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The Effect of Mobile Financial Service on Migrant Worker's Money Transfer Behavior in Bangladesh

Moshfika Haque

Julius Businge

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Supervisor: Annika Lindskog

Abstract

Mobile financial service (MFS) works as a vital money transfer instrument for migrant workers in developing countries like Bangladesh, where the poor migrant workers had no access to financial institutions like banks before 2010. Before introducing MFS, migrant workers used to transfer money through friends/relatives, travel agents, agents/brokers, couriers, postal service etc. However, after 2010, they can use MFS services to send, receive, and other transactions activity. The aim of this study is to find out the behavioral changes of migrant workers on money transfer (frequency of and amount of money transfer) due to the introduction of Mobile Financial Service. To accomplish this task, we are going to use the Ordinary Least Squares (OLS) Regression Analysis. Furthermore, we have done a comparative analysis of the frequency of money transfer and the amount of money transfer of migrant workers. This study investigates the data of Bangladesh Household Income and Expenditure Survey (HIES) 2010 and 2016 to find out the changing behavior of migrant workers towards money transfer. The analysis also focuses on statistically significant evidence suggesting that mobile financial services impact the frequency and amount of money transfer for individuals.

Keywords: Money Transfer, MFS, Migrant Workers

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1. Introduction

Financial inclusion is a kind of inclusion where people, whether poor or rich, rural or urban, have equivalent admittance to financial services at a reasonable cost with the most comfortable technology that is affordable and usable at any level. According to the United Nations, financial inclusion is "access to the range of financial services at a reasonable cost for the bankable people and firms" (UN, 2006). The adoption of mobile financial services (MFS), has developed and improved the financial structure and facilities by supporting households and individuals with the prospect to save, spend and transfer money through mobile financial services without having formal bank accounts (Hove and Dubus, 2019).

A recent report published by McKinsey and Co. emphasizes that mobile financial services can be a doorway into the large money transfer markets. And it has the possibility to extend over 1.6 billion new clients in developing economies and to expand the volume of loans extended to people and businesses by $2.1 trillion (McKinsey and Co, 2016). Previous work done based on mobile money systems in Kenya was the illustrations of how mobile financial services could help households to protect against risk and reduce poverty (Jack and Suri 2014; Suri and Jack, 2016). A study done by Suri and Jack shows that mobile financial services facilitated to boost nearly 200,000 Kenyan households out of poverty (Jack and Suri, 2016).

According to a survey report of 2014, 7% of Bangladeshi adults were involved in digital banking, but due to the speedy growth of mobile financial services, the percentage increased to 34% in 2017 (Demirgüç-Kunt et al. 2018). Microfinance is one of the powerful instruments of financial inclusion in Bangladesh. As rural and poor people have no access to the formal bank, they are involved with microfinance institutions that work as banks. Nevertheless, microfinance institutions (MFI) limitations are in terms of supplying loans and accepting savings. MFI does not allow frequent deposit services and withdrawal of money and money transfer. Even though they accept savings, the poor cannot access them instantly. For these reasons, poor people need some financial instrument that helps them to overcome these challenges.

In Bangladesh, the cell phone has a massive impact not only in the telecommunication sector but also in the overall financial and economic sector. This extended spread of the cell phone market has removed the challenge of rural areas' inaccessibility and crossed the everyday life

threshold as a necessary commodity to poor people. Gradually, people have passionately adopted it and can use it easily in daily life. Telecommunication infrastructure is the only most straightforward technology on the hand of people of remote places of Bangladesh. Initiating financial services through cell phones have a massive effect on rural and poor people's financial behaviour.

Over time, Mobile Financial Service (MFS) has become a form of financial inclusion through which all kinds of people can access various banking financial services within the cell phone device. MFS is defined according to (Alliance for Financial Inclusion, 2012) as the use of mobile phones to access financial services such as transactional and non-transactional services. It has become a true benefit for poor people who have no banking services access. It works like a money management instrument for the poor. MFS can create opportunities for the poor by increasing financial security and reducing the cost of transactions. The introduction and development of mobile banking in Bangladesh had a revolutionary impact on speed up the movement of money all over the country. It has become possible because of the substantial countrywide coverage of mobile networks, which function as a delivery channel for extending banking services to the entire population.

In this study, the insight into the case of Bangladesh meeting the challenges of maximum rural poverty and rapid urbanization. The country is currently known as one of the global hotspots for digital finance (Lee, J, Morduch, J, Ravindran, S, Shonchoy, A and Zaman, H 2018). This study will focus on the overall changes that brought by the MFS and the changing behaviour of migrant workers to support their families in rural areas. Compared to other formal services, mobile financial services' economic advantage is its convenience, security, and affordability to send and receive among the household. Thus, mobile financial services reduce the cost of sending money over large distances, improves financial inclusion, and reduces household risks.

Although MFS has changed the way of living a life, only very few studies on Bangladesh related to how MFS's introduction has dragged people to changes in the money transfer behaviour of migrant workers, thus, this study will try to fill this gap in the literature.

2. Objectives of the Study:

We plan to analyse the effect of Mobile Financial Services on the money transfer behaviour of migrant workers. Thus, this study will answer the following questions-

- How have mobile financial services changed the migrant workers' money transfer behaviour in Bangladesh?
- How mobile financial services have affected the behavior of educated and uneducated migrant workers in remittance between the year 2010 and 2016?

3. Literature Review:

There are several studies which have been conducted on mobile banking. However, a number of studies focused on developed countries. Nowadays, MFS-related research is mostly based on Africa (Kenya, Uganda, Mozambique), and those studies used panel data/randomized field experiments to show the impact on poverty, migration, financial inclusion, liquidity and savings, disaster, insurance market etc. (Aker et. al., 2016; Jack and Suri, 2014; Aron, 2015; Blumenstock, 2011).

Aker et al., (2016) stated in their paper about the money transfers as a progressively significant element for developed and developing countries to protect social policies. The authors also included that while money transfers are done electronically in developed countries, developing countries face ineffective financial infrastructure. The introduction of mobile money transfer systems for developing countries recommends various opportunities for money transfers (Aker et al., 2016). The authors tried to analyse the data by using randomized experiment of a mobile money cash transfer program in Niger and they found that the new system of money transfer actually benefited the household (Aker et al., 2016). Their investigation showed that among all the households approximately 9%–16% households received more mobile transfers and that lead to the time savings connected with mobile money transfers because the recipients of the system spent a reduced amount of time traveling to and waiting for their transfer (Aker et al., 2016). The authors suggested based on the investigated result that mobile money transfer system should be addressed as a logical challenge to implement in the developing countries (Aker et al., 2016).

Another author Aron, J. (2015) mentioned in his paper about mobile money and he beautifully described that mobile money transfer system is the recent financial innovation and how it works. According to Aron, J. (2015), mobile money is the financial transaction service which is done with the help of a mobile phone without visiting the bank. Mobile money system has extended very fast in the developing countries, by replacing the formal and conventional

banking services by overlooking the weak infrastructure and the cost structure (Aron, J. 2015). The author tried to investigate the development of mobile money with the help of surveys and became successful to prove that the mobile money system is one of the crucial elements in financial inclusion and the influence of regulation on the development of mobile money systems (Aron, J. 2015). The author tried to explore the perspectives of micro and macro in terms of economic influences through the mobile money system and represented the survey of existing micro and macro experimental works on the economic effect of mobile money system (Aron, J. 2015).

Blumenstock, J. (2011) had reflected on his paper about the causes and effects of internal migration and how this is serious to the pattern and policies to implement to influence the development of the human. But later the author realized that due to the lack of proper available data about the migrant people within the country, the actual picture of any issue could not be portrayed properly (Blumenstock, J. 2011). He also included in his paper that the government censuses and household surveys are costly and difficult to implement the migration statistics and as a result the system could not be able to capture the actual picture of the circulation of migration of developing economics (Blumenstock, J. 2011). In the paper, the author tried to provide quantitative patterns of internal migration and broader literature of information and technologies to understand the behaviour of individuals in developing countries (Blumenstock, J. 2011).

Moreover, MFS has explained in the context of micro and macro perspectives also. Macro studies showed the impact on money supply (Jack and Suri, 2014). Jack and Suri (2014) tried to create a focus on developing countries where the usage of mobile phone is abundant which led to use the mobile money more. As a result, people of those countries use mobile account to deposit and send money linked to the phone and can transferred the money to other people (Jack and Suri, 2014). Suri and Jack (2016) also showed in their paper that enhanced approach to mobile money has improved durable utilization in Kenya and decreased the number of families from poverty. Another author Aron (2015), focused on his paper about the forecasting of inflation for the markets is one of the big challenges where monetary administrations, exchange rates and price index were unstable. At that time Mobile financial services were recent inclusion to the market which started to provide the services through mobile including unbanked inflation (Aron, 2015) and found a significant effect if MFS is linked with the

banking system. A micro-level study found that regular M-Pesa users are more likely to be educated, urban, banked, and affluent" (Mbiti and Weil 2014).

Though Bangladesh has shown a substantial impact in mobile banking by poor people, earlier research on this issue is limited. This study is going to be an attempt to mitigate the research gap. USAID had a survey on MFS in Bangladesh, which has only a market situation, supply-side information, and some MFS usage data from the demand side (Parvez, Islam and Woodard, 2015). Some studies are found on technology adoption (Siddik et al., 2014). Siddik et al. (2014), focused on his paper about the financial inclusion as a new invention of technology through mobile phones brought tremendous changes in developing countries. Some authors discussed about the problems and prospects in their paper (Ahmed *et al*. 2011). Another author focused on clients' experience (Alam *et al*. 2013) and Mousumi, (2010) focused in her paper about technical issues related to mobile banking. Some studies are found about the impact of mobile banking on the livelihood of poor people (Bairagi *et al.*, 2011). However, these focus on Mobile Financial Services supply-side as it reduces cost but not intensely concentrates on the demand side.

4. Overview of Migrant Workers in Bangladesh:

In Bangladesh, the earning members of low-income households migrate to urban areas for work to support their necessities as individual households. Internal migration in developing countries like Bangladesh has focused on the movements of people from the rural to urban areas (Lucas, R. E. 2015). A substantial number of migrant workers from rural areas in Bangladesh are working in garments, transport, and labour sectors, such as construction workers in urban areas. They send their earned money to their family through relatives/friends, transport agents etc. Sometimes these kinds of ways of sending money become costly and insecured. Internal migration also acts as a significant role in poverty reduction and economic development (Deshingkar, P., and Grimm, S. 2004)

Internal migration is very important in terms of Bangladesh as the majority population are involved and possibly the considerable number of remittances are received and poverty reduction also occurred (Deshingkar, P., and Grimm, S. 2004). Thus, internal migration has become a vital source of income strategy for many poor people in Bangladesh (Deshingkar, P., and Grimm, S. 2004). A sizable number of migrant workers earn daily, and they do not have

any place to keep money securely. Thus, they must carry the full money with them. It might be suitable for them to send money weekly or twice a week. Their family member has to suffer for their infrequent money transfer. Sometimes they take high-interest loans for survival which make their life more vulnerable.

The majority of the migrant workers in Bangladesh are poorly associated with their families in villages. Those workers need a dependable, suitable, instant, secured and low-priced way of sending money to their families living in villages. MFS helps those workers to make the transactions at a lower cost, and they can control their money. Moreover, it can be said that with the help of MFS, those migrant workers and their families may also be able to access a widespread collection of financial services and products to improve their households' well-being. In contrast, from the supply side, MFS works as a platform for the effective delivery channel of various suitable financial services, such as savings, credits, and insurance.

5. Theoretical background

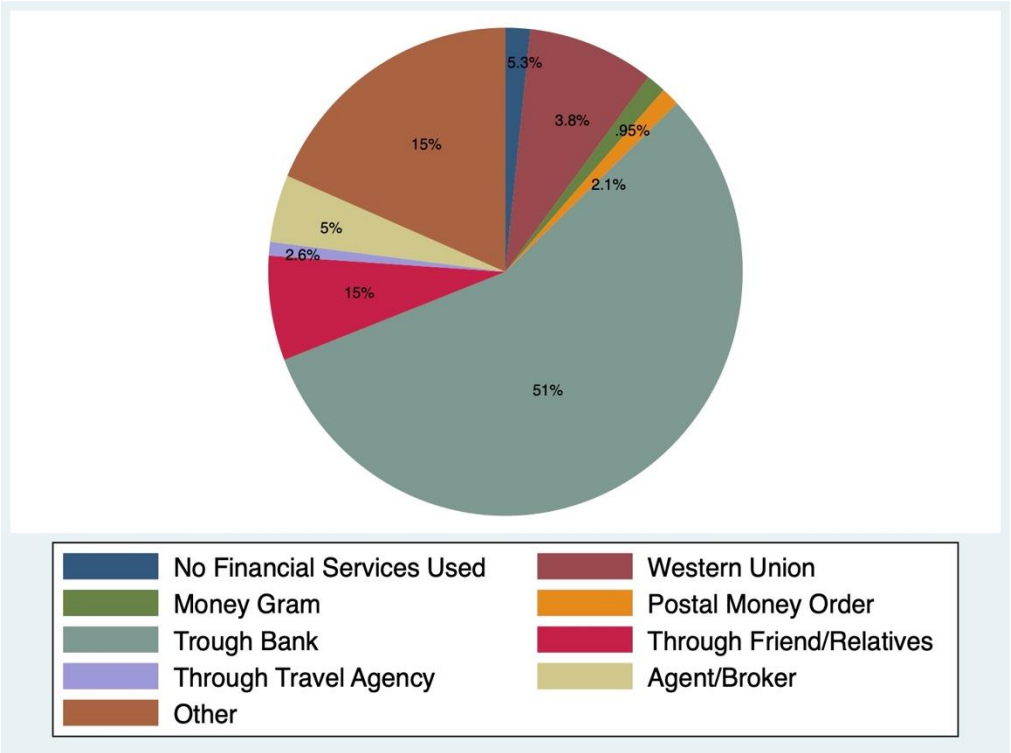
5.1. Human behavior and Mobile financial services

For an empirical study any hypothesized connection should have support from previous theories or established models (Colquitt and Zapata-Phelan, 2007). The study expects the impact of Bangladesh's Mobile Financial Services on migrant workers' attitudes and behavioural purposes through the Technology Acceptance Model (Davis et al., 1989). The adaption of new technology is fully depending on the acknowledgement of its users. Therefore, the analysis of the individual actions is one of the key elements for executing any new inclusion. As a result, the behavior of individuals has become the crucial part for any research of new inclusions. Over the period, different psychologists have created different human behavior models which are widely accepted. As we all know, human behavior is fluctuating over the movement of time. Technology Acceptance Model (Davis et al., 1989), showed the relationship between dependent and independent elements of different demographic variables like gender, age, household income, formal or informal labor etc. This study accepted the model which define the intentions among consumers to adapt mobile financial services in Bangladesh. Due to the technological advancement in phones and internet, both financial and non-financial firms have embraced and started adopting different mechanism in the use of MFS

(Karjaluoto et al, 2019). In developing countries, mobile financial services brought incredible changes with an intention to increase financial inclusion through mobile banking by using innovated circulation theory and disintegrated theory to impact the behavior of consumers (Siddik et al., 2014).

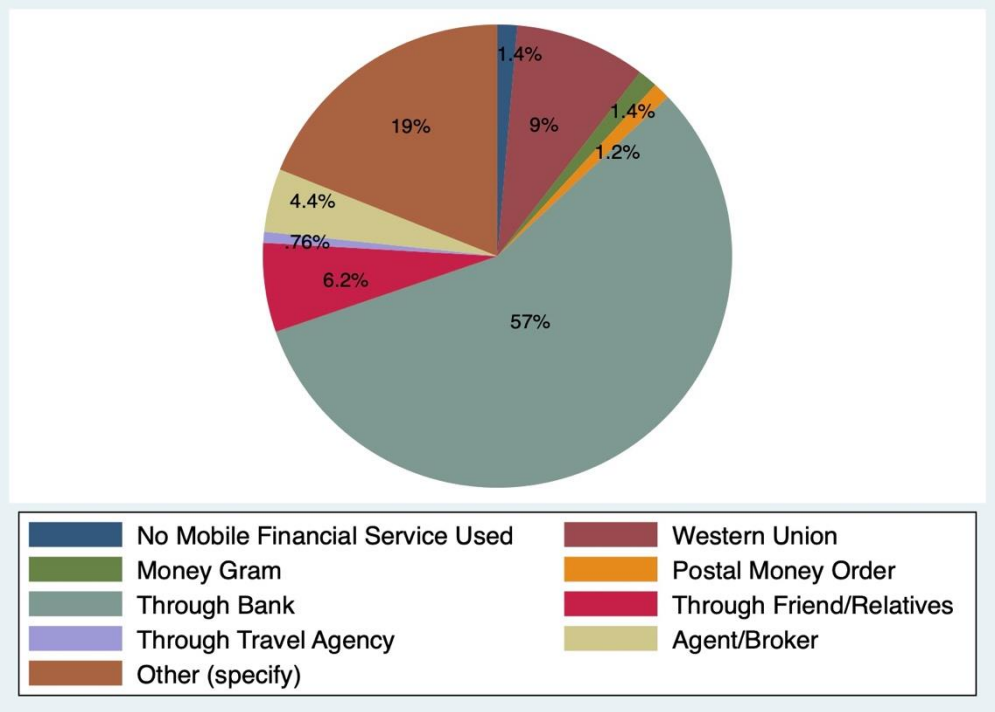
With the growing significance and control of Mobile Financial Services in developing countries, investigating consumer behaviors in adapting and using MFS is one of the most widely researched topic (Lee, Park, Chung, and Blakeney, 2012; Peffers and Tuunanen, 2005; Yen and Wu, 2016). In Bangladesh, after the introduction of Mobile Financial Services, different financial and non-financial organizations established and organized numerous methods to adapt and use of MFS. The main purpose of developing various mechanisms as MFS was to attract consumer behaviors that how they perceive the value of MFS and how they react towards the new inclusion. The figure 1 and 2 are the extract from Bangladesh HIES for 2010 and 2016 data sets and shows the different Financial Services (FS) and Mobile Financial Services (MFS) respectively, adopted by the migrant workers in Bangladesh.

Figure 1: MFS 2010



Source: Constructed based on Bangladesh HIES2010 data set

Figure 2: MFS 2016



Source: Constructed based on Bangladesh HIES2016 data set

5.2. Perceived value (PV)

Perceived Value is the global evaluation of the consumer regarding the utility of the product based on the perception of what is received in exchange for what is given (Zeithaml, 1988). For any business creating the exchange value for consumers and influence the consumer behavior are the main goal (Kumar and Reinartz, 2016). For any organization, perceived value considered as essential activity for the success, and it is beneficial for consumers. For this study, perceived value will help to understand the migrant workers reacting towards the new inclusion and how the mobile financial services influencing their money transfer behavior over the period. The concept of Perceived value is related to the money transfer behavior as mobile financial services are beneficial for migrant workers which helps the migrant workers to be familiar with internet and various services. Due to the approach of perceived value migrant workers have accepted the benefits of mobile financial services and can be able to transfer money to their household within one click. After 2010, the introduction of mobile financial services in Bangladesh, Perceived value influences the migrant workers decision-making process and their choices to adapt and use the mobile financial services in their daily household

activities as the new inclusion have changed their behavior towards money transfer to their households.

Previous research has shown perceived value acts as a crucial element in motivating migrant workers to use mobile financial services (Pura, 2005). The migrant workers who never use the mobile financial services may find it difficult to understand the real value of any services, but perceived value might help to clarify the real value of any financial inclusion.

The theory of consumption value represents how the aspects of perceived value impacted the consumer choice behavior (Lin and Huang 2012). The theory of consumption value defines that the functional values do not influence the consumer behavior rather the psychological benefit influence the usage of any services influence the consumer behavior. In terms of mobile financial services, migrant workers' behaviors are influenced by the money transfer frequency and the amount money they can send each time. Wang et al. (2013) explained the picture of mobile financial services to expand the theory of consumption values and in reflect of his study it has shown that the consumer behavior is directly impacted by the psychological and social values.

But sometimes perceived values have some negative consequences in terms of accepting the technology (Dholakia, 2001; Karjaluoto et al., 2014) because it might happen that the outcomes of new inclusion is unknown and it affects the behavior of consumers (Im, Yongbeom, and Han, 2008). In terms of this study, before 2010 in Bangladesh, there were no mobile financial service present in the market and after the introduction of new financial service it was quite risky to determine how the new inclusion would affect the behavior of migrant workers. But over the years and based on the survey of 2016 the impact was positive on migrant workers' behavior and the perceived value of migrant workers towards the adaptation of new inclusion should be positive and the overall outcome should be satisfactory.

Though this study does not test various theories rather it focuses on the adaption of several aspects to recognize the purpose of consumers to accept the mobile financial services in Bangladesh based on their behavior to send money.

6. DATA AND METHODOLOGY

This section presents the data used and methodology

6.1. Data

We will use the Household Income and Expenditure Survey (HIES) datasets for two years 2010 and 2016 from the Bangladesh Bureau of Statistics (BBS) conducted by the Government of the People's Republic of Bangladesh under the Ministry of Planning Statistics and Informatic Division to answer the above research questions. The HIES 2010 will represent the money transfer behavior of migrant workers before the effect or introduction of Mobile Financial Services, and the HIES 2016 will represent the aftereffect of the Mobile Financial Services. The survey data is based on two years, but the data has been analysed on different individuals for 2010 and 2016. The data entails numerous information about household consumption on non-food expenditure and remittances done by migrant workers, socioeconomic traits like agriculture, education and health, demographic such as age, religion, sex and marital status.

In addition to the above dataset, we will also use the Consumer Price Index dataset for 2010 and 2016 from the World Bank dataset. The aim is to account for the inflation between these two years.

6.2. Methodology

In this study, our sample will be the migrant workers who work as labor in the formal and informal sectors shown in appendix (table 7 and table 8) in urban or semi-urban areas. As mobile financial services have not been introduced in Bangladesh before 2010, some migrant workers could only be able to send money through friends or relatives' help. After the year 2010, mobile financial services were introduced and opened the door for people to get the facilities in a bigger context. For this paper, we shall use intervention time as a time variable to see the changes after the effect of adopting MFS in 2016. We shall apply ordinary least squares (OLS) approach, both simple linear and multiple linear regressions to estimate the effect of MFS after its initiation. Running the OLS regression always result to biasedness, so adjustments will be made to account for the violation of OLS assumptions and flaws. Omitted variable bias may occur due to the omission of a variable that determines the output (dependent variable) and at the same time correlated with other variables included in the regression (Suay

Erees, 2009). Furthermore, it can be caused by for example using insufficient data or including two identical variables in the regression. In this case, the analysis will be tested from heteroskedasticity by using the Ramsey test. The main variables are, the Frequency of Money Transfer, the Amount of Money Transfer, and the Late Survey after the effect. Our sample size is 64 districts of Bangladesh from seven regions which is shown in table 8 in appendix, and we will use robust checks to cater the multicollinearity in the independent variables.

6.2.1. Dependent Variable:

To determine the effect of Mobile Financial Services on the money transfer behaviour of the migrant workers, our dependent variables will be the frequency and amount of money transfer and compare their behaviour before and after the initiation of the MFS. These variables would capture how many times and how much money was sent during the years of the study.

The Frequency of Money Transfer (FMT): We shall compare the annual frequency of money transfer of the migrant workers before and after the introduction of MFS. This dependent variable could easily reflect on the difference between before introducing MFS in the year 2010 and after the effect of introducing MFS in 2016.

The amount of Money Transfer (AMT): In addition to frequency, the amount of money transfer is also very vital to migrant workers as far as remittances are concerned. With this variable, we will analyse the after effect of MFS in 2016.

6.2.2. Independent Variable:

We shall use Late Survey which is a dummy variable that becomes 2016 (1) and 2010 (0) as our determinant for both the Amount and Frequency of money transfer. This variable represents mobile financial services after effect (2016).

6.2.3. Control Variables:

We will analyse our dependent variables by employing casual modeling and among the control variables include; Level of education, Age, Sex, Occupation, Mobile phones, Access to internet, Wages, Years of migration and the regions. We believe that there are many control

variables, but we managed to gather these variables because they are the ones, we thought are important for this study.

Firstly, education levels will be added, as some past studies argued that investment by government and individuals in education and training contributed a lot to good economic sense in a migration, remittances, aid and bureaucracy (Brown Richard and Connell John, 2006). Others portray and evidence that education has both positive and negative effects on remittances. Cooray (2014) reveals that low educated migrants (primary and secondary) contribute positively and significantly to remittances while as the tertiary qualified do not contribute significantly to remittances. Another paper by Docquier et al. (2012) observes an inverse-U shaped relationship between remittances and migrants' education that depicts the more skilled migrant would send more remittances. In the real situation, a highly educated remitter can maximize his/her preference regarding money transaction modes by selecting from the various transaction channels such as financial institutions, mobile money transfers among others over an informal channel for remittance transfers.

Secondly, age has a more consistent impact on remittances (Carling Jorgen, 2008), and it is a vital variable as far as migration is concerned. It is believed that younger aged people have a high propensity to migrate in search of jobs and this means that they will remit higher amounts to their relatives back at home as compared to the older people. However, there is another scenario that contracts to this analogy that income tends to increase with age and in this essence, older people will be able to remit more.

Furthermore, we will include sex to capture the gender differences between men and women regarding remittance behaviours. This is not always significant but in certain instances, men are more likely to remit larger amounts than women due to some responsibilities they have as heads of the family or household, but also on the other side, women are more likely to remit a larger portion of their wages to their relatives than men. This is because some female migrants have a stronger sense of altruism with their relatives back home (Khan et al, 2021). This is also a dummy variable where female take (1) and male (0).

Over and above that, the use of mobile phones and the internet promotes and increases the use of financial services (Yilmaz el att, 2021). This decreases costs that are associated within the financial service sector and further reduces the information asymmetry. Access to internet and

the use of mobile phones enables financial inclusion, hence leading to income inequality improvement and a reduction in poverty levels. In this regard, migrant workers who are the remitters are connected to their relatives back home.

Wages will also be used as control variable because remittances always depend on the level of income or wage one who receives or earns. This means that, migrants' income has a positive effect on remittances or no effect at all (Carling Jorgen, 2008). Who earns enough high or reasonable income or wage are more likely to remit money to their relatives and the reverse might be true for low-income earners. Sometimes this scenario is not true. In line with (Carling Jorgen, 2008) tell that despite the weak financial position of the Somalis in Norway, they were by far the most regular remitters as compared to the other immigrants in the country. Furthermore, we accounted for inflation rate (53%) between two years (2010 and 2016), by employing Bangladesh's consumer price index (CPI). By applying the inflation rate on wages, we were able to come up with the adjusted wages which we later used in our regression.

Additionally, we will also have mobile phones as control variable, since they are associated remittance transfers (Chib A and Aricat R, 2017). Mobile phones connect migrant workers in all corners of the world in the form of social networks such as communication and can provide direct and indirect economic benefits (Rashid A Tareq, 2011). This control variable is also a dummy variable, which becomes (1) for those who use mobile phones and (0) without mobile phones.

We shall also control for regional differences. The fact that Bangladesh has seven regions with several districts in each region, which are presented in table 6 in appendix. To cover all the locations or regions, we shall employ regional fixed effect by creating six dummy variables for the regions using binary variables. These dummy variables will take the values of 1 or 0, where 1 represents a certain regional group and 0 otherwise.

6.2.4. Time Variable:

This study will use Bangladesh Household Income and Expenditure Survey (HIES) 2010 and 2016. To determine the before and after effect, 2016 will correspond to 1 as the money transfer behaviour got affected due to the adoption of MFS, and 2010 will be regarded as 0 as then there were no MFS existed.

6.2.5. Descriptive statistics

The summary statistics of the main variables used are presented in the tables 1 and 2 for datasets 2010 and 2016 respectively and they include the number of observations N, mean value, standard deviation, minimum and maximum value for each of the variable.

The variable age with a minimum value 0 means that the children born were below 1 year of age by the time the survey was conducted. Additionally, the years of migration refers to the number of years spent by the migrant worker in the locality after migration. The minimum value 0 on years of migration means that the migrant worker has lived in the locality for less than 1 year. In table 2, the number of observations for the wages is more than twice as much as the other variables since some individuals had more than two sources of income. Further on mobile phones and access to internet, the number of observations is more as compared to sex. This is because some individuals had more than one phone for different mobile networks. The number of individuals who have access to internet is much lower than those who do not have access to internet, because most individuals reside in rural areas where the access to internet and electricity and electricity is limited.

Table 1

Data Description (2010)

Variable Name	Observation	Mean	Std. Dev.	Min	Max
Frequency of Money Transfer **(FMT):** Times	1685	3.872404	2.30866	0	17
Amount of Money Transfer **(AMT):** 1,000,000 Taka	1685	0.787874	0.1304094	0	2.5
Age	1685	28.397	8.837	1	83
Wages (after inflation adjustment): 1,000,000 Taka	1685	0.0005923	0.0015947	0	0.016695
Years of migration	1685	4.233234	5.386892	0	83

Sex

	Frequency.	Percent
Male	1,612	95.67
Female	73	4.33
Total	1,685	100.00

Mobile phone

	Frequency.	Percent
Yes	1,463	86.82
No	222	13.18
Total	1,685	100.00

Access to internet

	Frequency.	Percent
Missing	21	1.25
Yes	24	1.42
No	1,640	97.33
Total	1,685	100.00

Level of education

	Frequency.	Percent
No class passed	146	8.66
Class 1	8	0.47
Class 2	32	1.90
Class 3	46	2.73
Class 4	54	3.20
Class 5	319	18.93
Class 6	85	5.04
Class 7	77	4.57
Class 8	156	9.26
Class 9	190	11.28
SSC/equivalent	310	18.40
HSC/equivalent	127	7.54
Graduate/equivalent	69	4.09
Postgraduate/equivalent	50	2.97
Medical	3	0.18
Engineering	9	0.53
Technical education	2	0.12
Other	2	0.12
Total	1,685	100.00

Table 2

Data Description (2016)

Variable	Obs	Mean	Std. Dev.	Min	Max
Frequency of Money Transfer **(FMT):** Times	19040	6.267	5.102	0	62
Amount of Money Transfer **(AMT):** 1,000,000 Taka	18982	0.2300376	0.4673701	0	20
Age	19094	33.5	10.149	1	98
Wages (after inflation adjustment):1,000,000 Taka	46924	0.00598	0.00643	0	0.2014
Years of migration	19021	6.34299	6.63647	0	98

Sex

	Frequency.	Percent
Others	4	0.02
Male	18,209	95.36
Female	886	4.64
Total	19,099	100.00

Mobile phone

	Frequency.	Percent
Yes	77,815	41.81
No	108,292	58.19
Total	186,107	100.00

Access to internet

	Frequency.	Percent
Missing	1	0.01
Yes	3,376	7.33
No	42,650	92.66
Total	46,027	100.00

Level of education

	Frequency.	Percent
No class passed/pre-schooling	1,675	8.83
Class 1	108	0.63
Class 2	376	2.03
Class 3	550	2.94
Class 4	840	4.46
Class 5	3,413	17.94
Class 6	855	4.54
Class 7	1,196	6.32
Class 8	2,358	12.41
Class 9	1,953	10.29
SSC/equivalent	2,922	15.36
HSC/equivalent	1,494	7.89
Technical education	46	0.30
Graduate/equivalent	599	3.20
Medical	27	0.20
Engineering	57	0.36
Postgraduate/equivalent	371	2.00
Other	29	0.21
Total	18,869	100.00

6.2.6. Econometric Model Specification:

The empirical estimation model used to investigate the relation between mobile financial services and the money transfer behaviours of the migrant workers is based on the same methodology applied by Grimme Hallberg, Emma (2019) in her research. She applied statistical methods of ordinary least squares (OLS) approach where both simple linear regression and multiple linear regression models for empirical analysis. We apply the same model but with different specifications as follows.

(1) Frequency of Money Transfer$_i$ = β_0+β_1Late Survey$_i$+ $\beta_2 * X_i$+ ε_i.

(2) Amount of Money Transfer$_i$ = β_0 +β_1Late Survey$_i$+ $\beta_2 * X_i$+ ε_i

The models present the outcomes of the explanatory variable, β_i, on the frequency and amount of money transfer, where β_0 is a constant interception term. The interpretation of a negative β_i would suggest that the estimated Late Survey has a reducing effect on both the frequency and the amount of money transferred, while a positive suggests an increasing. The parameter $\beta_2 * X_i$ represents the different control variables that further on will be added subsequently to develop the models. Finally, the error term ε_i aims to capture the unobserved variations that were not possible to include.

This section has elaborated on the issues of data, methodology and descriptive statistics of the study.

7. Results

This section presents the results obtained from running the OLS specifications that are highlighted in the previous section on methodology under econometric models. The results are displayed in the table and will be interpreted and analysed in regard to our research questions.

7.1. Robust Regression Results

The multicollinearity, outliers or missing values in the dataset have been rectified and corrected by carrying out re-estimation of the OLS model with robust standard errors, where each control variable is added at a time until the last one, forming specifications (1) to (8). Each specification implies an additional variable in the regression. The level of significance is determined at the p-value less than 0.05, hence providing us the enough evidence to reject the null hypothesis at 95% confidence interval.

7.2. Research Question One

The research question one states that, 'How have Mobile Financial Services (MFS) changed the migrant workers' money transfer behavior in Bangladesh?' was examined using the regression models (1) and (2), by running two regressions. These models estimate the correlation between Frequency of Money Transfer (FMT), Amount of Money Transfer (AMT), and Late Survey. The results are presented below.

Table3: ***OLS output***

DV: Frequency of Money Transfer (FMT). Times	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Late survey	2.394***	2.394***	2.184***	2.196***	2.209***	1.870***	1.809***	3.529***
	(.067)	(.067)	(.068)	(.068)	(.074)	(.088)	(.088)	(.234)
Level of education		.030***	.033***	.028**	.028**	.035*	.028*	.013
		(.009)	(.009)	(.009)	(.009)	(.013)	(.013)	(.013)
Age			.041***	.039***	.038***	.038***	.014*	.015**
			(.004)	(.004)	(.004)	(.005)	(.005)	(.005)
Sex (Male)				3.741***	3.767***	-.062	.006	-.303
				(.175)	(.176)	(.268)	(.268)	(.268)
Mobile phones (Yes)					-.030	.167	.179	.215*
					(.072)	(.103)	(.102)	(.102)
Access to internet (Yes)						.727*	.621*	.765**
						(.295)	(.293)	(.296)
Year of migration							.103***	.092***
							(.014)	(.013)
Regional fixed effects								Yes
Constant	3.872	3.652	2.464	-2.196	-2.195	1.793	2.192	1.531
	(.056)	(.085)	(.139)	(.068)	(.069)	(.352)	(.352)	(.403)
R-Square	.017	.018	.025	.027	.027	.049	.063	.084
N	20725	20716	20709	20707	20680	8477	8461	8461

Robust Standard errors in parentheses. Level of significance: $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Considering the first regression, the results show that the coefficients for the Late Survey turned statistically significant in all specifications. This supports our hypothesis for the behavioral changes of the migrant workers on frequency of money transfer. We further observe a positive correlation between the main explanatory variable and the dependent variable. This means that

a unit increase in the late survey is associated with an increase in the frequency of money transfer. In this case, it means that the number of times at which migrant workers remit money to their relatives increases. In addition, there is a variation in the Late Survey coefficients as we kept adding more control variables into the model. We also further see that some control variable such as, level of education and sex gained significance in some specifications, and one star significance level gained on mobile phones, but only three control variables (age, access to internet and year of migration) that turned significant in all specifications. The omission of an important control variable (wages) from the regression, might have impacted a huge change in the relationship between the main explanatory variable and the dependent variable. We also observe that after adding the variable access to internet, the observations dropped a lot since access to internet is limited especially in the rural areas and very expensive. The frequency for the access to the internet is well presented in table 1 and table 2. Finally, the number of observations kept on reducing as we added more control variables, and from specification (5), the observations dropped drastically until the last specification.

Table4: ***OLS output***

DV: Amount of Money Transfer (AMT). Taka: 1,000,000	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	(8)
Late survey	.151***	.151***	.129***	.130***	.140***	.136***	.133***	.058***
	(.005)	(.005)	(.005)	(.005)	(.006)	(.012)	(.011)	(.017)
Level of education		.003***	.003***	.002***	.002**	.001	.001	.002
		(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Age			.004***	.004***	.004***	.004***	.002***	.002***
			(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Sex (Male)				-.029***	-.025*	-.065***	-.062***	-.035***
				(.008)	(.011)	(.010)	(.010)	(.009)
Mobile phones (Yes)					-.027***	-.021	-.020	-.022
					(.007)	(.014)	(.014)	(.014)
Access to internet (Yes)						.001	-.006	.006
						(.015)	(.018)	(.018)
Year of migration							.007***	.008***
							(.001)	(.001)
Regional fixed effects								Yes
Constant	.079 (.003)	.060 (.006)	-.068 (.007)	-.130 (.005)	-.127 (.008)	-.038 (.019)	-.008 (.023)	-.036 (.027)
R-Squared	.008	.009	.019	.021	.022	.019	.023	.030
N	20667	20658	20651	20649	20622	8472	8456	8456

Robust Standard errors in parentheses. Level of significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the second regression presented in table 4, we regressed the Late Survey onto the Amount of Money Transfer, and the coefficients were statistically significant in all the specifications. Like in the first regression, the main explanatory variable is positively correlated with the

dependent variable, meaning that a unit increase in Late Survey results to an increase in the Amount of Money Transferred. Additionally, some control variables such as age, sex and year of migration turned significant in all specifications, except level of education and mobile phones that gained some level of significancy in some specifications. The trend at which the number of observations dropped is almost the same with the first regression presented in table3.

Regressions with regional fixed effects model were employed to check for the regional differences and to eliminate omitted variable bias. Fixed effects model eliminates bias to the time varying variables that correlate with the outcome (Collischon. M, Eberl. A, 2020). In our estimation of the models, we found that including wages as one of the control variables in our regression would result to collinearity because of the correlation between wages and the main explanatory variable (Late survey). The correlation between the variable that is omitted from the regression analysis and the regressor that predicts the dependent variable, leads to omitted variable bias (Suay Erees, 2009). So, in this case, we opted to drop out wages from the regression.

Robust regression methods were also applied to account for influence of outliers, allowing for error distribution, and reducing the sensitivity of the magnitude of the residuals (Li et al, 2021). The adoption of all these techniques in the model was to account for the systematic change in the variance of the residuals, thus producing unbiased estimates. Furthermore, we tested for variance inflation factor (VIF) for each variable to detect for multicollinearity, and the results show that none of the variables exceeded 10 which is the threshold for high collinearity. None of the control variables tested exceeded 4.61 meaning that all the variables were free from multicollinearity. (Emma G Hallberg, 2018) posit that the 'tolerance' should not be below 0.1, and neither of the variables tested for VIF fell below 0.1.

Furthermore, we observed that every time we kept adding a control variable in the regression, the R-squared was increasing and getting closer to one. This meaning that the variables used in our regression explains the dependent variable better.

7.3. Research Question Two

The research question two states that, 'How mobile financial services have affected the behavior of educated and uneducated migrant workers in remittance between the year 2010 and 2016?' was examined by using OLS regression models (3) and (4) with interaction terms based on the main explanatory variable and one control variable. Model (3) will examine the changes in the relationship between the independent variable and the frequency of money transfer (FMT), while the changes between the independent variable and the amount of money transfer (AMT) will be determined by employing model (4). In this case, we shall consider two variables, the Late survey and Education (Educated) in the model since Educated is coded 1 and Uneducated 0. The model aims at testing the hypothesis that the relationship between the independent variables on a dependent variable and how the interaction term affects the dependent variable.

(3) $FMT_i = \beta_0 + \beta_1 \text{Late Survey}_i + \beta_2 \text{Educated}_i + \beta_3 \text{Late Survey} * \text{Educated}_i + \varepsilon_i$.

(4) $AMT_i = \beta_0 + \beta_1 \text{Late Survey}_i + \beta_2 \text{Educated}_i + \beta_3 \text{Late Survey} * \text{Educated}_i + \varepsilon_i$.

Table5: ***OLS Interaction output***

DV: **Frequency of Money Transfer / Amount of Money Transfer** Times / Taka: 1,000,000	**Model 3 with Interaction term** (Coefficients)	**Model 4 with Interaction term** (Coefficients)
Late Survey	2.656***	0.150***
	(17.40)	(13.93)
Educated	.064	.002*
	(3.68)	(2.240)
LatesurveyEducated	-.036	.000
	(-1.820)	(.160)
_cons	3.407***	.061***
	(25.72)	(7.700)
R-Squared	.018	.001
N	20716	20658

*Robust Standard errors in parentheses. Level of significance: * p < 0.05, ** p < 0.01, *** p < 0.001*

There is non-significant interaction between the late survey and the educated in both models, (3) and (4). This indicates that the impact of the late survey on both the frequency and the amount of money transfer does not vary by whether the migrant worker is educated or uneducated. In other words, the educated and the uneducated individuals are impacted in the same way by the late survey. This means that the amount of money and the number of times at which the migrant workers sent money does not depend on whether the remitter is educated or not.

In model 3, the R-squared between the model with interaction term and that without interaction term increased from 17.8% to 17.9% and in model (4), the R-squared remained the same at 8.9%. This means that the model with interaction term that increased by 0.1% explains our dependent variable.

In the recent years in Bangladesh, most people living in rural areas were uneducated and lacked simple knowledge about technologies or new innovations such as the use of MFS. But now the trend has changed, as people are taking education for better lifestyle regardless of whether they are in rural areas or urban areas. This has been achieved through the effort of ensuring education for all by the Government of Bangladesh in the collaboration with the World Bank. As a result, people are trying to get at least minimum level of education to be employed and contribute to the household income. Due to the huge advancement in technology, Bangladesh has now incredibly moved forward and many job opportunities have been created in many sectors and the wage range also got impacted due to technological advancement. One of the recent technological inclusions is MFS.

The fact that Bangladesh is one of the developing countries that encourage local migration with the aim of reducing unemployment problems and improving the household income, which in turn leads to economic development within the country itself. In recent years, the numbers of migrants have been increased in Bangladesh. Most of these migrants come from rural areas to urban areas. The reasons behind these migrations are mostly to earn a better income and live a better life. This is caused by limited employment opportunities in rural areas, which prompts people to migrate to urban areas in such for greener pastures. Note that Bangladesh being a conservative country, the ratio of the household male to female in the labor force is large, meaning that there are more males than females in the labor market. This concept is changing, and more female members are getting involved in household income and employment. Women

empowerment made them to get involved in decision making in the family rather than being housewives and this gave them an opportunity to gain more power in decision making in every sector (Farawa M, 2015). On the other hand, males are now more focused on emigration.

In this paper, we have already discussed about how Mobile Financial Services have changed the dimension of the people of Bangladesh from after 2016. Characteristically, as the people of Bangladesh were conservative and uneducated and gradually, they changed their behaviors and started to migrate, and majority of the people lagged unbanked and did not enjoy the advantages of innovative financial services. In the meantime, the introduction of MFS reduced that gap and became the significant part of people's life. By the year 2016, MFS had changed people's lives and made it possible for almost everyone to use financial services through mobile phones. For migrant workers, MFS also played a vital role, as people became more educated and started to use more mobile financial applications, it helped them to send money to the household without hassle and gradually sent more money to their family members whenever they needed. On the other hand, as the migrant workers became more occupied and got more wages, they also got the opportunities to experience the better network channels and chose the faster network services which provide the hassle-free MFS.

Not only the migrant people of Bangladesh but almost everyone who is using mobile phones, and not only they send money via MFS but also, they use it for other purposes for example shopping, utility payment, banking transactions, school fees payment among others. As the MFS has influenced people's day to day life, so it has also affected the migrant workers behavior towards day-to-day life. MFS have changed people's lives and it is now not only limited to payments and money transfer purposes. With the new inventions and features, the MFS have drastically changed the economy of Bangladesh and taking the economy towards digital economy.

7.4. Directions for further research

This paper reviews a wide range of research, but there are some gaps in our knowledge on this topic. More research is needed on mobile financial services and how they impact the migrant workers' behavior in sending and receiving money, especially across countries. Our scope of study is based on one country, as we know that we live in a modern world with advance technology, and the mobile financial sector operates multinational in different countries. So,

there is a need to compare the countries that are using mobile financial services and this in one way or the other which can increase the sample size or number of observations. Further studies should replicate the current studies using large sample size to generalize the findings (Beck et al. 2009)

In our study we showed theoretical, practical, and methodological contributions of the mobile financial services to the migrant workers and the people of Bangladesh in general, and we believe that the models tested will provide a clear insight on the mobile financial services on migrant worker's money transfer behavior in Bangladesh, which will further be used by the MFS practitioners in accessing and conducting market(research) prior to the MFS industry (Beck et al. 2009).

8. Conclusion

This thesis explores the behavioral changes of migrant workers on the frequency and amount of money transfer due to the introduction of mobile financial services in 2016 in Bangladesh. In responding to the research questions, the results obtained exhibited a significant impact on the use of MFS, both on the frequency of money transfer and the amount of money transfer. Our results depicted a significant positive correlation between MFS (late survey) and both FMT and AMT, and as such, the introduction of Mobile Financial Services does increase both the Frequency and the Amount of Money Transferred or remitted by the migrant workers in Bangladesh. In spite of the fact that during this period of the introduction of MFS, it's when Bangladesh started experiencing a high growth in the number of MFS agents and registered MFS users, and this led to an increase in the number of MFS agents by 46% and the number of registered MFS users by 136% (Md Ali Ashraf, 2022). Thus, this posits an increase in the use of mobile financial services by migrant workers in Bangladesh. Since the adoption and the use of MFS is increasingly embedded in most of the activities of the people of Bangladesh, the policy makers should set more regulations on agents that offer MFS through close and tight monitoring of fintech to ensure proper performance of the financial services value chain. This will prevent risks of scamming such as internet fraud, hackers among others that would affect the registered users of the MFS negatively.

Despite an increase in the use of MFS, the OLS estimates are often associated with omitted variable bias. In our case, we omitted wages in the model due to the correlation with the late survey, the main explanatory variable. The fact that wages were positively correlated with the main explanatory variable, and this means that the expected coefficient estimates for the late survey would be positively biased. In this reflect, the results would depict a highly positive relationship between the late survey and FMT and AMT than before if we had not dropped wages from the regression. Furthermore, since inflation between these two years (2010 and 2016) was accounted on wages, excluding this variable makes the effect of Mobile Financial Services on both the Frequency and Amount of Money Transfer less significant since we are aiming at estimating the effect of time. Additionally, there are many control variables that could affect the FMT and AMT such as consumer spending that we did not consider in the model simply because we could not add a huge bunch of control variables but rather chose what we thought were more vital to our study.

Regarding on the behavior of migrant workers on the remittances, we found that the impact on the frequency and the amount of money sent does not depend on whether the migrant worker is educated or uneducated. The threshold at which the educated and the uneducated individuals sent money is the same. But the educated are more likely to earn more from the higher paid white-collar jobs than the uneducated (Shahadath and Adesola 2022). This in turn increases their household income which may lead to higher remittances than the uneducated, hence contradicts with our findings.

According to our analysis we already understood that mobile financial service is one of the greatest inclusions for the growth and financial development in nation like Bangladesh. Bangladesh is a nation where it's greater part of the population were unbanked until 2010, after that by the year 2016, mobile financial services brought a significant change to the country's economy. Substantial changes are generated by mobile financial services in financial sectors and institutional structure. MFS has the imaginable capacity to influence the low-income people and micro and small-business owners, out of them the migrant workers within the country are the major population who are greatly influenced and results in growth and poverty mitigation. Based on our research questions, the obtained results managed to support our hypothesis and we have seen that the mobile financial services after effect showed a positive effect on both the frequency of money transfer and the amount of money transfer.

The fact that there is lack of research on MFS and migrant workers in developing countries, the few previous studies like the one by (Md. Tanvir et al, 2021), also found a positively significant attitude towards the use of MFS by the Bangladesh people. As the migrant workers are mostly uneducated, therefore, MFS has become the common tool in sending money to their friends and family. The behavior pattern of migrant workers due to the use of mobile financial service has immensely changed from and helped them to contribute to the growth of economy more.

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10. Appendix

Table 6: District code

Code	District Name	Code	District Name	Code	District Name	Code	District Name
1	Bagerhat	32	Gaibandha	54	Madaripur	76	Pabna
3	Bandarban	33	Gazipur	55	Magura	77	Panchagarh
4	Barguna	35	Gopalganj	56	Manikganj	78	Patuakhali
6	Barisal	36	Habiganj	57	Meherpur	79	Pirojpur
9	Bhola	38	Joypurhat	58	Maulvibazar	81	Rajshahi
10	Bogra	39	Jamalpur	59	Munshiganj	82	Rajbari
12	Brahmanbaria	41	Jessore	61	Mymensingh	84	Rangamati
13	Chandpur	42	Jhalokati	64	Naogaon	85	Rangpur
15	Chittagong	44	Jhenaidah	65	Narail	86	Shariatpur
18	Chuadanga	46	Khagrachhari	67	Narayanganj	87	Satkhira
19	Comilla	47	Khulna	68	Narsingdi	88	Sirajganj
22	Cox's bazar	48	Kishoregonj	69	Natore	89	Sherpur
26	Dhaka	49	Kurigram	70	Chapai nababganj	90	Sunamganj
27	Dinajpur	50	Kushtia	72	Netrakona	91	Sylhet
29	Faridpur	51	Lakshmipur	73	Nilphamari	93	Tangail
30	Feni	52	Lalmonirhat	75	Noakhali	94	Thakurgaon

Source: Bangladesh HIES2016

Table 7: Industry code

Code	Description	Code	Description
01	Agriculture, hunting and related activities	37	Re-processing
02	Forestry and forestry activities	40	Gas, hot water and electricity supply
05	Fisheries and fishery activities	41	Water collection, purification and supply
10	Mineral (coal)	45	Construction
11	Gas and oil extraction	50	Sale, maintenance, repair and fuel for motor vehicles and motorcycles
14	Other mineral exploration	51	Other wholesale, except motor vehicles and motorcycles
15	Food and beverage production	52	Other retail outlets except motorcycles and motorcycles
17	Clothing production	55	Hotels and restaurants
18	Produce, wash, and dye made garments	60	Road vehicles
19	Leather and leather products	61	Naval vehicles
20	Manufacture of wood and wood products other than furniture	63	Travel Assistance (Transport and Travel Agency)
21	Manufacture of Paper and Paper Products	64	Postal and Telecommunication
22	Publishing, printing and recording	65	Financial intermediation without insurance and pensions
23	Petroleum refining	66	Insurance and Pensions
24	Chemical production	67	Financial help to mediate
25	Manufacture of rubber and plastics products	70	Real Estate
26	Production of other non-metallic minerals	71	Rental of personal and home appliances
27	Metal production	72	Computers and related work
28	Manufacture of metal products except machinery	73	Research and Development
29	Production of other materials Not Elsewhere Classified	74	Other Business
30	Production of machinery used in office and accounting	75	Public administration, defense and compulsory social security
31	Production of electrical equipment	80	Education
32	Production of radio, television and mass media equipment	81	Health and social services
33	Production of watches, glasses and medical equipment	90	Sewage and such works
34	Motor car production	92	Recreation, cultural and sports related work
35	Production of machinery used in other vehicles	99	Foreign organization
36	Manufacture of furniture and non-listed products		

Source: Bangladesh HIES2016

Table 8: Occupation code

Code	Description
01	Physical Scientists and Related Technician
02	Architects and Engineers
03	Architects, Engineers and Related Technicians
04	Air craft and ships officers
05	Biological Scientists and Related Technicians
06	Doctors, Dentists and Veterinarians
07	Nurses and other medical staff
08	Statistician, mathematician, system analyst and related staff
09	Economist
10	Accountants
12	Judge
13	Teachers
14	Religious workers
15	Authors, journalists and related workers
16	Fine and Commercial Artists, Photographers and Related Creative Artists
17	Actor, Singer and Dancers
18	Sportsman and Sports Related Workers
19	Professional, Technical and Related Workers and Not Elsewhere Classified
20	Lower
21	Manager

Code	Description
30	Government Executive Officer
31	Clerical
32	Typist, Stenographers/Computer Operators
33	Record Keeper, Cashier and Related Workers
34	Computer Related Workers
35	Transport and Communication Supervisor
36	Driver, Conductors (Manual and Mechanical)
37	Mail Distribution Clerks
38	Telephone and Telegraph Operators
39	Clerical and Related Workers Not Elsewhere Classified (N.E.C)
40	Manager (Wholesale and Retail Trade)
42	Sales Supervisors and Buyer
43	Traveling staff
44	Insurance, Real Estate, Business and Related Services Sales-man
45	Street Vendors
46	Salesmen Not Elsewhere Classified
50	Residential Hotel Manager
51	Working Proprietors (Catering and Lodging Services)
52	Supervisor Catering and Lodging Services
53	Cooks, Waiters and Related Workers (N.E.C)

Code	Description
54	Maids and Related Housekeeping Services Workers Not Elsewhere Classified
55	Building Caretakers, Cleaners and Related Workers
56	Laundry, dry cleaning related workers
58	Security Service Workers
59	Service Workers Not Elsewhere Classified
60	Farm Manager and Supervisors
61	Farmers
63	Forestry Workers
64	Fisherman, Hunts and Related Workers
70	Production Supervisors and General Foreman
71	Miners, Quarrymen, Well Drillers and Related Workers
72	Metal Processors
74	Chemical Processors and Related Workers
75	Spinners, Weavers, Knitters, Dyers and Related Textile Workers
76	Tannery/Leather processors
77	Food and Beverage Processors

Code	Description
78	Tobacco Preparers and Cigarette Makers
79	Tailors, Dressmakers, Sewers, Upholsterers and Related Workers
80	Shoemakers and Leather Goods Makers
81	Wood Products Makers
82	Stone Cutter and Processors
83	Workman, Welding Worker and Muscular Manufacturer
84	Workers other than electric
85	Electric Worker
86	Broadcast and Sound Equipment Operators and Motion Picture Projectionist
87	Water and sewer structure and metal welder
88	Goldsmith
89	Glass Foreman, Potters and Related Workers
90	Rubber and Plastics Product Makers
91	Paper and Paperboard Products Makers
92	Printing

Source: Bangladesh HIES2016