

# Remittances and Investment Choices at the Household Level: Empirical Evidence from Bangladesh

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**Abstract:** *In developing countries like Bangladesh, foreign capital inflows, such as remittances, are a vital source of funds that can bridge the domestic investment gap. Previous empirical results from developing countries show that remittances are widely consumed and seldom used for investment purposes. Therefore, the objective of this study is to identify the link between remittances and investment at the household level in Bangladesh. Based on a large-scale and nationally representative cross-sectional secondary data set of the Bangladesh Bureau of Statistics and employing the ordinary least square (OLS) regression model, this study helps to explore the link between remittances and investment at the household level in Bangladesh. The result of this study reveals that remittances positively affect the housing, land, agriculture, business, and valuable investment decisions at the household level, and significantly impact various types of investment. Therefore, it can be said that in the least developed countries like Bangladesh, remittance does act as credit insurance and works as a risk-spreading strategy to secure and increase income and acquire capital for investment. The demographic characteristics of the household head, such as gender and marital status, have a significant impact on household investment.*

**Keywords:** Remittances; Investment; Household; Micro-level impact; Bangladesh  
**JEL Classification:** J20, D0, J31

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## 1. Introduction

Remittances are a crucial aspect of globalisation. In 2020, worldwide remittances were estimated to have reached approximately USD702 billion, the majority (USD540 billion) of which were directed towards low and middle-income countries (Ratha et al., 2020). After foreign direct investment (FDI), remittances have become the second-largest source of external finance for developing countries, and accounts for nearly double the amount of official aid received (Chowdhury, 2011; Rao & Hassan, 2011; Hossain & Hasanuzzaman, 2013). It contributes significantly to different economic sectors and ultimately to growth through direct and indirect channels. One meaningful way to observe the economic implications of this kind of transitional income lies in investigating the association between remittances and investment at the household level.

Studies reveal that remittances help developing countries reduce negative shocks by influencing economic growth, and reducing the level of poverty and inequality (Jouini, 2015; Taylor, 1992). It also helps increase per capita income, promote entrepreneurial activities, and strengthen financial development in cash-dependent countries (Lasagabaster et al., 2005; Rahman, 2009). At the household level, remittances bring in extra money that enhances the well-being of households by increasing consumption, providing better access to health, education, housing and living conditions, and creating opportunities for productive activities (Thao, 2009). It helps households remove investment constraints by increasing the marginal propensity to save, thereby stimulating investment (Adams & Page, 2005; Gupta et al., 2009; Hatemi & Uddin, 2014).

The inflow of workers' remittances in Bangladesh has exhibited an increasing trend over the last 30 years in both absolute and relative terms. In 2021, remittance hit an all-time high of USD21.74 billion, as migrant workers continued to use formal channels—sidestepping the hundi system—to send money home. Hence, remittances are expected to make a significant socio-economic contribution through direct and indirect channels on different sectors of Bangladesh economy and eventually on growth. Given that Bangladesh is one of the primary recipients of remittances globally, it is an ideal country to test the development impact of remittances.

Migrants transfer earnings to their families in their home country as additional income. This altruistic behaviour could constitute about 51%

to 70% of household income on average (Siddiqui & Abrar 2003). Studies show that households often devote their remittance income on conspicuous consumption and status-oriented consumer goods (Simiyu, 2013; Adams, 2011; Chami et al., 2003). Additionally, households with remittance income spend about 40% more than households that do not receive remittances. In most cases, remittances are spent on the consumption of basic needs, such as food and healthcare (Kangmennaang et al., 2018). Therefore, remittances supplement income and lead to increased consumption (Démurger & Wang, 2016). However, in the short term, remittances can contribute to the growth of output in the economy by increasing aggregate demand if households spend most of this income on consumption (Hossain et al., 2017; Mamun & Nath, 2010).

An International Organization for Migration (IOM) study states that remittances accounted for more than half of the household income of beneficiary families in Bangladesh (Barai, 2012). Thus, remittance inflow enables substantial economic growth and makes valuable contributions at both the micro and macro levels. The Household Income and Expenditure Surveys (HIES, 2011) conducted by the Bangladesh Bureau of Statistics (BBS) indicates that overseas remittances constitute a sizeable portion of household income and expenditure (BBS, 2011a, 2011b). It has proved to be the most stable and resilient amongst the external sources of income in Bangladesh. Of the various uses of remittances by households in Bangladesh, basic family consumption (87%) and debt repayment (36%) are the two most significant (Mahapatro, 2016).

As with other developing countries, remittances in Bangladesh have become an increasingly important outcome of global economic integration that can support governmental and household resilience. A substantial amount of foreign remittance from international migrants goes to rural households across the country. Therefore, it is expected that remittances will generate remarkable benefits for the home country economy by augmenting investment and income-generating activities. Besides smoothing consumption, when remittances are invested in human and physical assets, it helps diversify income sources. Therefore, in a developing country like Bangladesh, if a large share of remittances are directed towards investment, it could lead to higher economic growth and enhance the economic impact of remittances in the long run (Mamun & Nath, 2010; Hossain et al., 2017).

In developing countries, worker remittances become an essential source

of bridging investment gaps that would otherwise be major impediments to economic growth (Shabbir et al., 1992). Under such circumstances, if remittances are used only to meet the daily needs of the family instead of investing in the productive sector, it loosens the multiplier effect of benefiting both the household and the broader community (Démurger & Wang, 2016; Mallick & Mahalik, 2016; Bohme, 2015; Dhakal 2012; Shahbaz & Aamir, 2009; Yang, 2008; Woodruff & Zenteno, 2007; Schrooten, 2005; Afsar, 2003; Dustmann & Kirchkamp, 2002; Siddique & Abrar, 2001). In other words, if remittances are primarily consumed, the growth effect through investment could be unresponsive. Thus, it is crucial to pinpoint the utilisation pattern of remittance inflows so that the actual impact on remittance-receiving households and society can be figured out.

Given the country's extended history of migration, that it is one of the main recipients of remittances worldwide, as well as from a development perspective, researching impact of remittances on household-level investment in Bangladesh is of great importance. Political, economic, and infrastructural perspectives vary from country to country, region to region. Therefore, it is necessary to assess the remittances-investment nexus in country-specific contexts. Although there are many policy initiatives and activities aimed at increasing remittance inflow, there is a lack of effective policy incentives to promote directing remittances towards investment. Therefore, a study of such will help suggest strong development policies at the micro level, and enable the implementation of appropriate policies to boost investment, as far as South Asian or middle-income countries are concerned.

Few studies have tried to capture the correlation between remittances and investment in one particular frame. Therefore, this study aims to investigate the nexus between remittances and investment at the household level and the types of investment made. It will help determine whether remittances genuinely increase the level of investment of Bangladeshi households.

## **2. Literature Review**

Nowadays, the cross-border economic activities of international migrants have developed substantially because of globalisation, improved economic integration, and global financial liberalisation. This has essentially triggered

the large cross-border circulation of remittances. Over the past 30 years, remittances to developing countries have increased gradually, averaging USD100 billion annually. Remittances have played crucial role in social development for the last few decades. Small economies especially are the most dependent on migrant remittances (Durand et al., 1996; Aggarwal et al., 2006; Gupta et al., 2009; Rao & Hassan, 2011).

Bangladesh is currently the eighth most remittance-receiving country worldwide (World Bank, 2020). According to the latest figures from the Bangladesh Central Bank, expatriate Bangladeshi workers have sent home around USD15.9 billion in FY 2017-18, 17% more than the previous financial year. It is so far the second-highest yearly amount that the country has received since independence in 1971. Therefore, remittances have come out as an alternative form of financial relief for households of Bangladesh. In Bangladesh, a substantial amount of foreign remittance goes to rural households all over the country. Despite the associated transfer costs, remittances in rural Bangladesh have had a positive effect. Remittances work as a source of income and as a means of improving the capability of the people, in terms of increasing access to all forms of social institutions (Hossain & Mullaly, 2016).

Globally, remittances increased investment in housing in Nigeria (Osili, 2004), agricultural investment in China (Taylor et al., 2003), schooling and entrepreneurial expenses in the Philippines (Yang, 2006 & 2008), student retention rates in El Salvador (Edwards & Ureta, 2003), entrepreneurship in Mexico (Woodruff & Zenteno, 2007), land ownership in Pakistan, housing and education spending in Guatemala, and health, housing and education in Ghana (Adams, 1998, 2010 & 2013).

Many studies have concluded that remittances have had an impact on the pattern of the household spending in developing countries (Airola, 2007; Adams, 2005; Zarate-Hoyos, 2004). Through the receipt of international remittances, households in Indonesia continue to raise their average per capita expenditures by reducing marginal expenditure on food consumption and diverting this towards housing investment (Adams, 2013). Taking experience from Bangladesh, Mannan and Farhana (2014) state that migrants' housing investment decisions can bring direct and indirect benefits to their families. Therefore, growing investment in housing using remittances in developing countries could potentially increase household assets and improve the quality of life (Mannan & Farhana, 2014). In Nepal,

Dhakal (2012) reports that landholdings positively affect investment at the origin household. Income from agricultural production from these lands also indirectly adds to household income and well-being. In countries with underdeveloped financial systems, remittances have been observed to overcome credit and liquidity constraints and are used to invest in small business development (Naudé et al., 2017). Remittance-receiving households also spend remittances on acquiring wealth, such as gold jewellery and bank deposits (Ahmed et al., 2018; Khan et al., 2011). Apart from that, remittances are also expended on acquiring transport vehicles. Many migrants take loans to finance vocational training, finish their academic education before migration, or even finance their migration process. Once migrants' income profile starts rising, these loans are paid back via remittances (Barai, 2010). Therefore, international remittances also play a significant role in repaying debt. De Brauw and Giles (2008) find that while poor households focus more on housing investment and durable goods, affluent families tend to invest more in productive assets. Above all, the growing nature of households investing their remittances in education, housing, land, entrepreneurial activities, etc., indicates a promising future for developing economies (Sikder & Higgins, 2017).

However, the impact of aid or any other monetary inflows on the growth rate of the recipient economy depends on the investment or consumption nature of this money transfer. In this view, Lewis (1954) argues that the key to economic development lies in increasing investment. Similarly, Rostow (1960) perceives that the question of how to change an underdeveloped country into a developed economy depends on increasing investment (Raimi & Ogunjirin, 2012). Undoubtedly, one of the crucial components of total spending in an economy includes investment expenditure. This expenditure directly accords to capital formation, and is considered one of the prime conditions for economic development. Kamal and Rana (2019) state that creating investment opportunities is essential to local economic development, which can be achieved by engaging remittance recipient households towards investment. Therefore, the proper utilisation of migrant's remittances deserves attention (Osili, 2007).

However, migration is a form of lumpy investment, especially for households in poor rural areas of Bangladesh (Mendola 2008). Therefore, causes of migration and utilisation of remittances simultaneously shape the economic impact of having a migrant member of the family left

behind, and help with the understanding of the complex linkages between migration opportunities and economic development in local communities. Earlier research depicts the common practice of remittance-receiving households making little or almost no effort to save or invest; rather, the marginal propensity is to use remittance income for consumption (Barajas et al., 2009). In addition, studies show that households more often spend remittances on conspicuous and status-oriented consumer goods (Simiyu, 2013; Adams, 2011; Chami et al., 2003). Research conducted on nine years of Nepali macroeconomic data show that remittances have more causality on consumption patterns and less on investment (Taguchi & Shammi, 2018). Studies also note that only 23% of families in Bangladesh report practicing investment using remittances. Therefore, households are least likely to use remittances in investment sectors like business, real estate or land, and savings, which would create new employment and income-earning opportunities. Importantly, if remittances are spent only for consumption, future consumption must be financed by future remittances or other sources of income. But if remittances are used for investment today, this could assist in funding future consumption (Pant, 2011). Thus, the productive use of remittances is essential, as remittances can play a more direct role in enhancing growth in developing countries like Bangladesh (Stauvermann et al., 2018).

While it is recognised that investment is the key through which remittances are expected to influence a country's economic growth, few empirical studies have systematically examined the remittances-investment link. In terms of Bangladesh, a large number of studies focus on the micro-level impact of migration and remittances on household consumption, poverty and inequality. However, as far as utilisation is concerned, few studies have attempted to analyse the pattern or type of investment and savings made through remittances in terms of Bangladeshi households. This gap opens a window for further investigation. Moreover, the causes and effects of migration and remittances can only be better understood when the process is placed in its local context, because what can be beneficial at the national level may be detrimental at the community or household level, or *vice versa*. Also, as the political, economic and infrastructural perspectives vary from country to country and region to region, it is important to assess the relationship between remittances, investment and savings in the context of Bangladesh. Nonetheless, studies using household-level data can often

delineate causal pathways more convincingly, and can also shed light on the impacts of remittances with more detail and nuance. Therefore, this study tries to enhance robustness by deploying large pool of data with wider sample and area coverage. To date, there are hardly any studies that address the impact of remittances on household-level investment using data from all over Bangladesh. Therefore, this study attempts to fill the gaps.

Hossain et al. (2017) show that gender, education level, marital status of the household head, household size and ownership of the house has significant impacts on the physical and financial investment of remittances at the household level. Bhavani and Shetty (2017) report that age, gender, education, and occupation significantly influences the selection of investment avenues. Several theoretical and empirical studies on remittances and their impact use household head characteristics as an important determinant of the former (Stark, 1999; Stark & Taylor, 1989; Stark et al., 1986; Stark & Bloom 1985).

### **3. Methodology**

#### ***3.1 Theoretical framework***

The new economics of labour migration (NELM) theory (Lucas & Stark, 1985) primarily perceives migration as a strategy of diversifying risks at the household level to protect it from negative income shocks or to overcome the budgetary or borrowing constraints on household activities. The theory further explains that in the absence of a formal or informal market for credit or insurance, households have limited or no opportunity to self-finance production in agriculture or other non-farm sectors. In such circumstances, remittances act as an insurance for households, and play a crucial role in overcoming missing or incomplete credit by providing them with access to capital to support production and income-generating activities (Sikder & Higgins, 2017; Taylor, 1999; Taylor & Wyatt, 1996; Stark, 1991). According to Lucas and Stark (1985), migrant workers often consider remittances as a strategy to diversify their savings. As a result, part of their savings generates investment in housing, agriculture and livestock, land holdings, small businesses or other properties and financial assets in the home country. In general, all capital expenses which might generate returns could be considered as investments (Shaffer, 1961). Hence there remains a scope to



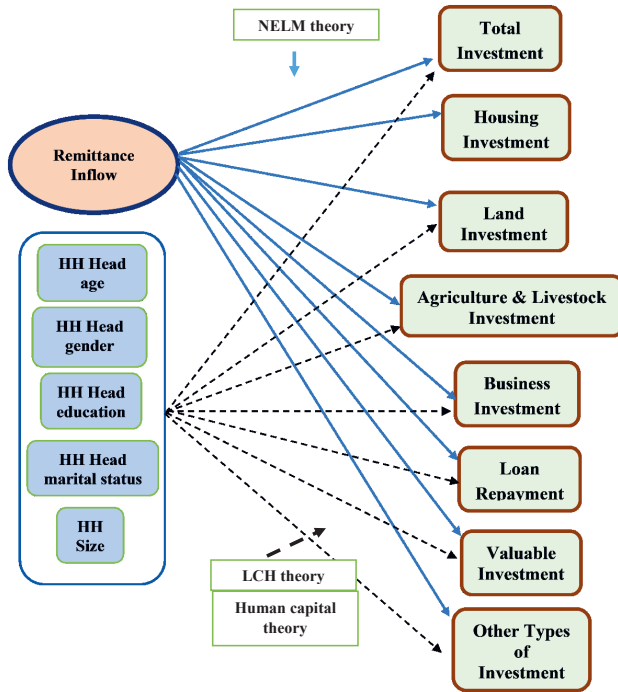
connect the NELM theory with types of investments in order to assess the impact of remittances on different category of investment.

Under NELM theory, migration decisions are made by larger units of related people, usually households in which the migrant is the decision unit (Stark, 1991). Therefore, migration is considered to be not just an individual choice, but also the collective decision of the family (Stark & Bloom 1985). Hence, the utilisation of remittances may often be determined by the characteristics of household members, or specifically, the household head. Besides remittances (supported by NELM theory) to assess the impact of socio-demographics of the household head on various investment decisions, this study also takes from the life-cycle hypothesis (LCH) theory and human capital theory. LCH is an economic theory that relates to the spending and saving patterns of people over time. LCH presumes that an individual consumes on the basis of future income. If the individual is a household head, he or she must consume by considering his/her income, the household size, or dependent members in the household. For instance, preferences of utilising income may be different between a married and an unmarried household head. Furthermore, LCH concludes that the average propensity to consume is higher in both young and ageing individuals, since they tend to borrow against future income (in the case of young individuals) or using savings (as with aging or retired individuals). Middle-aged people, on the other hand, have a greater propensity to save and *vice versa*. Human capital theory, meanwhile, demonstrates that the educational level of individuals or groups has a significant association with income distribution, where an educated and skilful household head can have more earnings and investment opportunities (Alam, 2009).

### 3.2 Conceptual framework

Based on existing literature and all the related theories discussed above on the spending decisions and characteristics of households, the conceptual framework has been developed in estimating the relationship between remittances and types of investment (see Figure 1).

Figure 1: Conceptual Framework



### 3.3 Model specification

The following equations provide the estimated regression models to capture the effect of remittances on different kinds of investment:

$$TOTIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{1}$$

$$HIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{2}$$

$$LIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{3}$$

$$AIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{4}$$

$$BIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{5}$$

$$LR_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{6}$$

$$VIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{7}$$

$$OIN_i = \beta_0 + \beta_1 RI_i + \beta_2 X_i + \dots + \varepsilon_i \tag{8}$$

where,  $TOTIN_i$  represents the total investment of the household;  $HIN_i$ ,  $LIN_i$ ,  $AIN_i$ ,  $BIN_i$ ,  $LR_i$ ,  $VIN_i$ ,  $OIN_i$  represent investment in housing, land, agriculture, business, loan repayment, valuables and other types of investment, including miscellaneous expenses; and  $RI_i$  represents the total remittance inflow. All these are scale variable measures in local currency (BDT), transformed into log form.  $X_i$  represents the set of independent variables related to the social demographics of the household head, such as age, gender, education, marital status, and household size. Categorical variables like gender, age, education, marital status and household size are expressed as dummy variables. These dummy variables are binary in nature. In terms of the gender of the household head, female household heads are represented by 0 and male household heads are represented by 1. Household heads aged less than or equal to 45 years are represented by 0, while those aged 46 years and above are represented by 1. Household heads with no education are represented by 0, while those with an education are represented by 1, which includes primary (class 1 to 5), secondary (class 6 to 10), higher secondary (class 11 and 12), graduation and above. Unmarried household heads are represented by 0, while those who are married, widowed, separated/alone and divorced are represented by 1. Finally, small households (one to six members) are represented by 0, and big households (seven or more members) are represented by 1. The subscript  $i$ , represents each household (HH), while  $\varepsilon_i$  is the error term which holds for all the equations formed to serve the purpose of the study.

### 3.4 Data source, sample and data analysis technique

This study deploys a secondary data set from the latest Survey on Investment from Remittance (SIR, 2016), conducted by the BBS. A key advantage of this data is that it is specifically designed to identify the investment choices made by households where only remittance-receiving households (RRHHs) were considered as the survey population. Seven out of eight divisions of Bangladesh are covered, as the study area included urban and rural areas (Dhaka, Chittagong, Khulna, Rajshahi, Sylhet, Rangpur and Barisal). A two-stage stratified random sampling technique was applied. At the first stage, from the area frame of 1,433 primary sampling units (PSU), 400 were taken as samples following simple random sampling (SRS). And from the list frame, out of 2,320 villages, 400 were selected as samples using probability

proportion to estimate size (PPES). In the second stage, approximately 20 RRHHs from each village from the 400 sample villages, and 20 RRHHs from the 1,433 PSUs were selected using SRS. This resulted in an estimated sample size of 16,000 RRHS, some of which were dropped for various reasons. Finally, a total of 10,451 RRHHs were surveyed. Ordinary least square (OLS) regression was deployed to define the impact of remittances on household investment, as both the dependent and the independent variables are continuous, and all the assumption tests, such as multicollinearity, autocorrelation and homoscedasticity, were satisfied (Gujarati, 2003; Pohlman & Leintner, 2003). SPSS (version 25) was used to perform the descriptive statistics, testing assumptions for normality and regression analysis based on the collected data.

## 4 Empirical Results

### 4.1 Demographic profile of the household head

Table 1 shows that among 10,451 households receiving remittances, 51.2% of household heads were male, and 48.8% were female. Most of the household heads were 46 years and above (51.2%). The household head's level of education was satisfactory, with 35.5% falling under the higher secondary education category. However, 29.4% of the household heads were uneducated. Most household heads (89.5%) were married, while 47.6% of households had four to six members.

**Table 1:** Demographic Characteristics of Respondents

Variables	Frequency	%
<i>Gender</i>		
Male	5,352	51.2
Female	5,099	48.8
<i>Age</i>		
Less than and equal to 25	779	7.5
26 to 35	2,574	24.6
36 to 45	1,743	16.7
46 and above	5,355	51.2

Variables	Frequency	%
<i>Education</i>		
No education	3,077	29.4
Primary education (Class 1 to 5)	3,013	28.8
Secondary education	3,715	35.5
Higher secondary	403	3.9
Graduation and above	230	2.2
Don't know	13	0.1
<i>Marital status</i>		
Unmarried	344	3.3
Married	9,358	89.5
Widow	728	7.0
Alone / Separate	12	0.1
Divorce	9	0.1
<i>Household size</i>		
1 to 3 members	3,612	34.6
4 to 6 members	4,978	47.6
7 to 9 members	1,410	13.5
10 and above	451	4.3
<b>Total</b>	<b>10,451</b>	<b>100</b>

#### 4.2 Descriptive statistics

Table 2 shows that the remittance-receiving households received at least BDT3,000 as remittances during the year 2015-2016. The mean value indicates that the highest amount of remittance was spent on housing investment. However, the lowest amount was channelled towards valuable investments, such as gold, diamond jewellery, and holding shares/bonds.

**Table 2:** Descriptive Statistics

Variables	Mean (BDT)	Std. Dev	Min	Max	No. of Obs.
Total remittance inflow	278,944	464,762	3,000	32.1M*	10,451
Types of investment					
Housing investment	52,954	265,755	0	21.5M	3,158
Land investment	34,159	137,716	0	6.2M	1,520
Agriculture and livestock	7,423	31,270	0	0.9M	1,761
Business investment	4,987	61,751	0	3.6M	341
Repayment of loan	33,403	74,280	0	1.4M	3,413
Investment in valuables	2,571	18,598	0	0.7M	471
Other investments	9,923	61,948	0	4.0M	1,028
Total investment	145,421	387,996	0	31.3M	8,036

Note: \*M: Million BDT

### 4.3 Remittance and investment

The frequency distribution in Table 3 reveals that out of the 10,451 households surveyed, all (100%) received remittances. Among the remittance-receiving homes, a majority (76.9%) made some form of investment. Based on the results, it can be said that households are investing their remittance incomes. However, it is vital to know what kind of investments these are.

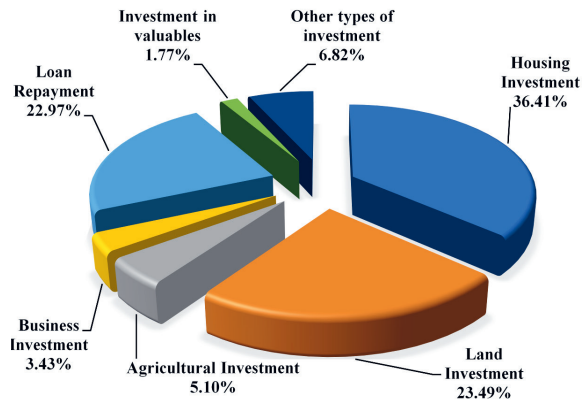
Table 4 shows various kinds of investments made by households using remittances. The families recorded multiple responses for each category of investment. Out of 10,451 remittance-receiving households, the highest number of families (30.2%) invested in housing, followed by 16.9% in agriculture and livestock, 14.5% in land, 4.5% in valuables and 9.8% in other types of investment. However, other than investment, the highest number of households (32.7%) were also seen to be engaged in repaying loans using remittances. Figure 2 shows that the highest percentage of remittances (36.41%) was spent on housing investment.

**Table 3:** Remittances and Investment

Variables	Frequency	%
Remittances received by households		
Total investment	10,451	100
Investment made by HH	8,036	76.9
No investment made by the household	2,415	23.1
Total	10,451	100

**Table 4:** Types of Investment

Variables	Frequency	%
Housing investment	3,158	30.2
Land investment	1,520	14.5
Agricultural and livestock investment	1,761	16.9
Business investment	341	3.3
Loan repayment	3413	32.7
Investment in valuables	471	4.5
Other types of investment	1,028	9.8

**Figure 2:** Investment Share of Total Remittance (%)

#### 4.4 OLS regression results

Table 5 displays the results based on OLS regression related to the types of investment made by the households in Bangladesh using remittances. Coefficients related to remittance inflow shows a strong positive association with housing, land, agriculture and livelihood, business, loans, valuables and other types of investment. Therefore, remittance inflow can be considered a significant predictor of household investments in Bangladesh. Coefficients correlated to household heads' gender demonstrate that other than land and valuables, gender significantly impacts all other kinds of investment. The age coefficients of the household head are insignificant in terms of all categories of investment. The only exception is other investment types, including investment in vehicles, expenditure for sending family members abroad, etc. However, the negative coefficient associated with the age variable interprets a significant negative relationship between these two variables. Household heads' education levels showed a significant but negative impact on some of the investment categories, such as housing, agriculture and livestock, loan repayment and valuables. The coefficient values specify that the marital status of the household head has a significant positive impact on households' total investment, agriculture and livestock, and other types of investment, and a negative impact on investment in valuables. Housing, land, business investment and loan repayment have an insignificant relationship in this regard. Finally, household size has a significant negative impact on housing investment, loan repayment, total investment, and other investment types. The negative sign associated with the household size coefficient signifies that if the household size is small, there is a greater opportunity to invest.



**Table 5:** OLS Results: Remittances and Types of Investment

Investment	No of Obs.	Constant	RI	HH gender	HHage	HHedu	HHmr	HHsize
TIN	7,664	-0.207** (0.000)	0.982** (0.000)	0.059** (0.000)	-0.012 (0.151)	-0.045** (0.000)	0.036** (0.049)	-0.029** (0.000)
HIN	2,993	-0.118 (0.350)	0.940** (0.000)	0.088** (0.000)	-0.010 (0.550)	-0.054** (0.000)	0.008 (0.830)	-0.076** (0.000)
LIN	1,420	0.547** (0.001)	0.840** (0.000)	0.006 (0.767)	-0.019 (0.344)	-0.008 (0.637)	0.007 (0.882)	-0.023 (0.174)
AIN	1,690	1.157** (0.000)	0.559** (0.000)	0.227** (0.000)	-0.024 0.415	-0.069** (0.013)	0.012** (0.044)	0.005 (0.847)
BIN	314	1.024** (0.017)	0.699** (0.000)	0.169** (0.006)	-0.059 (0.277)	-0.075 (0.190)	-0.078 (0.497)	0.026 (0.605)
LR	3,290	1.483** (0.000)	0.647** (0.000)	0.064** (0.000)	-0.023 (0.098)	-0.061** (0.000)	0.026 (0.410)	-0.044** (0.000)
VIN	448	2.286** (0.000)	0.439** (0.000)	0.011 (0.782)	0.022 (0.577)	0.012 (0.754)	-0.184** (0.026)	0.036 (0.285)
OIN	937	1.583** (0.000)	0.572** (0.000)	0.091** (0.002)	-0.064** (0.027)	-0.037 (0.141)	0.224** (0.000)	-0.066** (0.006)

Notes: Standard errors in parenthesis. \*\* $p < 0.05$ .

## 5. Discussion

The study outcomes reveal that households in Bangladesh no longer only utilise remittances to meet fundamental requirements like food, health and education, but also for investments in housing, land, agriculture, business and valuables, thereby providing an alternative way to finance development. Although a study by Hossain and Mullally (2016) on Bangladesh showed that remittances have minor investment effects on remittance-receiving households, the findings of Hoyos (2004), Griffith (2008), Le (2011), Thagunna and Acharya (2013), Bui et al. (2015), Adams (2013, 2016), Karki (2016), Démurger and Wang (2016) and Khatri (2017) show otherwise, in line with the results of this study. Bui et al. (2015) explain that remittance-receiving households devote 14% more on physical assets. Osili (2004), Airola (2007) and Mishra (2013) find that a considerable portion of remittances go into investments in housing and agriculture, which supports the findings of this study. According to Khan et al. (2011),

besides purchasing land and commercial plots, as well as constructing and renovating homes, remittance-receiving families repaid their loans, purchased more vehicles, and started new businesses to convert this investment into income-generating activities. The results of the present study resemble these earlier findings in the Bangladeshi context. Thus, it can be said that, rather than being merely consumed, households are channelling remittances towards investments. The overall results indicate the positive impact of remittances on different kinds of household investment choices in Bangladesh.

Male-headed households played a more efficient role in physical and business investments at the household level compared to female-headed households. Male household heads are also found to make investment in vehicles. Mannan and Farhana (2014) and Hossain et al. (2017) obtained similar outcomes. Therefore, male household heads are observed to more carefully utilise their remittance income and boost various kinds of investments compared to their female counterparts.

Age is generally assumed to be a crucial factor for making appropriate investment decisions. The findings here, however, are an exception, and show that age is an insignificant predictor of investments in remittance-receiving households. The results show that irrespective of the household head's age, the families receiving remittances prefer to invest in various sectors if funds are available. Earlier findings show that the older the household head, the more experience to make decisions for the welfare of the household (Sánchez & Zhu, 2015). However, Zimmermann and Vadean (2008) state that this varies from country to country. Thus, the finding that households with extra income prefer to make investments regardless of the age of the household head adds to the available literature.

This study shows that household heads without education tend to invest more in land and valuables than those who are educated. One possible explanation for this could be that highly-educated household heads generally use their resources to develop family and social ties instead of making physical investments. This is in line with an earlier study (Hossain et al., 2017), which shows that household heads with higher education levels were 46% less likely to invest in physical sectors than illiterate household heads. According to Hossain et al. (2017), educated household heads preferred to invest in human resource development to maintain the inter-temporal generation. One possible reason could be that investment in land and

valuables, such as gold jewellery, shares, and bonds, represent household status.

Household heads marital status is significantly and positively associated with agricultural investment, total investment and other types of investments, including in vehicles. On the contrary, a significant negative association is seen between marital status and valuable investment. A married household head could acquire fewer valuable assets, such as gold jewellery, shares, and bonds than an unmarried household. As married household heads had greater responsibility to run the family, they invested more in income-generating activities. In their study, Mannan and Farhana (2014) also described marital status as playing an essential role in remittances and household development. Some insignificant impacts are also observed in terms of the marriage status of the household heads on housing, land and business investment, as well as loan repayment. This appears to be motivated by practicality, because housing, land and business investment falls under the everyday needs of a household, which need to be fulfilled regardless of household heads' marital status.

The significant negative impact of household size on different categories of investment indicates that the fewer the members of the household, the higher the household investment level. Usually, families with more members have higher consumer spending, which dampens investment expenditure. This is in line with the findings of Basu and Rajan (2018). Hossain et al. (2017) also find that a bigger household size negatively impacts substantial investments from remittances in physical sectors.

## **6. Conclusion and Policy Implication**

The findings demonstrate that the inflow of remittances positively affects households' investment decisions in Bangladesh and significantly influences various kinds of investment. Families receiving remittances are more devoted to investment goods and non-food expenditure—e.g., housing, land, agricultural and business investment—which helps finance development. The highest share of remittances is spent on housing investment. Households with male heads have a significantly higher likelihood of making physical investments related to those headed by females. Irrespective of the household heads' age, remittance-receiving families prefer to invest in a variety of sectors if they have funds available. Household heads without education are

found to invest more compared to those that are educated. Therefore, the results of this study indicate that, besides remittances, the complex interplay of household factors also determines the remittance-receiving household's ability or inability to shift remittance income from conspicuous consumption towards investment.

The government of Bangladesh should adopt a more appropriate and timely implementation of policies that encourage households to utilise remittances for investment in different sectors. These policies should ensure a healthy investment climate by providing incentives and appropriate logistical support to remittance-receiving families. Investment capacity-building and motivation programs can be organised to disseminate information on the various benefits and advantages of making productive investments. This action may further generate higher returns for remittance-receiving households by increasing the opportunity cost from consumption and by raising returns from investment, which is imperative for Bangladesh's growth and development.

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