008). Bangladesh has a long history of migration and is currently one of the major labour-exporting nations, where migrant income has become a dominant element of the domestic economy. Each year, a large number of Bangladeshis migrate overseas, both short-term and long-term, in search of a better standard of living (Siddiqui, 2005).

In Bangladesh, remittances finance both internal economic allocations and transfers from abroad (Encyclopedia of Social Science, 2007). The inflow of remittances has already become a major driving force of economic progress and poverty reduction in Bangladesh. Remittances occupy the second-largest share among foreign currency earnings (Bangladesh Bank, 2012). Foreign remittances significantly contribute to the national economy by increasing foreign exchange reserves, per capita income and employment opportunities.

Literature Review

Although Castaldo and Reilly (2007) argue that remittances are mainly used for consumption—such as food, non-food items, durable goods and utilities—Serino and Kim (2011) found that the poorest countries benefit the most from remittances. Adams (2005) and Page (2007) observed that remittance-receiving households both consume and invest their remittances, with a larger share allocated to investment than to consumption goods. The present paper shows that non-remittance-receiving households are unable to spend as much money either on consumption or investment.

In Ahmed's (2012) study, remittance-receiving households used remittances for current consumption, income generation and asset formation. Ali et al. (2013) concluded that migrants' remittances improve living standards by enabling access to basic services such as education, healthcare and recreation, resulting from a continuous flow of income from the place of migration to the place of destination. Castaldo and Reilly (2007) also noted that households receiving remittances spend a lower proportion of their expenditure on food and a higher share on consumer durables. Ali et al. (2013) further highlighted that remittances play an important role in increasing household investment in health following migration.

Rivera and González (2009) examined household expenditure categories such as food, health, education, durable goods, non-durable goods and others, and found that food accounts for the largest share of total expenditure across all household types. However, remittance-receiving households allocate a significantly higher share of their total expenditure to healthcare than non-remittance households, while spending relatively less on education. Simiyu (2013) analysed how increased remittance receipts were used in Kenya, focusing on expenditure on education, health, food and other household needs. Remittance-receiving households spend more on food, non-food items and education, and save more than non-receiving households (Mahapatro, 2016). Following Adams (2005) and Salas (2014), the present study adopts household head age and household size as explanatory variables, and also considers the gender and educational attainment of the household head, as suggested by Awan et al. (2013).

Tabuga (2008) discussed the inflow of remittances and its challenges in the Bangladeshi economy, particularly in relation to land and local business development. For decades, rural development has been the primary focus of expansion efforts (Ashley and Maxwell, 2001). The concept of rural development is closely linked to the wellbeing of rural populations and encompasses multiple dimensions of rural life, including environmental and psychosocial needs (Adisa, 2012; Mashreque and Nasrullah, 2005). Rural development is associated with social and economic improvement of the rural poor through increased production, equitable distribution of resources and empowerment. A large proportion of the rural population still lives below the poverty line. To eliminate rural poverty, both farm and non-farm activities—often in cooperation with NGOs—can play an effective role.

Farm activities depend largely on agricultural production, which is subject to seasonal and environmental conditions. However, non-farm activities have received limited attention, even though income from them can significantly reduce rural poverty (Roetter, Keulen, Kuiper, Laar, and Verhagen, 2007). The agricultural sector—still the core source of rural economic growth, employment and livelihood—is currently facing low productivity (Wang, Khan, and Zhang, 2013), pushing rural populations to seek alternative non-farm income sources.

In recent decades, international remittances earned through labour migration have become an increasingly important driver of socio-economic development in Bangladesh. They help reduce unemployment, lower poverty rates, increase foreign exchange reserves and improve the balance of payments (Ali, 2014; Siddique, Selvanathan, and Selvanathan, 2012). There is a strong positive relationship between global remittance inflows and poverty reduction. International remittances have played a decisive role in macroeconomic stability and household welfare by increasing consumption and reducing poverty in Bangladesh (Islam, 2011; Raihan, Sugiyarto, Bazlul, and Jha, 2009; Wadood and Hossain, 2016). Against this backdrop, the present research seeks to explore the role of international remittances in rural development in the south-central region of Bangladesh, with specific attention to their impact on agricultural production.

Data and Methods

This study is explanatory in nature and includes both qualitative and quantitative data. To answer the research questions and achieve the stated objectives, this study is based on a field survey as primary data provided by various households in Rupsha Upazila, and on secondary data collected from previous works, journals, books, reports, etc. The study employs a multistage sampling technique. There are 64 districts in Bangladesh. Among those, the author has chosen Khulna District as the study area. In the context of the number of upazilas in Bangladesh, Khulna District holds the second position (BBS, 2020). This district consists of nine upazilas; for the purposes of the study, the author has selected Rupsha Upazila. Multi-stage random sampling is applied in this study. For the 1st stage, 64 districts are selected. For the 2nd stage, Khulna District is selected. For the 3rd stage,

Rupsha Upazila is selected, and for the 4th stage, four villages are selected (Rajapur, Jogihati, Diara, Nandanpur), where 50 migrants are chosen from each village who have stayed abroad for more than 5 years.

1 Research Technique and Model

According to the outcomes of Kangmennaang, Bezner-Kerr, and Luginaah (2017) and Wouterse (2012), there is a constructive effect of remittance on rural household agricultural output and household well-being. Brown and Leeves (2011) found that remittances appear more linked to consumption through accompanying truncated wage level.

Adams and Cuecuecha (2013) specified that households receiving remittances spend less at the margin on food, more at the margin on three investment goods: education, housing, and health, and invest more in agricultural sector like domestic level farming. The agriculture segment, a significant source of rural economic progress, employment and livelihood, is now facing low productivity (Wang, Khan, and Zhang, 2013), driving the rural people to explore potential investment in the agricultural sector on income-earning activities.

1.1 Dependent Variable:

Paddy and Fish Production in BDT (Seasonal Basis)

1.2 Independent Variables:

Agricultural Farm Size, Agro Labour Force, Agro-Farm Nature, Household Micro-credit Facility, Household Training Facility, Household NGOs participation, Having Radio or TV, Age of household head, Sex of the household head, educational status of household head, Household size, Dependent household members, Household income including remittance, Mirant Living Year.

1.3 The Multiple Regression Model:

A multiple regression has been examined to capture the effect of investment on remittance receiver households on Paddy and Fish Production (Measured in USD).

The equation can be written with a variable short name as:

$$PNF= \beta O+ \beta 1AFS +\beta 2ALF+ \beta 3AFN + \beta 4HMF + \beta 5HTF +\beta 6HNP +\beta 7RNT +\beta 8AGH + \beta 9HHS +\beta 10\ ESH +$$

$$+ \beta 11\ HSZ + \beta 12\ HFZ +\beta 13\ RHI + \beta 14\ LYM\ldots \text{(i)}$$

Here, the author considers two dependent variables and nine independent variables to measure the effect of the independent variables on the dependent variable.

Table 1 – Variable List Identification of Independent Variables Affecting Dependent Variables

Dependent variable: Paddy and Fish Production (Measured in USD)				
Explanatory variables (Indicators)	**Description of variables**	**Measurement unit**	**Expected Sign**	**Sources of Variables**
Household Behavioural Variables:				
AFS	Agricultural Farm Size	In Bigha	+ or -	Kangmennaang et al. (2017)
ALF	Agro Labour Force	In Numbers	+ or -	Mahapatro (2016)
AFN	Agro-Farm Nature	1= Seasonal, 0= Non-seasonal	+ or -	Musumba et al, (2007)
HMF	Household Micro-credit Facility	1= Yes, 0= No	+ or -	Sinning (2008)
HTF	Household Training Facility	1= Yes, 0= No	+ or -	Sikder and Higgins (2017)

Dependent variable: Paddy and Fish Production (Measured in USD)				
Explanatory variables (Indicators)	**Description of variables**	**Measurement unit**	**Expected Sign**	**Sources of Variables**
HNP	Household NGOs participation	(= 1 if the household respondent participated in any production-related activities undertaken by NGO; 0 – otherwise)	+ or -	Raihan et al. (2009)
RNT	Having Radio or TV	(= 1 if household owns a radio and television; otherwise, 0)	+ or -	Shimul (2013), Alcala et al. (2014)
Socio-economic Variables				
AGH	Age of household head	Years	+ or -	Adams (2005) and Tabuga (2008)
HHS	Sex of the household head	Dummy: Male=1 and otherwise=0	+ or -	Rivera and González (2009)
ESH	Educational status of household head	Years of schooling	+	Traverso (2016)
HSZ	Household size	Number of members	-	Adams (2005) and Tabuga (2008)
HDM	Dependent Household Members	Number of members	-	Wadood and Hossain (2016)
RHI	Household income including remittance	In USD	+	Parinduri and Thangavelu (2008)
LYM	Mirant Living Year	Years	+	Sinning (2008)

Source: Author's compilation, 2025

Results

Migrants go abroad to reduce the financial difficulties of their households and to take responsibility for their families. Marriage increases this responsibility, motivating migrants to earn more, which has a positive effect on remittance flows. For this reason, the marital status of migrants is an important variable in this study.

Migrants are engaged in different types of occupations based on their skills, categorised as skilled, semi-skilled and unskilled. The educational profile of the migrants shows that many of them are not sufficiently educated to obtain standard or white-collar jobs. The poor financial condition of migrant households often forces individuals to migrate without the qualifications required for better employment. In developing countries such as Bangladesh, people are more likely to migrate abroad for income-earning purposes. Many household members migrate in order to achieve financial stability at home.

It is observed that many talented students are unable to complete secondary or higher secondary education due to financial hardship. In this research, four categories were identified to explore the reasons behind migration. The majority of remittance-receiving households in the study obtain remittances once a month. The findings also show that migrants who left earlier earn significantly higher incomes than those who migrated later.

Table 2 – Multiple Regression Analysis Results of Independent variables on the Dependent variable

Variables	Model 01: Paddy Production (In USD)	Model 02: Fish Production (In USD)
AFS	27.32** (1.16)	*19.68** (0.565)*
ALF	*1.42 (0.087)*	*-1.65 (1.459)*
AFN	*-0.698 (0.269)*	*-1.09 (0.93)*
HMF	*0.98 (4.01)*	*1.851** (0.961)*
HTF	*-1.593 (1.451)*	*1.456 (0.695)*
HNP	*1.711** (1.04)*	*3.054 (1.032)*
RNT	*-1.66 (-1.02)*	*0.652 (0.129)*
AGH	12.758** (1.96)	*16.356** (0.564)*
HHS	-0.456 (0.006)	-0.032 (0.453)
ESH	24.01*** (3.98)	17.071* (0.985)
HSZ	-1.45* (2.02)	-0.672 (1.03)
HDM	-0.165 (0.985)	-1.432 (1.062)
RHI	0.077*** (2.965)	0.064** (1.995)
LYM	-1.89 (0.69)	-0.612 (0.236)
Constant	***26.56***	**14.92**
R^2	**0.432**	**0.3366**
Observations	**192**	**192**
Significance Level: *p<0.1; **p<0.05; ***p<0.01		
Note: 1 USD = BDT 121.21 (March 2025)		

Source: Author's compilation based on field Survey, 2025

From Model 01, the author estimates the effect of household behaviour on paddy production. First, farm size is positively associated with paddy production: if the farm size increases by 1 bigha, paddy output rises by USD 27.32 (BDT 3310). This result is statistically significant at the 5 per cent level. Second, households' participation in NGO activities has a positive effect on paddy production, as NGOs provide skills and modern cultivation techniques. Third, the age of the household head is positively related to paddy production: a one-year increase in age results in an additional USD 12.75 (approximately BDT 1550) per season. Fourth, an additional year of schooling increases paddy production by USD 24.01 (BDT 2910) per season, which is statistically significant at the 1 per cent level. Fifth, household size is negatively correlated with paddy production and is

statistically significant at the 10 per cent level. Finally, if the monthly income of a remittance-receiving household increases by USD 100, paddy production increases by USD 7.70 (approximately BDT 930) per season. This variable is statistically significant at the 1 per cent level.

From Model 02, the author estimates the effect of household behaviour on fish production. First, farm size is positively associated with fish production: a 1-bigha increase in farm size raises fish output by USD 19.68 (BDT 2382), which is statistically significant at the 10 per cent level. Second, participation in microcredit programmes is positively linked to fish production, as short-term loans support fish cultivation. Third, the age of the household head is positively related to fish production: a one-year increase in age results in an additional USD 16.35 (approximately BDT 1980) per season. Fourth, an additional year of schooling increases fish production by USD 17.07 (BDT 2065) per season, which is statistically significant at the 10 per cent level. Finally, if the monthly income of a remittance-receiving household increases by USD 100, fish production rises by USD 6.40 (approximately BDT 775) per season. This variable is statistically significant at the 1 per cent level.

Conclusions

Migration is a factor that contributes to household income by linking households to new markets, societies and cultures. It may lead to changes in consumption, saving and investment behaviour. A simple comparison between households with and without remittances shows that the former group invests a larger share of their income in education, health, durable goods and other categories. Such differences indicate that consumption preferences may be shaped by the receipt of remittances.

Remittance-receiving households have higher income than non-remittance households. However, on average, their socio-demographic characteristics do not differ significantly. It remains unclear whether the differences in investment between the two groups result from remittances themselves or from differences in total income or other factors.

In this study, the author presents several empirical specifications to examine the impact of remittances on investment patterns in the study area. The research has important implications for policy development and implementation at both the micro and macro levels. It also opens opportunities for further research on investment-related issues in different economic sectors. Possible areas for future investigation include remittances and consumption, remittances and poverty reduction, remittances and agricultural development, remittances and rural–urban dynamics, and the effects of domestic and international remittances.

Based on this study, it is suggested that future research may include additional variables not used here in order to strengthen the analysis. Scholars conducting similar studies may follow the same framework for methodology, data collection, analysis and hypothesis testing, or use the methodological and analytical structure of this paper as a model for related research. The findings presented here provide a foundation for further study.

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Competing interests

The authors declare that they have no competing interests.

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