

MICROFINANCE IMPACT ON BORROWERS'
POVERTY IN BANGLADESH AND
MALAYSIA



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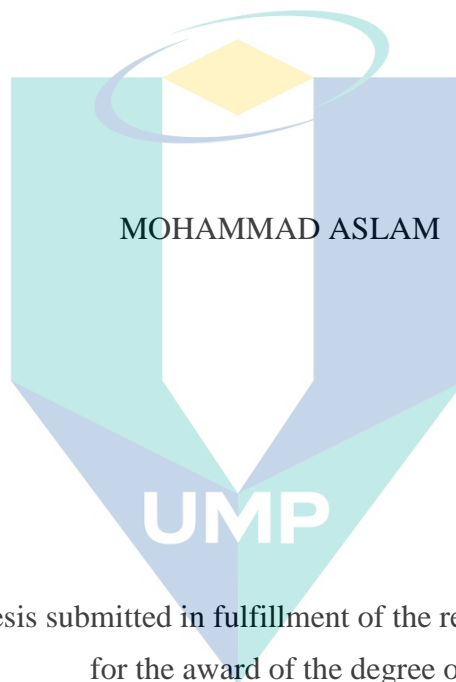
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UNIVERSITI MALAYSIA PAHANG

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AND MALAYSIA



Thesis submitted in fulfillment of the requirements
for the award of the degree of
Doctor of Philosophy

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ABSTRAK

Kemiskinan adalah isu lama yang telah dipantau sebagai masalah ekonomi, sosial, politik dan bahkan moral di seluruh dunia. Pembiayaan mikro telah dirancang untuk menghilangkan kemiskinan melalui aktiviti menjana pendapatan. Peminjam memerlukan wang untuk merealisasikan impian mereka dan pembiayaan mikro dapat memainkan peranan penting. Orang miskin mempunyai niat dan tenaga kerja tetapi mereka kekurangan kewangan untuk memulakan perusahaan kecil. Melalui pembiayaan mikro, pengusaha kecil dapat memperoleh input yang diperlukan untuk memulakan perniagaan mereka. Kedua-dua kerajaan tempatan dan agensi antarabangsa berusaha untuk menghilangkan kemiskinan melalui pembiayaan mikro. Konsep keusahawanan ini mungkin dapat menjana pekerjaan baru dan menghasilkan pendapatan yang dapat membasmi kemiskinan. Dengan konsep ini, pembiayaan mikro diadakan terutamanya di Bangladesh dan kemudian ditiru di Malaysia untuk mengurangkan kemiskinan. Grameen Bank dan BRAC melayani sebilangan besar peminjam di bawah tahap kemiskinan di Bangladesh. Antara lain, TEKUN melayani tujuan yang sama di Malaysia. Pada mulanya, institusi pembiayaan mikro di kedua-dua negara telah disokong oleh Kerajaan atau Donor. Walau bagaimanapun, kesan positif dan negatif terhadap kemiskinan peminjam telah dapat dilihat dalam beberapa kajian yang membuat pembiayaan mikro masih dipersoalkan. Oleh itu, kajian ini mengukur kesan pembiayaan mikro terhadap kemiskinan peminjam di peringkat perniagaan, isi rumah, individu dan keselamatan di Bangladesh dan Malaysia. Data primer dan sekunder digunakan dalam kajian ini. Data primer dikumpulkan melalui tinjauan dengan kuesioner terstruktur sementara data sekunder diambil dari dokumen dan laman web yang tersedia untuk umum. Kesan pembiayaan mikro terhadap kemiskinan peminjam telah diukur melalui tanggapan dari peminjam peserta dan bukan peserta menggunakan Model Portofolio Ekonomi Rumah Tangga (HEPM) untuk perspektif kuantitatif. Hasilnya menunjukkan kesan positif dalam dan antara peserta dan peminjam bukan peserta termasuk kesan kasual menggunakan PLS-SEM. Dari perspektif kualitatif, menggunakan HEPM Modified, kesan positif terhadap kemiskinan peminjam juga dijumpai melalui buku harian peminjam. Kejadian dan intensiti kemiskinan telah diukur untuk membandingkan peminjam peserta dengan kemiskinan peminjam bukan peserta dengan membina Indeks Kemiskinan Multidimensi. Ini juga menunjukkan kesan positif terhadap kemiskinan peminjam. Selanjutnya, kajian ini meneliti kegagalan pinjaman pembiayaan mikro melalui Regresi Logistik Binomial dan mendapati beberapa penentu penting menyumbang kepada kemungkiran. Prestasi sosial dan kewangan pembiayaan mikro telah dianalisis melalui data panel. Oleh kerana tidak ada perubahan arah kecuali beberapa petunjuk antara prestasi sosial dan kewangan, pembiayaan mikro nampaknya memberikan sumbangan positif bagi peminjam miskin. Penyelidikan ini menyumbang dengan mengambil kedudukan yang baik untuk perbincangan kewangan mikro secara akademik. Penemuannya mengesahkan industri pembiayaan mikro berurusan dengan pelaburan besar dan sebilangan besar peminjam menyumbang ke arah pengurangan kemiskinan. Ini juga menyumbang melalui pengembangan skop pengukuran kuantitatif dan menambahkan aspek kualitatif untuk kesan pembiayaan mikro terhadap kemiskinan peminjam di Bangladesh dan Malaysia. Oleh itu, pembuat dasar perlu meneruskan dan menyokong pembiayaan mikro sebagai strategi pembangunan.

ABSTRACT

Poverty is a long standing issue that has been monitored as an economic, social, political and even moral problem around the globe. Microfinance has been designed to eliminate poverty through income-generating activities. The borrowers need money to materialize their dream and microfinance can play an important role. The poor have both intention and labor but they lack finance to start small enterprises. Through microfinance, small entrepreneurs may acquire necessary inputs to start their business. Both local governments and international agencies are trying to eliminate poverty through microfinance. This entrepreneurial concept may be able to generate new jobs and produce revenue that could eradicate poverty. With this concept, microfinance had been hosted primarily in Bangladesh and later replicated in Malaysia to alleviate poverty. Grameen Bank and BRAC are serving large number of borrowers below the poverty level in Bangladesh. Among others, TEKUN is serving the same purpose in Malaysia. Initially, microfinance institutions in both countries have been supported by the Government or Donor. However, both positive and negative impact on borrowers' poverty have been visible in several studies that make microfinance still questionable. Therefore, this study measures microfinance impact on borrowers' poverty at business, household, individual and security levels in Bangladesh and Malaysia. Both primary and secondary data are applied in this study. Primary data are gathered through a survey with the structured questionnaires while secondary data are taken from publicly available documents and websites. Microfinance impact on borrowers' poverty has been measured through responses from participant and non-participant borrowers using Household Economic Portfolio Model (HEPM) for a quantitative perspective. The result shows positive impact within and between the participant and non-participant borrowers including casual impact using PLS-SEM. From a qualitative perspective, using Modified HEPM, positive impact on borrowers' poverty has also been found through borrowers' diaries. The incidence and intensity of poverty has been measured to compare participant borrowers with non-participant borrowers' poverty by constructing the Multidimensional Poverty Index. This also showed positive impact on borrowers' poverty. Furthermore, this study examined the microfinance loan default through Binomial Logistic Regression and found some significant determinants contributing to default. The social and financial performance of microfinance has been analyzed through panel data. As there was no mission drift except few indicators between social and financial performance, microfinance seems to contribute positively for poor borrowers. This research contributes by taking favorable position for microfinance debate academically. Its findings confirm microfinance industry dealing with huge investment and large number of borrowers contributing towards poverty alleviation. It also contributes through expanding quantitative measurement scope and adding qualitative aspect for microfinance impact on borrowers' poverty in Bangladesh and Malaysia. Hence, policymakers need to continue and support microfinance as a development strategy.

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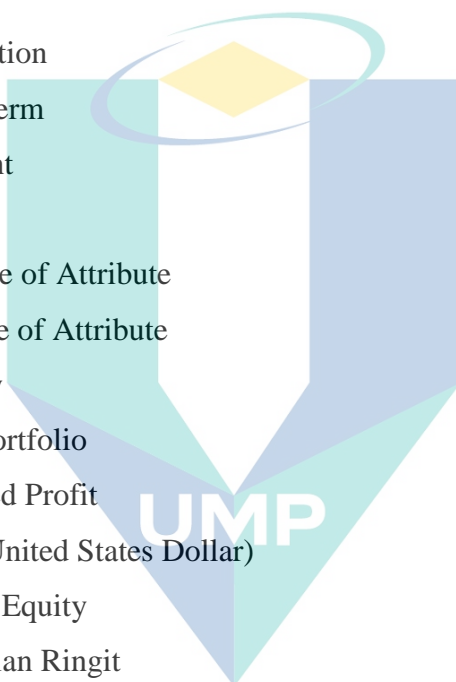
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LIST OF SYMBOLS

χ^2	Chi Square
T-Test	Independent Sample T – Test
\int	Function
e	Base of Natural Logarithm
i	Individual Respondent
t	Time
Σ	Summation
ε	Error Term
α	Constant
β	Slope
1	Presence of Attribute
0	Absence of Attribute
S	Subsidy
LP	Loan Portfolio
P	Reported Profit
\$	USD (United States Dollar)
E	Annual Equity
RM	Malaysian Ringit



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LIST OF ABBREVIATIONS

AIM	Amanah Ikhtiar Malaysia
AIMS	Assessing the Impact of Microenterprise Services
ASA	Association for Social Investment
BLR	Binomial Logistic Regression
BPR	Bank Perkreditan
BRAC	Bangladesh Rural Advancement Committee
BRI	Bank Rakyat Indonesia
DRP	Displaced Rohingya Population
EMP	Eleventh Malaysian Plan
EPU	Economic Planning Unit
FINCA	Foundation of International Community Assistance
FP	Financial Performance
GB	Grameen Bank
GDP	Gross Domestic Product
HEPM	Household Economic Portfolio Model
LM	Lending Methodology
M-HEPM	Modified Household Economic Portfolio Model
MPI	Multidimensional Poverty Index
NEM	New Economic Model
NEP	New Economic Policy
NGO	Non- Governmental Organization
OSS	Operational Self Sufficiency
PWD	Person with Disabilities
RCT	Randomized Control Trials
ROA	Return on Asset
ROE	Return on Equity
SP	Social Performance
TEKUN	Tabung Ekonomi Kumpulan Usaha Niaga
UNICEF	United Nation International Children Emergency Fund
UNDP	United Nation Development Program
YUM	Yayasan Usaha Maju

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides an introduction and contextual background of the study. Specifically, Section 1.2 starts with a poverty scenario across the globe. Section 1.3 discusses different countries confronting poverty. Section 1.4 discusses the overview of poverty in selected countries under this study. Section 1.5 delivers the definition of operating terms applied in this study. Section 1.6 presents how microfinance alleviates poverty. Section 1.7 and Section 1.8 provide research problem statement and research questions respectively, whereas Section 1.9 deals with research objectives. Section 1.10 and Section 1.11 discuss study scope of work and its significance, respectively. Finally, Section 1.12 gives organization of the thesis followed by Section 1.13 for chapter summary.

1.2 Poverty in the Globe

Nearly half of the globe population meaning exceeding about three billion people have been living their lives by a lesser amount of \$ 2.50 per day (Alternatively, less than RM 10 per day). Exceeding 1.3 billion people live in extreme poverty level expending not as much of \$1.25 per day. About one billion children across the globe have been plunged in poverty (DoSomething.org, 2019). With reference to the United Nation International Children Emergency Fund (UNICEF), around 22,000 children die a day because of poverty. About 805 million people in the world do not get the required food for their survival. Exceeding 750 million people do not have adequate access to hygienic water. An estimated 842 thousand people per year or about 2300 people per day are killed by diarrhoea mainly caused by unsafe drinking water, poor sanitation, and hand uncleanliness. Because of chronic malnutrition, around 165 million children aging less than five years were underdeveloped for their abridged rate of growth and

development in the year 2011. Due to a lack of affordable medical treatment, almost 2 million children die per year with the avoidable diseases such as diarrhoea, pneumonia, etc. By the year 2013, three suggested doses of vaccine fighting against diphtheria, tetanus and pertussis were not availed by about 12.8 million children aging less than a year. One-fourth of all human meaning about 1.6 billion people live without electricity. At large, the majority (About 80%) of the global population runs their lives by expending less than \$10 a day. As per Oxfam estimation, it would require only \$60 billion per year to eliminate the extreme level of global poverty and this amount is less than one-quarter of the income of the top hundred billionaires in the world. The World Food Program says, “The poor are hungry and their hunger traps them in poverty. Hunger is the number one cause of death in the world killing more than HIV/AIDS, malaria and tuberculosis combined” (DoSomething.org, 2019).

There has been huge disparity in wealth distribution between rich and poor people. Bourguignon and Morrisson (2002) investigated the well-being distribution among people throughout the world during the last two consecutive centuries. Their estimate displays that world income inequality distribution seems to have stabilized or to have grown more slowly from the opening of the 19th century. At that time, most inequality distribution had been due to differences within countries but later on, it has been found for differences between countries. However, inequality had been reversed in the second half of the 20th century and expected to reduce inequality in the upcoming decades. As per Figure 1.1, the share of the world population living in absolute poverty (Less than \$1.90 per day) estimated 9.6% for 2015 (Roser & Ortiz-Ospina, 2017).

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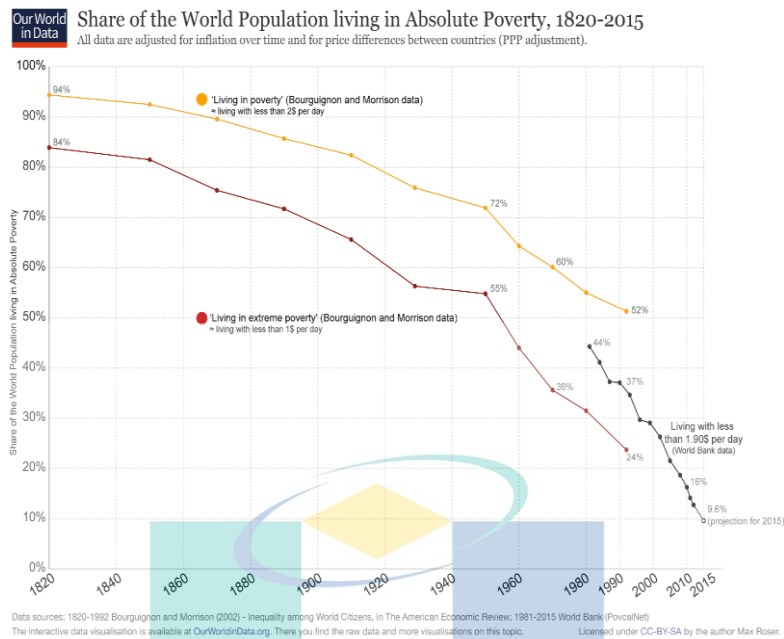
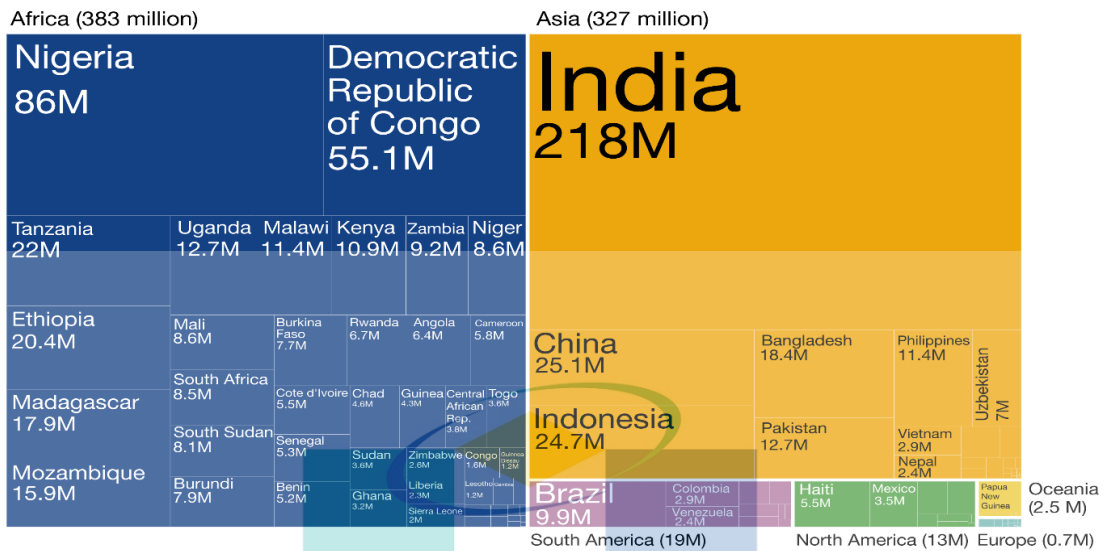


Figure 1.1 World Population in Absolute Poverty
 Source: Roser and Ortiz-Ospina (2017)

The world extreme poverty incidence decreased by almost 100% from the previous to the current century and appeared around 10.7% during 2013. With the big success, still there has been undeniably no cause to be satisfied with this rate, which reveals a total population of 746 million people behind the poverty level. The following image depicted in Figure 1.2 gives a breakdown of the situation by country and continent. These numbers derived from multiplying the estimated rate of poverty by the respective estimated population in corresponding countries. The World Bank estimated the poverty rate published in 2016 using 2013 household survey data through PovCal. The World Bank also estimated the total population in the World Development Indicators. In the World Bank estimates, differences between the price levels among countries have been adjusted to account for poverty measures. This has been echoed in the 'international dollar' metric applied for estimating incomes. At the latest date, Continent Africa accounted for the biggest population who are living behind the extreme poverty level. Continental breakdowns are 383 Million in Africa, 327 Million in Asia, 19 Million in South America, 13 Million in North America, 2.5 Million in Oceania, and 0.7 Million in Europe. It is clearly seen that India is the country with the highest population living in extreme poverty level (218 million), followed by Nigeria (86 million) and Congo (55 million) (Roser & Ortiz-Ospina, 2017).

Globally there are 746 million people in extreme poverty (in 2013)

Extreme poverty is defined as living with less than \$1.90/day. This is measured in international dollars (i.e. price differences between countries are taken into account).



Data source: World Bank (PovcalNet). The interactive data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic. Licensed under CC-BY-SA by the author Max Roser.

Figure 1.2 Extreme Poverty Distribution

Source: Roser and Ortiz-Ospina (2017)

1.3 Countries Confronting Poverty

Since GDP per capita echoes the mean treasure of an individual living in a particular state, it has been often regarded as a pointer of the living standard of that specific country. Therefore, it has been considered as a standard method applied to match how rich or poor countries are with reference to each other. As the year 2018 approaches end, it has been obvious to forecast the per capita GDP from the year 2019 to the year 2023 for the 127 countries across the world. It covers to give an idea of what countries have been at the bottom of poverty presently and which countries will be achieving a jump towards being relatively richer in the upcoming time (FocusEconomic, 2019). These are consensus predictions based on individual separate forecasts of more than 1000 globe prominent economic think tanks, investment banks, and professional economic forecasting entities (Please see Figure 1.3).

The World's Poorest Countries

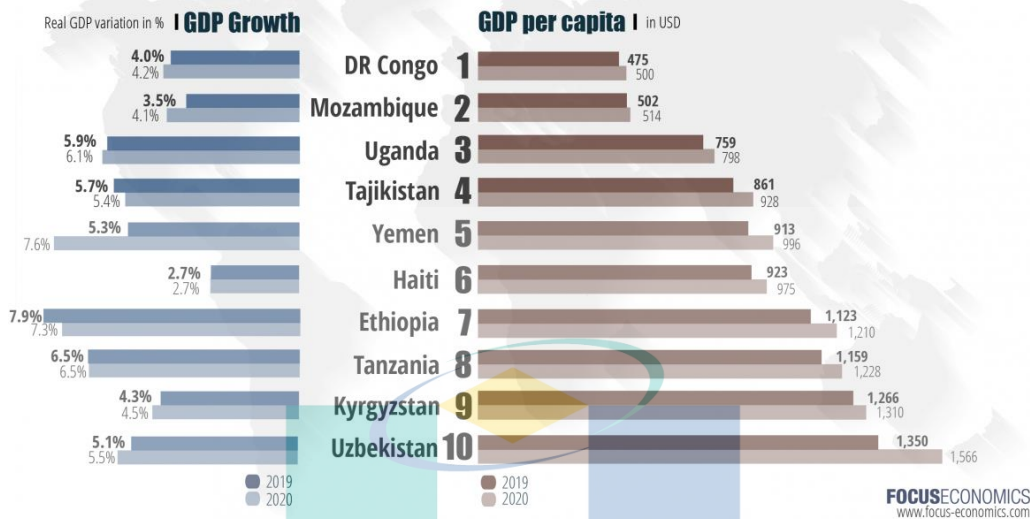


Figure 1.3 World Poorest Countries
Source: FocusEconomic (2019)

As per Table 1.1, starting with the poorest country to the richest country of the world, the actual Gross Domestic Product (GDP) per capita ranged from \$ 438 to \$ 106,719 in 2017. It gives us some indications of the world resource inequality and disparity. The estimates have been done for 2019 and 2023 respectively but no major changes in the scenario. Bangladesh is a lower side position with good prospects. It has been ranked as 11th country from the lowest in the world with respect to GDP per capita with \$ 1,521 in 2017. It has been forecasted by ranking as 15th and 18th country in the world in respect of the same with \$1,774 and \$ 2,547 for 2019 and 2023, respectively. Its positive has been forecasted upwards. Malaysia is more or less in the middle position with good prospects. It has been ranked as 65th country from the lowest in the world with respect to GDP per capita with \$ 9,814 in 2017. It has been forecasted by ranking 72nd and 71th country in the world with respect to the same with \$ 11,354 and \$14,714 for 2019 and 2023, respectively. Therefore, its position has been forecasted a little downward. However, Malaysia is a much richer country in comparison to Bangladesh.

Table 1.1 GDP per Capita Ranking

Name of Country	Rank	GDP per Capita \$	Rank	GDP per Capita \$	Rank	GDP per Capita \$
	2019 (Projected)		2017 (Actual)		2023 (Projected)	
DRC	1	475	2	438	1	551
Mozambique	2	501	1	429	2	647
Uganda	3	759	3	725	3	959
Tajikistan	4	861	5	777	6	1158
Yemen	5	912	N/A	-	5	1079
Haiti	6	922	4	775	4	992
Ethiopia	7	1122	N/A	-	9	1508
Tanzania	8	1159	6	1037	8	1502
Kyrgyzstan	9	1266	7	1203	7	1487
Uzbekistan	10	1350	10	1513	14	2350
<i>Skipped.....</i>						
Bangladesh	15	1,774	11	1,521	18	2,547
<i>Skipped.....</i>						
Malaysia	72	11,354	65	9,814	71	14,714
<i>Skipped.....</i>						
Australia	117	57171	114	55680	114	67846
Singapore	118	62004	116	57494	115	73585
Denmark	119	62204	115	57359	117	74401
Qatar	120	64788	118	60693	119	77778
USA	121	65132	117	59792	116	73856
Iceland	122	78031	120	73477	120	95854
Ireland	123	79773	119	68808	122	99061
Switzerland	124	84697	122	80069	121	95939
Norway	125	84783	121	74570	123	107529
Luxembourg	126	117534	123	106719	124	138707

Source: FocusEconomic (2019)

1.4 Poverty Overview

1.4.1 Bangladesh

Starting from the 1980s, individuals, donors, and the government have been giving their respective efforts to alleviate poverty. Especially, government efforts are visible in the Third Five Year Plan. Every three out of four lives are below or close to the poverty level during this period. Bangladesh has been highly blessed with the natural environment of the easy growing plants, especially rice. All economic and social system developments are in close synergy with the land and related activities. Yet, this country is highly blissful in humanitarian perspective. The interaction among humans, expressiveness in culture, fullness in lives together with art and culture have been more fully expressed compared to many cultures. However, Bangladesh seems very ineffective by certain economic indicators, particularly per capita income together with literacy rate, housing condition, roads and highways, medical facilities, children mortality, loan default, export of goods and services, population growth rate, etc. Domestic savings are quite low although increasing faster than expected. Government and non-government organizations together with the donors are putting their effort into the poor and small farmer. Government efforts to serve marginal people have not been working well compared to private agencies. This is because of universal disorder like bureaucracy. Although there is some success in raising agricultural productivity, the economic stability of the country is questionable (Maloney, 1985a).

There are several reasons for poverty persisting in greater extent in Bangladesh. Firstly, the causes often blame outside political forces and natural reasons like droughts, floods, less resources, less export, historic exploitation, etc. However, the country can address those issues and can get huge potential through proper use of land, the network of irrigation, water reservoir, river and canal, and human resource. These provide the only hope for reducing poverty a little. Secondly, both foreign and home viewers often quote several causes of poverty particularly blaming overpopulation as the main contributor. The population is even expected to double in a few decades. Such a high growth in population has to be prevented in all possible ways. Otherwise, it may not be possible to maintain political and economic stability at such an alarming rate. Other reasons for poverty have been attributed to persistent low development history, institutional incapacity, physical infrastructural inadequacy, entrepreneurship

insufficiency, low literacy rate, idleness and leisure time, exploitation among the class, individual selfishness, etc. It is not possible to reduce the poverty dramatically at any time soon despite all the efforts of people, different agencies and the government. However, expressiveness in art and culture together with personal relationships among people will endure to spot richness in lives notwithstanding physical poverty (Maloney, 1985b). Matthew (2018) gave some promising facts about the current scenario of poverty in Bangladesh highlighting GDP, employment, education, life expectancy etc.

Very well-known economist Alfred Marshall in his work “Principles of Economics” deliberated the agents of production. He wrote “The agents of production are commonly classed as Land, Labour and Capital”. Land means material and forces from nature given freely like land, water, air, light, heat, etc. Labor means the economic work of people with the head or hand and capital means all stored-up necessities for the material goods production. It is the main stock of wealth regarded as production agent rather than as a straight source of gratification from nature (Xu, Chaudhry, & Li, 2009). Therefore, Capital or alternatively finance is the main factor of production necessary to produce goods and services ultimately will work for poverty alleviation. Bangladesh, like other developing country, has lack of capital or finance to start revenue generating activities (Ahmed & Haque, 2011; S. Islam, 2009). It urges banking industry to provide production input for producing goods and services. The banking industry here has gone further by promoting financial inclusion of the poor in rural areas through microfinance. This has helped to expand the monetisation of the rural economy which facilitates continuous resource transfer from rural to urban and vice versa. Nearly half of its population still does not have a bank account and there are fewer than 10,000 bank branches in the country.

According to World Bank, only fifty-two percent of the town and thirty-seven percent of the village adults in developing countries have access to a bank account. However, the percentage is eighty-nine and eighty-seven respectively in case of developed countries. About 39% population of the world, mostly from developing countries, does not possess any bank account (WorldBank, 2015). Approximately, only ten percent of the 2.5 billion people living below poverty line (living on less than \$2 per day per person) have access to bank account (Chaia et al., 2009). According to a survey conducted by Institute of Microfinance on access to financial services in Bangladesh,

only thirty-seven percent of the households have access to formal financial services and only twenty-four percent household have access to formal saving account (B. M. A. Khalily, P. Miah, M. Hasan, N. Akthar and F. Muneer., 2011). In terms of age, about eighty percent of all young adults between 15 to 24 years in Bangladesh have no bank account (WorldBank, 2015). In terms of poverty level, ninety-seven percent non-poor households have account while only thirty-four percent poor have bank account in Bangladesh (Sen, 2015). In terms of residence, eighty-seven percent do not possess bank account living in rural areas (BangladeshBank, 2012). Therefore, accessibility of basic banking services in Bangladesh remains inadequate and lags far behind compared to developed countries. Such limited access could potentially have important impact to start and run revenue generating activities. Lacking credit through banking access might also be difficult for poor people for saving relatively high amount or obtain credit for start-up a business, agricultural inputs, etc. Given the low rate of financial service accessibility, the number of bank branches needs to be increased to bring people into the financial system. Microfinance plays an important role in this perspective by including more and more people in the financial system for starting revenue generating activities to alleviate poverty.

Like other nations in Asia, Bangladesh has experienced various development in different socio-economic perspective. Side by side, Bangladesh also fights with overwhelming poverty despite economic growth in various sectors. To gain a quick insight of poverty in Bangladesh, Matthew (2018) lists down top different facts like GDP, its growth rate, service industry contribution, unemployment, poverty rate, hunger and poverty, life expectancy, primary education, adult literacy rate, population density etc. These facts show an enhanced economy that may offer more chances for its people. The citizen standard of living could be raised through an increased output in service, industry and agricultural sector. Poverty for a large number of people in Bangladesh persists even though the economy is developing. It may continue to decrease with more emphasis on education and diversification in different sectors of the economy (Matthew, 2018).

The incidence of poverty declined nearly 7 percent (from 31.5 percent to 24.3 percent) over the period from 2010 to 2016. During this period, the compound poverty declined 4.23 percent annually. On the other hand, the rate of poverty declined from

40.0 percent to 31.5 percent from 2005 to 2010. At that time, compound poverty was reduced by 4.67 percent each year. Therefore, it is evident that though poverty is decreasing gradually, the pace of reduction rate declined from 2010 to 2016 compared to the period of 2005-2010. In urban areas, poverty reduction rate is higher (4.68 %) than rural areas (1.97%). From 2010 to 2016, the reduction rate of the depth of poverty (measured by the poverty gap) was 4.28 percent. It has also been observed that the income poverty reduction rate in urban areas is lower than that of rural areas (1.61% and 5.12% respectively). Moreover, the reduction rate of the depth of severity of poverty (measured by the squared poverty gap) was also lower in urban areas compared to rural areas. The trend of poverty is depicted in Table 1.2.

Table 1.2 Trend of Poverty in Bangladesh

Particulars	2016	2010	Annual Change (%) (2010 to 2016)	2005	Annual Change (%) (2005 to 2010)
Head Count Index					
National	24.3	31.5	-4.23	40.0	-4.67
Urban	18.9	21.3	-4.68	28.4	-5.59
Rural	26.4	35.2	-1.97	43.8	-4.28
Poverty Gap					
National	5.0	6.5	-4.28	9.0	-6.3
Urban	3.9	4.3	-1.61	6.5	-7.93
Rural	5.4	7.4	-5.12	9.8	-5.46
Squared Poverty Gap					
National	1.5	2.0	-4.68	2.9	-8.81
Urban	1.2	1.3	-1.33	2.1	-8.64
Rural	1.7	2.2	-4.21	3.1	-8.75

Source: (Ministry of Finance, 2018)

Although Bangladesh has shown progress through dropping the poverty rate, about 24.3% population has been still living below National Poverty Line whereas about 14.8% below International Poverty Line during the year 2016 (Please see Table 1.3). However, the speed of poverty reduction has slowed down a bit with GDP per capita raising more than 5%. The pace of urban poverty reduction is slower than that of rural

despite both the areas has experienced poverty downfall. Households with agricultural activities experience relatively slow poverty reduction than households involved in industry and service. In comparison to the western part, the eastern part of the country is doing better in poverty reduction because of structural changes and concentrated job creation over there. Due to the recent political crisis in Myanmar, more than one million Rohingya people moved into eastern Bangladesh by crossing international boarder during 2017. These people are very highly vulnerable to basic needs and more than 75% of them would not be able to survive without aid. They are causing huge socio-economic problems and put welfare challenges but mainly localized in the district of Cox Bazar (WorldBank, 2019b).

Table 1.3 Bangladesh Poverty Percentage in Different Lines

Poverty Line in Various Scale	Number of Poor (Millions)	Rate (%)	Period (Year)
National Poverty Line	39.6	24.3	2016
International Poverty Line (\$1.90 per day per capita-2011 PPP)	24.1	14.8	2016
Lower Middle Income Class Poverty Line (\$3.20 per day per capita-2011 PPP)	86.2	52.9	2016
Upper Middle Income Class Poverty Line (\$5.50 per day per capita-2011 PPP)	137.8	84.5	2016

Source: WorldBank (2019b)

During the financial year 2016-17, Household Income and Expenditure Survey (HIES) produced poverty estimations by quarter intervals together with district level for the first time. About one out of four people and one out of eight people live in the poverty level and extreme poverty level, respectively in Bangladesh. Poverty shows dropping over the time from 2000 to 2016 but still not good enough for a better socio-economic life standard. (Please see Figure 1.4).

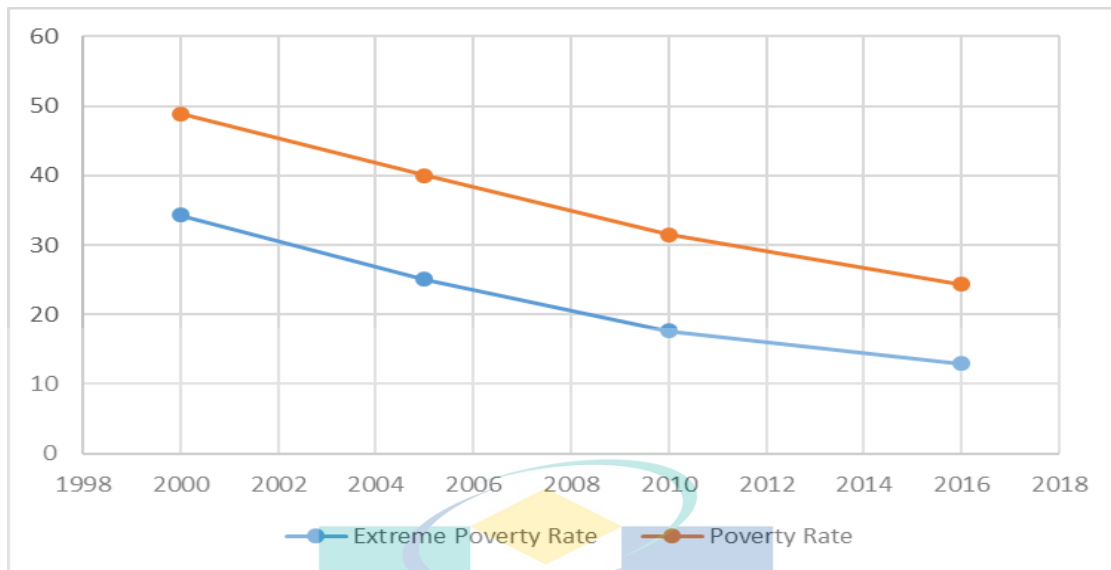


Figure 1.4 Bangladesh Poverty Rate

Source: WorldBank (2017)

With reference to Bangladesh Bureau of Statistics (BBS), Poverty rate of Bangladesh stands at 21.8% while the rate of poverty stands at 11.3% as per the lower poverty line or people living in extreme poverty in 2018. This information has been disclosed for revealing the final data of the Household Income and Expenditure Survey (HIES) for 2016. It also displayed that poverty rate of Bangladesh reached to 24.3% as per the upper poverty line. The rate of poverty has been 12.9% as per the lower poverty line or people living in extreme poverty in 2016. Bangladesh has been trying desperately to achieve the connected SDG targets by 2030 by eliminating poverty. HIES 2016 also disclosed that the extreme poverty rate is 12.9% at the national level, with the lowest being 7.6% at the urban level and with the highest 14.9% at the rural level. It also reveals that the household monthly income is only \$188 (Tk15,988) and monthly household expenditure is \$184 (Tk15,715) in 2016. There exists a disparity in income between urban and rural areas within the country. The wall materials of households with durable materials were only 30% in 2016 meaning almost 70 % used non-durable materials. Around 25% of people did not have any accessibility to using electricity. The total literacy rate was 65.6% while the female literacy rate was 63.4%. (BBS, 2017).

1.4.2 Malaysia

Malaysia poverty is visible through lower middle income (\$3.2 per day) and upper middle income (\$5.50 per day) poverty line (Please see Table 1.4). As per minimum wage, a person is said to live below poverty if the income per day is below

\$9.16 in Malaysia. About 0.4 percent of households of Malaysia has been living below the national poverty line definition in 2015. Similarly, poverty, as measured by the International poverty line, was almost zero percent in 2015. However, poverty dropped from 16.7 to 2.7 percent of the population using upper-middle-income class poverty line from 2008 to 2015. Poverty rates are relatively higher in the rural areas, more especially in Kelantan, Sabah, Sarawak and Kedah. GDP per capita growth rate (Average 3.5 percent per year from 2011 to 2015) drives poverty reduction together with faster income growth among lower-income households. Malaysia has made progress in reducing poverty and the Government needs to consider updating the poverty line to reflect Malaysian present higher living standards. The national poverty line has been defined as approximately \$3.38 for a single adult male. It is well below median poverty line of the upper-middle-income countries and close to that of lower-middle-income comparators. Annual growth of the bottom 40% mean household income has been 8.3% from 2011 to 2015. Alternatively, it is 2.4% points faster than the corresponding growth for the country's total population during the same time. This difference is called the shared prosperity premium. The main sources of income growth for the bottom 40 percent were higher employment earnings and to the lesser extent income transfer. The inclusive pattern of growth has led to a significant reduction in income inequality. The decrease in income inequality was most pronounced from 2011 to 2013 when the Gini Index declined from 43.9 to 41.3 after which it fell by only 0.3 percent points to 41.0 in 2015 WorldBank (2019b).

Table 1.4 Malaysia Poverty Percentage in Different Lines

Poverty Line in Various Scale	Number of Poor (Thousands)	Rate (%)	Period (Year)
National Poverty Line	122.9	0.4	2015
International Poverty Line (\$1.90 per day per capita-2011 PPP)	3.2	0.0	2015
Lower Middle Income Class Poverty Line (\$3.20 per day per capita-2011 PPP)	72.1	0.2	2015
Upper Middle Income Class Poverty Line (\$5.50 per day per capita-2011 PPP)	823.0	2.7	2015

Source: WorldBank (2018)

Although the income class poverty line shows fewer people are living below the poverty line, the real picture would be something different if it is considered the cost of living. The minimum wage raised to \$ 275 monthly (RM1,100 monthly) in 2019 by the government (MalayMail, 2018). It means a person will find his or her life difficult below \$9.16 per day, which means living below poverty. By these estimates, about 4 percent of people are living below the poverty line. Currently, the population is estimated at 31.62 million in Malaysia. It means 1.26 million can be considered as poor. In another estimate by the cost of living, the scenario has become much worse. A summary of average monthly expenses in Malaysia is given below (Insteram, 2018). A single living would be expected to spend monthly as rent for a one-bedroom apartment in a central location – \$500, utilities – \$100, groceries – \$75, eating out – \$62, transportation – \$75, personal expenses – \$62. Therefore, the total monthly expense in Malaysia would be somewhere between \$750 and \$1000 (RM 3000 and RM 4000) for a minimum standard of living. Taking the lower side of the estimate, it is about \$25 per day per capita. It makes 12% (3.79 million) people are living below a minimum standard of life. This can be taken as an indication of poverty.

The Government of Malaysia through its EPU (Economic Planning Unit, 2019) depicts the chronology of poverty eradication step by step as follows:

1. Market-Based Policy - 1957 to 1970: Before independence in 1957, more than half of the Malaysian households were living in poverty. After independence and before 1970, the export-led economy with no interference by the government was primarily focused on economic development. During the 1960s, the economy enjoyed a high growth rate but the country continued poverty incidence relatively lower in the urban areas and higher in the rural areas together with disparity among ethnic groups. The overall poverty in 1970 was 49.3 percent. The overall income inequality in 1970 was relatively high with the Gini coefficient of 0.51. Income share of the bottom 40% household was low at 11.5 percent as compared to top 20 percent households at 55.7 percent. The country also experienced high unemployment rates, which recorded low at 6.6 percent in 1967 and high at 8.0 percent in 1970. The large part of the population, particularly among the indigenous groups were living in the rural areas and engaged in the low income, traditional activities particularly in rice and rubber smallholding in the agriculture sector. Whereas, the non-indigenous among the Chinese and Indians have

entered the sectors that were very dynamic such as tin mining, agriculture estates, commerce, and manufacturing.

2. New Economic Policy (NEP) - 1971 to 1990: In the implementation of development initiatives, Malaysia has committed to the best extent that socio-economic development must benefit all citizens and reduce the disparity. Therefore, the development drive after independence was positioned on the idea of 'growth with equity'. This development philosophy has been translated through the promulgation of the NEP in 1971 under Malaysia's first long-term development plan, 1971-1990 to support and strengthen the Government's effort to drive the economy towards promoting quality and inclusive growth to ensure that no one in the society will be left out in the development process. The objectives, priorities, and strategies under the NEP had been shaped to achieve the over-riding goals of national harmony and advance an unprejudiced, prosperous, and enlightened Malaysia. The NEP was executed through dual-pronged approaches such as the abolition of poverty regardless of race and restructuring of society to eradicate ethnic recognition for economic functions. The leading attention for the poverty eradication scheme has been on income-generation, promotion of training and education capabilities, job creation and transformation of rural life together with improvement in living settings. Both the public and private sector together with NGOs have been serving the poor concurrently.

Period concerning the first half of the NEP, agricultural reform policy was the major instrument in converting rural areas and people below the marginal poverty line into a more prosperous Malaysian community. Since the majority of the poor were in the agricultural sector in rural areas, the focus of the poverty eradication strategy was on mobilizing rural resources institutional capacity building and land development programs. Prime programs were New Land Development Schemes, In-situ Development Program, Village Industry and Rural Entrepreneurship Program, Different Cropping Program, Marketing Program, Technical Training and Advisory Program, Industrial and Vocational Training Program. Besides income-generating activities, the Government is trying to advance the quality of life of the people below the poverty line by establishing and maintaining good infrastructure and social facilities as well. These include good water system, road and highway, electricity, health and medicine, rural school and hostel, etc. A special program for the hard core poor (household earning less

than the food PLI) was also continued. The activities relating to this program are registering and profiling hard core poor for delivering suitable and appropriate projects for them that promote their income, housing, food together with education and training.

Period concerning the second half of the NEP, the basic nature of the Malaysian economy got transformation from agriculture to manufacturing although agriculture was dominating. Education and training, as well as entrepreneurship programs, played a vital part to support the households below the poverty line by ensuring jobs and small business developments. The poverty rate dropped to 16.5 % in 1990 compared 49.3 % in 1970 by the close of the NEP.

3. National Development Policy (NDP) - 1991 to 2000: Poverty eradication remained as an integral component and thrust of the subsequent development policies starting with NDP. During this period, Malaysia got tertiary level economic development with a stronger role in the manufacturing and services sectors. These sectors were the major drivers to the Malaysian economy and provide vast employment opportunities to the community. Besides manufacturing, the service providing industries namely gas and water, electricity, transport and communication, insurance, financial services, real estate, wholesale and retail, hotels and restaurants together with other services contributed significantly to the employment generation. While continuing with the effort to provide quality employment opportunities, the focus of poverty eradication initiatives and programs have been realigned to meet with the expectation and sustain the high living standards of the community from the multi-dimensional perspective in a more challenging environment. As the previous program accomplished significant achievement in overcoming past difficulties and forwarding the nation economically and socially, the development approaches of the NDP period have been shifted towards market welcoming policies and tools that are consistent with national competitiveness with respect to the current socio-economic perspective and challenges. However, the objective of national unanimity remains highly relevant and social inclusion has been given greater emphasis. Every citizen irrespective of ethnicity, gender, status, location etc. must enjoy and share the development and growth as this is the key criterion for the Malaysian development program.

4. **National Vision Policy (NVP) - 2001 to 2020:** The subsequence to NDP had also introduced fresh drives entailing shifting the attention of the anti-poverty policy towards the abolition of hard-core poverty. The NVP incorporates strategies to address pockets of poverty in inaccessible areas and among Bumiputra minorities in the states of Sabah and Sarawak on the island of Borneo prompting the income and quality of people in the bottom 30 percent earning group.

5. **Tenth Malaysian Plan - 2011 to 2015:** Inclusive development principle was introduced in the New Economic Model (NEM) as stipulated in the Tenth Malaysia Plan (TMP) and reaffirmed framework in the Eleventh Malaysia Plan (EMP). The inclusive development approach will guarantee that no one is foregone in their respective contributions and share in the development outcome. In an open and global economy, absolute equivalence is not possible in reality. However, an inclusive way may guarantee that inequalities have been narrowed through capacity enhancement and empowerment programs through specific strategies. It includes uplifting the bottom 40% household towards the creation of a more prosperous and bigger middle-class group, empowering societies for a fruitful and wealthy society, renovating country areas, accelerating regional growth, and enhancing the economic potential of the urban poor. Basic principles of the new development framework are market-friendly, need-based, merit-based and transparency.

6. **Eleventh Malaysian Plan - 2016 to 2020:** Under the present Eleventh Malaysia Plan, Malaysia continues to focus on the effort to address multi-dimensional and relative poverty issues by reducing inequality and improving income disparity. It has been narrowing the development gaps between regions through the corridors development initiatives to overcome regional disparities and providing greater access to quality opportunities to enhance the capacity and capability of the bottom 40% of households. Malaysia has also embarked with a more focus development strategies to address socio-economic uncertainty and vulnerability among the bottom 40% household, which include women, children, youth, older persons and persons with disabilities to face greater challenges of modern urban life through a more integrated and comprehensive social protection system. Despite all the efforts, the poverty level as shown in Table 1.5 still calls for attention.

Table 1.5 Incidence of Poverty by Ethnic Group and Strata

	1995	1997	1999	2002	2004	2007	2009	2012	2014	2016
Malaysia	8.7	6.1	8.5	6.0	5.7	3.6	3.8	1.7	0.6	0.4
Malay	12.2	9.0	12.3	9.0	8.3	5.1	5.3	2.2	0.8	0.5
Chinese	2.1	1.1	1.2	1.0	0.6	0.6	0.6	0.3	0.1	0.1
Indians	2.6	1.3	3.4	2.7	2.9	2.5	2.5	1.8	0.6	0.1
Others	22.1	13.0	25.5	8.5	6.9	9.8	6.7	1.5	0.9	1.5
Strata										
Urban	3.6	2.1	3.3	2.3	2.5	2.0	1.7	1.0	0.3	0.2
Rural	14.9	10.9	14.8	13.5	11.9	7.1	8.4	3.40	1.6	1.0

Source: EconomicPlanningUnit, (2019)

The reduction of poverty is evident across all ethnic groups, strata and region as shown in Figure 1.5, Figure 1.6, and Figure 1.7. Among the Bumiputera the poverty incidence reduced from almost 65 percent in 1970 to 0.8 percent in 2014, meaning that millions get out of poverty. Poverty incidence among the Bumiputera dropped from 64.8 percent in 1970 to 0.8 percent in 2014. The same pace of reduction also occurred among the Chinese and Indians, where the poverty rate for the Chinese reduced from 26.0 percent in 1970 to 0.1 percent, while for the Indians from 39.2 percent to 0.6 percent in 2014 as well.

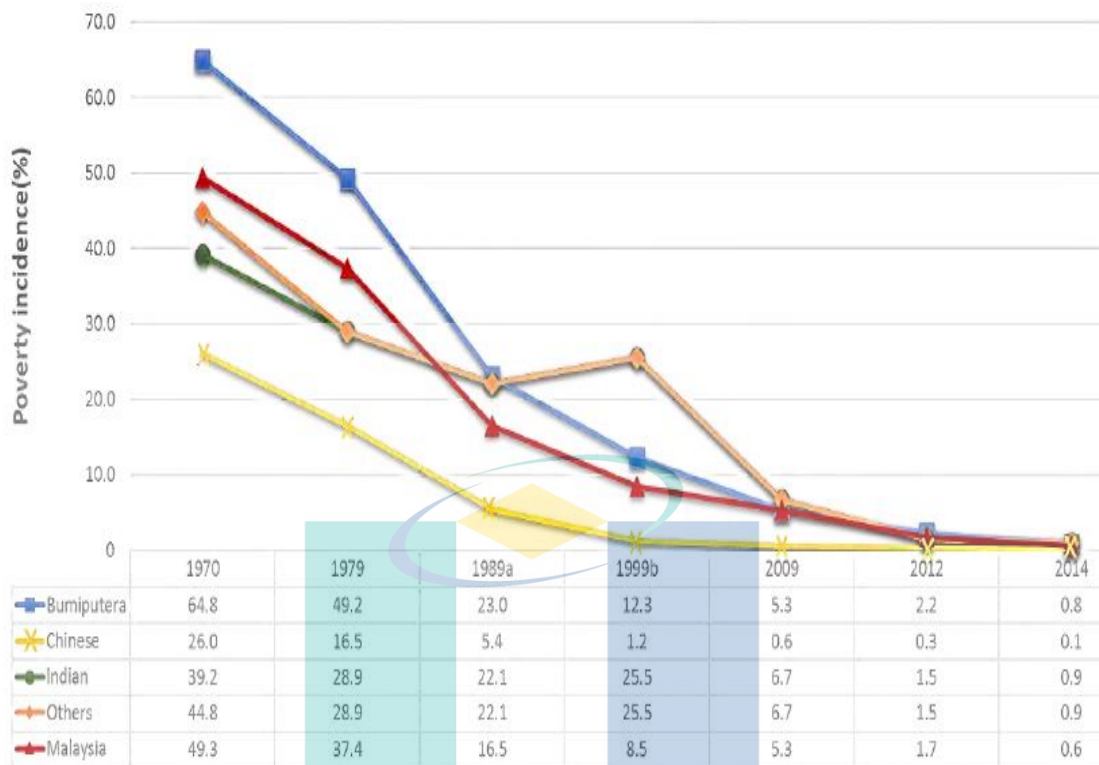


Figure 1.5 Incidence of Poverty by Ethnic Group

Source: EconomicPlanningUnit, (2019)

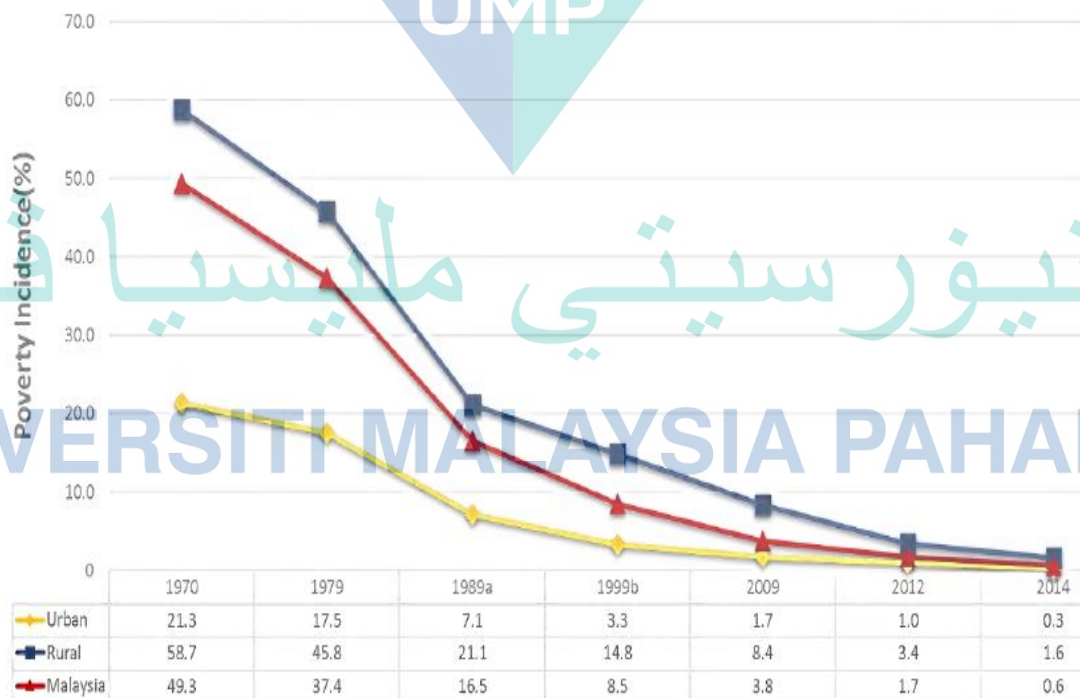


Figure 1.6 Incidence of Poverty by Strata

Source: EconomicPlanningUnit, (2019)



Figure 1.7 Incidence of Poverty by Region

Source: EconomicPlanningUnit, (2019)

1.5 Defining Operating Terms

This research used non-participant borrowers as a control group. This type of study relating to compare with non-participant borrowers who should be relatively homogenous for avoiding selection bias in the same socio economic condition is costly and time consuming. It has been carried out on a large scale which incorporates three separate microfinance institutions (GB, BRAC and TEKUN). Hulme (2000a) described that the research approach taken by a researcher for the impact assessment of microfinance study depends on its budget, human resource and time requirement. This study limited its scope through defining the operating terms in its specific meaning for aforesaid limitations.

Microfinance includes financial instruments such as small credit, saving, insurance, and further pecuniary products that are specifically designed for the poor. These instruments are devised to fight against poverty for the people living behind the poverty line. The poor people have always been confronting to access financial services from the traditional banking system mainly for two reasons before the microfinance system. Primarily, poor people cannot lodge collateral and secondarily, they do not possess good credit history. A formal definition is given by M. Robinson (2001) as follows:

“Microfinance refers to small scale financial services primarily credit and savings-provided to people who farm or fish or herd; who operate small enterprises or small business enterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages and commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban. Many such households have multiple sources of income.”

Microfinance: Microfinance presents small magnitude of financial services primarily microcredit designed for borrowers living below poverty line. It includes financial instruments such as microcredit, microsaving, microinsurance, and further pecuniary products that are specifically designed none but for the poor. Hulme (2008) defined the subsidized microcredit evolved to the market based microfinance. This concept includes microcredit, microsaving, microinsurance, etc. and this has been adopted in this study for Bangladesh perspective. Since microfinance products only encompass microcredit currently, it has often been used interchangeably with microfinance in Malaysia (LoanStreet, 2018). Mokhtar (2011) also used microcredit as microfinance in the study when gauging performance of microfinance in Malaysia. In this study, this researcher treats one group with microfinance and another group without microfinance. Hence, microfinance is the dichotomous independent variable for this study (“1” for microfinance intervention through participant borrowers and “0” for without microfinance intervention through non-participant borrowers). This means one is the experiment group and other is the control group.

Poverty: Poverty is a state or condition in which a person or community lacks resources essential for minimum life standard and living below national poverty line (J. Chen, 2019). Hagenaars and De Vos (1988) defined poverty as a feeling that people do not have enough to get along and it can be measured relatively. This research measures poverty in relative term (Change in borrowers’ poverty position) rather than in absolute term for these persons. It measures relative poverty by different poverty variables (e.g. business revenue, fixed assets, current assets, employment etc. as dependent variables) of participant and non-participant borrowers through five point Likert scale for this study. Microfinance institutes give loan to poor people based on their respective

portfolio. These people are living below national poverty line. This research concerns the poverty of these people.

Participant Borrowers: It means successful borrowers who have taken microfinance based on their portfolio and completed at least one year using this loan for revenue generating activities (Experiment Group). Mermod (2013) described them actually as poor people and unbanked people who do not have any possibility to access financial services due to lack of collateral and other social, cultural, and gender limitations.

Non-Participant Borrowers: It means those poor people who have applied for the loan but not entertained or who intended to be borrowers but unsuccessful for their respective limitations (Control Group). Mushtaq and A Rauf (2011) demarcated these type of borrowers eligible to become client of microfinance institute.

Monetary Measurement: This research takes the United States Dollar (USD) for the study as a vehicle currency because Bangladesh is operating in Bangladeshi Taka (BDT) and Malaysian is operating in Malaysian Ringgit (MYR). It has been taken the approximate conversion rate of 4 MYR and 85 BDT against one USD in this study.

Living Style: Conjugal means married and reside together in the household for carrying out revenue-generating activities. Single includes unmarried, divorced, separated and do not reside together in the household for carrying out revenue-generating activities.

Household: It means the number of people sharing common food from the same kitchen. Households consist of two or more individuals who are related by birth, marriage, or adoption, although they also may include both related and unrelated members (McFalls Jr, 2003).

Loan Default: High recovery is the symptom of positive impact of microfinance loan. Loan default occurs when borrowers fail their repayment instalment or commitments more than two times during the agreement period. Sexton (1977) took this approach of repayment failure and classified borrowers who missed any repayments as bad borrowers. Here, Loan default is the dichotomous dependent variable for loan recovery analysis (0 for no default and 1 for default).

Loan Default Variables: The loan defaults independent variables have been divided into three broad categories as Borrower Characteristics (Gender, Living Style, Education Level, Age, Alternative Income and Number of Dependent etc.), Business Characteristics (Business Type, Revenue Amount etc.) and Loan Characteristics (Repayment Period, Repayment Mode, Alternative Loan, Repayment Amount, Interest Rate etc.) (Mokhtar, 2011).

1.6 Microfinance for Poverty Alleviation

Microfinance appears as an instrument for promoting the socio-economic development of the poor people. It plays a significant part in combating poverty by providing access to the specially arranged financial system for the poor. In fact, generating income from small entrepreneurship activities through microfinance gives the opportunity for further advancement in trade and volume together with improved life quality of the borrowers. Khandker, Samad, and Khan (1998) found that women in Bangladesh made themselves empowered by their respective contributions to household income and asset building, which ultimately resulted in enhancing life standard and family status through microfinance.

There are two sides in a financial system such as supply or lending side and demand or borrowing side. Microfinance is the supply or lending side of the system. It gives small credits to the poor for income-generating activities which help them accumulating capital together with raising life standards (Littlefield, Morduch, & Hashemi, 2003). Nobel Prize winner in Economics in 1976, Milton Friedman quoted “The poor stay poor not because they are lazy but because they have no access to capital” (Smith & Thurman, 2007a). This quotation is quite impressive as many people lagging behind the poverty are already being benefitted through microfinance.

In a simple meaning, microfinance provides small credits with other financial services to the entrepreneurs usually excluded from the traditional banking system. It is providing microcredit, bank accounts, insurance policies and sometimes fund transfer to tiny businesses. These types of business generally found in the developing world. Financially marginalized people get initial funds to set up a small business or other revenue-generating activities. They do not have any other option to get financial services rather than microfinance. Microcredit is a collateral-free loan. That makes it a very risky

venture and a small credit lending system results in high transaction cost. Therefore, these two factors attract high-interest rate and loan management cost. Microfinance includes microloan, microsaving, microinsurance and other banking services essential for revenue-generating activities. It provides these services to businessperson and entrepreneur to assist them to take their initiatives off the ground. It also serves with microsaving accounts that require borrowers no minimum balance. Microinsurance is a part of it as well where borrowers get insurance with lower cost relative to market rate. Microfinance borrowers can get education and training including record keeping, documentation, working capital management together with other skills that are very much required to run a business. They have been even facilitated with cyber technologies to avail modern virtual systems in their lives and works. For example, in the case of Kenya, mobile phones have been used to provide microlending. In the case of the United States, young growing numbers of entrepreneurs with zero collateral have been able to take credit to start their business. Microfinance brings changes in women's life by breaking their cycle of poverty. By taking up 84% of the microfinance, women have been major borrowers in fact by the year 2016 (Cautero, 2019). Most of them are living in rural areas. The microfinance industry has been rising quickly. By the year 2017, it got a portfolio of \$ 114 billion with 139 million borrowers across the world. India is the highest followed by Bangladesh, Vietnam, Mexico, Philippines and other countries by the number of borrowers in 2017 (MicrocreditRegulatoryAuthority, 2017). Microfinance has the enormous number of success stories around the globe. For example, 79% of customers in Banco da Familia's improved their income between the first and last credit and 87% of the borrowers have reported improvement for the standard of living with reference to research sponsored by BNP Paribas. A Kenyan social enterprise named M-Kopa Solar following the business model of "pay as you go" has roughly 250,000 borrowers. 92% of them have been reported positive impact in their lives for microcredit (BNP-PARIBAS, 2017). These are the quite optimistic instances of successes for microfinance.

Microfinance is envisioned to break the poverty cycle, enhance employment, improve earning capability, and eventually support economically marginalized people in society. As an alternative option, these poor people require to raise fund as a loan from their respective families, friends or even from loan sharks informally with enormously high interest rates beyond tolerance level. However, many researchers

conclude that microfinance has lost its mission despite good intention and eventually it has not been working for poverty alleviation for which it is envisioned (Duvendack et al., 2011; Hickel, 2015). Instead, they argue that microfinance merely generates poverty in worse level. One important reason is that many borrowers divert microfinance loan to pay for elementary facilities rather than invest in the revenue generating activities. Consequently, it makes their businesses either fail or sometime totally stop that eventually plunges them into further debt. As an instance, ninety-four percent of all microfinance loans have been used for consumption in South Africa. It reveals microfinance borrowers are not creating new income with the original loan. As a consequence, they require to obtain alternative loan to settle the current existing debts and so on. This situation plunges the borrowers into deep down more and more debt. In extreme cases, borrowers have found themselves caught up in dangerous positions like committing suicide or other life threatening issues (Taylor, 2011). Finally, microfinance can be used as an influential instrument for financially underserved or not served marginal poor people when applied efficiently and effectively. Either way whether microfinance is applied successfully or not, it is an important topic in the financial world. With an appropriate use, it could be an influential development tool to alleviate poverty (Cautero, 2019).

1.7 Problem Statement

Poverty is a problem almost all over the globe. It will make endanger the rest of the world in its extreme form at any part of the world. It may be the worst form of violence and the source of criminal activities in many cases. Although these poor people do not commit any crime out of their own activity, they pay penalty by born as poor. It is not controllable in their jurisdiction in many cases. The Chinese philosopher Confucius correctly quotes “In a country well governed, poverty is something to be ashamed of. In a country badly governed, wealth is something to be ashamed of.” In respect of almost all the countries, it is long-standing fatal ailment. A person who thinks but never does and a person who does but never thinks have equally been responsible for failure that ultimately turns into poverty. Mother Teresa held us not God responsible for the poor death out of hunger. This world is blessed with everyone’s need but it is not happening for somebody’s greed. The minority of the people are in possession of the majority of the resource in the world. The huge disparity in wealth distribution is

creating poverty in the lower end. However, poor people are blamed for everything because history has been written by the rich. It is very much needed to save this world, get people out of poverty together with advancing economic growth. For this, it is necessary to show people's problem and solutions together. It needs to test the progress, not by the abundance with fewer people but little with many people. Civilization cannot rest with as far as poverty, injustice and gross inequality exist in our world. Even, one cannot be able to serve a few rich in society if one fails to save the poor. Nobel Laureate Muhammad Yunus stated that poverty should not belong to civilized society rather it should belong to the museum. He suggested microfinance might be one of the ways to solve this poverty for humankind (Compassion, 2019).

Microfinance has been intended to solve poverty problem of the people living below the poverty line. However, strong criticism against the microfinance is that it is not working for its intended purpose (Hickel, 2015). Though some instances are there for positive impacts of microfinance, there are negative examples of people struggle with debts making their lives even more complex and pushing them further down into poverty (TRT.World, 2017). In the state of Andhra Pradesh in India, Microfinance organizations have been accused of using predatory practices leading to client suicide. The government effectively shut down microfinance operation and it seemingly provided relief to clients who were being harassed by microfinance organizations where these borrowers had little or no power to prevent this situation (Saxena, 2014). Some major studies found that there has been no clear evidence yet existing that microfinance programs have positive impacts (Duvendack et al., 2011). It has been thirty years on service of the microfinance. Still, researchers are searching for impact of microfinance. Critics of microfinance say that borrowing money simply does not deal with root causes.

It is much more important to think about the structural causes that produce poverty and suffering. For the structural cause of poverty in the first place, it needs to talk about imbalances and the voting power of the World Bank and IMF. It also needs to talk about the imbalances and international trade systems that are preventing poor countries to develop. Microfinance may be a pretend solution that does not, however, address these issues (Hickel, 2015). However, strong attention should be given to look at the microeconomic situations where there are people on the ground who are struggling to feed themselves together with other basic needs like clothing, medicine, housing, education, etc. for themselves and families. These situations need to be addressed.

Microfinance enables us to go right into the problem and deliver a solution, which will have an immediate impact. It may not be a complete solution to poverty. However, it is a part of the solution, which can be used to eliminate poverty.

Whether microfinance can alleviate poverty depends on how microfinance institutions handle their job in the ground level. Microfinance may not work as effective development tool despite good intention. The dimension of microfinance failure is locally responsive organizations. There has been a lot of scandal when microfinance scaled up and there are larger organizations that do not have a local context that do not respond to their beneficiary on their client's needs. Critics of microfinance want to be very specific about high-interest rate and high staff wages. However, positive impact of microfinance may be due to the work of women as they are majority in numbers of borrowers. By giving voice over the family, microfinance has been often regarded as a tool to empower women's freedom. When none of the family members having a job, the microfinance delivered an opportunity for that family. Khandker et al. (1998) found that women made themselves empowered by their respective contributions to household income and asset building, which ultimately resulted in enhancing life standard and family status through microfinance. Yunus (2007) expressed his experience that women being considered as a problem for the family previously could share the same socio-economic status with the men when they get themselves involved in microfinance and received good results from their borrowing. Besides, lending to women generally is related to lending to the poor (Bassem, 2012). Women are responsible for family and community labor that is often overlooked in the state led development policies or the market led development policies. These overlooked policies leave female population beyond income generating activities. Microfinance could play an important role and recognize their contribution. Irrespective of institutions sustainability, there is a loss of focus on the women's contribution and risk-taking. Microfinance may work based on group of women who trust each other making strong form of collateral. Microfinance may also reduce discrimination against women at the bank, labor market etc. (TRT.World, 2017).

Microfinance has sometimes high default and transaction costs. It resulted in many program failures based on subsidization (Von Pischke, Adams, & Donald, 1983; Yaron, 1994). Besides, subsidized credit has been contributing to borrower rent sinking

attitude including high default rates (M. Robinson, 2001). The subsidized credits are undermining both the financial performance of the institutions and undermining social impact by limiting the quality and quantity of the subsidized allocation (Morduch, 2006). The financial performance of microfinance institute put the whole microfinance system within the jurisdiction of the market behaviour. It proposes to establish microfinance institution with financial sustainability since the resources are constraints from governments or donor agencies. Consequently, relatively higher interest rates need to be charged to cover all operational costs necessary for running the institute. Here comes the compromise for serving to alleviate poverty. Alternatively, microfinance institutes jump serving the borrowers adjacent to the poverty level but not very poor with terrestrial concentration. Usually, they are involved with short cycled revenue generating activities together with high profitability. It obviously exposes the dominion of the maximization of profit rather than maximization of welfare (De Briey, 2005).

This has been a major debatable issue to find out microfinance impact on borrowers' poverty in current years (Duvendack et al., 2011; Milana & Ashta, 2012). Some researchers like Bhuiya, Khanam, Rahman, and Nghiem (2016), Pitt, Khandker, and Cartwright (2006), Rahman, Luo, and Minjuan (2015) and Woller and Parsons (2002) discovered positive impact of microfinance for poverty alleviation whereas some researchers like Bateman (2010), Hulme (2000b), Roodman and Morduch (2014) and (Sinclair, 2012) did not disclose significant positive impact on microfinance borrowers' poverty. In addition, many researches come to the opinion that there has been significant positive impact for few development indicators chosen for their respective studies but not for other indicators (De Mel, McKenzie, & Woodruff, 2008; Ghalib, Malki, & Imai, 2015; Imai, Arun, & Annim, 2010; Imai, Gaiha, Thapa, & Annim, 2012; McKenzie & Woodruff, 2006; Mukherjee, 2015; Van Rooyen, Stewart, & De Wet, 2012) whereas other researchers did not conclude the same indicators rather put positive impact for some else indicators (McIntosh, Villaran, & Wydick, 2011). Therefore, microfinance is losing its grounds for inadequate proof for positive impact on poverty despite good intention (Lascelles & Mendelson, 2012).

Although Bangladesh has shown progress through dropping the poverty rate, about 24.3% population has been still living below National Poverty Line whereas about 14.8% below International Poverty Line during the year 2016 (WorldBank, 2019b).

Malaysia poverty is visible through lower middle income (\$3.2 per day) and upper middle income (\$5.50 per day) poverty line. As per minimum wage, a person will find his or her life difficult below \$9.16 per day in Malaysia (WorldBank, 2018). Bangladesh, Malaysia and many parts of the world the persisting poverty problem need to be resolved. Among others, microfinance as a development tool, could be one of the way to handle this issue. In many cases, it appears important instrument to deal with poverty alleviation when applied as a development tool. However, the mixed and negative results are also visible when applied for resolving poverty. Microfinance impact on borrowers' poverty is very much important to find out with current scenario especially when it is used as a development tool. The academic world has been diverged in their respective opinions for or against microfinance treatment. In addition, there have been billions of dollar investment and millions of clients in microfinance industry already working. Hence, it is high time to check what is happening in the ground to safeguard the investment and borrowers' lives as well.

1.8 Research Questions

The borrowers have been provided microfinance based on their portfolio that ensure they are using this facility for revenue generating activities. It ensures microfinance intervention and any breach of it may have ethical and legal consequences. The main research question is whether microfinance has impact on borrowers' poverty in Bangladesh and Malaysia. This main question is further sub-divided into more specific questions as follows:

1. The first question is whether there is significant difference due to microfinance on poverty at business, household, individual, and security level **within** participant borrowers (Experiment Group) and non-participant borrowers (Control Group) [Research Objective 1].
2. Second question is whether there is significant difference due to microfinance on poverty at business, household, individual, and security level **between** participant borrowers (Experiment Group) and non-participant borrowers (Control Group) [Research Objective 2].

3. Third question is whether microfinance has cause-effect relationship on borrowers' poverty at business, household, individual and security level. These three questions are quantitative impact analysis [Research Objective 3].
4. Fourth question is how microfinance is making impact on poverty through borrowers' financial and activity diary between participant and non-participant borrowers. This part is qualitative analysis using Modified HEPM Model [Research Objective 4].
5. Our fifth question is whether poverty index is lower for participant borrowers in relation to non-participant borrowers for microfinance positive impact on borrowers' poverty [Research Objective 5].
6. Our sixth question is whether microfinance has been recovered and if not then what are the factors responsible for loan default [Research Objective 6].
7. Finally, our seventh question is whether microfinance serves the social objective by reducing poverty or achieving financial objective by making money [Research Objective 7].

1.9 Research Objectives

The main objective of this research is to find out microfinance impact on borrowers' poverty in Bangladesh and Malaysia. This research analyses both quantitative and qualitative microfinance impact on poverty through HEPM and M-HEPM, respectively. For quantitative measurement, the impact has been observed through finding the difference before microfinance and after microfinance (Within impact), and with microfinance and without microfinance (Between impact). This study also quantifies microfinance impact on poverty through regressing microfinance on borrowers' poverty. For qualitative measurement, borrowers' diary can give us valuable information about their poverty specifically in the absence of formal record of poverty. This research compares poverty index between participant and non-participant borrowers to see the microfinance impact. More default is the symptom that microfinance is consumed rather than it is used for poverty alleviation. If the microfinance loan is not returned back to the lender, then the whole microfinance process will be in question for poverty alleviation. Therefore, this study examines

microfinance loan default and try to point out the factors responsible for the default. Finally, microfinance seems not to have impact on poverty alleviation if it maximizes profit like other commercial organization. Hence, it is needed to find out whether microfinance is making money through financial performance ignoring social performance for poverty alleviation.

Specific objectives are:

1. To measure whether there is significant difference due to microfinance on poverty at business, household, individual, and security level **within** participant borrowers (Experiment Group) and non-participant borrowers (Control Group). [Hypothesis H₁]
2. To measure whether there is significant difference due to microfinance on poverty at business, household, individual, and security level **between** participant borrowers (Experiment Group) and non-participant borrowers (Control Group). [Hypothesis H₂]
3. To estimate whether microfinance causes significant impact on borrowers' poverty at business, household, individual, and security level. [Hypothesis H₃]
4. To find out how microfinance is making impact on poverty through borrowers' financial and activity diary between participant and non-participant borrowers. [No Hypothesis – Qualitative Study]
5. To measure the impact of microfinance on poverty through comparing multidimensional poverty index between participant borrowers and non-participant borrowers. [No Hypothesis – Index Comparison]
6. To observe loan default and point out the factors responsible for loan default in microfinance. [Hypothesis H₄ to H₁₆]
7. To identify whether microfinance is serving the social objective or financial objective. [Hypothesis H₁₇ to H₁₈]

1.10 Scope of the Study

There are five biggest microfinance companies in the world namely 51 Give in China, Bank Raykat in Indonesia, BRAC and GB in Bangladesh, Kiva Microfunds in USA (Maverick, 2016). Bangladesh is the pioneer in microfinance. It started providing microfinance services and non-collateralized credit to the people living below poverty line through GB in a large scale. GB is the major microfinance operator as their number of borrowers reaches 8.93 million by this time. To overcome loan default problem and diversify the risky portfolio without collateral, some innovative strategies have been devised such as frequent and flexible repayment, small size loan, mandatory savings together with the group liability concept (Yunus, 2007). These strategies work and so GB has become the pioneer in the microfinance industry in Bangladesh. Subsequently, it has been replicated in some countries across the globe including Malaysia. Regarding the latest Annual Report (GrameenBank, 2017), Grameen Bank has just finished its 34 years operation by the end of December 2017. The growth of the bank also has reached higher like previous years. It has received a new batch of 33,264 new members that brings about 8.93 million borrowers together. This borrower number is more than 100 countries operating microfinance all over the world. Grameen Bank renders its service activities through zonal offices covering 246 regions and 2568 branch offices. It covers 81,400 villages which is above 93 percent of total villages across the country.

BRAC is the second microfinance operators in Bangladesh as their number of borrowers is 4.19 million by this time. Currently, it operates various programs in all sixty-four districts in the country from lending microfinance loans to teaching rural people how to set up their own business. BRAC does some activities on commercialization even complaints from some intellectuals. However, it is noted that charitable organizations should not engage in commercial activities (Sidel, 2003). The annual expenditure of BRAC is increasing every year and the annual budget exceeds \$583 million. However, the donor contribution is decreasing day by day. This is not for the donor's unwillingness but rather for its financial sustainability. BRAC has combined poor economics market programs with non-poor economic commercial activities (Mannan, 2010).

On the other hand, P. B. McGuire, Conroy, and Thapa (1998) described that Malaysia started microfinance through the replication of the Grameen Bank model. In

another study, it is quoted as “Malaysia replicated the Grameen Bank model that is the leading example of the microfinance framework in the world” (Mokhtar, 2011). As one of the poverty eradication strategies, microfinance programs have been implemented as a development tool since 1987 in Malaysia. There have been three big microfinance institutions commonly known as AIM, YUM and TEKUN which targeted different groups of poor people across the country (Mokhtar, Nartea, & Gan, 2012). Here, TEKUN has the dominating number of borrowers and it is approaching half a million with incremental trend. Therefore, the scope of this study is GB and BRAC in Bangladesh and TEKUN in Malaysia. For microfinance institute performance, this research has taken the available data of the year 2015, 2016 and 2017 from Microfinance Regulatory Authority Report and randomly selected 40 microfinance institute of Bangladesh. Secondary data for microfinance institute performance are from annual report of Microfinance Regulatory Authority. Malaysian microfinance institutes are not included in this study for non-availability of data as they are very restricted in sharing financial information (Mokhtar, 2011).

1.11 Significance of the Study

Researchers like Bhuiya et al. (2016), Pitt et al. (2006), Rahman et al. (2015) and Woller and Parsons (2002) find microfinance positive impacts. Khandker et al. (1998) found that women made themselves empowered by their respective contributions to household income and asset building, which ultimately resulted in enhancing life standard and family status through microfinance. Many studies done by researchers like Bateman (2010), Hulme (2000b), Roodman and Morduch (2014) and Sinclair (2012) did not conclude any significant positive microfinance impact on borrowers' poverty or welfare. Moreover, many studies decided that there has been positive impact on borrowers poverty for few welfare indicators but not for others such indicators (De Mel et al., 2008; Ghalib et al., 2015; Imai et al., 2010; Imai et al., 2012; McKenzie & Woodruff, 2006; Mukherjee, 2015; Van Rooyen et al., 2012)

1.11.1 Theoretical Significance

This research gets significance through taking either for or against side in the academic debate of microfinance impact on borrowers' poverty. It remains a dilemma about microfinance impact for its inadequate proof (Lascelles & Mendelson, 2012). The

outcome of microfinance may be poverty alleviation or entrapping poor people through spiral of debt and producing worst scenario with good intention. Many people are poor not for the reason that they do not want to work rather they lack capital together with other inputs for producing income generating activities. They should be given an opportunity to become an entrepreneur for producing goods and services. They have not given chances to materialize their dreams and often kept outside formal financial system. After providing microfinance as small capital, these poor people end up with more assets and more earning from those assets. It ultimately increases their consumption and positive outlook for lives. This is a good argument that microfinance may work to a certain extent. Bhuiya et al. (2016), Pitt et al. (2006), Rahman et al. (2015) and Woller and Parsons (2002) found that microfinance had positive impacts. Although microfinance is important in helping the poor survive, it may not be wise for mass exit from poverty. Bateman (2010), Roodman and Morduch (2014) and Sinclair (2012) did not find any significant positive impact on borrowers poverty for microfinance. As a solution for the global poverty, microfinance gives hope for poverty elimination by providing financial services to the poor. However, microfinance is also subject to corruption and abuse. A series of catastrophes sparked the crash of microfinance in India and other parts of the world. Therefore, it becomes a major debatable issue then to find out the impact of microfinance on borrowers poverty currently (Duvendack et al., 2011; Milana & Ashta, 2012).

Mixed results have been found through many studies conducted over the years examining microfinance impact. Microfinance has not been the silver bullet as it is considered once. Some researchers have revealed that many borrowers consume their loans to cover short term crises rather than address long term development. Some programs end up with over-indebtedness. Microfinance loans are also expensive and incurs high interest to meet the necessary operation costs of fund provider. Many programs exploit rather than empower. Heavy handed collection tactics have been documented as exploitative interest rates are combined with extortion. Financial literacy and education are often excluded as precursors to loan products. As a result, many poor become trapped in deepening cycles of poverty and debt. Microfinance is still making an impact and some programs are truly addressing extreme poverty. Nowadays, the development world has detached itself from even using the word microfinance rather focusing on reaching universal financial inclusion. This works enclaves both

quantitative and qualitative aspects for microfinance impact assessment. It signifies microfinance impact through constructing multidimensional poverty index between participant and non-participant borrowers. It emphasizes that favorable loan product for particular borrowers should be made for good loan recovery.

1.11.2 Practical Significance

Global microfinance market has been projected to grow rapidly accompanied with around 14.3% growth during 2019-2025. Global policy maker may take an opportunity to leverage this emerged idea. It has been expected that microfinance will bring in strong advantages accumulating important momentum to global growth. The microfinance industry is huge by the year 2017 achieving a portfolio of \$ 114 billion with 139 million borrowers across the world. Bangladesh, being pioneer in conceptualising and applying microfinance idea, has been serving over 31 million borrowers (including Grameen Bank) with a loan portfolio of about \$ 8.0 billion borrowers. Although more than a thousand institutions are running microfinance programs, only 10 large microfinance institutions including Grameen Bank represent 81% of the total outstanding loan. Its microfinance industry has expanded its scope far beyond from household activities and self-employment through diversifying borrowers' economic activities. In Malaysia, Entrepreneurial notion has become more significant with the introduction of Knowledge Economy concept for the purpose of achieving the objective of National Mission Plan 2020 in line with poverty alleviation. The government has been focusing on the small and medium enterprises, particularly the microenterprise because of its small size, easy entry barrier, and small capital requirement compared to large industries. However, access to financial resources is the foremost obstacle for opening a microenterprise by most entrepreneurs especially who are living below poverty line. The Malaysian microfinance provides services to approximately 82% of Malaysian poor and low income households. The provided loan is based on Islamic principles free of interest except 4% as operational and managerial fee. Malaysian microfinance industry has been serving more than one million borrowers with a loan portfolio of \$1.2 billion. Among others, AIM and TEKUN are serving large number of microfinance borrowers. TEKUN has provided loan to more than half a million borrowers with total loan amount of \$ 1.34 billion.

Microfinance industry involves huge amount of investment and large number of borrowers lives. These huge amounts of investment involving millions of borrowers in microfinance need to be assessed for the industry survival and growth. This research signified thorough finding the microfinance impact on borrowers' poverty incorporating both quantitative and qualitative analysis in Bangladesh and Malaysia. Without proper impact assessment, this industry may not get its direction for further way forward. Policymakers could get an insight of current impact scenario of Grameen Bank, BRAC in Bangladesh and TEKUN in Malaysia as these three are serving large number of borrowers in their respective operation. If positive impact has been found on borrowers' poverty for selected microfinance institution, policy maker may continue to support and subsidize the respective institution. Since the microfinance product, services and administration are different as discussed in the characteristics of GB, BRAC, and TEKUN, the impact results may be interpreted in line with similar products and services that will be provided by different microfinance institutions. For example, if GB participant borrowers get positive impact, then GB loan products can be replicated by existing other or new microfinance institutions. Same goes for BRAC and TEKUN as well. This study may help policy makers to support the respective microfinance institute with positive impact in poverty alleviation. Furthermore, new microfinance institute with same nature of product and service can be developed in line with current impact assessment. The replication of GB, BRAC, or TEKUN could be made according to their respective impact contribution toward alleviating poverty.

1.12 Organization of the Thesis

The thesis is organized into five chapters as follows:

Chapter 1 **Introduction** deals with poverty in the globe, countries confronting poverty, poverty overview of selected countries, operating terms, microfinance for poverty alleviation, research problem statement, research questions and objectives, scope and significance of the study, organization of the thesis followed by a chapter summary.

Chapter 2 **Review of Literature** provides a review of the previous studies relevant to this research including economic overview of selected countries, microfinance evolution, microfinance program, characteristics of microfinance

institutes, microfinance design, underlying theories of the study, research gap, theoretical framework, microfinance impact assessment, multidimensional poverty index, loan recovery issues, microfinance institute performance, hypothesis development and finally a summary of the chapter.

Chapter 3 **Research Methodology** deliberates different methodologies applied to this study including research approach and philosophy, research design, population and sampling, time period, sampling design, research data, applicable research techniques for impact assessment in line with research objectives and a summary of the chapter.

Chapter 4 **Results and Discussion** presents and interprets the empirical results and outcome of this study for three constitutions (GB, BRAC and TEKUN) consecutively together with microfinance institute performance analysis and finally a summary of the chapter.

Chapter 5 **Conclusion and Recommendation** discusses the research findings, its contribution, recommendation from the findings, implication of the research, its limitation and direction for future research followed by a chapter summary.

1.13 Summary of the Chapter

This chapter introduced necessary background to the study. It started with a poverty scenario across the globe and discusses different countries confronting poverty. Then it elaborated the poverty overview of Bangladesh and Malaysia. Operating terms are defined that are used for this study. It also discussed how microfinance alleviates poverty as a development tool. It provided research problem statement which had been intended to resolve through this study. It set out research questions along with broad and specific objectives. It also presented the study scope and study significance. Finally, it captured the organization of the thesis followed by a summary of the chapter.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter provides an overview of literature for different aspects of microfinance and its relevance with reference to borrowers' poverty. Specifically, Section 2.2 starts with economic overview of Bangladesh and Malaysia together with GDP growth rate and per capita together with unemployment rate. Section 2.3 discusses microfinance evolution. Section 2.4 deals with different microfinance programs operation in Bangladesh and Malaysia whereas Section 2.5 characterizes Grameen Bank, BRAC and TEKUN as selected microfinance institutes. Section 2.6 deliberates different designs used in microfinance operation. Section 2.7 discusses the underlying theories of the study. Section 2.8 studies with research gap and Section 2.9 draws the theoretical framework of the study. Section 2.10 provides an overview of how microfinance impact assessment has been done previous literatures. Section 2.11 deals with multidimensional poverty index and Section 2.12 talks about loan recovery and factors responsible thereto. Section 2.13 analyses the performance of microfinance institute including outreach, sustainability, impact, approach and performance trade-off. Section 2.14 develops the relevant hypotheses necessary for this study followed by Section 2.15 for chapter summary.

2.2 Economic Overview

2.2.1 Bangladesh Overview

Bangladesh has been one of the most densely populated country in the world. About 75% of the population of the country lives in underdeveloped rural areas. It is an agro-based country for a long time. The majority of the population has been directly or indirectly involved in agricultural activities for their means of lives. There is a dominant status of the agriculture sector together with rural areas to meet the country's different progress challenges. There is a direct link between the agriculture sector and

rural areas. The agriculture sector is very important because most of the people of the country are living in rural areas and have a direct link between the rural development and the development of our national economy (BBS, 2019).

Bangladesh has a sustainable economic growth. However, it reached the poverty level at 14.8 % during the year 2017 based on the international poverty line definition of \$1.90 per person per day. Besides, several other indicators like per capita food production, literacy rate, and life expectancy have improved. According to official estimates, on an average 6.5% GDP growth rate has been underpinned over the decade approaches 7.9% during 2018. Bangladesh got a lower-middle-income country position by the year 2015. All three entitlement benchmarks have been fulfilled by Bangladesh in 2018 to become Least Developed Country (LDC) and Bangladesh is on the way for graduation by the year 2024. The requirement for fuel and energy, transportation and suburbanization have been accompanied by economic growth. However, major bottlenecks appear for inadequate preparation and investment specifically in case of infrastructure. Bangladesh requires urgent structural reform, major investment in human resource, domestic revenue mobilization, woman participation and global integration to become upper-middle-income country. Finally, the emerging productive sector and new jobs will come out through improved infrastructure and a favorable business climate (WorldBank, 2019c).

Bangladesh faces several domestic and international adverse challenges. Still, this country has been able to endure her socio-economic development with growth trends. At the latest financial year of 2018-19, its GDP and GNI per capita have been estimated at \$1,827 and \$1,909, respectively. Investment has been only 31.56 % of GDP. Public sector investment is relatively very poor (Only 8.17%) whereas private sector investment reached a little bit higher (23.40%) of GDP. The inflation rate went up at 5.44 percent, which is quiet high during this period. The revenue collection is estimated at \$37 billion (Tk.3,16,599 crore) whereas the expenditure is targeted at \$52 billion (Tk.4,42,541 crore) making a budget deficit of \$15 billion. Out of the expenditure, revenue expenditure is \$ 31 billion and development expenditure is \$21 billion (Tk.1,73,449.00) crore and the rest is others. The export earnings of Bangladesh stood at \$30 billion whereas import payments stood at \$40 billion making it a trade deficit country. The overall balance recorded the deficit of \$499 million in February

2019 due to deficit in \$427 million of the current account balance. Bangladesh Bank maintained stability in retaining foreign exchange reserves. At the end of 30 April 2019, the gross foreign exchange reserves stood at \$32 billion. (Ministry of Finance, 2019).

If anybody looks at the other socio-economic indicator, during the past two decades, Bangladesh has some improvement in primary and secondary learning. By full effort, secondary school level was about 62% enrolment rates during the year 2015 leaving a large population in primary education level only. In comparison to similar status countries, the Government of Bangladesh has been spending only approximately 2% of GDP on education and training. However, Millennium Development Goal targets for Health, Nutrition and Population (HNP) have been accomplished by this time. The fertility rate together with maternal and child mortality are decreasing year by year. Bangladesh has achieved significant food security despite the high-density population, declining agricultural land, and recurrent natural catastrophe. It has the fastest rates of productivity in the agricultural sector about 2.7% per year, which is second in the world next to China. However, this achievement is constantly threatened because of agricultural land shrinkage by about 1% per year and a growing population. The share of agriculture in GDP has decreased from 28% to 13% from the year 1990 to 2018. This fact is associated with a declined employment growth rate and slowed down poverty reduction rate as well. Climate change and its adverse consequences are inevitable in Bangladesh because of its geographical condition. Unfortunately, Bangladesh is the number one risky economy in the world due to climate change as per the 2014 Climate Change Vulnerability Index. Due to restricted responsibilities together with inadequate resources, local government organization plays a limited role for rendering facilities to the distress people. Top-Down Approach has been used very often to provide services but accountability to service recipients is very little (WorldBank, 2019c).

2.2.2 Malaysia Overview

Malaysia gained its independence from the British Empire in 1957. It has inherited a good infrastructure and well management that makes rapid economic growth despite its ethnicity such a Malay, Chinese and Indian. Agriculture and mining were the primary basis of the Malaysian economy in the decades of 1970. Afterward,

there was a transition for industrialization. It led the country to a significant growth compared to its neighbours in East and Southeast Asia. The efficient management of macroeconomics contributed significantly to the development of the country. Macroeconomic policy ensured economic stabilization through handling unequal income distribution among different ethnic groups for maintaining socio-economic balance among themselves. The New Economic Policy (NEP) as a development strategy confirmed that all citizens should have their respective share in the wealth and development in the future (Menon, 2009).

NEP mainly contributed to two major dimensions. The first one was poverty alleviation irrespective of identity and the second one was restructuring society. It was devised to make unity through decreasing interethnic racism for an unequal distribution. Primarily rural Malay farmers were targeted for reducing poverty among themselves. As poverty reduced significantly over time, NEP's next mission was identified with restructuring the society by reducing interethnic disparity more specifically between Malay and Chinese group. Unfortunately, the economic position of the ethnic Malay did not progress in spite of economic growth. There was a big income disparity among Malaysian ethnic groups from the colonial period although overall average income reached higher compared to its neighboring countries (Jomo & Sundaram, 2004).

2.2.3 GDP Growth Rate

The changes in the volume of the country's goods and services or in real income of residents measure the respective economic growth rate of the concerned country.

Three indicators have been usually used to calculate growth rate such as Volume of Gross Domestic Product, Real Gross Domestic Income and Real Gross National Income. Considering the first one, Volume of Gross Domestic Product is the summation of value addition, which has been measured at a constant price, produced by country's household units, the government itself and industries working within it. Irrespective of operating industries resident status, GDP takes into consideration all domestic goods and services produced. Through this measurement system during the year from 1988 to 2017, the average growth rate of Bangladesh is 5.32% with the highest 7.28% in 2017 and the lowest 2.42% in 1988. In case of Malaysia, the average growth rate is 6.12% with the highest 10.00% in 1996 and the lowest -7.36% in 1998

(Please see Figure 2.1). Malaysian GDP growth rate is relatively higher together with high volatility sometimes negative in comparison to Bangladesh. In case of Bangladesh, although the GDP growth rate is acceptable, it lacks in magnitude which cannot support quality life.

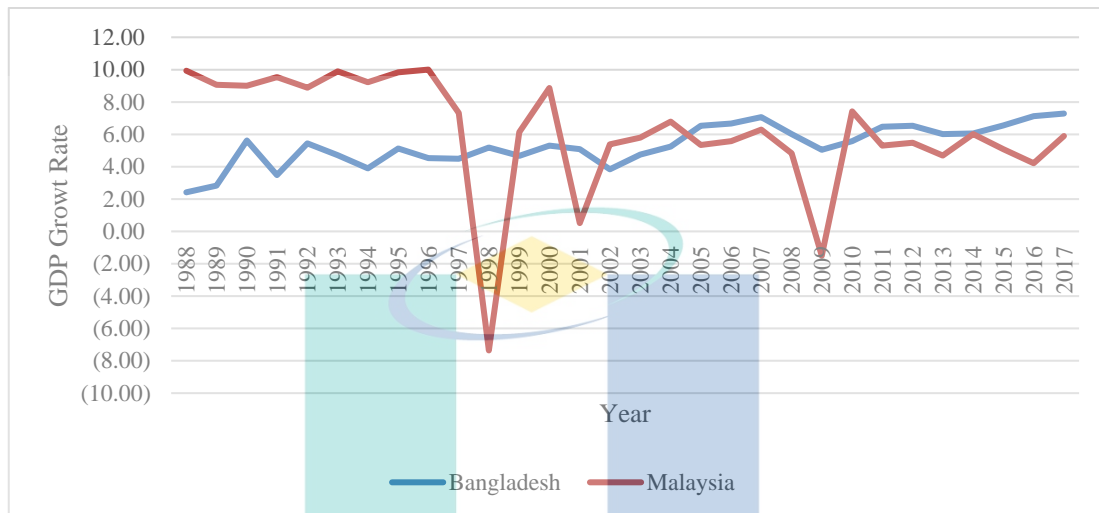


Figure 2.1 GDP Growth Rate

Data Source: WorldBank (2019a)

2.2.4 GDP Per Capita

GDP is divided by the midyear population to find the GDP Per Capita. As it is known that Gross Domestic Product is the summation of value added by total inhabitant manufacturers existing in the economy added with goods and services taxes and subtracted with subsidies not taken into consideration in product value. It also does not consider depreciation for assets and depletion or degradation for natural wealth. Bangladesh experiences relatively lower GDP Per Capita since 1988 around average \$579 but currently \$1,517 in 2017 whereas Malaysia experiences relatively higher GDP Per Capita average \$5,936 but currently reached \$11,184 in 2017 (Please see Figure 2.2). Bangladesh experiences lower GDP per capita, which cannot offer quality life above the poverty level.

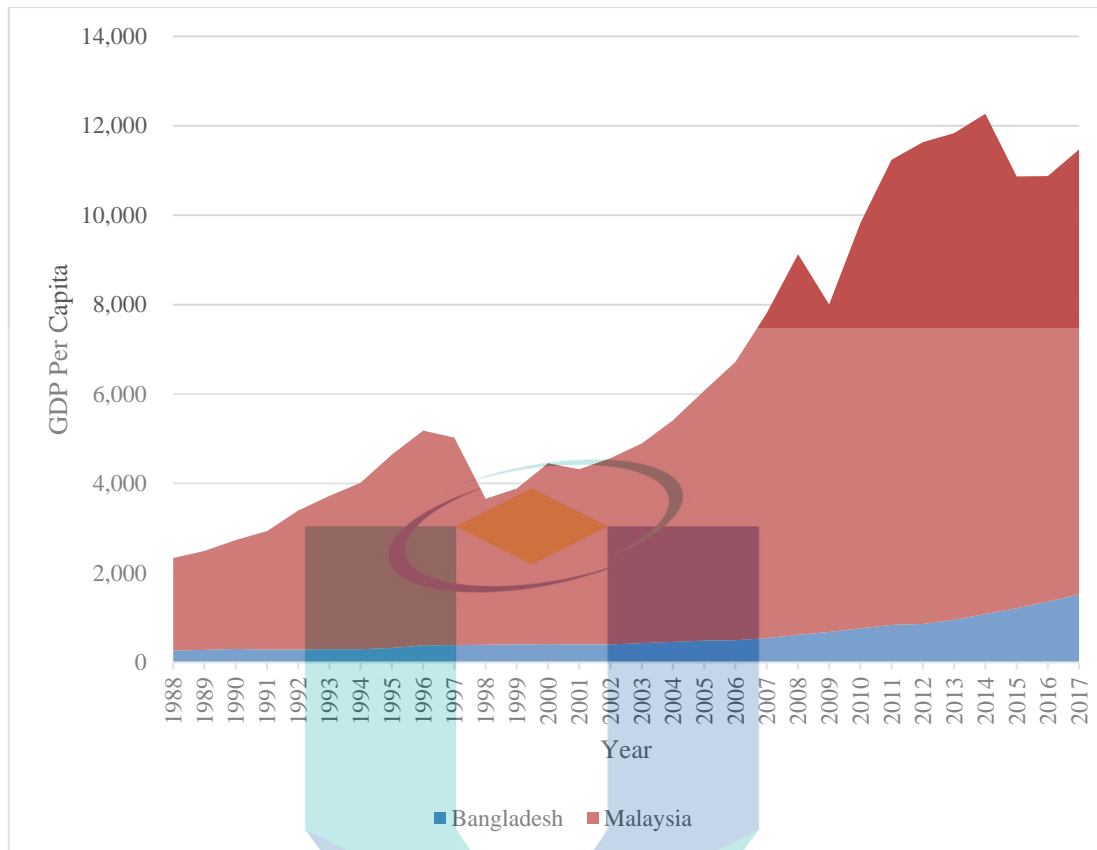


Figure 2.2 GDP Per Capita
Data Source: WorldBank (2019a)

2.2.5 Unemployment Rate

Workforce available and looking for a job but no opportunity to work refers to unemployment. Lower rate of employment can be hidden as a significant poverty level. People without employment or welfare benefit have to live in a vulnerable position whereas safety net can provide waiting for suitable jobs. Relatively higher and long-standing unemployment show significant unequal resource allocation. It creates uncertainty among the young workforce and ultimately has a damaging effect on people, economy, and society. When people are unemployed, they cannot contribute to national development and ultimately cannot be able to exercise citizen rights and have no significant voice in the society. Unemployment monitors the track of the country to reach the Sustainable Development Goal. During the years from 1991 to 2017, the average unemployment rate in Bangladesh is 3.56% with the highest 5.00% in 2009 and the lowest 2.20% in 1991. In case of Malaysia, average rate is 3.31% with the highest 4.11% in 1993 and the lowest 2.45% in 1997 (Please see Figure 2.3). In case of Malaysia in 2017, although reported unemployment has been found around

3.4%, the youth unemployment rate has been found over three times higher at around 10.8%. The youth unemployment rate is lowest in Singapore at 4.6%, followed by Thailand (5.9%), Vietnam (7%), Philippines (7.9%) and Indonesia (15.6%) among ASEAN countries. This rate is at 10.8% in China while close to 10.50% in India (StarOnline, 2018). It means Malaysia is suffering to face give young people jobs that may reduce their poverty and ensure better lives. In case of Bangladesh, about 58% of the population has been found in vulnerable jobs as per the International Labor Organization (ILO) during 2017. Vulnerable employment has been defined as works or odd jobs that are unlikely to have formal work engagements, and consequently more likely to lack decent working conditions, satisfactory social security, and proper representation in different aspects surrounding job environment (DhakaTribune, 2018).

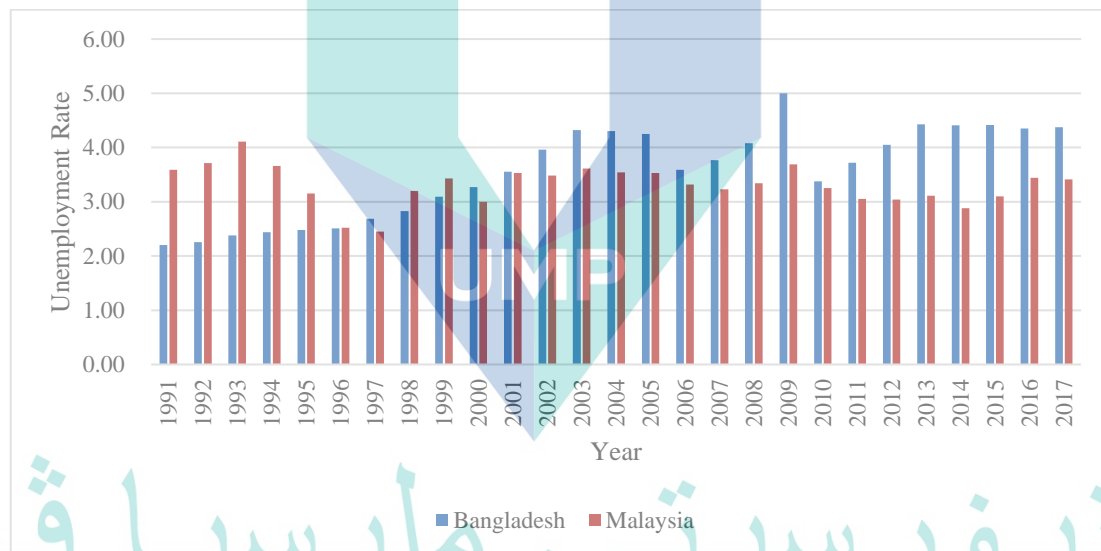


Figure 2.3 Unemployment Rate

Data Source: WorldBank (2019a)

2.3 Microfinance Evolution

In history, during the 16th and 17th centuries, rural finance was observed in Germany and Ireland (Steinwand, 2001). Hollis and Sweetman (1998) tracked down that Friedrich Wilhelm Raiffeisen formed a credit cooperative in Germany and that was one instrument of the microfinance provider after the “hunger year” of 1846. This credit cooperative delivered credits to poor farmers in rural areas. It had magnificently aided 1.4 million agrarians in Germany and been imitated in Ireland and Northern Italy

by 1910 (Morduch, 1999). During their colonial periods in India and Indonesia, this successful “Raiffeisen Model” was also replicated by the British and Dutch. Based on this Model, BRI is one of the efficacious microfinance institutions in the globe today (Seibel, 2005). Informal finance is common among Asian nations as well. It is named differently in different countries. Say, this type of lending is named “Hui” in China, “Chit funds” in India, “Arisan” in Indonesia and “Paluwagan” in the Philippines (Seibel, 2005).

Microfinance was identified as rural or informal finance earlier. Rural or informal finance has similar features and practices as microfinance such as small credits normally customized to the poor. During the 1970s, the term “microfinance” became popular and commonly used with the formation of Grameen Bank in Bangladesh by Dr. Muhammad Yunus, a Bangladeshi economist. He was aware of the destitution and hardship the poor people faced, more specifically the females in Bangladesh. Muhammad Yunus started micro-lending without collateral from his pocket to women villagers of Jobra in the countryside of greater Chittagong in Bangladesh. With this loan, the female borrowers started small income-producing activities such as weaving bamboo stools, making pots, etc. (Yunus, 2007).

Muhammad Yunus assumed that the traditional commercial banking system could not give a solution to the alleviation of poverty in his country. Finally, he convinced people and ultimately the government for validating his thoughts and ideas through establishing Grameen Bank in 1976, locally known as the bank of village (Yunus, 2007). This bank started dealing with soft, small and collateral-free credit to poor female borrowers of the country. As providing collateral-free credit is a risky and volatile venture in terms of recovery, many people were not optimistic about the outcome of the Grameen Bank since its inception.

However, the ideas of Mr. Yunus were applied successfully with good outcomes contributing positively to the lives of poor people by using collateral-free loans. This microfinance system empowered women as a contributor to the family and boost up their self-esteem and economic status. They become economically independent and confident to contribute their portion to the socio-economic development of the country. Eventually, their outstanding achievements gave shape to the modern microfinance system. For this excellent piece of work and contribution to

humanity both Muhammad Yunus and his Grameen Bank got the Nobel Peace Prize in 2006 (Yunus, 2007). As per Table 2.1, India is the highest followed by Bangladesh, Vietnam, Mexico, Philippines, etc. by the number of borrowers in 2017.

Table 2.1 Microfinance Top Ten Countries

Rank	Country	Borrowers Number & Growth Rate	Loan Portfolio Dollar & Growth Rate
1	India	50.9 Million (+5.8%)	17.1 Billion (+26.3%)
2	Bangladesh	24.85 Million (+3.5%)	7.8 Billion (+17.0%)
3	Vietnam	7.40 Million (+2.8%)	7.9 Billion (+18.9%)
4	Mexico	6.80 Million (-3.8%)	4.4 Billion (+5.5%)
5	Philippines	5.80 Million (+16.3%)	1.3 Billion (+17.5%)
6	Pakistan	5.70 Million (+25.9%)	1.8 Billion (+39.6%)
7	Peru	5.10 Million (+9.5%)	12.6 Billion (+17.0%)
8	Brazil	3.50 Million (+1.1%)	2.6 Billion (+2.7%)
9	Colombia	2.80 Million (-0.7%)	6.3 Billion (+5.6%)
10	Cambodia	2.40 Million (-4.7%)	8.1 Billion (+21.6%)

Source: MicrocreditRegulatoryAuthority (2017)

2.4 Microfinance Program

2.4.1 Bangladesh

Bangladeshi banking innovator Professor Dr. Muhammad Yunus pioneered microfinance. Since then, it turns into a significant development instrument for poverty

alleviation, freedom and entrepreneurship development specially in developing countries. Microfinance implies offering financial assistance and services to the poor. Microfinance contributes novelty by stimulating development through financial inclusion of the poor people usually excluded in typical commercial system. The obvious long lasting achievement of microfinance as an endeavour to battle poverty enlighten its appeal under the support of multinational institutions, private donors, and sometimes individual investors. Among others, multinational institution includes the World Bank, the United Nations, and the Aga Khan Foundation, etc. Because of tangible impact of microfinance on poverty alleviation including socio-economic development, Nobel Peace Prize has been awarded to Professor Yunus jointly with his founded Grameen Bank in 2006.

Microfinance is being operated in Bangladesh for about forty years. More over 33 million borrowers including Grameen Bank borrowers have been served with different financial and non-financial services through more than seven hundred registered Microfinance Institutes (MFIs) across the country (MicrocreditRegulatoryAuthority, 2017). In any case, it is worthy of noting that microfinance has been serving as a bridging gap in the regular commercial framework (Singh & Mehta, 2012). Sometimes, microfinance has been introduced erroneously in countries not having significant hard-core poverty. However, the experimental results from Bangladesh alone is adequate not to accept adverse claims against microfinance. More explicitly, when it has been viewed as a suitable instrument to include the unbanked people to get them rid of poverty. A few MFIs from Bangladesh become good examples in the developing countries like Grameen Bank, Bangladesh Rural Advancement Committee (BRAC), etc. All given things under consideration, there is the shortage of exploration that talks about the viability of microfinance at large. As of late, Mia (2017) gave a synopsis of the microfinance industry in Bangladesh dependent on the different legitimate status of MFIs. Bangladesh turned into an obvious option for this investigation because microfinance in its exact sense started from here and it has the most extensive operations.

2.4.2 Malaysia

Amanah Ikhtiar Malaysia (AIM) was established in the year 1988 by the Trustee Incorporation Act 258 which was revised 1981 (Chamhuri & Quinones, 2000).

P. B. McGuire et al. (1998) described that AIM was the biggest replication of the Grameen Bank model outside Bangladesh and the first poverty-oriented institution designed to serve microfinance in Peninsular Malaysia. (Tzi & Othman, 2016) also cited the same. More specifically, it was the area of Selangor where the concept of Grameen Bank was replicated as a pilot study referred to “Project Ikhtiar”. From Universiti Sains Malaysia, Dr. David Gibbons and Professor Sukor Kasim were the two social scientists conducted this pilot project and concluded the successful outcome that group-lending approach could be implemented in Malaysia like Grameen Bank. In another study, it is quoted as “Malaysia replicated the Grameen Bank model that is the leading example of the microfinance framework in the world” (Mokhtar, 2011). By this time, all over Malaysia the microfinance services were widely offered and started a new horizon for poverty alleviation through different microfinance institutions. AIMS has been hosted mainly for two reasons. The first one is to give the financial service access to the destitute people living behind the poverty level and the second one is to decrease the consistent income disparity among society. Both poverty and inequality have been categorized by wealth discrepancy between rural-urban, male-female, different ethnic groups and different states. The three foremost Microfinance Institution operating in Malaysia are Amanah Ikhtiar Malaysia (AIM), Yayasan Usaha Maju (YUM) and Tabung Ekonomi Kumpulan Usaha Niaga (TEKUN). Although all these three Microfinance Institutes vary in type of entity, year of formation, scheme of activity, area of coverage and type of borrower, they get assistance and financial support from the Government of Malaysia. They also diverge in their performance more specifically in loan recovery associated with borrower individual and household features. But the impact of microfinance is positive on the borrowers, although the magnitude varies among these institutes (Revindo & Gan, 2017).

After the NEP and NDP, Poverty lessening became a prime objective in Malaysian development plans that resulted a sharp drop in the poverty incidence over time. Still, some outstanding issues seek for attention even the incidence of poverty decreased commonly. Among these issues, one is the main ethnic group Malay still living below poverty and another is the rural area facing hard-core poverty incidence. Then Malaysia announced a microfinance program as a poverty abolition strategy in consistent with the microfinance program in Bangladesh as founded by Muhammad

Yunus, Roslan, Noor, Majid, and Abidin (2006) opined that the microfinance program introduced in Malaysia is expected to diminish the dependency on government and become self-reliant of the marginal poor people.

Malaysia has been practicing microfinance in different forms such as cooperative banks, credit unions, and banks' credit windows. For example, Majlis Amanah Rakyat (MARA), Council of trust to the Bumiputera, Credit Guarantee Corporation (CGC), etc. specifically for agricultural activities, Agriculture Bank of Malaysia (BPM), Farmers Organization Authority (LPP), Federal Land Development Authority (FELDA), etc. There have been also Non-Government Organizations (NGOs) working in this microfinance including Yayasan Usaha Maju operating in Sabah, Koperasi Kredit Rakyat in Selangor. The typical credit arrangement approaches to about \$ 2,500 (RM 10,000). In most cases, they are given for small trades, agricultural-related activities and poverty elimination (Ilias, 2019).

AIM was the first microfinance institution established in the year of 1987 in Malaysia. It delivers loan facilities all over Malaysia namely Peninsular, Sabah and Sarawak. To provide microfinance credit to the marginal people, the state of Sabah started its microfinance institution namely Yayasan Usaha Maju (YUM) at the same time. Grameen Bank model has been replicated both in the AIM and in YUM (Mokhtar, 2011). In 1998, TEKUN was established as the third microfinance institute in the country. Like AIM, it also extends its services all over Malaysia. The microfinance services of AIM and YUM are only for the marginal people living behind the country's poverty line, whereas the TEKUN delivers services for both poor and not so poor. However, these institutions differ in lending designs such as AIM adopts group-lending design whereas YUM and TEKUN adopt the individual lending design.

The microfinance institutions of Malaysia are also different in their formal recognition perspective. YUM and TEKUN are the government body under the Ministry of Agriculture and Agro-Based Malaysia respectively whereas AIM is nothing but an NGO. The common thing is that they are all subsidized microfinance institutions. They accept complete financial backing from the government in terms of grants and soft loans. The charges for microfinance loans are very low and as a consequence, they all have not accomplished financial sustainability from the beginning (Roslan et al., 2006).

2.5 Characteristic of Selected Microfinance Institutions

Microfinance institutions services are tailored to the poor people having to lack of entry to mainstream banking. These institutions have their unique characteristics that need to be quoted for understanding microfinance impact on borrowers' poverty. These characteristics include among others collateral-free loans and institutions going to customers rather than opposite usual practice. Microfinance institutions maintain the simple practice in money lending, the little amount of transaction, repeated borrowings, increased borrowing size in a successful result, affordable borrowing rate, free use of loans, flexible repayment, etc. Microfinance institutions are also based on their key principles such as poor people's requirements of different services which are not only limited to loans and savings. Those principles include strong strategy, system development, permanent local institutions, easy accessibility to financial services, complementary governmental role, donor contribution, institutional and human capacity building, transparency, etc.

2.5.1 Grameen Bank (GB)

The Grameen Bank as a pioneer microfinance institution was founded in Bangladesh during October 1983 by the tremendous and optimistic effort of Dr. Muhammad Yunus. It broke the idea of traditional banking that loans could not be given without collateral. This important feature made it unique but involved in risky ventures. To overcome this problem and diversify the risk portfolio, Dr. Yunus devised some innovative strategies such as frequent and flexible repayment, small size loan, mandatory savings together with the group liability concept (Yunus, 2007). Dr. Yunus started his journey by giving very small credit to marginal poor people at Jobra village under the Chittagong district in Bangladesh. Surprisingly, he experimented by lending only \$27 among 42 poor persons meaning only 62 cents per borrower to confront the poverty trap during 1976. It resulted in all the people pay back the credit that gave him immense pleasure. It also convinced him to replicate the process all over Bangladesh. Here begins a new industry called microfinance that extents small credit and financial services to the poor abandoned by the traditional banking system. Microfinance has started its journey to get poor people out of poverty together with wealth creation and positive externalities (Evaristus, Schuyler, Aprajita, & Qiulin, 2004).

Frequent and flexible repayment systems made borrowers pay their loans based on their respective business cycles like weekly, monthly or seasonally over time. In most cases, weekly repayments are generally applied for financing small business activities that produce daily or weekly income (Yunus, 2007). But monthly, quarterly or semi-annually repayments are applied for activities that take longer cycles such as seasonal business, agricultures, etc. These frequent and flexible collection systems enable borrowers to repay their loans in line with their respective small revenue-generating activities. Further, it makes credit supervisors monitoring on the borrowers very often and a regular basis ultimately resulted in fewer defaults through early warning and symptom (Jain & Mansuri, 2003).

The group liability lending concept is another important feature devised by Grameen Bank in the field of microfinance. There are about more or less 5 to 10 people in a group formed for microfinance. The borrowers choose the people among themselves to make an effective group that should be reliable with good performance. The members in the group are jointly responsible if anyone among them fails to pay back the borrowed amount in stipulated time. This device is some sort of social collateral rather than financial collateral to diversify and mitigate the risk of default. It also gives credentials to the next loan by better performance record of the previous loans. Ultimately through this system, the borrowers learn to utilize loans efficiently and effectively resulted in good credit scores for them (Yunus, 2007). The core purpose of the group lending device handovers risk and burden from the lenders to the borrowers (Beatriz & Morduch, 2005). All the activities in traditional banking like borrowers' selection, their performance, monitoring, and compliance have now been done by the borrowers themselves through group lending. Several studies such as Varian (1990), Stiglitz (1990), De Aghion (1999), A. V. Banerjee, Besley, and Guinnane (1994) and Chowdhury (2005) found that even without financial or physical collateral, group lending is an efficient way of upholding a good recovery rate.

Mandatory saving is another feature of Grameen Bank promoting microfinance. This is a prerequisite to apply for a loan and borrowers must contribute to the savings irrespective of their loan application outcome. Only the magnitude of the amount will be higher for the relatively large recipients in a group. These savings are collected in the meetings scheduled with the borrowers and also serve economic

consumption or crisis moment during loan tenure (Yunus, 2007). Regarding the latest Annual Report (GrameenBank, 2017), Grameen Bank has just finished its 34 years operation by the end of December 2017. The growth of the bank also has reached higher like previous years. The Grameen Bank family got a new batch of 33,264 new members that brought total borrower about 8.93 million. This borrower number is more than 100 countries operating microfinance all over the world. Grameen Bank renders its service activities through zonal offices covering 246 regions and 2568 branch offices. It covers 81,400 villages (Above 93 percent of total villages) across the country.

- **Microenterprise Loans:** GB helps people reconstructing their lives even after crossing the poverty line. It provides a new financial package for further prosperity. This package is called Microenterprise Loan and it is specially designed for fast-growing members. Under this category, about \$4.95 billion has been disbursed by the year 2017. The loan size has no restriction. However, the average size is about \$424 and the highest single loan given under this program is \$48,455 by this time for the activities of fish trading, poultry feed, and aquaculture. Usually, the prime activities financed by this type of loan are dairy farms, grocery shops, pharmacy, auto-rickshaw, and stone business for construction.
- **Housing for the Poor:** Housing is one of the basic amenities required by human beings along with food, clothing, medicine, and education. GB started the program for housing loans during 1984 to materialize the issue of fulfilling basic needs among its members. Along with satisfying the basic need, housing to members brings pride, respect, and security that ultimately forward themselves for social status and economic prosperity. The loan size has a restriction up to \$723 to construct a tin-roof house. But the average loan size is about \$169 per borrower and it comes with an 8% interest rate repayable within five years. With a housing loan of \$8.23 million, the total constructed house number became 716,642 by the year 2017 from inception.
- **Scholarship for the children:** This scholarship program is for the members' children to overcome their financial limitations to pay for education-related expenses. The girls get preference to avail this scholarship and a minimum fifty

percent quota is for them. On the other hand, both girls and boys will have the rest fifty percent based on their academic scores. During 2017, this scholarship has been awarded by 27,000 members' children at different levels of education. The total amount disbursed under this program is \$6.39 serving aggregate 307, 677 students by this time from inception.

- **Higher Education Loans:** This program is higher education assistance for the members' children who completed their primary education. It has been introduced during 1997 to provide advance education such as engineering, medicine, technology, etc. at the graduate and postgraduate level for the brilliant children of borrowers. This type of loan has been designed to bear all the expenditures relating to higher education like admission expenses, semester fees, printing and stationery, food and lodging, etc. for the entire study period. By this time, a total 53,882 borrowers' children are getting benefits from this program.
- **Nursing Education:** This program is for borrowers' children wish to take courses relating to Nursing and Midwifery. Their children can take this education in Grameen Caledonian College of Nursing which maintains the international standard of curriculum. This helps them to secure work both in the domestic and international markets. A total of 477 students are registered under this scheme consisting of 327 in 3-tear Diploma level and 150 in B.Sc. level in Nursing and Midwifery.
- **Loan Insurance:** This program is to cover the risk of the borrower in the event of death when all dues have been paid off from the insurance funds. This insurance fund has been built through the borrower saving account deposit along with interest. At each time of taking the loan, Grameen Bank borrowers are required to deposit equivalent to 3% of principal and interest in the respective savings account. This deposit is made based on the incremental loan amount. If the current loan does not go beyond the previous loan, there is no requirement to put the additional deposits in the respective savings account. About \$171 million has been deposited under this program dated 31 December 2017. Total benefit recipients are 458,886 (Deceased borrowers) who have been paid off from this fund amounting to about \$85 million.

- **Life Insurance:** This is life insurance benefits for the families of deceased borrowers. In exchange surprisingly, borrowers do not need to pay a premium for this insurance. They get qualified by being a bank shareholder and cover themselves under this scheme. Approximately, it ranges from \$0.17 million to \$0.21 million each year for this life insurance benefit coming to the families of deceased borrowers. Each deceased borrower family gets a benefit of \$18 per month. In total 91,619 borrower cases, about \$5.58 have been paid as life insurance benefits by this time.
- **Village Phones:** Under this program, borrowers are given credit to provide telecommunication service at grass root level in rural areas through mobile phones. By this time, about 1.8 million borrowers are being served under this program and it covers almost half of total villages across Bangladesh. Grameen Phone being the largest mobile operator is also making revenue out of this program. Being only 1.89% of the aggregate subscriber of Grameen Phone, Village Phones consume 2.22% of the airtime.
- **Beggar Members:** Beggars are the most unfortunate and deprived people of the society. They are quite hard to grasp under the typical program for poverty alleviation. Hence, Grameen Bank innovated a program for them known as Struggling Members Program in 2002. Currently, the number is over 109,000 registered under this program with \$2,64 million disbursements. The recovery rate of 86 percent is impressive for this program. The outcome appears that almost 20,000 beggars stopped begging and become salesperson door to door. Already 9,000 beggars became the mainstream borrower of the Bank from this group.

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2.5.2 Bangladesh Rural Advancement Committee (BRAC)

BRAC was established by Sir Fazle Hasan Abed in 1972 after the War of Independence. It originally aimed at helping refugees from India to resettle their families. In the next several decades, BRAC settles its mission from “development imperatives” (1972-1990) to “institutional imperatives” (1990-2000) to “market imperatives” (2000-now). It successfully overcame its early difficulties by combining two things that were seldom mentioned together: operating an NGO like a business

company and taking the responsibility to solve the social environment of poverty. Nowadays, BRAC operates various programs in all 64 districts in Bangladesh from lending microfinance loans to teaching rural people how to set up their own business. Even complaints from Bangladesh intellectuals did not change Sir Fazle's mind on commercialization. Prof. Mozaffar Ahmed, a prestigious economist in Bangladesh, pointed out that charitable organizations should not engage in commercial activities (Sidel, 2003). The annual expenditure of BRAC is increasing every year and the annual budget is \$583 million in 2012. However, the donor contribution is decreasing day by day. This is not for the donor's unwillingness but rather for its financial sustainability. BRAC has combined poor economics market programs with non-poor economic commercial activities (Mannan, 2010). Therefore, this institution is categorized as a "poverty enterprise" from three phases such as firstly, BRAC effectively functions multi activities in one entity, secondly, it focuses on financial development activity and has solid microfinance operations, and thirdly, it gathers its incomes from microfinance activity and social initiatives (Mannan, 2009).

BRAC transfers money from these social initiatives to poverty alleviation activities (Mair & Marti, 2007). Microfinance seems to be one of the first-born programs in BRAC. Since it launched in 1974, it has covered all 64 districts. With reference to Figure 2.4, it provides four stages as a ladder to help the vast majority of the population to get out of the poverty trap. Firstly, it is to provide asset grants and soft loans for the targeted ultra-poor people. Secondly, it is to lend microloans to the Dabi scheme. Thirdly, it is to lend microloans to the Progoti scheme and fourthly, it is to lend to SME (Small and medium enterprises) loans as mainstream banks (Yali, 2013).

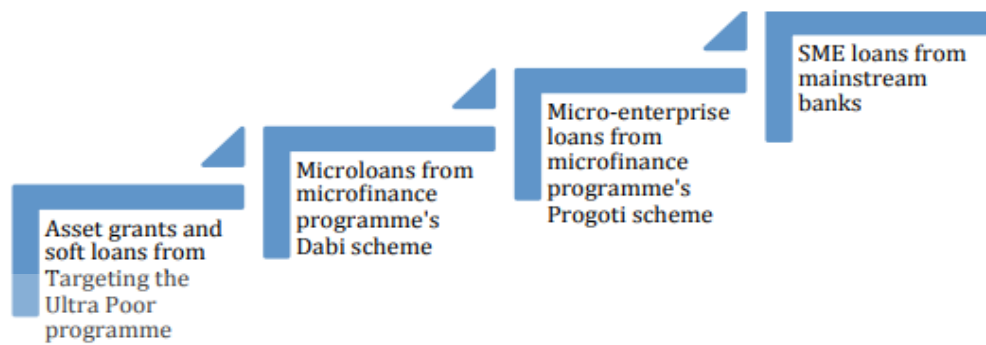


Figure 2.4 Four Steps of BRAC Microfinance

Source: Yali (2013)

BRAC is the largest NGO in Bangladesh, however, it is not the first one to launch the microfinance project. In several decades, a unique innovation of the credit delivery system has emerged. According to the NGO Affairs Bureau, in their assessment of micro-credit program in Bangladesh by 2010, approximately 2,116 NGOs are operating these programs around the country (Liton, Sadekin, & Muzib, 2014). BRAC initiated its microfinance program in 1976. Its present program was started in 1990 which is branded as the “Rural Credit Project”. Other than this program, it also aggressively joins in health development, training and social improvement creativities. It particularly delivers numerous microfinance and training to marginalised and under-privileged people such as poor women, retired, and sacked employees and very poor living in vulnerable river sides. Three of the biggest MFIs in Bangladesh are GB, BRAC, and ASA. They have different missions, mechanisms, and services. Table 2.2 shows the features of GB, BRAC, and ASA. The core feature for Grameen Bank is working Group-Lending (GM) method, say five-member group. The core feature for BRAC is organizing the programs through Village Organizations (VOs), so that members can learn practical rules, report progress and discuss problems. ASA operates with GM features similar to Grameen Bank.

Table 2.2 Comparatives for GB, BRAC and ASA

Program Features	Grameen Bank	BRAC	ASA
Membership Criteria	Minimum landholding of half acre of land; Only one member allowed per household.	Maximum landholding of half acre of land; Minimum one member work for wages per household; Only one member allowed per household.	Maximum landholding of half an acre of land; Minimum one member work for wages per household; Only one member allowed per household.
Group Features	Men and women in different groups; Five people per group; Five to eight groups form a center; Meetings hold weekly.	Solidarity groups contain men and women's groups; 30-40 members form a Village Organizations; Divided into smaller groups; Meet weekly or monthly.	Men and women in different groups; Twenty people form village organizations; Meet weekly.
Credit Delivery Mechanism	Fifty-week instalment loan; 20% interest for general loan; 8% for housing loan; Max. loan \$ 118	Fifty-week instalment loan; 20% interest for production loan; Maximum loan \$118	Forty-six instalment loan; 15% interest for general loan; Maximum loan \$ 8,235
Social Development	Minimal skills based training; Training duration 15-30 days;	Substantial skills based training; Training duration 3-6 months;	Minimal skills based training; Review conduct at center meetings.

Source: Yali (2013)

BRAC scheme (Product and Services) are shown in the following Figure 2.5.

BRAC MICROFINANCE PRODUCTS AND SERVICES

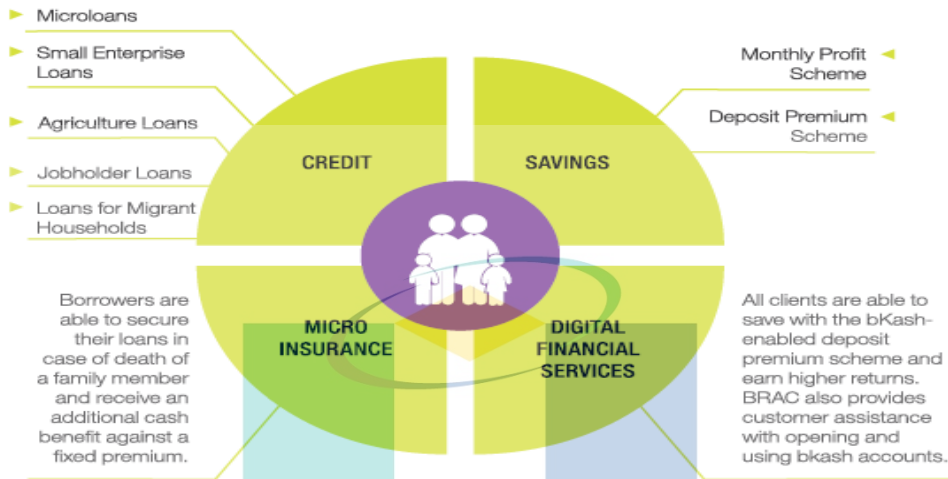


Figure 2.5 BRAC Schemes

Source: BRAC (2019)

BRAC loan portfolio is shown in Table 2.3 below:

Table 2.3 BRAC Portfolio

Particulars	Quantity
Village Organization (VO)	279,175 organizations
VO Members	5.84 million members
Total Borrowers	4.19 million borrowers
Dabi Borrowers	3.72 million borrowers
Progoti Borrowers	254, 330 borrowers
Cumulative Disbursement	\$ 8175 million
Outstanding Loan	\$ 706 million
Repayment Rate	98.76 percent

Source: Yali (2013)

2.5.3 Tabung Ekonomi Kumpulan Usaha Niaga (TEKUN)

According to incorporation, the third microfinance institution in Malaysia is Tabung Ekonomi Kumpulan Usaha Niaga or alternatively, it is known as the Economic Fund for National Entrepreneurs Group. It started its journey in the field of microfinance dated November 9, 1998 under the jurisdiction of the Ministry of

Agriculture and Agro-Based Malaysia. It is little bit different by its characteristics from YUM and AIM. Both the not so poor and the poor people are being served through TEKUN. The targeted borrowers are Bumiputra and Indian entrepreneurs for the swift and easy small-scale loans. It also started to explore new business ideas for innovative and progressive entrepreneurs with required education and training to achieve skill all over Malaysia from the year 2008.

TEKUN provides different microfinance loan schemes for small and medium scale entrepreneurs. The scale of amount varies from approximately \$125 to \$12,500 (RM 500 to RM 50,000) with the borrowers' age ranging from 18 to 65 years. Both males and females are eligible for TEKUN's loan. TEKUN managerial decisions and types of borrowers' business activities determine the mode of repayment whether it would be weekly, monthly, or semi-annually. The new management fee (Alternatively interest rate) decreased from previously 8% to currently 4% rate. The particulars of TEKUN's different credit programs are given in Table 2.4.

Table 2.4 TEKUN'S Financing Schemes

Name	Type	Amount (\$)	Repayment Period
Tekun Niaga	Small Loan Scheme	\$ 2,500 to \$ 12,500	Up to 5 years
	Medium Loan Scheme	\$ 12,500 to \$ 25,000	Up to 10 years
Teman Tekun	Small Amount	\$ 250 to \$ 1,250	6 months to 3 years
	Others	\$ 12,500 to \$ 25,000	6 months to 5 years
Temannita	Small Amount	\$ 250 to \$ 1,250	6 months to 5 years
	Others	Further up to \$ 5,000	Same
Contract	Contract Scheme	\$ 250 to \$ 25,000	Within 6 months
Ar Rahnū		\$ 125 to \$ 25,000	6 months Extension 6 + 6 months
Indian Community Entrepreneur Development	Small Loan Scheme	\$ 2,500 to \$ 12,500	Up to 5 years
	Medium Loan Scheme	\$ 12,500 to \$ 25,000	Up to 10 years
Special		Up to \$ 12,500	Up to 5 years

Source: TEKUN (2019b)

TEKUN extends its operations through setting up offices to both Peninsular Malaysia and the Eastern part of the country as well according to administrative jurisdiction. Since 1998, it provided loan to 557,947 customers with more than \$1.34 billion in amount (Please see Table 2.5).

Table 2.5 TEKUN Achievements

Particulars	Quantity
Number of Borrowers	557,947 Borrowers
Number of Branches	225 Branches
Number of Staff	1100 Person
Amount of Loan Disbursement	\$ 1.34 Billion
Repayment Rate	85 Percent

Source: TEKUN (2019b)

Unlike the other two microfinance institutions AIM and YUM, TEKUN has loan default problems and its recovery rate is quite disappointing. It got a record of classified or non-performing loans about 15% of the lending portfolio amounting to \$56 million (RM 225 million) accumulated since 1999. In such consequences, TEKUN has a shortage of enough capital in providing new loans. To promote the recovery rate, TEKUN brought a slogan “Let’s Pay Back the Loan” dated 1 July 2009 and borrowers were stimulated through incentives such as discounts to repay the loans. Currently, it also took steps to recognize and ban defaulters who were ignoring reimbursement notices (BeritaHarian, 2009).

The number of 53,782 Tekun Nasional borrowers failed to pay outstanding loans. The Tekun Nasional issued loans worth \$1.34 billion (RM 5.35 billion) to 557,947 entrepreneurs nationwide up until now. Of the total, 53,782 borrowers failed to pay an outstanding amount of \$47.73 million (RM 190.9 million). The borrowers were from various business sectors including services, retail, agriculture, and agro-based industries. The amount collected so far is \$15.2 million (RM 60.8 million) or 31.85 percent of the total outstanding amount. The hard-core defaulters under the Tekun Nasional are classified as borrowers, who fail to pay instalments as stated in the loan agreement of more than 24 months (MalayMail, 2015).

According to another report, the loan default scenario is alarming for TEKUN National. Its debt reached \$1.28 billion whereas its non-performing loans became almost 38% for the financial year ended 31 December 2017. As per rule set out, credits due for more than 6 months and 24 months are categorized as non-performing loan and bad debt, respectively. TEKUN bad debt approached \$109.4 million, which was 6.4% of total outstanding. It made a profit of \$ 7.12 million for the year 2017. It incurred average operating costs \$25 million a year meaning monthly expenditures of around \$2.25 million. Different initiatives such as setting up a recovery call center, repayment systems, loan recovery methods and liquidation actions have been in effect to decrease the bad debt at the reasonable figure (Bernama, 2018).

2.6 Microfinance Design

The basic microfinance principle is to serve the poor and get them out of poverty. Since microfinance is a collateral-free small amount of loan with many borrowers, it assumes a very risky venture and related to the high operating costs. To reduce the risk, some strategies are to be adopted such as lending designs, small amount loans, compulsory savings, frequent repayment instalment, etc. So far, there have been three generally accepted lending designs such as group lending, individual lending, and village banking. These designs are very much important to understand microfinance impact and how it is working in the ground level when dealing with borrowers for giving collateral free loans.

2.6.1 Group Lending Design

This type is designed by Muhammad Yunus through Grameen Bank in Bangladesh. This has appeared as a very distinguished design in the field of microfinance. Hulme (2008) found that group lending design was replicated more than forty developing and developed countries including Thailand, Malaysia, Vietnam, Philippines, Sri Lanka, China, India, Honduras, Mali, Tanzania, Chile, Canada, and United States.

A good recovery rate is very much important to achieve the financial sustainability of the microfinance institution in the end. Hartarska (2005) observed that the group-lending system had been a better channel to outreach to the poor without

even hampering the financial sustainability of the concerned institution. Furthermore, Park and Ren (2001) found this mechanism working quite well in China and documented about cent percent recovery. In the experience of Malaysia, the same types of results are found in the case of Amanah Ikhtiar Malaysia documented 98.98% recovery applying group lending system. Although the microfinance institutes follow their respective lending design, their main purpose is to alleviate poverty. Individual microfinance institute outcome may be different and their result may not be comparable. However, in the case of YUM and TEKUN, the experience was a bit different as these institutions were using the individual lending systems. YUM and TEKUN recorded recovery rates of 90.72% and 85.00%, respectively (BeritaHarian, 2009).

2.6.2 Individual Lending Design

The individual lending design follows activities synonymous to a typical commercial bank except for small size loans and frequent repayment. It formulates a typical bilateral agreement between a borrower as a single customer and a lender as a financial institution. The motive of this practice is to make a profit rather than social obligation by imposing a relatively higher interest rate and as a consequence, they intend to attain financial sufficiency through their activities and do not depend on donations, grants, subsidies, etc. (Morduch, 2000). Banco Sol in Bolivia and Bank Rakyat in Indonesia do follow this individual lending system in contrast to Grameen Bank in Bangladesh.

Each microfinance institution has two sides in their operation. One is the breadth of outreach, meaning numbers of borrowers serving and other is the depth of outreach, meaning poorest borrowers or hard core poverty serving. Cull, Demirgu, and Morduch (2007) and Hartarska (2005) found that institutions following individual lending design intended to make more profit for financial sustainability, were more oriented with the breadth of outreach than the depth of outreach.

2.6.3 Village Banking Design

Gettysburg Speech is quite famous among all speeches not only in America but also in the world. The President of the United States Abraham Lincoln gave this speech

in Pennsylvania during the American Civil War. His Excellency's speech was dedicated to the Soldiers' National Cemetery dated November 19, 1863. These words were to honor the soldiers who sacrificed their lives in order "that government of the people, by the people, for the people". But these words are equally applicable as well to the numerous soldiers who gave their lives for establishing democracy in the following years of history (Wikipedia, 2019a). Village banking has taken the concept of Gettysburg Speech as "that bank of the people, by the people and for the people". Village banking is a special type of lending design in microfinance. It had been first established by the Dutch during the colonial period of the 1890s in Indonesia (Rosengard, Patten, Johnston Jr, & Koesoemo, 2007). Currently, this lending model has been followed by *Bank Perkreditan Rakyat*. When practicing this model by microfinance institution, Cull et al. (2007) found that the village bank owned by the villagers, operated by the villagers and served for the villagers.

In this system, the villagers hold the fund portfolio ownership, provide the fund to the borrowers among themselves and recollect it back and finally responsible for all types of managerial and administrative activities. Therefore, the main difference between group lending and individual lending design is the ownership and management belongings to the bank and to the villagers, respectively. The Foundation for International Community Assistance (FINCA) established by John Hatch in the year 1984 is the example of modern village banking. It gets the required fund for its operation from USAID and personal grants from different individual donors for carrying out its activities (Wikipedia, 2009). Painter and MKNelly (1999) stated that FINCA is the most dominant institution currently around the world in microfinance serving the Caribbean, Latin America, Eastern Europe, Africa, Central Asia, and the Caucasus.

The noticeable features of group lending, individual lending and village banking designs are presented in Table 2.6.

Table 2.6 Features among different Lending Designs

Features	Group lending	Individual lending	Village Banking
Country	Bangladesh	Bolivia	Indonesia
Example	Grameen Bank	Banco Sol	Bank Perkreditan Rakyat
Target group	Poor people	Not-so-poor people	Poor people
Objective	Social	Commercial	Social
Administration	Institution's personnel	Institution's personnel	Villagers

One particular design is not enough to get people out of poverty as a generally accepted principle for all over the world. Customization and specification are needed for any particular country with respect to its requirement. Bhatt and Tang (2001) explained that different lending designs had significant roles in providing customized needs to different countries. One design could do well in a particular country whereas the same could have different results in other countries. For instance, Individual design worked well in Cameroon whereas Group design performed better in Bolivia (Zeller & Meyer, 2002).

2.7 Underlying Theories of the Study

Practitioners and theorists have noticed the incredible growth of microfinance around the globe for the last few decades. Still, it has been an argumentative subject that how much this outburst has made an impact on the concerned people. Almost everyone agrees that microfinance is something special, novel, and innovative contributing to the new dimension of financial intermediation. It includes millions of people into the system who were previously thrown out as unbankable from the financial system. This has made microfinance an outstanding accomplishment by itself. Theorists want to know the special features of microfinance that make it work. It makes a massive expression of theoretical speculations repeatedly portrayed in modern theoretical developments of finance and economics. Subsequently, it developed the ideas and tools based on economic theories of asymmetric information and related theories of incentives, screening, and enforcement. The peer group of

economists has devotedly applied these ideas to extract the mysteries of microfinance (Osmani & Mahmud, 2015).

There are many limitations and obstacles in the informal credit market of developing countries. The theories of microfinance have been developed to explain how microfinance has overcome the existing limitation and become successful in the rural credit market. To understand the victory of microfinance, it is better to start with the characteristics of the rural credit market where the secret may be disguised. There are some ordinarily assumed phenomena about the rural credit market such as formal finance and banking systems exclude rural people, rural people take credit from the informal market, the informal market contains friends, families, and moneylenders and it charges extremely high-interest rate for a higher risk of default.

It succeeded over centuries for these aforesaid hearsay evidences and assumptions. However, these aforesaid assumptions and evidences have been validated through systematic experimental studies which are comparatively current derivation in literature. Still, there are outstanding debate for high credit risk and intolerable interest rate. The informal money lenders charge the highest interest rate on the logic of credit risk for collateral free loan that makes their position argumentative and this put borrowers in probable loan default. Default risk and high interest rate are sophisticatedly formalized at the theoretical level by Bottomley (1975) and Bhaduri (1980), respectively. In spite of their early appeal and elegance, both these theories have been under increasing criticism. Bardhan and Rudra (1978) found that it did not fit the facts on the whole for interest rate in the case of Bhaduri Model. There is deficiency of convincing evidence for high default rates existed in the informal credit market in the case of Bottomley model. Timberg and Aiyar (1984) estimated that the mean default rates ranged between half and one and a half percent of working capital of informal lenders. Aleem (1990) established similar findings in his study and found that the default rate could be up to five percent in some cases but not exceeding to this rate.

Both formal commercial banks and informal moneylenders come across with the similar type of problems such as faulty enforcement and information asymmetry. But the way they respond are different. The informal moneylenders attempt to overcome the problems through finding ways which decrease their lending risk. On the

other hand, formal bankers abandon these type of borrowers without serving them as their loan portfolio carry risk. They keep themselves away from marginal poor borrowers and exclude from financial services. Therefore, charging higher interest rate becomes an explanation by informal lenders when they device their lending portfolio in risky environment. More specifically, it highlights the ways how informal lenders deal with both the issues of enforcement and information together with their consequences. These informal lenders put their maximum effort to screen out the borrowers through collecting all the potential personal and other information. They observe how the given loan is being utilized for revenue generating purpose and also keep borrowers reminding unwanted penalties in case of non-payment. This monitoring technique confirms the rate of default to be kept in minimum level but still attracts relatively higher interest rate for lenders' transaction cost required for the process and sometimes for local intimidation. Alternative capacities of informal lender have been used sometimes to monitor the consequences of lending for the borrowers. They can make due influence on borrowers as landowners, traders, recruiters etc. These different alternative capabilities may resolve loan recovery issues and create the viable credit market. For example, a landowner cum an informal lender may retain the capacity of threatening a tenant cum an informal borrower to vacate the tenancy as a tool to stop loan default.

An intervention towards the existing credit market must comply with the already existing mechanism prevailing in the market for tackling the issues of information and enforcement. However, most intervention in the rural credit market done by the government or other agencies missed those existing mechanisms in many developing countries. Consequently, these interventions with good intentions did not conform to poor accessibility to the credit market through breaking informal moneylenders' domination. The government initiated highly subsidized financial institutions have been formed and employed to do the intervention. Unfortunately, these interventions impacts did not turn out with successful results. Firstly, they created financial repression through accepting administrative guided inefficient utilization of credit rather than accepting market guided utilization of credit. Secondly, the poor borrowers were cornered by relatively rich borrowers through their controlling capacity. Lastly, these interventions made financially unviable institutions that could not serve a long time without depending on grants or subsidy and ultimately created

insolvencies or government budget drain out. However, all the interventions did not fail all over the world. For example, Fitchett (1999) found significant favorable impacts on agriculture produce and welling for such intervention. In the same way, Burgess and Pande (2005) opined that such intervention policies got intended positive impacts with lower poverty and higher non-agricultural produce.

The intervention will only come out successfully with addressing inherited complications in the first instance. Hoff and Stiglitz (1990) correctly pointed out that institutional intervention would not be able to break informal moneylenders' supremacy without learning direct mechanisms applied by themselves. These mechanisms are to delete or at least mitigate the issues of screening borrowers, giving proper incentives to behave desirably and enforcement of the lending contracts. Microfinance intervened in the rural credit market successfully through addressing those issues of screening, incentives, and enforcement as done by informal moneylenders. It adopted the long-standing lending techniques and made a successful intervention to deliver the affordable loan to the marginal people. This is the secret of its success according to the theories of microfinance. There has been an existing multiplicity of theories under the common theme. Information asymmetry is capable of putting several diverse kinds of issues for lenders. Different theories may be required to understand and explain how microfinance has been dealing with those issues in lending. Osmani and Mahmud (2015) named these theories into three comprehensive ways (1) moral hazard (relating to incentives) (2) adverse selection (relating to screening) and (3) enforcement (relating to contract). Microfinance plays positive impact on borrowers' poverty when all aforesaid theories together with slack resources and good management theory are applied and implemented in ground level. All these have been discussed chronologically in the following sections.

2.7.1 Moral Hazard Theory

This type of moral hazard has been developed in two alternative ways. One is based on the principal-agent issues in general literature and the other is based on credit market issue including microcredit in the specific literature. The differences of two alternative ways lie in the decision variables that are issues to this type of moral hazard. One part of the literature takes the level of effort expended by the agent as decision variables. The principals want the optimum level of effort by the respective agents for

the desired output of activities. However, the agent can manage to get away without giving the desired effort and ultimately do not produce optimum output. Moral hazard comes out from the agent not working to the best extent to serve the principle. Ghosh, Mookherjee, and Ray (2000) explained that how moral hazard for the level of effort could contribute to credit control. He explained that the likelihood of desired success rises with an expanded level of effort by the agent but at a diminishing rate. The cost of expanded effort is normalized and simplified in the theory, which tells that cost rises proportionally with the level of effort. Osmani and Mahmud (2015) opined that microfinance uses the group-lending approach to make the borrower giving higher level of effort.

The other part of the literature concentrates on the type of project selected by the agent. Here the choice of the project by the agent is the relevant decision variable. In this case, Moral hazard comes from propensity of agent to choose relatively a riskier project than considered optimum from the principal perspective. Any agent is supposed to choose between two options. Say, one option is safer and the other option is riskier. The safer project will have a lower expected return whereas the riskier project will have a higher return. In the presence of asymmetric information and limited liability, the moral hazard comes out when the agent has the propensity to choose the riskier project for his interest only. The principal may want to involve in a safer project for his perspective. The reason behind this moral hazard is that success will give agents relatively higher return whereas failure will not affect them due to limited liability. Osmani and Mahmud (2015) opined that microfinance makes the borrower socially liable to behave desirably through choosing the acceptable risky projects.

2.7.2 Adverse Selection Theory

When the information is asymmetric among the market participants, the market can behave in peculiar or strange ways (Akerlof, 1978; Arrow, 2001). More specifically, inferior products and services may drive superior products and services out of the market. This is a sort of market disappointment known as adverse selection. Jaffee and Russell (1976) and Stiglitz and Weiss (1981) put this classical idea to the credit market documented in pioneer papers. They formed the opinion that lenders should be able to discriminate between the bad borrowers and the good borrowers.

Otherwise, market-clearing interest rates might induce bad borrowers to participate and good borrowers to move out of the credit market. This will not be the optimum position of the lender. As a result, the lender may develop a strategy to safeguard funds that will contribute to credit limitation or rationing. This strategy may leave many borrowers out of the credit market with unsatisfied demand. This may be logical to respond from the lenders point of view but socially undesirable and inefficient. It may be referred to the classical case of market failure. Microfinance practices joint liability lending design to avoid adverse selection which contribute improved performance of the credit market (Osmani & Mahmud, 2015).

2.7.3 Contract Enforcement Theory

This is the case when borrowers have earned the desired returns that make them capable of repaying the loan. However, the borrowers do not want to repay and the lender cannot do anything lawfully for enforcement because of the absence of collateral. Then, what can be the options available to the lender to tackle the enforcement problem. The lender can do unlawful things such as seizing assets or intimidating violence that is not desirable even in the worst scenario. The lender can also go for a peaceful solution like alternative dispute resolution or social pressure. These options have been available to the informal moneylenders. However, a formal lender cannot practice these types of options because of their reputation and long arm of law. Dishonest borrowers being aware of these limitations may default even capable of repayment. This is known as ex-post moral hazard or problem of strategic default. When lenders deal with moral hazard-free borrowers, they do not need to worry about repayment when the borrower project is successful. The borrowers can be persuaded to behave in a deserving way by offering some incentives like the repetition of the loan with more amounts. The dishonest borrower will be offered no more loan and the honest borrower will be blessed with incentives. However, this possibility can only be applied successfully with the repeated transactions of credit offered again. The lender will be able to threat borrowers through no further offer in the near future because of strategic default. If the lender can make this threat credible, then borrowers will be induced to value the accessibility of future loans. Ultimately, it will pursue the borrower not to go for strategic default. Osmani and Mahmud (2015) viewed that microfinance uses this option in practice to become a success story.

2.7.4 Slack Resources Theory

Slack resource theorists claim that good financial performance possibly results in the obtainability of slack financial together with other resources which deliver the opportunity for entities to invest these resources in various social performance like employee welfare and community relations, environmental protection, etc. (Waddock & Graves, 1997). Good social performance would result from investing these slack resources for the social domains if such resources are available. Therefore, good financial performance might be an influential predictor of good social performance. Some empirical evidences provide support for the slack resources theory (J. B. McGuire, Schneeweis, & Branch, 1990; J. B. McGuire, Sundgren, & Schneeweis, 1988).

2.7.5 Good Management Theory

Alternatively, Good management theorists claim that there is a high association between good management practice contributing socially and financial performance. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989). This overall performance includes financial performance as well. For instance, better employee relationship within the organization might be expected to improve productivity together with job satisfaction. Incentives from local government may come for excellent community relationship within the whole society. Such incentives may include lucrative tax breaks, improved infrastructure, good education facility, and or compatible regulation which ultimately contributing in the ground level. In addition, good customer perceptions about the nature and quality of an entity's products and services, its awareness of environment, and its government and community relationship, are progressively becoming bases of competition (Prahalad & Hamel, 1994). It is blurring the lines between social performance and good management practice. Sales may be increased and or stakeholders cost may be decreased for such aforesaid positive perceptions about the entity by external stakeholders.

2.7.6 Connecting Underlying Theories

Microfinance alleviates poverty when borrowers are behaving in a moral ethical way since it is a collateral free loan and work in the best interest of lender. The borrows should not consume the loan rather use it in the revenue generating activities (Moral Hazard). Microfinance has positive impact on borrowers' poverty when lenders are able to discriminate between the bad borrowers and the good borrowers. Wrong selection of the borrowers may jeopardize the whole process (Adverse Selection). Again, microfinance alleviates poverty when the lenders are able to threat borrowers through no further offer in the near future because of wilful default (Contract Enforcement). All these aforesaid three theories make microfinance an instrument for alleviating poverty. Appling all these aforesaid theories to microfinance intervention, the impact can be observed between and within borrowers including causal, qualitative, poverty index and loan default impact (Please refer to research objectives 1 to 6). For microfinance institutional performance, if the social objective is sacrificed to achieve the financial objective or vice-versa, then microfinance may not have impact on poverty (Slack Resource and Good Management) (Please refer to research objective 7).

2.8 Research Gap

Governments together with development agencies wish to adopt the microfinance models across the countries after formal recognition of the concept during mid-seventies. Mohammad Yunus has been addressed as the 'Father of Microfinance' for his brilliant contribution to this filed of development strategy (Goldstein, 2011). He declared, "Credit is the fundamental human right" (Yunus, 1987). He also said that poverty would be seen in only poverty museum one day through microfinance initiatives (Yunus, 2007). He wanted to create a world without poverty. His works earned him together with Grameen Bank Nobel Peace Prize. He questioned why people should go to the moneylenders known as the loan sharks to carry on their lives and why cannot we extend the banking system to cover everybody including the poorest.

The microfinance industry has been rising quickly. By the year 2017, it got a portfolio of \$ 114 billion with 139 million borrowers across the world. India is the

highest followed by Bangladesh, Vietnam, Mexico, Philippines and other countries by the number of borrowers in 2017 (Microcredit Regulatory Authority, 2017). Microfinance gives small credits to the poor for income-generating activities which help them accumulate capital together with raising life standards (Littlefield et al., 2003). Nobel Prize winner in Economics in 1976, Milton Friedman quoted “The poor stay poor not because they are lazy but because they have no access to capital” (Smith & Thurman, 2007a). By taking up 84% of the microfinance, women have been major borrowers in fact by the year 2016 (Cautero, 2019). 79% of customers in Banco da Familia's improved their income between the first and last credit and 87% of the borrowers have reported improvement for the standard of living (BNP-PARIBAS, 2017).

Due Diligence of whether microfinance is working or not for poverty alleviation is very important to be done before further proceedings. This is to be done in accordance with three definitions of the word “Microfinance” corresponding to a different conception of development. Roodman (2012) found each development leading to different kinds of evidence such as (a) **Development as Escape from Poverty:** It has been broadly apprehended once that microfinance alleviated poverty. However, academicians and professionals are not very much sure about it because of limited statistical evidence. Two microfinance impact randomized tests were carried in India and Philippines and surprisingly both these studies did not find any impact on poverty alleviation. (b) **Development as Freedom:** Noble prize winner economist Amartya Sen argues that the spirit of development is escalating freedom, which means superior control over one's conditions. In the view of Mr. Sen, freedom should be developed in the desired result serving one's ultimate purpose. Marginal people utilize financial services exactly to expand better control over their economic condition. By giving voice over the family, microfinance has been often regarded as a tool to empower women's freedom. In fact, the outcome is mixed in nature where some women have found freedom whereas others have lost their minimal household assets to repay their debts. (c) **Development as Industry Building:** Industrialization can be the most effective tool to fight against poverty. *Creative destruction* as suggested by Joseph Schumpeter can be used to find a way out where new goods and services replace old ones and generate profits with new jobs as well. Microfinance has been developed as an industry with microfinance institutes where new jobs are created together with

borrower revenue-generating activities. Therefore, it is not only making borrowers entrepreneurial heroes but also creating microfinance institutions and industry to innovate and compete with ideas for poverty reduction. However, sometimes microfinance industry development confronts with an unhealthy situation like susceptibility to credit bubbles and real possibility of over-indebtedness like in Pakistan, India etc. Microfinance has stimulated the impression of dropping poverty and empowering women. However, it also contributed to building dynamic industries for delivering inherently useful financial services to millions of marginalized people.

Roodman and Morduch (2014) did a well-noted work on the impact of microfinance on households. Contradictory findings of this work have produced lasting confusion. Pitt and Khandker (1998) applied a quasi-experimental design to find out microfinance impact. They concluded that microfinance raised household expenditure particularly in case of lending to women. Khandker (2005) applying panel data analysis concluded that microfinance helped extremely poor people even more than moderately poor people. But using simpler estimators than Pitt and Khandker (1998), Morduch (1999) found no impact on the level of expenditure. Nevertheless, he found that microfinance reduces volatility in consumption. These conflicting results had never been openly confronted and reconciled. Opinion and findings cause a stalemate position and require further studies to conclude. A replication exercise shows that all these studies' evidence for impact is weak (Roodman & Morduch, 2014). De Haan and Lakwo (2010) emphasized that the first stage objective of microfinance should be poverty alleviation which ultimately lead to build just and equity in the society highlighting empowerment, freedom, and fair wealth distribution. Microfinance may lead to female borrowers achieving empowerment and freedom. According to Balcha and Tamara (2017), ninety percent of the people lack receiving support from formal commercial financial services. These service providers do not yet recognize that the poor people are worthy of being their clients and availing financial services. Microfinance has not still reached the poorest section of society even though their outreach is promising in many cases.

In the beginning, it seems very simple that microfinance wants to lend money to poor people for small activity or business. Borrowers try to make their contribution and help the struggling economy get on its feet. However, the reality is someway

different. People struggle with debt and make their lives even more complex. Microfinance pushes them further down into poverty and sometimes causes life-threatening circumstances. Major portion of microfinance dollars end up being used by business owners for consumption rather than investing in the business. The business failed and debt spiralled out of control and people cannot break out of the poverty cycle. Critics of microfinance say that borrowing money simply does not deal with root causes. It is much more important to think about the structural causes that produce poverty and suffering. For the structural cause of poverty in the first place, it needs to talk about imbalances and the voting power of the World Bank and IMF. It also needs to talk about the imbalances and international trade systems that are preventing poor countries to develop. These are the problems to be addressed. Microfinance may be a pretend solution that does not, however, address these issues (Hickel, 2015).

The success of microfinance is evident due to the work of women. In the 1990s when microfinance started, there was a lot of promise in microfinance. Small-scale NGO interventions will value women's contribution to development. Actually, women are more responsible for family and community labor that is often overlooked in the state led or the market led development policies. Microfinance could fill this gap. In this modern business world, there are often complaints that too many loans are going to men and not enough to women because they are not trusted to repay it or to make a success of it. There are discriminations at the banks and women do face discriminations at the bank, labor market, etc. Microfinance forms a part of solution to discriminations without directly addressing those issues. In poor developing countries, this is not a question of the woman having the microfinance and the husband getting a job. This is the question of none of the family members having a job and the microfinance delivered an opportunity to those families (TRT.World, 2017).

Microfinance has been found to invest in borrowers existing business rather than new business. There was no change in per capita consumption in the new market. More people did not tent to borrow more but the existing borrower tent to borrow for a larger amount with a longer period for additional accessibility. The business was no more profitable though some indications of development in education, health, or women's empowerment. Microfinance was not able to produce any significant impact on borrowers in a new market (A. Banerjee, Duflo, Glennerster, & Kinnan, 2015).

Other policies like the delivery of key amenities and logistics may seem more effective than microfinance to diminish poverty. Merely focusing on microfinance undercuts all alternative schemes of the spectrum (Bateman & Chang, 2012). In extreme cases, borrowers have found themselves caught up in hazardous cycle or spiralling of debt which induced to even death such as committing suicide (Taylor, 2011). Microfinance organizations have been blamed with applying voracious practices leading to borrowers' suicide in India. The government effectively shut down microfinance operation and it seemingly provided relief to clients who were being harassed by microfinance organizations where these borrowers had little or no power to stop this situation (Saxena, 2014). This instance called for better regulation of microfinance institutions and demand for more leniency about repayment (Kaur & Dey, 2013). However, microfinance may function as a valuable tool for the financially underserved or no served marginalized poor people when applied effectively and efficiently. It is an important topic in the financial kingdom in either way. Microfinance might be a powerful developmental tool to alleviate poverty when it has been applied appropriately (Cautero, 2019).

This has been a major debatable issue to find out the impact of microfinance on borrowers poverty in recent years (Duvendack et al., 2011; Milana & Ashta, 2012). Some researchers like Bhuiya et al. (2016), Pitt et al. (2006), Rahman et al. (2015) and Woller and Parsons (2002) find microfinance positive impacts. Khandker et al. (1998) found that women made themselves empowered by their respective contributions to household income and asset building, which ultimately resulted in enhancing life standard and family status through microfinance. Many studies done by researchers like Bateman (2010), Hulme (2000b), Roodman and Morduch (2014) and Sinclair (2012) did not conclude any significant positive microfinance impact on borrowers' poverty or welfare. Moreover, many studies decided that there has been positive impact on borrowers poverty for few welfare indicators but not for others such indicators (De Mel et al., 2008; Ghalib et al., 2015; Imai et al., 2010; Imai et al., 2012; McKenzie & Woodruff, 2006; Mukherjee, 2015; Van Rooyen et al., 2012) whereas some studies did not decide the same rather they drew positive microfinance impact to some different indicators (McIntosh et al., 2011). Al-Mamun, Mazumder, and Malarvizhi (2014) found decreased vulnerability among hard core poor household in case of AIM using economic vulnerability index rather than poverty index used in this

study. Earlier, same scenario was reported employing quality of life index (Al Mamun, Adaikalam, & Abdul Wahab, 2012). Again, microfinance positive impact was found through increased income and reduced poverty rate (Al-Mamun, Malarvizhi, Hossain, & Tan, 2012) and later confirmed through increased income and decreased poverty and level of economic vulnerability (Al-Mamun & Mazumder, 2015). AIM's microcredit program participation also generated positive impact on women's empowerment (Al-Mamun, Wahab, Mazumder, & Su, 2014) . However, GB, BRAC, and TEKUN provides loan both female and male although female participation is dominating in number. Still, microfinance appeared dropping its ground despite good intention due to lack of adequate proofs for positive impact on borrowers' welfare (Lascelles & Mendelson, 2012).

Under the backdrop of the aforesaid literatures microfinance impact on poverty can be compared according to their different results of impact on poverty alleviation presented in Table 2.7.

Table 2.7 Comparing Selected Previous Results of Microfinance Impact

Positive Impact	Negative Impact	Mixed Impact
Hashemi, Schuler, and Riley (1996)	Morduch (1999)	Milana and Ashta (2012)
Hashemi et al. (1996)	Hulme (2000b)	Lascelles and Mendelson (2012)
Khandker (1998b)	Bateman (2010)	Cautero (2019)
Husain (1998)	Duvendack et al. (2011)	
Pitt and Khandker (1998)	Taylor (2011)	
Woller and Parsons (2002)	Sinclair (2012)	
Littlefield et al. (2003)	Hickel (2015)	
Khandker (2005)	TRT.World (2017)	
Pitt et al. (2006)		
Smith and Thurman (2007b)		
Roodman and Morduch (2014)		
Al-Mamun, Mazumder, et al. (2014)		
Rahman et al. (2015)		
Bhuiya et al. (2016)		

Finally, microfinance may not be the solution to poverty. There are many more important structural things to be focused on. However, for the time being, microfinance has been serving for millions gaining access to financial services, learning to save, being able to pay for school fees on time when due, being able to pay for health emergencies when it happens and being able to invest in an income-generating activities. It seems a solution today addressing all these issues. It makes differences in borrowers' lives. Most people agree that microfinance began for the right reason and whilst it has undoubtedly helped. In the right hand, some poor people start a business and make progress. In the wrong hand, it has created an unbearable burden too. Some structural changes need to be addressed with more regulation to smooth the operation and to prevent the loan sharks. The effectiveness of the microfinance system has been documented with the different outcomes in different times and places across the globe. There is no consensus about the impact of microfinance on borrowers' poverty. Therefore, this study has been focused on whether microfinance is working for borrowers' poverty alleviation in the case of Bangladesh and Malaysia. It is primarily concerned with the impact of microfinance on borrowers' poverty level. It intends to find out whether there is a significant change in borrowers' business, household, individual, and security enrichment after receiving microfinance. It also deals with microfinance institute performance and studies relative poverty incidence and intensity among borrowers. Some microfinance institutions have good records of recovery but some have large number of defaulters. This study also investigates the factors leading to loan default. An upward trend of microfinance channelling tiny amounts of money to the people leaving below the poverty line has been observed predominantly for the last some decades. However, the impact assessments of these types of initiatives are quite lacking (Mokhtar, 2011). Roodman (2012) found microfinance different development stages such as escape from poverty, individual freedom and industry building with different kinds of evidence. Roodman and Morduch (2014) gave contradictory findings on the impact of microfinance on households that produced long lasting confusion. Pitt and Khandker (1998) concluded that microfinance raised household expenditure particularly in case of lending to women. These diverged phenomena about microfinance impact on borrowers' poverty produced a stalemate position. This study has been intended to contribute for filling up this gap (Please see Figure 2.6).

Microfinance impact may be different for respective socio cultural issues for Bangladesh and Malaysia. Socio cultural factors mean the characteristics of the society

including lifestyle, customs, and moral values inherent to a country (Thornton, Ribeiro-Soriano, & Urbano, 2011). To be more particular, it includes language, aesthetics, education, legal system, political legacy, religious belief, social values, technological advancement, etc. Bangladesh is enriched with diverse culture (Akhter & Sumi, 2014). This diversity has been reflected through its literature, music and dance, architectural heritage, painting, and clothing style. Islam, Hinduism and Buddhism are the three primary religion which have enormous influence on its socio culture. Malaysia is also multi-cultured society (Ani, Mohamed, & Rahman, 2012). The native Malays, Chinese, and Indians are the main ethnic groups here. These ethnic groups maintain their respective religion, customs, and practice. They enjoy public holidays commonly in their individual festivals. Malaysia has been the homeland for many other indigenous groups as well. Ethnic Malays have been given more consideration and priority rather than the others for education and training, business transactions, employment and housing requirements by the government. These socio cultural aspects are reflected at borrowers individual and household level in this study.

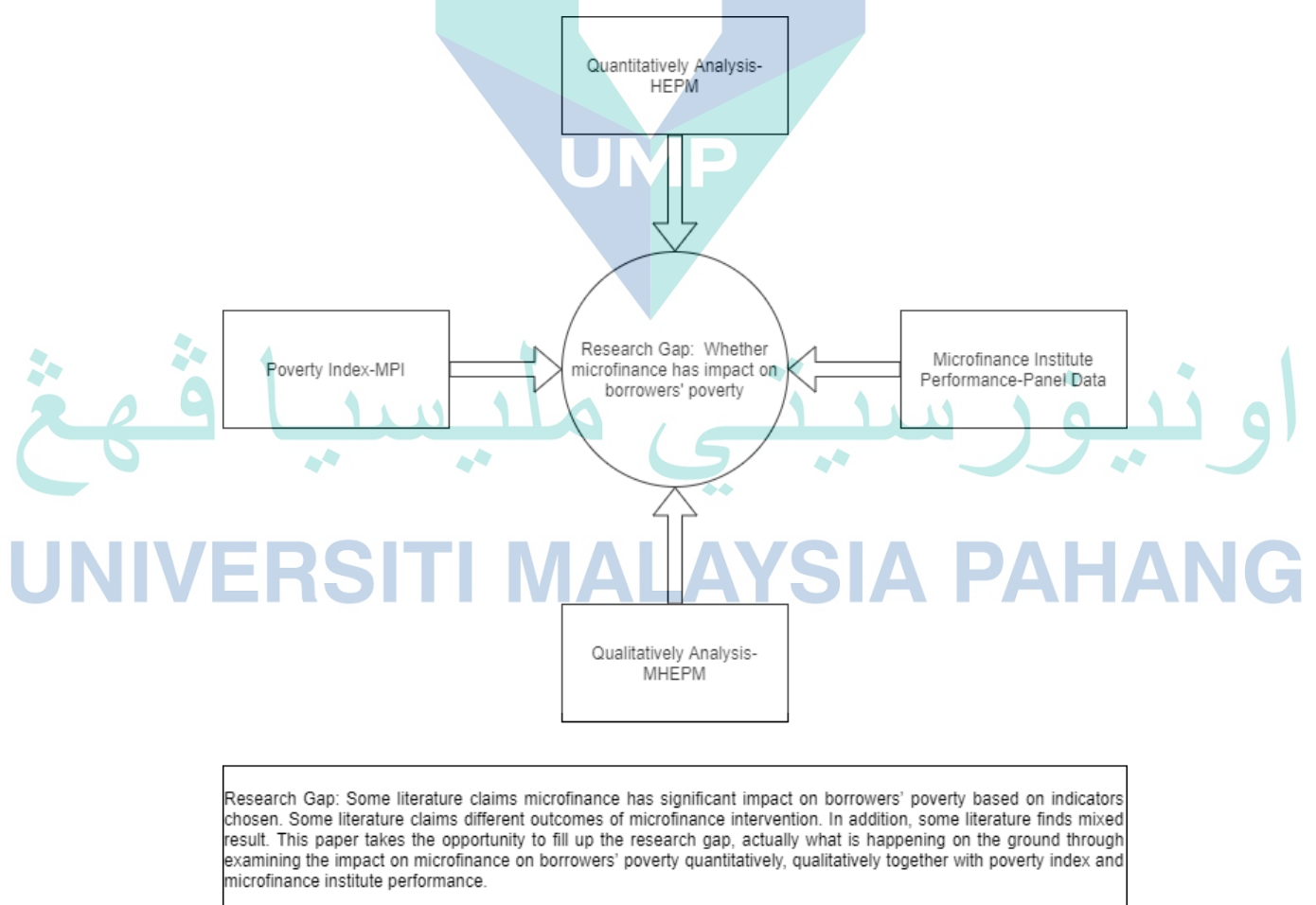


Figure 2.6 Research Gap

2.9 Theoretical Framework

The microfinance theory section discussed that how microfinance is successful and what is the logic behind this success. Microfinance uses the group-lending approach to make the borrowers giving the higher level of effort for the successful outcome. It makes the borrowers socially liable to behave desirably through choosing the acceptable risky projects (Moral Hazard). When the information is asymmetric between lenders and borrowers, the microfinance market can behave in peculiar or strange ways. This sort of market disappointment is due to wrong selection of borrowers (Adverse Selection). Microfinance practices joint liability lending design to avoid adverse selection which contribute improved performance of the credit market. There has been issues when borrowers have earned the desired returns that make them capable of repaying the loan. However, the borrowers do not want to repay and the lender cannot do anything lawfully for enforcement because of the absence of collateral. In this case, the lender will be able to threat borrowers through no further credit in the near future. If the lender can make this threat credible, then borrowers will be induced to value the accessibility of future loans (Contract Enforcement). Finally, Higher financial performance leads to higher social performance (Slack Resource) and higher social performance leads to higher financial Performance, *ceteris paribus* (Good Management).

All these theories are assumed to be working when a borrower is involved with microfinance. This study tries to observe what is happening in the reality. There needs to find out the application of these theories in the ground whether it working or not for poverty alleviation. In reality, this has been a major debatable issue to find out the impact of microfinance on borrowers poverty in recent years (Duvendack et al., 2011; Milana & Ashta, 2012). Some researchers like Bhuiya et al. (2016), Pitt et al. (2006), Rahman et al. (2015) and Woller and Parsons (2002) find microfinance to have positive impact whereas some researchers like Bateman (2010), Hulme (2000b), Roodman and Morduch (2014) and Sinclair (2012) do not find any significant positive impact on borrowers poverty. The overall impact of microfinance in the developing world against poverty has been about zero (Hickel, 2015). Therefore, it states that poverty is the function of microfinance as shown in Equation 2.1:

In this study, microfinance is independent variable that takes two categories such as one experiment group treated with microfinance and one control group without microfinance treatment (Please see Figure 2.7). Microfinance is provided to participant borrowers (Experiment group) by the respective microfinance institute for producing revenue generating activities. This experiment group consists of those poor people with successful loan application through fulfilling all the criteria set by microfinance institute. On the other hand, microfinance is not provided to non-participant borrowers (Control group) by the respective microfinance institute for producing revenue generating activities. This control group consist of either those poor people with unsuccessful loan application for not fulfilling all the criteria set by microfinance institute or those people wish to have microfinance but cannot proceed for their respective limitations.

Poverty is the dependent variable in this study. This research measures poverty in relative term rather than in absolute term. It is represented by different poverty variables in line with HEPM and other factors. For example, it takes “Business revenue” as poverty variable in business level impact measurement of microfinance. Then, this research measures whether a participant borrower’s business revenue has increased or not compared to oneself after at least one year with microfinance. If a participant borrower agrees more for business revenue increment compared to oneself after taking microfinance, one is better off towards poverty alleviation. It can be concluded that microfinance has positive impact on poverty remaining other things constant. This is before-after approach and it happens within participant borrowers. This study also measures whether a participant borrower’s business revenue has increased or not, after at least one year with microfinance compared to a non-participant borrower. If a participant borrower agrees more for business revenue increment after taking microfinance compared to a non-participant borrower, she is better off towards poverty alleviation. It can be concluded that microfinance has positive impact on poverty remaining other things constant. This is parallel approach and it happens between participant and non-participant borrowers.

With the limitation of complexity and lack of formal record in HEPM, this research proceeds to observe poverty qualitatively through M-HEPM. Therefore, this research selects randomly five participant borrowers and five non-participant borrowers for each selected microfinance institute and then go for case studies. Each borrower is given a financial diary to record her monthly receipt-payment account and an activity diary to record her daily activities. The researcher analyses these diaries to observe their poverty level to find whether microfinance borrowers have justifiable qualitative lives and decision-making capabilities through their respective financial diaries. The researcher also discovered focused income and expense categories to conclude the complete position of the borrowers' livelihood. The borrowers can alleviate poverty when they are spending in accumulating physical, human and financial capital. Otherwise, they are not alleviating poverty. Activity diaries show through the summary of time-use that why borrowers are spending their times and why they are poor. It is quiet understandable that unpaid activities or leisure time are resulting to poverty. The researcher has categorized borrowers different activities according to Maslow (1943)'s hierarchy of needs.

This research measures poverty though constructing Multi-dimensional poverty index and compare between participant and non-participant borrowers. This research also looks for microfinance loan default because frequent loan default ends microfinance impact on poverty. Furthermore, it is explored whether microfinance is serving poverty alleviation through satisfying social objective rather than financial objective. If social objective is sacrificed to achieve financial objective, then microfinance does not have impact on poverty alleviation rather it is a typical money making machine like other financial service.

small loans are performing for alleviating poverty. Microfinance investors like others always demand good or at least acceptable return on their investments based on risk of the portfolio. M. B. Khalily (2004) disclosed that there are two identifiable impacts on the borrowers' poverty due to microfinance. The preliminary impact may be intermediate outcome through borrowers' nutrition intake, other consumption, increased income and expenditure, wealth accumulation, qualitative children education, employment generation, savings etc. The final impact may occur when microfinance borrowers get rid of poverty at the end. If we combine overall microfinance impact on borrowers' poverty together, it may happen at three levels such as borrowers' businesses, household, and individual level. When microfinance makes significant welfare impact on borrowers' poverty, it can be claimed that microfinance programs are successful or it is a good performance as development tool. However, these welfare impacts have been achieved through being involved in usually small enterprises or some other initiatives that produce revenue for borrowers. The borrowers can buy small inventories or merchandise or even purchase qualitative input for agriculture like high yielding crops or others by using this small amount of loan and this increases their productivity which ultimately increase their income (T. Islam, 2007).

In Bangladesh, the impact of microfinance on borrowers' poverty has been studied in different researches. For instance, Khandker (1998b) examined eighteen hundred borrowers in eighty six villages and acquired evidence of microfinance positive impact through observing different variables like nutrition intake, revenue and expenses, resource accretion, saving formation, employment generation, etc. In addition, he claimed that about 5.0 % borrower were out of poverty by their individual group annually. Some further studies done by Hashemi et al. (1996), Husain (1998) concluded comparable type of positive results for microfinance impact in the country. All these aforesaid researchers come to consensus here that microfinance delivered qualitative lives among poor borrowers and sometimes drive them out of poverty or at least reduce it.

In Malaysia, Ismail (2001) studied sixty borrowers from Amanah Ikhtiar Malaysia and found that the impact of borrowers' loans depended on the borrowers' type of business. In particular, he concluded that agricultural sector borrowers

produced lower income than small business sector borrowers did. In Peru, Dunn and Arbuckle (2001a) found that besides the positive impact on income, microfinance generates employment as well. The growth in business activities will create jobs. In Philippines, Hossain and Diaz (1997) documented similar nature of findings. They examined the Grameen Bank Model replication in the Philippines and found that wage-earning employments were substituted by self-employment through microfinance borrowing. Besides, Woller and Parsons (2002) opined that the employment generation through microfinance also gave the advantage to the community as well.

In many cases, the microfinance loans have been used for borrowers' consumption instead of investment in revenue generating activities. However, these loans must be used for intended purpose efficiently and effectively. Obviously, borrowers can expect more impact when they use loans in the deserving way. MacIsaac (1997) correctly concluded that borrowers' impact might be frustrating when loans are diverted for personal consumption purpose rather than investing in income-generating activities. Good borrowers produce revenue through using loans whether the counterpart may consume otherwise. In addition, Dunn and Arbuckle (2001a) found that microfinance gave direct impact on microenterprise businesses together with indirect impact on household welfares including intake nutrition, housing qualities, good education etc.

Some research carried out in Bangladesh context by different researchers like Pitt and Khandker (1998), Zaman (1999), Khandker (2005) concluded that microfinance did positive impacts on borrowers' welfare such as food consumption, other necessities, children education, etc. However, their findings about microfinance impact are not similar in nature across other countries examined. For example, Dunn and Arbuckle (2001a) found that due to microfinance, there are increased consumptions on food together with increased income on household, but not increased expenditure on children education and home appliances in case of Peru. Both Mosley (2001) in Bolivia and Coleman (2002) in Thailand recognized that comparatively well-off borrowers acquired higher positive impacts than poor borrowers by utilizing microfinance loans. However, some negative impacts have also been evident due to microfinance as well. T. Islam (2007) established the fact that there were even worse-off impact of microfinance on the respective borrower's poverty as they started

borrowing from loan shark (Informal lenders) as obligation to pay back the existing loan from microfinance.

In developing countries like Bangladesh, men do possess much priority and advantages over women and often men are prevailing in almost every part of daily life. Microfinance started empowering women and expanded the economic and social status of the borrower. Yunus (2007) expressed his experience that women being considered as a problem for the family previously, can share the same socio-economic status with the men when they get themselves involved in microfinance and came out of good results from their borrowing. Some researchers like Mustafa et al. (1996), Husain (1998), Khandker et al. (1998) and Hulme (2000a) found the positive impact of microfinance on women's lives in Bangladesh. They opined that women were empowered by microfinance and capable of taking the family decisions and blessed with higher personal savings. Different variables have been studied in different studies for women empowerment through microfinance as follows:

- Goetz and Gupta (1996), Pitt and Khandker (1998), Dunn and Arbuckle (2001a) used variables like control over loans, income and savings.
- Hashemi et al. (1996), Dunn and Arbuckle (2001a) took variables like women's mobility, capability of making purchases, capability of making decisions and their legal and political consciousness
- Zaman (1999), Dunn and Arbuckle (2001a) and Garikipati (2008) investigated variables like women's control over domestic properties and capability concerning family maintenance

Similar nature positive changes for female empowerment were found by the study of Nader (2008) in Cairo and Afrane (2002) in Ghana. But Kevane and Wydick (2001)'s study in Guatemala showed that male and female borrowers in case of achieving sales of their respective business were not significantly different. Their performance appeared the same in sales scenario but significantly different in business stability, employment generation and dropout rate from the program. Female borrowers were relatively more stable, generate higher employment and recorded low dropout than male borrowers.

2.10.1 Assessment Approaches

There are three categorical approaches with reference to studies done by different scholars from time to time in different countries about the impact of microfinance. The approaches are as follows:

- **Scientific or Quantitative Approach** – It comprises big scale sample surveys usually a longitudinal study that involves huge costs and needs sophisticated econometric analysis (Hulme, 2000a). For instance, Studies done by Mustafa et al. (1996), Husain (1998), Khandker (1998a), Coleman (1999), Morris and Barnes (2005) and Mahjabeen (2008) belong to Scientific or Quantitative Approach category.
- **Ethnographic or Qualitative Approach** – It is the traditional humanities approach. It contains interviews with the respondents and it is a small-scale study. For instance, A study done by Hietalahti and Linden (2006).
- **Participatory Learning and Action Approach (PLA)** – It is action-oriented research. Hulme (2000a) opined that either Quantitative or Qualitative approach can be used here. It includes simple statistical study or analysis and it is not intensive like the previous two approaches.

However, both quantitative and qualitative approaches can be combined to reach better conclusions of the intended study. Researchers like Afrane (2002), Dunn and Arbuckle (2001a) and Nader (2008) combined both the approaches together and found better conclusions.

2.10.2 Assessment Limitations

There have always been some limitations of the study undertaken. In some cases, it may be in methodology. M. B. Khalily (2004) found out three factors that could make the research doubtful for the precision of impact assessment. The factors are as follows:

- **Fungibility of the Fund** – It is a major shortcoming to study the impact assessment of microfinance. Fungibility arises when a particular study cannot be able to isolate the utilization of microfinance credit solely from the

otherwise borrowed funds. The reliability of the impact assessment of a specific microfinance loan can be attained when the borrower source of the fund has only been from that microfinance institution. However, in reality, the borrowers also get loans from other sources besides the microfinance institutes and put together the entire fund for their small income-generating activities. Therefore, the welfare changes assessment of the microfinance credit might be overestimated. Hulme (2000a) pointed out that it was not possible to isolate the fund for precise impact assessment when it had been mixed up with other funds and invested together in the same small enterprise.

- **Selection Bias** - Among other researchers, Nader (2008), Dunn and Arbuckle (2001a) and Coleman (1999) used this technique of cross-section reference for comparison between treatment group and control group. The treatment group is the microfinance borrower and the control group is the non-microfinance borrower of a similar nature. Selection bias appears when the treatment group is compared with a control group in impact analysis to figure out the welfare changes between them. It is the investigation to find out whether microfinance borrowers achieve better welfare changes in comparison to non- microfinance borrowers or vice versa. The non-microfinance borrower should possess similar criteria such as the same location, education status, environment, socio-economic condition for a fair comparison between them. Hulme (2000a) stated that if the study did not consider these same criteria or basis for the treatment and control group, there must be a selection bias and comparison is irrelevant. Besides, Afrane (2002) found that it is not an easy task to get non-microfinance borrowers with the same criteria.

- **Endogeneity of the Program** - It happens when the measurement of the poverty changes from a targeted microfinance borrower. It may be extremely prejudiced except the researchers take into account of the endogeneity appropriately. There may have two sources of recognizable biasness. One is placement endogeneity for purposive pursuing of the geographic location of the microfinance program and the other is placement endogeneity due to targeting individual borrower. The endogeneity of the microfinance program indicates that the error term is highly correlated with explanatory variables. If

the microfinance program has been targeted with low (high) values of the outcome indicator, then there will be an underestimation (overestimation) of the program's impact.

The research done by Afrane (2002) on the microfinance impact assessment in South Africa and Ghana employed the "before and after" technique. In this technique, the position of borrowers is recorded before microfinance and welfare impact has been assessed after microfinance. Same technique has been followed by (Mokhtar, 2011) in case of Malaysia. The microfinance consequence would take place in three possible ways as follows:

- The welfare impact assessment may have positive change between before and after microfinance.
- The welfare impact assessment may have no change between before and after microfinance.
- The welfare impact assessment may have negative change between before and after microfinance.

2.10.3 Household Economic Portfolio Model

In measuring microfinance impact, the fungibility issue has more importance and weight than the endogeneity or selection bias issue. However, these issues may be solved through using Household Economic Portfolio Model (HEPM) model recommended by Assessing the Impact of Microenterprise Services (AIMS) (M. B. Khalily, 2004). The main feature of the HEPM framework is to discharge overestimating any particular nature of borrower poverty or welfare. As a result, HEPM recommended that microfinance impact can be assessed on three different perspectives of borrowers' poverty or welfare. Those perspectives are as follows:

- The borrowers' Enterprise or Business perspective
- The borrowers' Household or Family perspective
- The borrowers' Individual or Personal perspective

M. Chen and Dunn (1996) recommended the HEPM framework on the basis of their study. The household resource components in the HEPM framework belongs to the household consist of:

- Human household resources (Time, Labor and Skill)
- Physical household resources (Land, Building, Tools and Equipment and Raw Materials)
- Financial household resources (Cash and Cash Equivalent)

All aforesaid resources may belong to either individually or collectively for the individual member of the respective household. The resource may be sourced from either a formal organization or an informal lender or even from the societal network. Receiving loan from microfinance institution, there ought to be some household activities consist of:

- Production household activities (Income generating activity, Household maintenance activity and outdoor activity)
- Consumption household activities (Basic amenities together with ceremonies and amusements)
- Investment household activities (Real property, productive assets, physical storage of wealth, human resource development through education and training).

The income generated from these activities will flow into domestic belongings. By considering all perspectives of the borrower's domestic activities, the HEPM framework becomes operational (Please see Figure 2.8). The HEPM framework suggests that microfinance impact assessment should be carried out on all components since they are interrelated with each other. Those components have been studied at microenterprise, household, and individual level.

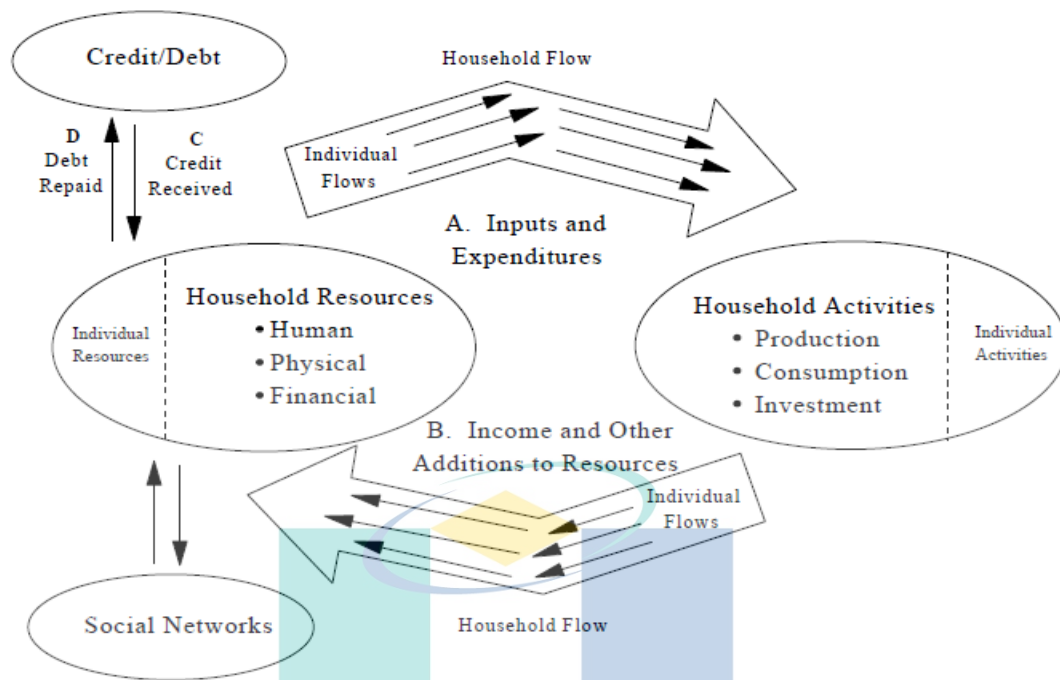


Figure 2.8 Conceptual Model of Household Economic Portfolio

Source: M. Chen and Dunn (1996)

2.10.4 Modified Household Economic Portfolio Model

HEPM appears to be a complex model with some limitations. Many researchers who referred this model have considered it as difficult appraisal model although offers complete image for microfinance impact on borrowers' poverty or welfare (Al Mamun, Abdul Wahab, & Malarvizhi, 2011; Al Mamun, Abdul Wahab, & Malarvizhi, 2010; Gobezie & Garber, 2007; Hulme, 1997, 2000a; Jacobsen, Marshak, Ofori-Adjei, & Kembabazi, 2006). Hulme (1997) found key application limitations of the model such as complexity in experiment, higher cost requirement, sophisticated analytical skills and time consuming. Among few researchers, Dunn and Arbuckle (2001b) applied HEPM to evaluate microfinance impact on borrowers' poverty. They concluded that it was very difficult to overcome the selection bias even in quasi-experimental design. E. Dunn (2002) recommended a mixed method comprised of survey together with case study when applying HEPM practically. To overcome the counterfactual issue, this quasi-experimental design might be significant. He also gave caution when choosing the control group in applying HEPM. In this situation, the HEPM has been regarded as a model of quantitative impact evaluation with quasi-experimental design for exploring microfinance effect. The comprehensive experiment out of this model may provide two categories of information as a whole. The first category includes quantitative

aspect for the direction and magnitude of microfinance impact on borrowers' poverty and the second category includes qualitative aspect for the process through which these impacts happen. HEPM has another limitation known as self-reporting measurement when conducting the survey (Dunn & Arbuckle, 2001b; Jacobsen et al., 2006). A systematic check is not possible when different variables under the studies have been self-reported without formal record by the respective respondent.

After summarizing the advantages and disadvantages of HEPM Model, Alia, Ashta, and Ratsimalahelo (2017) figured out several complicating features for measuring microfinance impact through it. They tracked down that this HEPM Model brought idle framework theoretically for tracing resource flow within individual components and it also made overcome the limitation of fungibility often common in microfinance impact assessment. However, HEPM proposes to quantify both social and economic impact on microfinance borrowers. It also proposes to use self-reported response as there has been no formal records about borrowers. As a result, HEPM suffers from two major complexities. It can deliver comprehensive impact measurement for microfinance borrowers when these complexity issues have been resolved. They recommended a modified version of HEPM for resolving these issues. Through their recommended modifications, Alia et al. (2017) attempted to apply Modified-HEPM to deal with aforesaid two limitations:

- They suggested the HEPM to be simplified for the diversity of impact through focusing on economic impact discarding social impact.
- They also suggested the HEPM to be formal for the absence of records through using borrower diaries.

It has been very significant to point out what happens within the portfolio's individual components. It may be done through measuring flow of money and time of acidity. Money flow can be measured through the physical and financial capital. For example, the response may be taken about the flow of money, how they are invested or consumed. Only economic impact of human capital may be taken into consideration because this type of capital is quite difficult to measure. It is clearly observable that revenue generating activities have been applying human capital as their input. To build human capital factors like education, training, health, intelligence etc. together with

time are also required. Time may be used up for eating, sleeping, cleaning etc. to preserve human capital. Alternatively, time is considered for investing or divesting human capital and money is considered for investing or divesting physical or financial capital. Hence, it may be recommended that time distribution on different activities can be applied for finding out the economic value of human capital. Through the same two measures, time and money as mentioned earlier, activities can also be tracked down. Both consumption and production activities can be traced through the time that has been spent on them. Following the same way, flow of money in or out, can trace investing or divesting activities. Figure 2.9 displays the separation of components applied in Modified-HEPM.

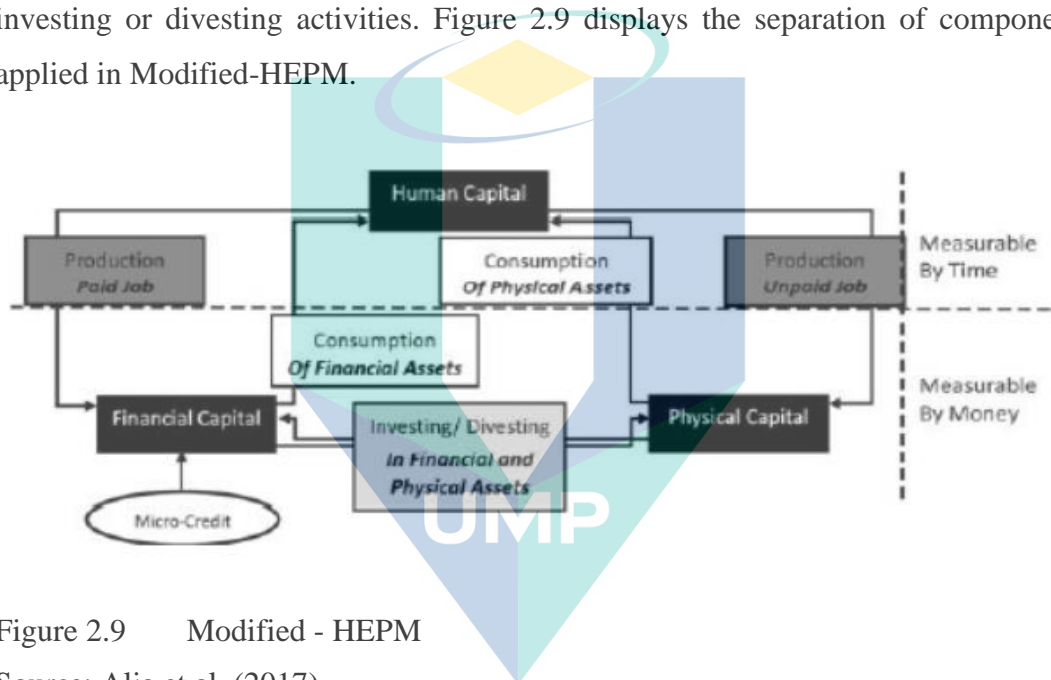


Figure 2.9 Modified - HEPM

Source: Alia et al. (2017)

Two types of diaries can be maintained to account for both money and time. These diaries are used to collect relevant data and information inside the household portfolio. To be more specific, Money flow measurement will be done through financial diary and time flow measurement will be done through activity diary to have comprehensive picture of the portfolio. These two types of diaries have been reviewed in the methodology chapter to observe the changing process of borrowers' lives in poverty alleviation. Alia et al. (2017) studied this type of changing process in poverty alleviation through a case study in Egypt. They have depicted a financial diary and a time-use diary from a poor woman in Egypt in August 2013 and both the diaries were recorded for 14 days in Arabic, later on translated for use.

2.11 Multidimensional Poverty Index

Very often, monetary indicators such as consumption, income, expenses have been applied for measuring poverty. Conventionally, these indicators are the monetary perspective to observe poverty and consider only this one dimension. This monetary dimension has been calculated on the basis of goods and services measured at the current market price required for running living standard at minimum level. A person seems to be poor or marginal who is living below the poverty line, if she cannot generate enough resources to carry this minimum life quality. It is well noted that monetary indicators have been extremely worthwhile information for measuring poverty. However, different indicators such as food, medicine, clothing, education, employment, housing, security etc. may be more useful measurement and such indicators are much more informative in broad sense to indicate and understand poverty. Merely one dimensional monetary-based indicators cannot have the capacity to capture the whole diversified range of issues contributing to poverty.

Since 1997, Human Development Report (HDR) has re-estimated poverty in different dimensions apart from conventionally taken monetary measurement technique. It is estimated through the Human Poverty Index (HPI) for the first instance. Subsequently, it is succeeded by the Multidimensional Poverty Index (MPI) in the year 2010. This new MPI has been designed with the joint effort by Human Development Report Office (HDRO) of UNDP and Oxford Poverty and Human Development Initiative (OPHI) of Oxford University. Every year, OPHI computes the index and UNDP publishes the index from then on. In addition, by dividing into rural-urban, ethnicity or subnational breakdowns, the OPHI website displays sub-classification MPI indices of almost all countries across the globe. MPI has been used as an international measure of poverty incidence and intensity for more than one hundred developing countries. MPI is complementing customary income-based measurement through including acute deprivation which people face regarding health, education and living standard. It is a measurement at the individual poverty level (Alkire, Kanagaratnam, & Suppa, 2018; Wikipedia, 2019b).

2.12 Microfinance Loan Recovery

Finance is typical fund intermediation process from surplus to deficit unit or household in the society. Microfinance is also under this jurisdiction of fund flowing system. The loan derives from microfinance institute as lender to microfinance client as borrower and revert back from the borrower to the microfinance institute by repayment. For the successful financial system, the process has to be repeated again and again between lenders and borrowers. If the process is not repeated and the loan is not paid back and / or taken newly, then there must be something wrong in the system which will make the whole effort questionable. Consequently, it will create more debt problem rather than solving poverty problem. Therefore, it is very crucial to look into the contributing factors that are responsible for loan default or alternatively making the microfinance system ineffective. High recovery is the symptom of positive impact of microfinance loan on borrowers' poverty. Low recovery is the symptom among others that funds are diverted for consumption rather than investment in revenue generating activities.

The attitude and competency of the borrowers to pay back loans has been very important issues besides assessing microfinance welfare impact. Historical repayment patterns could be one of the ways to analyse loan defaults. The analysis of previous knowledge on loan delay showing historical patterns may give a good indication. A fund provider may be able to pre-decide by checking their respective previous repayment records of borrowers for future probable status. A positive relationship between previous and current loan has been confirmed. Most likely delays in the previous borrowings will indicate repayment problems in current borrowing and the situation would be even worse. As a result, it is evident that the borrower with earlier deferral will face borrowing size rationing in the succeeding borrowing. In addition, both farmers and non-farmers borrowers share the same findings in respect to previous delays (Hering & Musshoff, 2017).

Relatively low-income borrowers and poor borrowers get microfinance from microfinance institutions. Because of borrowers less capability, the interest rate and related terms and conditions have to be relaxed so that the poor people get access to those funds. One of the relaxed covenants is that microfinance usually does not require

collateral. This contributes to very high risk in case of defaults. Because of defaults and high transaction cost, microfinance is a quite risky venture and need to charge a high interest rate for sustainability. Therefore, microfinance institute requires developing some design or backup to face those issues that ultimately help to serve the poverty alleviation purpose. Several studies concluded that borrowers default rate got significant contribution from different variables such as type of business, size of loan, education level, number of credit, borrowers' age, marital status, and gender etc. These factors consequently have been categorized into three broad groups like characteristics of borrower, characteristics of loan, and characteristics of behaviour. Thus, Borrowers' demography, previous attitude and credit record may have substantial influences on the recovery rate (Baklouti, 2013).

Van den Berg, Lensink, and Servin (2015) found that characteristics of the loan officers, more specifically their gender, play a significant role in recovery rate. Their study concluded that male loan officers perform well enough to persuade borrowers to pay back their loans than female loan officers. The probable reasons behind this could be such as male loan officers exercise more command over female borrowers, can work late or extra time, can travel unsecured areas, possess good counselling and enforcement for perusing recovery, etc.

Hsu (2016) qualitative data analysis revealed that social ties among the borrowers are very influential in making their decision in microfinance. Social ties could be in different forms as well. For example, personal relationships and state-imposed organization. In comparison to these two forms of collateral, one social tie can facilitate good recovery rate whether the other social tie do not. Even social collateral structures can perform differently in microfinance and decide the possible consequences on borrowers for their respective outcomes in using microfinance.

Kassim and Rahman (2018) conducted the individual borrower interviews of Grameen Bank through the semi-structured form in Bangladesh. Their study constructed by a comprehensive content analysis identified different variables in the recovery of microfinance loans such as post loan observation, field workers' skill, technical support, payment frequency, database accessibility, family health issue, struggling business, motivational lacking, and financial commitment beyond capacity.

As about eighty percent of borrowers of microfinance were female without competent education and skill, the post loan observation among others appeared very significant in microfinance recovery and ultimately their performance.

Chaudhary and Ishfaq (2003) selected some variables for loan defaults together with the effect of subsidized interest on recovery. They established that comparatively higher education level, trading or business activities, suitable credit investment and women borrower played important outcome on the good recovery of loan. Their investigation also pointed out that it was irrelevant for the recovery rate whether the interest rate was subsidized or not. They suggested that the higher recovery rate might not come out from subsidized interest rate. Alternatively, the subsidized interest rate is irrelevant for higher recovery.

Roslan and Karim (2009) investigated the factors of loan defaults for borrowers of commercial bank lending in the agricultural sector. Their determinants are divided into three categories - characteristics of the borrowers, businesses and loans. They found the probability for the loan repayment default is influenced by the borrower gender, business type, loan size, repayment time and borrowers' training and skill. Specifically, they established that the higher probability of defaulting came from male borrowers and borrowers allowed long time for repayment. In addition, the support or service sector borrowers with education and training and borrowers with higher loan got relatively lower loan defaults.

Apart from the group lending approach, loan repayment determinants in microfinance can be studied through socio-economic variables. Borrowers' socio-economic factors may have the significant influence on recovery rate rather than group lending. Those socio-economic variables consist of the level of education, borrower gender, income of household, business type, duration of business, experience of borrowers etc. Bhatt and Tang (2002) concluded that comparatively higher education level is positively significantly linked with better recovery of loan. On the contrary, other socio-economic determinants like the borrowers' gender, income of households, business type, duration of business, and experience of borrowers got insignificant consequence on microfinance recovery.

Agricultural credit payback by the farmer in poor countries can be enormously enhanced through cautious supervision of the four determinants such as the nature of disbursement, time of disbursement, number of supervision, and the profitability of the enterprise. Disbursement of loans should most likely be to the best extent of commodities or goods. Because this will definitely safeguard loan fund utilization for the intended purpose. The recovery rate for the cash loan is relatively lower than that for the kind loan. This may be because borrowers do not use the cash loan for the intended purpose of business activities rather they diversify the fund for consumption or otherwise. It also should be given at the right time of the borrowers' requirement typically within one or two months after application. Consistent observing of the borrowers' activity areas by the loan supervisors make proper utilizations of the loan and also confirm higher profitability eventually making contribution to higher recovery (Okorie, 1986).

According to Brehanu and Fufa (2008), Agricultural productivity could be increased by providing access to small-scale farmers' and ultimately it will reduce their poverty by increased productivity. However, there must be some basic guidelines such as grouping the borrowers, imposing group liability concept and post loan monitoring to give those credit access to the farmers. The social collateral like the group liability concept acts as the prime cause to achieve a higher recovery rate from the borrowers. However, other determinants such as ecology, land size, livestock, service experience, agents networking, and income from other sources are also found significant for higher loan repayments. In the case of loan default, it may be either voluntary (intentional) or involuntary (forced). Surprising or unpredictable things happen in business reducing their income generation capacity that may contribute to involuntary defaults. Those forced situations may be low income generation, natural calamities and borrowers' health issues, etc. On the other hand, intentional or voluntary defaults are immoral attitude issues or just unethical behavior of the borrowers. For example, capable borrower chooses not to pay back their loans for either none or lower enforcement initiatives practiced by the individual microfinance institution.

In another study, Nawai and Shariff (2012) argued that borrowers' sex, proper religious tuition, lender office distance, formality of business, volume of activity, loan

size, monitoring technique, and loan timing made the significant contributions to borrowers' recovery rates. They also argued that lacking of force from lending institutions could not cause repayment delay or cause minimum payback. In addition, borrowers making alternative use of funds other than intended purpose made them defaulters. Their research recommended that incentive need to be extended to the decent and deserving borrowers to payback loan on time without delay.

The optimal design of combined credit arrangements with joint obligation considered as a device for less default. Those arrangements may significantly encourage intensive monitoring, lessen the frequency of default, and improve the lender's capability to provoke recovery. Cost-benefit analysis should be made between the benefit of loan given and the cost of monitoring associated with it. As the more associated risk across the borrowers is highly correlated, the more benefits are expected out of extensive monitoring. Group size should also be optimum for joint arrangements. The size should be neither too small for assuming joint responsibility and commitments nor too big for free riding. By comparing diverse monitoring techniques, it has been found that a group lending mechanism as social collateral is operative in decreasing default rates (De Aghion, 1999).

Van Tassel (1999) examined joint obligatory arrangements as part of a screening technique taken by microfinance institutes for group lending. The desired credit contracts could come out of a model or one-time experience of lending especially when borrowers have more information about themselves than the lenders. As the information is asymmetric between borrowers and lenders, the microfinance intuition as a lender can use joint obligatory arrangements for screening agents. The borrower could make the endogenous group among themselves by their more and latest information. The lender does not secure the loan rather the borrower secures the loan by co-signature in the group lending method. When any particular group member is in the incidence of default, the other group member will take initiative to resolve the issue and put pressure on loan recovery so that no sanction comes out of the individual failure. Therefore, the defaulters become less in number when group sanction has been imposed as a screening device.

There have been rich and established models justifying group-lending consequences for loan default. The four commonly quoted models are Besley model, Coate model, Stiglitz model, and Ghatak model. They are often known as four representative models of joint group lending. Ahlin and Townsend (2007) concluded that aforesaid models' repayment recommendations do not correspond to all the time. For instance, based on the model used, output correlation and borrowers' cooperative capability may increase or decrease the payback rate. Interestingly, payback has been negatively influenced by the joint liability rate and social ties. On the other hand, payback has been positively influenced by local sanctions and returns. In addition, the model fitting for informal sanction versus adverse selection may be diverged by the concerned region. In their study, Ahlin and Townsend (2007) concluded that the Besley and Coate model of limited enforcement has been strongly supported in the relatively poor and rural regions. However, the Stiglitz model of moral hazard and the Ghatak model of adverse selection have been supported in rich region.

Different variables like the size of group, size of loan, degree of loan sanction, activity mixing, borrowers' features, socio-economic condition, peculiar behavior, etc. may determine the rate of loan defaults. However, the main standards of sensible microfinance must be attached to the operation and consequently, the payback rate could be found satisfactory even in remote rural areas. Microfinance institutions should customize their respective services according to the needs of the borrowers. This will ultimately create a worthwhile environment for the borrowers to create a viable association for long period. Furthermore, it was suggested to give more liberty to the group members in forming their group (Sharma & Zeller, 1997).

Zeller (1998) also examined the loan recovery rate by the group, lender and community features. In the current research, the group lending approach gets a lot of attention due to financial services provided to the people beyond the poverty level especially when they cannot afford collaterals that are typically essential for loan recovery. Zeller focused on investigating the contribution of microfinance program design, communal environment, and group features on recovery rate. His outcomes revealed that the socially unified group reduces risk by differentiating asset portfolio

of the members in the group. This made even the high-risk exposed communities perform better in their respective recovery.

Wydick (1999) also examined the recovery rate of microfinance using the group-lending approach. His study took issues like the social relationships among the group members, any sanction imposed by microfinance institutes and finally peer post loan monitoring. The group lending approach can alleviate information differences between lenders and borrowers. This makes the microfinance institute more capable of monitoring. Earlier studies provided some explanation of the group lending approach in terms of social ties, internal group pressure and post loan monitoring. But his study contributed by doing empirical tests on the group lending approach and found that post loan monitoring is significant for a good recovery rate as it is working like group insurance. Internal group pressure is relatively little significant in the moral hazard of the borrower whereas social tie is not statistically significant at all.

Finally, in a comprehensive picture, the determinants of loan default can be classified into three broad characteristics namely borrowers' characteristics, business characteristics, and loan characteristics. Some defaults happen due to borrowers' individual characteristics like gender, age, living style, education level, dependent number etc. It is common in the microfinance loan recovery that female borrowers are more accountable and more orderly for payback. Chaudhary and Ishfaq (2003) and Roslan and Karim (2009) figured out male borrowers were more prone than female borrowers in loan default. Borrowers' age might indicate their respective capability to pay back the loan. Older borrowers were found more responsible than the younger borrowers for loan default (Brehanu & Fufa, 2008). In the same node, Single borrowers were found more susceptible for defaulting than married borrowers (Peng, Li, Lv, & Zhou, 2009). Aged and conjugal borrowers behaved responsible and they might want to keep good relationship with lenders for more future loans. If borrows are not educated enough for running revenue generating activities, it may be an issue for loan default. Educated borrowers behaved relatively better than their counterpart (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). When borrowers' dependant number are more, they need to maintain and support them for basic amenities. This may induce

microfinance loan consumption rather than investment. Borrowers with relatively large number of dependant were found to be more defaulters (Brehanu & Fufa, 2008).

Some defaults are associated with borrowers' business characteristics like business type, monthly revenue, alternative income, alternative loan, etc. Agricultural businesses are more vulnerable than trading business for natural catastrophes and lower business cycle which can contribute to loan default. An agricultural business was associated with lower cash cycle than small business (Chaudhary & Ishfaq, 2003). Generating enough monthly revenue make borrowers capable of payment the loan back on time. Small business revenue was accompanied with the higher likelihood of loan default (Okorie, 1986). Some borrowers have more than one sources of income and it may be oppositely related with loan default. Borrowers with extra or alternative income in addition to micro credit financed income would have the higher capability for paying back micro credit (Brehanu & Fufa, 2008). In the same way, some borrowers have more than one sources of loan and it may have positive relationship for loan default. Extra or alternative loan can affect borrowers' capability for paying back their microfinance loan. These extra credits assume more limitations to fulfil the obligation in addition to microfinance loan. This researcher finds adequate number of microfinance borrower taking loan from multiple sources when carrying out pilot survey. When borrowers prevail extra or alternative loans from other sources, they find themselves encountering complexities and challenges for their individual payback.

Other defaults occur for borrowers' loan characteristics like repayment mode, repayment period, repayment amount, interest rate or management fee etc. Repayment mode, say weekly, may contribute to loan default. This may be more specifically correct for borrowers with lower revenue cycle. Microfinance institute enforced loan repayment mode may play significant role for loan payback attitude of the borrower (Derban, Binner, & Mullineux, 2005). Longer repayment period may contribute to default. Borrowers with longer repayment period can be related to more loan default problem in comparison to borrowers with shorter repayment period. Borrowers with longer repayment period implying longer commitment to repay loan contributed positively for default (Roslan & Karim, 2009). Repayment amount is the size of amount what borrowers pay back as loan instalment weekly or otherwise and it can be

a factor to default. This may be more specifically connected with revenue and business cycle. Derban et al. (2005) concluded that the unfavorable loan product could play significant role in case of loan default. Interest rate/ Management fee is charged to cover operational and other costs for microfinance institute. Whether borrowers confront loan repayment for comparatively higher interest rate or management fee is very important to investigate. Borrowers with high interest rate/fee have been assumed to become loan defaulters in comparison to borrowers with low interest rate/fee. This researcher found adequate number of microfinance borrowers being charged different rates for different borrowers on the basis of their individual portfolio when carrying out pilot survey. Derban et al. (2005) concluded that the unfavorable loan product could play significant role in case of loan default. Therefore, loan should be suitably designed for the intended purpose.

2.13 Microfinance Institute Performance

Microfinance institution will be treated as a good performer if it meets the desired objective or at least in good progress through achieving a major part of the objective. Those performances may be measured through outreach, sustainability positive impact on borrowers. More specifically, achieving both outreach to the poor and financial sustainability is quite challenging. When microfinance institutes achieve financial sustainability by ignoring outreach, there is no difference of commercial organization with them. They are just money making machines like other financial institutions. Enhancing poor people's life quality and finally lifting them out of poverty should be the prime objectives for all microfinance institutions. However, the perception of investors, borrowers, donors, society and even staff can diverge their objectives of poverty alleviation and may inclined to alternative objective like profit maximization. As borrowers are able to upgrade their life quality through improving their business, good health and social security, better education and training, etc., they inclined to visualize positive contribution of microfinance institution. Even society as a whole measures microfinance institute performance through their respective changes and contribution brought forward (Schreiner, 1996).

Schreiner (2003) also concluded that microfinance institutes become good performer when they are involved in profit maximization to earn higher rate of return on their investment as per investors demand. However, market leverage has been more concern for donor agencies as they want to confirm share gain through maximum outreach to the poor by the respective microfinance institute. At this point, the microfinance institute need to consider higher financial stability with more efficiency to deliver goods and services to the poor. However, microfinance staffs are very much concerned about continuing their jobs. Their major concerns are the situations of what happens if donors stop funding and what happens to their jobs. As a result, staffs are more concerned with financial sufficiency rather than poverty alleviation of respective microfinance institute. It results in their job security along with healthy financial performance of the microfinance institute. Ultimately, better financial performance can derive better financial sufficiency in the long run.

Concerning the CGAP guidelines (Rosenberg, 2009), Microfinance institution performance would be based on five fundamental aspects such as Outreach – Number of poor people getting services from the institute, Borrower poverty level – Depth and magnitude of the poverty of respective borrowers, Collection performance – Recovery rate of the loan given, Financial sustainability – Being independent of donors' funds, subsidies or grants to maintain services and continue for the foreseeable period, Efficiency – Being able to control itself including administrative expenses.

There are three phases to measure microfinance institute performance (Zeller & Meyer, 2002). The first and important phase begins when institutions are funded for establishment and consequently subsidized for liberal credit policy. The second phase demands for financial sustainability for successful operation and the third phase goes for ultimate impact of microfinance operation on borrowers' poverty. The outreach to the poor is evaluated through number of borrowers, average loan size etc. It is similar with the welfarist approach which asserts that as long as prime objective of poverty reduction has been served, there is nothing wrong in providing subsidy for the operation. Alternatively, it means that financial performance is preferred later to social performance or outreach (Morduch, 2000).

During the nineteen-eighties, things were not smooth for subsidized microfinance policy. Much evidence has been documented against it. There is none or little performance by subsidized microfinance institute. In many cases, the programs did not serve the purpose and ultimately, become some sort of failed initiative. They continued to produce worsen results and finally became unviable for financial sustainability. Similar incidence by large scale brought new school of thought called institutionalist approach. This school claimed that microfinance institute need to achieve financial sustainability for serving outreach for long time. They thought different strategies like higher interest rate, viable project, strong monitoring, etc. This concept expressed that better performer would be treated through better financial performance rather than social performance (Morduch, 2000; Waller & Woodworth, 2001).

Zeller and Meyer (2002) mentioned three important criteria which are very much essential to quantity institutional performance. These criteria have been mentioned such as outreach to the poor, financial sustainability, and its impact. The aforesaid three criteria are highly recommended to measure microfinance institute performance. It is quite challenging to achieve three criteria concurrently. However, this may give the best institutional performance record. According to Zeller and Meyer (2002), it has been visualized as a triangle measuring performance which is depicted in Figure 2.10. The Triangle's inner circle represents how well microfinance institutes can achieve three criteria concurrently. It is the outcome of institutional innovations through fair policy, modern technology, organizational capacity, and above all effective and efficient administration. In achieving these criteria simultaneously, there need some balancing among them. Any particular criteria may need to be gained by offsetting other criteria at a time. It is commonly known as trade-off or mission drift among these criteria. Hartarska (2005), Zeller and Meyer (2002) and Park and Ren (2001) came into conclusion that there is a possibility to achieve financial sustainability and outreach to the poor concurrently in many cases for particular microfinance institute.

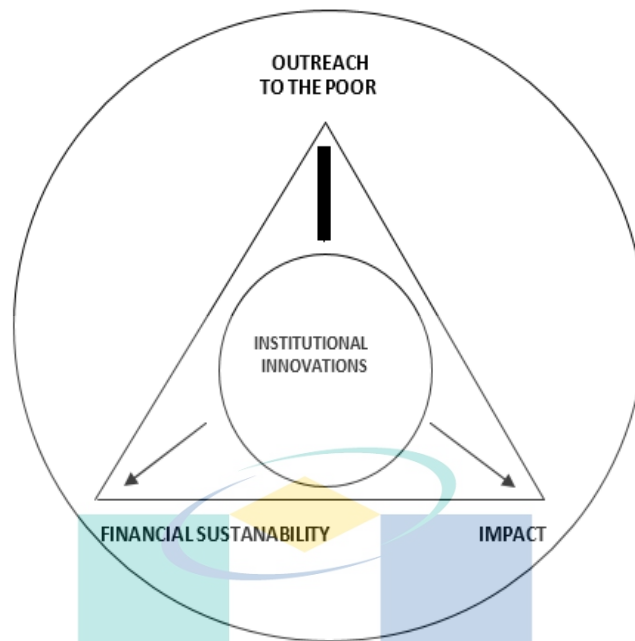


Figure 2.10 Triangle Measuring Performance
Source: Zeller and Meyer (2002)

This is not practical to achieve all three objectives at the same time in a win-win situation (Hartarska, 2005). Park and Ren (2001) established that microfinance institute need to charge high transaction cost for outreaching to the poorest at low interest rate. It is a dilemma where microfinance institutes may not tolerate high transaction costs and the poor borrower may not sustain high interest charges. There needs balancing between institute and borrower at some point to settle it down. By depending on subsidies and grants, there may be an option where microfinance institution may reach maximum outreach at low interest rate but high transaction cost. On the other hand, alternative option may be like that microfinance institution provided loan not-so-poor borrower at high interest rate but low transaction cost without depending on grants and subsidies.

2.13.1 Outreach

Outreach means serving the poorest borrowers and making their well-being to the best extent possible at minimum charge. There are many indicators which show outreach like the number of borrower, the extent of poverty, the diversity of services, etc. The outreach will be more and more when microfinance institutes reach more indicators with the higher index. Navajas, Schreiner, Meyer, Gonzalez-Vega, and

Rodriguez-Meza (2000) pointed out six dimensions such as Breadth, Depth, Length, Scope, Cost and Worth for measuring outreach. They put it together in their study the financial issues with the outreach as per Table 2.8.

Table 2.8 Dimension, Definition and Indicator of Outreach

Dimension	Definition	Indicator
Breadth	Borrowers Number	Number of Credit Number of Accounts
Depth	Societal Value	Mean Loan Size Female Borrower Percentage Rural Borrower Percentage Borrower Education Level Borrower Ethnicity Borrower Housing Type
Length	Financial Performance	Financial Self-Sufficiency Operating Self-Sufficiency Return on Asset Mean Loan Size/ GNP per Capita Portfolio Growth Capital Cost to Asset Labour Cost to Asset Loan to Asset Donation to Loan Loan Size
Scope	Products and Services	Loan Saving Insurance Other
Cost	Products and Service Cost	Price Cost Transaction Cost
Worth	Value Placed on Products and Services	Profit Increment Dropout Rate

Source: Navajas et al. (2000)

2.13.2 Sustainability

Navajas et al. (2000) studied the third dimension often quoted as Length of operation in their microfinance study. These types of studies have been further extended by other scholars. Cull et al. (2007), Gutierrez-Nieto, Serrano-Cinca, and Molinero (2007) and Tucker (2001) thought about some more relevant ratios to measure institutional financial performance in their respective detailed studies. Among others, those ratios or indicators are Return on Equity, Return on Asset, Operational Self Sufficiency, Portfolio at Risk, Risk Coverage Ratio, Provision Expense Ratio, Operating Expense Ratio, Write-off Ratio, Personnel Productivity, Cost per Client, Funding Expense Ratio, Credit Officer Productivity, Loan Loss Reserves, Cost of Funds Ratio, etc.

From the funding point of view, microfinance institutions can be categories as an unsubsidized and a subsidized institution. Navajas et al. (2000), Cull et al. (2007), Gutierrez-Nieto et al. (2007) and Tucker (2001) studied the measurement of financial performance generally applicable to microfinance institutions that are unsubsidized. But the Subsidy Dependence Index (SDI) was introduced by Yaron (1992) and further expanded by Schreiner and Yaron (1999) to measure the financial performance of subsidized microfinance institutes. Microfinance institute having a high SDI Index means low financial self-sufficiency and microfinance institute having a low SDI Index means high financial self-sufficiency.

2.13.3 Impact

As discussed earlier, there are three components of measuring microfinance performance such as outreach, financial sufficiency, and welfare impact. Many researchers studied microfinance performance sometimes based on one component or sometimes mixture of components. However, measuring the welfare impact is the most essential component in defining the success of the microfinance institute. There is evidence of concentration exclusively on the welfare impact on the borrowers in terms of their business, household, and individual aspect for measuring microfinance institute performance. Researcher like Park and Ren (2001) recorded the performance taking the three components together. Researchers like Cull et al. (2007), Woller and Parsons (2002) etc. measure the microfinance institute performance by taking into

consideration both outreach and financial performance. However, many researchers have taken only one component in their study. For example, Adongo and Stork (2006), Navajas et al. (2000) and Dunn and Arbuckle (2001a) studied microfinance performance by taking only one component like financial performance, outreach, and welfare impact, respectively.

2.13.4 Institutional versus Welfarist Approach

A group of researchers developed the institutionalist approach through Rural Finance Program at Ohio State University. This approach has been developed since then at nineteen eighties and occupied very robust argument in microfinance field (Brau & Woller, 2004; Zeller & Meyer, 2002). This concept highlighted that microfinance institute need to achieve financially self-sufficiency for delivering and continuing its goods and services to the borrower. Microfinance activity ought to be autonomous and free from gift, subsidy or donation and they need to be independently financed for increasing long term suitability. Morduch (2000) highlighted that institute have been expected to gain profit as a prime objective for accomplishing independence through serving the high number of borrowers ranging from the poorest to not all that poor. Just serving the least fortunate would require high operation costs that could be counterbalanced by loaning not really so poor borrowers.

As indicated by welfarist, microfinance subsidization is definitely not a wrong choice to the extent the goal has been served properly. The welfarist underline on the social return of the venture besides financial return. Microfinance organizations can achieve social viability without achieving financial viability. If the institutes only give consideration to financial sustainability, the welfarists view that poor borrower may not be entertained. They draw attention to serve the poor borrower by depth (Maximum poverty) and breadth (Maximum borrower) that should be simply the ambit of microfinance institute rather accomplishing independence. Woller, Dunford, and Woodworth (1999) expressed that the prime objective of microfinance institute is preferably significant over financial solvency. Concerning them, microfinance institutions may not be known as subsidized organization if social return surpasses alternative returns and the other way around. Microfinance investors could stop investment just when social return becomes deficit, not really financial return. Besides, Woller et al. (1999) depicted that there are two significant sorts of investors in

microfinance industry, in particular social investor and selfish investor. Social investors just request the social improvement of the borrowers and drive them out of poverty. Social investors have two categories. One category exclusively content with eliminating poverty. However, the other category needs both poverty reduction and financial sustainability. In any case, the extraordinary narrow minded investor just searches for profit maximization derivable from their respective investment.

Microfinance institutes' transformation into commercial banks has conveyed a paradigm shift in their service models, customer, and extent of work. The Institutionalists believed that service beneficiaries should not be the poorest borrowers, however a little over the poverty line, to guarantee profitability and sustainability of institute. Rajdev and Bhatt (2013)'s underlying investigation showed that microfinance institutions motivated when profit had higher possibility of supporting their business. However, their last investigation demonstrated that there has been no significant difference between profit oriented microfinance institute and its counterpart. Generally, their investigation did not have decisive proof on whether profit-oriented microfinance institute get better possibility of financial sustainability. Additionally, financial statement examination conducted by them demonstrated that financial ratios of profit oriented institute indicated declining pattern. This should be noted that there was no requirement for extra guideline for ensuring sustainability so long as microfinance institute showed dependable conduct or attitude and adopted self-regulation.

It is quite a big challenge to achieve both financial solvency and social outreach for microfinance institute concurrently. Accomplishing profitability and serving poor borrower might be a balancing situation. Bassem (2012) investigated the relationship between outreach and profitability and found neutral association between them. However, when microfinance institute desires to diminish their portfolio risk, they found symptom of mission drift. Once more, higher portfolio at risk has not been relevant to low profile borrower, which did not legitimate any compromise. This implies both the goals are reachable simultaneously. In any case, this result is restricted to proxy variables derived for financial sustainability and social outreach.

Adhikary and Papachristou (2014) experimentally inspected to discover relationship between outreach and sustainability. They concluded that both depth and

breadth of outreach are positively correlated with profitability and efficiency. Similar study found the presence of trade-offs among outreach, profitability, and sustainability showing reverse effect on outreach to the poor borrower for profitability, whereas the findings on financial sustainability did not show any mission drift with the outreach (Kipesha & Zhang, 2013). Adair and Berguiga (2014) also concluded that outreach was inversely associated with sustainability and the other way around. Stochastic frontier analysis was also applied to explore whether microfinance institute has trade-off between outreach and efficiency. There is very solid proof that outreach is adversely associated with efficiency (Hermes, Lensink, & Meesters, 2011).

There are mixed reactions in different research studied at various time in separate places of the globe with alternative methodologies for outreach and sustainability of microfinance institute. Some studies (Adhikary & Papachristou, 2014; Bassem, 2012; Bos & Millone, 2015) claimed that outreach and profitability may be achieved concurrently, some studies disclosed (Adair & Berguiga, 2014; Hermes et al., 2011; Masood, 2013) that they are negatively associated where there requires balancing between them. Some other research (Kipesha & Zhang, 2013; Rajdev & Bhatt, 2013) have not been conclusive. In this manner, the net consolidation between welfarist and institutionalist represent the uncertain position. New studies may be promulgated in Bangladesh and Malaysia about this context to point out the exact mission drift over there. At last, it is less important whichever mode microfinance institutes operate, a welfarist or institutionalist regardless of their investors' desire. The most noteworthy inquiry is whether the microfinance institute serve positive results to the poor borrower (Hulme & Mosley, 1996).

2.13.5 Social versus Financial Performance

Microfinance has been designed as an instrument to alleviate poverty by delivering financial services to the poor borrowers for creating income-generating activities. Poverty alleviation can be done through including poor people in the financial system. This is not possible in customary financial framework at commercial bank. In any case, there remains the significant question whether it is conceivable to offer those types of services without being financially sustainable. It depends on governments' or donors' funds to go far with such free lunch. These two ways place microfinance at the convergence. One may guess whether the microfinance bargains a

compromise between serving poor people (Social Objective) and achieving financial sustainability (Financial Objective). By ignoring the intended social purpose of alleviating poverty, when microfinance institutes wish to achieve financial sustainability through earning high return on their portfolio, then it drops its momentum. It appears no more microfinance rather transformed to macrofinance like other traditional or commercial financial institutes. It has never been desirable for any mission drift or trade-off between social and financial performance. Satisfying social targets with financial sustainability will be the ideal result of microfinance.

With reference to similar type of literature, Direct Credit Approach has been commonly known as welfarist approach emphasizing social outreach. It perceived microfinance as a successful instrument to fight against poverty and vulnerability of poor people. Eventually, it advanced the government assistance to the welfare of the poor people. Other than small scale credit and related services, microfinance gives non-monetary supports like training and learning along with specialized help to borrowers for operating their income generating activities. This welfare perspective succeeded all the way during the 1980s. It gave importance to form social institutions like Cooperative Societies or Non-Governmental Organizations which considered microfinance as key instrument for poverty alleviation (Hamed, 2004). The notable case of this approach is the popular Grameen Bank. The other example is the rural banking framework promulgated by FINCA (Foundation of International Community Assistance) in Latin America and recently in Africa and Asia. Nevertheless, this welfare approach has been inclined to high default and operating costs. It brought about numerous microfinance program into disappointment based on subsidy where charged interest rates had been lesser than prevailed market rates (Von Pischke et al., 1983; Yaron, 1994).

Financial Market Approach has been often known as institutionalist approach highlighting financial performance positioned microfinance within market jurisdiction. It means to establish microfinance institute with financial sustainability being aware of fund limitations from government or donors and also aware of outreach to the poorest (De Briey, 2005). Microfinance institutes need to arrive financial viability through productivity and efficiency. Thus, they have to charge relatively higher interest rates or management fees to cover every single operational expenses. Here,

microfinance institute compromises serving to the poorest borrower for their best extent for poverty alleviation. Or maybe, they begin serving the customers near the poverty level with geographical focus but engaged in highly lucrative and short cycled activities. For instance, countries like Peru, Bolivia and so forth offer to frame the specifically managed or regulated microfinance institute. These unique organizations get restricted entities' status and they get away from NGO status. It plainly uncovers the jurisdiction of profit maximization rather than welfare maximization (De Brie, 2005).

2.14 Hypotheses Development

Different researchers take different variables along with different methodologies to study microfinance impact on borrowers' poverty. Their study results put microfinance impact on borrowers' poverty debatable in recent years (Duvendack et al., 2011; Milana & Ashta, 2012). Bhuiya et al. (2016) found positive impact of microfinance on household income and consumption. Pitt et al. (2006) observed that microfinance has impact on women empowerment on different indicators like decision for purchasing, resources, transaction, fertility, attitude etc. They concluded women participation in microfinance helps to increase woman empowerment although male microfinance participation has negative impact thereon. Microfinance intervention improve life quality through increasing income, general expenditure and savings and can play significant role in improving rural economy (Rahman et al., 2015). Woller and Parsons (2002) emphasized to incorporate microfinance direct and indirect impact on local economic activity in addition to borrowers' and their family welfare. Khandker et al. (1998) concluded that women made themselves empowered by their respective contributions to household income and asset building, which ultimately resulted in enhancing life standard and family status through microfinance. The increase in the household's income also expected to increase family spending on food (Khandker, 2005; Zaman, 1999). M. Chen and Dunn (1996) stated five important variables such as the borrowers' control of business and family, borrowers' self-esteem, borrowers' savings, borrowers' attitude towards the future and borrowers' effectiveness in managing unfavorable shocks.

Many researchers did not find any significant positive impact on borrowers' poverty. Hulme (2000b) pointed out the down side of microfinance. He argued that

microfinance did not scratch the surface of poverty and it was urgent to make more humanitarian practice. Many women committed suicide when they had loan default problem. Despite microfinance helped many poor people improving their lives, it was just a partly solution. Bateman (2010) added that microfinance had been brilliantly marketed and politically vital concept, but it was actually an empty vessel in development strategy. It was absorbing valuable economic resources that might have alternative useful use. Roodman and Morduch (2014) revisited the microfinance impact and concluded that though microfinance had much hope of possibility to reduce poverty, it was not confirmed by recent randomized controlled trials. Sinclair (2012) found that although microfinance was a huge industry, its impact on poor's better-off based on very little solid evidence rather based on hearsay evidence. Furthermore, many works concluded that there had been positive impact in case of few development indicators but not for others indicators (De Mel et al., 2008; Ghalib et al., 2015; Imai et al., 2010; Imai et al., 2012; McKenzie & Woodruff, 2006; Mukherjee, 2015; Van Rooyen et al., 2012), whereas other researchers did not agree the same rather put positive impact for some else indicators (McIntosh et al., 2011). Microfinance has been losing its grounds because of inadequate proof for positive impact (Lascelles & Mendelson, 2012).

HEPM model hosted by AIMS (Assessing the Impact of Microenterprises Services) in 1996 has been used to measure microfinance impact assessment on the borrowers (M. Chen & Dunn, 1996). This had been applied by Dunn and Arbuckle (2001b) to evaluate the impact assessment in Peru. It recommended that the impact assessment research should be conducted at the following three levels such as Microenterprise, Household, and Individual level. Similar to Afrane (2002) study, this study uses a "before" and "after" approach in evaluating the impact of microfinance on the borrowers' poverty variables. This study also added security level along with the previously mentioned three levels. In addition, this research applied a control group (non-participant borrowers) and experiment group (Participant borrowers). Prior studies make conclusion about many development indicators including family welfare, women empowerment, humanitarian ground and others for microfinance treatment. This held the common view that microfinance make significant changes in borrowers' welfare through different development indicators taken by the individual researchers in their respective studies. In line with prior studies, it can be said that microfinance

has impact on borrowers' poverty level if it makes significant difference on borrowers' poverty before and after its treatment. It can also be said that microfinance has impact on borrowers' poverty level if it makes significant difference with and without its treatment. Under this backdrop and in compliance with HEPM Model, this research developed the following hypotheses:

H₁: Microfinance makes significant difference on borrowers' business, household, individual and security level poverty **within** participant borrowers and non-participant borrowers.

H₂: Microfinance makes significant difference on borrowers' business, household, individual and security level poverty **between** participant borrowers and non-participant borrowers.

At business level, microfinance may cause impact on borrowers' poverty through business revenue, fixed asset, current asset and employment generation. T. Islam (2007) and Hossain and Diaz (1997) established the fact that the profitability and growth of microenterprise business through microfinance are correlated with the growth of its fixed assets and employment generation. M. Chen and Dunn (1996) also found that borrowers would be able to buy new land, increase quality business premises, increase equipment and tool and recruit human resources with microfinance. At household level, microfinance may cause impact on borrowers' poverty through household income, immovable property, movable property and expenditure. Household income inflows from either partly or totally from revenue generating activities. Microfinance could increase house quality, number of appliance, household land, firming land, and number of livestock as well (Coleman, 2002; Dunn & Arbuckle, 2001a; Khandker et al., 1998; Nader, 2008). The household's growth of income raised the borrower's expenditure as per Dunn and Arbuckle (2001b). The increase in the household's income would also increase family spending on food and nutrition (Khandker, 2005; Zaman, 1999).

At individual level, microfinance may cause impact on borrowers' poverty through borrowers control on situation, honor, capacity and confidence that ultimately pointing out individual empowerment with the sound socio-economic positions. M. Chen and Dunn (1996) stated five important variables such as the borrowers' control

of business and family, borrowers' self-esteem, borrowers' savings, borrowers' attitude towards the future and borrowers' effectiveness in managing unfavorable shocks. Woller and Parsons (2002) found that revenue generated from the business would make the borrower contribute to the household. This would result in a rise in the borrower's self-esteem or honor. M. Chen and Dunn (1996) and Dunn and Arbuckle (2001b) opined that the growth in the business will increase the borrower's effectiveness in coping with effectiveness in managing unfavorable shocks. Hashemi et al. (1996) established better stability and higher growth in the business after intervention. At security level, microfinance may cause impact on borrowers' poverty through borrowers social, financial, food, and health security. Microfinance caused impact on health improvements, nutrition, education, food security, quality of housing, infant mortality, gender disparities and women empowerment, self-esteem and respect (Epstein and Crane, 2007; Kabeer, 2005). Dhungana, Singh, Acharya, Gautam, and Paudyal (2016) asked participants about their health awareness and practices after microfinance intervention and reported positive outcome. Details of constructs and items development are discussed in the following Table-2.9.



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Table 2.9 Constructs and Items Development for Causal Impact

Construct	Types of Construct	Variable	Conceptual definition	Operational definition	Measurement Item	Technique of development	Literature support
Microfinance (Independent Variable)	Reflective	Microfinance (Category: Participant or Non-participant borrowers)	Microfinance presents small magnitude of financial services primarily microcredit designed for borrowers living below poverty line (M. Robinson, 2001).	Microfinance refers to small magnitude of microcredit designed for borrowers living below poverty line. Participant borrowers mean who have taken microfinance based on their portfolio and completed at least one year. Otherwise, Non-Participant. Mermod (2013) described these poor people beyond banking services.	Category : Microfinance Institutes (In this case GB, BRAC and TEKUN) give small loans to participant borrowers for alleviating poverty through revenue generating activities.	Adapted from (Mosley, 1997) (Armendáriz & Morduch, 2010)	(M. Robinson, 2001) (Mermod, 2013)
Poverty (Dependent Variable)	Reflective	Borrowers' Poverty	Poverty is a state or condition in which a person or community lacks resources essential for minimum life standard and living below national poverty line (J. Chen, 2019). Hagenaaars and De Vos (1988) defined poverty as a feeling that people do not have enough to get along.	Poverty is measured in relative term (Change in borrowers' poverty position) rather than in absolute term (Mokhtar, 2011). It is done by different poverty variables (e.g. business revenue, fixed assets, etc. of participant and non-participant borrowers through five point Likert scale (Likert, 1974).	Items are developed from different poverty variables (e.g. business revenue, fixed assets, etc.) at business, household, individual and security level with in line with HEPM Model (M. Chen & Dunn, 1996).		(J. Chen, 2019), Hagenaaars and De Vos (1988)

Table 2.9 Continued

Construct	Types of Construct	Variable	Conceptual definition	Operational definition	Measurement Item	Technique of development	Literature support
		A. Business Level	Borrowers' poverty need to be measured at their business, household, individual and security level in line with HEPM Model (M. Chen & Dunn, 1996)	Microfinance made positive impact on the microenterprise revenue and employment (Dunn & Arbuckle, 2001a). The profitability and growth of business are correlated with the growth of its fixed assets and employment. (Hossain & Diaz, 1997; T. Islam, 2007)	1. Business Revenue: How much you agree that your business revenue has been increased.	Adapted from (Mokhtar, 2011)	Dunn and Arbuckle (2001a)
					2 Fixed Asset: How much you agree that your fixed asset has been increased.	Adapted from (Mokhtar, 2011)	Hossain and Diaz (1997); T. Islam (2007)
					3. Current Asset: How much you agree that your current asset has been increased.	Self - Developed	Hossain and Diaz (1997); T. Islam (2007)
					4. Employment: How much you agree that your employment has been increased.	Adapted from (Mokhtar, 2011)	Dunn and Arbuckle (2001a)

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Table 2.9 Continued

Construct	Types of Construct	Variable	Conceptual definition	Operational definition	Measurement Item	Technique of development	Literature support
		B. Household Level	Borrowers' poverty need to be measured at their business, household, individual and security level in line with HEPM Model (M. Chen & Dunn, 1996)	Microfinance increased house quality, number of appliance, household land, farming land and number of livestock as well (Coleman, 2002; Dunn & Arbuckle, 2001a; Khandker et al., 1998; Nader, 2008). The household income also raised the borrower's expenditure (Khandker, 2005; Zaman, 1999).	1. Household Income: How much you agree that your household income has been increased.	Adapted from (Mokhtar, 2011)	(Coleman, 2002; Dunn & Arbuckle, 2001a; Khandker et al., 1998; Nader, 2008)
					2. Immovable Property: How much you agree that your immovable property has been increased.	Self - Developed	-
					3. Movable Property: How much you agree that your movable property has been increased.	Self - Developed	-
					4. Expenditure: How much you agree that your expenditure has been increased.	Adapted from (Mokhtar, 2011)	(Khandker, 2005; Zaman, 1999)

Table 2.9 Continued

Construct	Types of Construct	Variable	Conceptual definition	Operational definition	Measurement Item	Technique of development	Literature support
		C. Individual Level	Borrowers' poverty need to be measured at their business, household, individual and security level in line with HEPM Model (M. Chen & Dunn, 1996)	Revenue generated from the business made the borrowers contributing to the household. This caused rise in borrower's self-esteem (Woller & Parsons, 2002). The growth in the business increased the borrower's effectiveness in coping with unfavorable shocks (M. Chen & Dunn, 1996; Dunn & Arbuckle, 2001b).	1. Control: How much you agree that your control over the situation has been increased.	Adapted from (Al Mamun, Abdul Wahab, & Malarvizhi, 2011)	M. Chen and Dunn (1996) and Dunn and Arbuckle (2001b)
					2. Honor: How much you agree that your honor has been increased.	Adapted from (Mokhtar, 2011)	Woller and Parsons (2002)
					3. Capacity: How much you agree that your capacity has been increased.	Self - Developed	M. Chen and Dunn (1996) and Dunn and Arbuckle (2001b)
					4. Confidence: How much you agree that your confidence has been increased.	Adapted from (Mokhtar, 2011)	M. Chen and Dunn (1996) and Dunn and Arbuckle (2001b)

Table 2.9 Continued

Construct	Types of Construct	Variable	Conceptual definition	Operational definition	Measurement Item	Technique of development	Literature support
		D. Security Level	Borrowers' poverty need to be measured at their business, household, individual and security level in line with HEPM Model (M. Chen & Dunn, 1996)	Microfinance impact indicators include improvements in health, nutrition, education, food security, quality of housing, infant mortality, gender disparities and women empowerment, self-esteem and respect (Epstein & Crane, 2005; Kabeer, 2005)	1. Social: How much you agree that your social security has been increased.	Self - Developed	Reddy and Manak (2005)
					2. Financial: How much you agree that your financial security has been increased.	Adapted from (Al Mamun, Abdul Wahab, & Malarvizhi, 2011)	(Al Mamun, Abdul Wahab, & Malarvizhi, 2011)
					3. Food: How much you agree that your food security has been increased.	Self - Developed	(Epstein & Crane, 2005) (Kabeer, 2005)
					4. Health: How much you agree that your health security has been increased.	Self - Developed	(Epstein & Crane, 2005) (Kabeer, 2005)

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Under the backdrop of aforesaid literatures and Table 2.10, the following hypothesis has been developed for microfinance causal impact on borrowers' poverty.

H₃: Microfinance causes significant impact on borrowers' poverty at business, household, individual, and security level.

If microfinance loan is not returned back, then the whole process will be in question and there would be no impact on borrowers' poverty most apparently. It will be the case that the loan is not used for revenue generating activities to alleviate poverty rather consumed for other purpose. In a sharp comparison to typical bank loan agreements, majority microfinance lending oblige that repayments begin just instantly next to credit given and keep occurring weekly from then on. However, economic theories recommend that more flexible payback program may cause benefit to the borrowers and possibly increase their payback capability. In case of microfinance, the financial discipline enforced by recurrent payback appears significant to prevent loan default (Field & Pande, 2008). Borrowers' different characteristics as below could contribute to loan default:

- Borrower Characteristic – Gender, Living Style, Education Level, Age, Alternative Income and Number of Dependent etc.
- Business Characteristic – Business Type, Revenue Amount etc.
- Loan Characteristic – Repayment Period, Repayment Mode, Alternative Loan, Repayment Amount, Interest Rate etc.

They are discussed in detail in the following paragraphs and hypothesised accordingly:

Gender could be a contributing factor to loan default. Chaudhary and Ishfaq (2003) and Roslan and Karim (2009)s' works exposed that male borrowers are less accountable and less orderly in loan repayment. Santandreu, López Pascual, and Cruz Rambaud (2020) also studied the punctuality of both men's and women's microfinance repayment issues. Under the backdrop of the aforesaid literatures, following hypothesis has been developed, H₄: Gender contributes to loan default.

Age may contribute to borrower's capacity to pay back the loan. Relatively older borrowers are expected to have more responsibility than younger borrowers (Brehanu & Fufa, 2008). Balogun and Alimi (1988) also identified the major cause of loan default as age of borrowers along with other contributing factors. Higher age of the group members had a negative impact on repayment performance (Godquin, 2004). Therefore, H₅: Age contributes to loan default.

Living Style designates as conjugal when a borrower is married and living a conjugal life and as single when a borrower is unmarried or divorced and living a single life. Marriage has been often taken as optimum behavior and family accountability. Since there is no spouse and / or no children to support financially, the single borrower would be less accountable. Single borrower might not need to keep a positive relationship with the microfinance service provider to increase the likelihood of having prospective loan compared to a married borrower (Peng et al., 2009). Santandreu et al. (2020) also studied the punctuality of both men's and women's microfinance repayments for marital status and other factors. Hence, H₆: Living Style contributes to loan default.

A borrower with a relatively higher educational level would be negatively associated with a loan default (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Because learned borrower has management capability and carries out the business operation efficiently and effectively. Arene (1992) measured positive effect of clients' level of education on repayment performance. Khandker, Khalily, and Khan (1995) found training increased repayment performance. Matin (1997) concluded client's level of education had a negatively significant effect on repayment problems. Under the backdrop of the aforesaid literatures, this researcher develops H₇: Education contributes to loan default.

The number of dependants can contribute borrowers' capability for loan repayment. For higher number of dependants, the borrower will face more obligation for their basic amenities and other expenses (Brehanu & Fufa, 2008). However, Mensah, Raphael, Dorcas, and Kwadwo (2013)'s result showed the number of dependents without significant effect on loan default. In this case, it is hypothesized, H₈: Number of dependants contributes to loan default.

Business Type means the borrower's category of business like either an agriculture business or otherwise. For example, microenterprise may be involved in the farming activity or may do small trading. An agricultural business would be associated with a lower cycle of cash flow than a small business (Chaudhary & Ishfaq, 2003). The Business Type variable was significantly related with loan default implying that borrowers involved in agriculture were more likely to have a problem repaying the loan than borrowers involved otherwise (Mokhtar, 2011). Hence, H₉: Business type contributes to loan default.

Monthly Revenue may contribute to the borrower capacity to pay back the loan. A lower amount of business revenue is related to a higher probability of a loan default (Okorie, 1986). This is one of the portfolio indicator how microfinance institute select borrowers. Borrowers higher monthly revenue could be a symptom for good productivity in revenue generating activities. Kasarjyan, Fritzsche, Buchenrieder, and Korff (2007) confirmed high productivity reduced the incidence of repayment problem. Under the backdrop of the aforesaid literatures, this research developed H₁₀: Monthly revenue contributes to loan default.

Alternative Income besides income related to microfinance business will increase the capacity for the borrower to pay back that microfinance loan (Brehanu & Fufa, 2008). It increases the confidence and spirit to take more loans by paying it on time. Furthermore, borrowers' alternative income could be a symptom for good productivity in revenue generating activities. Kasarjyan et al. (2007) confirmed that high productivity reduced the incidence of repayment problem. An inverse relationship between number of sources of income and repayment problem indicated that borrowers with multiple sources of income were less prone to default (Al Mamun, Abdul Wahab, Malarvizhi, & Mariapun, 2011). Therefore, H₁₁: Alternative income contributes to loan default.

Alternative Loan means the additional loans that borrowers have taken other than microfinance loans. Discussion with many borrowers, it has been found that the microfinance loan is not adequate sometimes to run their business operation and therefore they have taken loan from other sources. This creates the additional commitments for extra loan repayment and reduced their capacity to pay back

microfinance loan (Mokhtar, 2011). Under the backdrop of the aforesaid literature, this researcher developed H₁₂: Alternative loan contributes to loan default.

Repayment Mode displays the frequency of loan repayment. It may be weekly or monthly repayment program. Loan default can be associated with repayment mode set by the respective microfinance institution (Derban et al., 2005). The most widespread product, microcredit, has standardized features such as short duration and small weekly instalments starting right after loan disbursement (Laureti, 2012). Deininger and Liu (2009) found high payment frequency increased repayment performance. Therefore, H₁₃: Repayment mode contributes to loan default.

Repayment Period is the period within which the borrowers have to repay the loan back. It can be categorized as long-term for more than one-year period and short term for otherwise. Borrowers having long term mean that they have longer commitment to repay the loan and ultimately it contributes to positive relationship of having a loan default (Roslan & Karim, 2009). However, the work of Field and Pande (2008) concluded that the repayment schedule in microfinance institutions may have effect on loan default. Hence, H₁₄: Repayment period contributes to loan default.

Repayment Amount denotes the amount that has to be paid back by the borrowers in a timely instalment. Unfavorable loan program features such as loan repayment mode and loan instalment amount can contribute to loan default (Derban et al., 2005). However, the work of Field and Pande (2008) concluded that the repayment schedule in microfinance institutions may have effect on loan default. Therefore, H₁₅: Repayment amount contributes to loan default.

Interest Rate denotes the amount that has to be paid back by the borrowers in addition to principal amount receipt by them. Balogun and Alimi (1988) identified the major cause of loan default as high interest rate along with other contributing factors. Microfinance borrowers' business might fail in earning higher rate of return than the high interest rates (Lau, 2018). Hence, H₁₆: Interest rate contributes to loan default.

There might be linkage (positive, neutral or negative) between financial performance and social performance for the microfinance institutions. Bassem (2012) has explored higher financial performance leading to higher social performance and did not find any mission drift between them. However, it may show the presence or

absence of trade-off between these two performances. With reference to Trebucq and d'Arcimoles (2002), there are two hypotheses while assuming the presence of relationship between financial and social performance. The first one is with reference to the "Slack Resources Theory" stating positive / favorable impact of financial performance on social performance of an entity. Some empirical evidences provide support for the slack resources theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988). Under this backdrop, the following hypothesis is developed:

H₁₇: Higher financial performance leads to higher social performance, *ceteris paribus*.

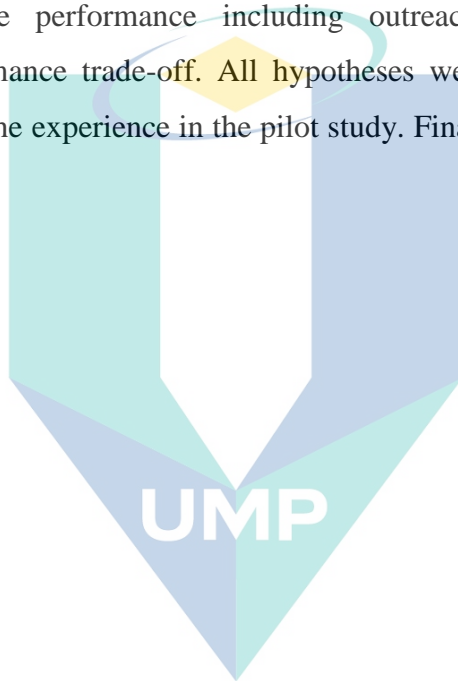
With reference to Trebucq and d'Arcimoles (2002), the second hypothesis is with reference to the "Good Management Theory" stating positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989). Bassem (2012) has also explored higher social performance leading to higher financial performance and found no mission drift between them. Under this backdrop, the following hypothesis is developed:

H₁₈: Higher social performance leads to higher financial performance, *ceteris paribus*.

2.15 Summary of the Chapter

This chapter explored relevant literatures to support this study. It provided an overview of literatures for different aspects of microfinance and its relevance with reference to borrowers' poverty. It explained in detail with different classical and the contemporary works surrounding this study. It started with economic overview of Bangladesh and Malaysia together with growth rate, per capita, and unemployment rate. It discussed how microfinance evolves across the time. It also dealt with different microfinance programs operation in Bangladesh and Malaysia and characteristics of Grameen Bank, BRAC, and TEKUN as selected microfinance institutes of this study. It deliberated different designs used in microfinance operation and the underlying theories behind microfinance success. Research gap and theoretical framework have

been put as formal sketch of the study. Different ways of measuring microfinance impact assessments have been elaborated in this chapter. Poverty incidence and intensity have been discussed through multidimensional poverty index like a thermometer. If the microfinance loan is not returned to the lender, the whole process will be in question and there must be some factors contributing to this consequence. Therefore, it discussed loan recovery and factors responsible thereto. Microfinance is not a money-making machine like other traditional financial institutes rather it should serve for poverty alleviation as social performance. So, it provided details for microfinance institute performance including outreach, sustainability, impact, approach and performance trade-off. All hypotheses were developed in line with previous studies and the experience in the pilot study. Finally, it provided the chapter summary.



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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deliberates research data and research methodology. Specifically, Section 3.2 discusses research approach and research philosophy. Section 3.3 delivers the research design for the study. Section 3.4 provides particulars of the population and sampling whereas Section 3.5 denotes research period research data of the study. Section 3.6 describes sampling size and Section 3.7 discusses constructs and items for PLS-SEM. Section 3.8 and Section 3.9 elaborate impact assessment and poverty incidence and intensity methodology, respectively. Section 3.10 provides the technique to find out determinants for loan default and finally, Section 3.11 deliberates different indicators for microfinance institute performance followed by a summary in Section 3.12.

3.2 Research Approach and Philosophy

Research approach is the set of procedures on which research will rely when implementing a study. It may have three possibilities such as deductive, inductive, and abductive research approach. In deductive approach, it goes from theory to data whereas in inductive approach, it goes from data to theory (Woiceshyn & Daellenbach, 2018). However, in abductive approach, it goes for mixture of induction and deduction and it appears more complicated. Deductive approach has been taken in this study. There is microfinance theory and it has been applied for borrowers' poverty alleviation and our data will either approve or disapprove what is happening in reality.

There is also another perspective to see research approach. Generally speaking, there are three research approaches namely quantitative, qualitative and mixed approach (Creswell, 2014). This study typically chooses a research approach for each research question it has been planned to investigate and then identify the overall approach that describes the study as a whole. When all of our research questions

answer quantitatively, it is a quantitative approach. When it attempts to answer the research questions qualitatively, it is a qualitative approach. When one or more of the research questions answers quantitatively and qualitatively, it labels the entire study as mixed approach. Here, this study uses quantitative approach for some research questions and qualitative approach for other research questions without mixing the data. In this study, it is actually mixed approach. HEPM is quantitative approach and M-HEPM is qualitative approach.

The way it has been designed the research and the methods it has been used, are also related to philosophical worldviews (Holden & Lynch, 2004). There are four different philosophical worldviews namely postpositivism, constructivism, transformatism, and pragmatism. Postpositivism includes theory verification. Researchers observe and measure things and try to verify the assumption about the world (Fox, 2008). Constructivism is more about theory generation from observing different phenomena. Transformatism is change oriented and more political towards increasing justice and giving voice to the people. Finally, Pragmatism is really focusing on trying to solve real world problems and give optimum solutions. In this study, it has been verified whether microfinance is working for poverty alleviation. Philosophically, it is more in theory verification that leads this research to postpositivism worldviews.

3.3 Research Design

Research design is the framework that is used to collect and analyse data. The research type, research approach, research philosophy, population and sampling, time period, sampling design, research data, independent and dependent variable, and research tool are determined during the design phase. Since this study seeks to describe whether microfinance is alleviating poverty, it could be categorized as 'Descriptive Research'. It covers microfinance impact on borrowers' poverty in Bangladesh and Malaysia. This research scope is limited with GB and BRAC for Bangladesh and TEKUN for Malaysia as they are serving the highest number of borrowers. No comparison has been made among these groups as they are different by their respective products and services.

3.4 Population and Sampling

Grameen Bank has total enrolment of about 8.93 million borrowers. At this level, the Bank's membership is higher than at least 100 countries in the world. The Bank dispenses its services through 40 zonal, 246 area and 2,568 branch level offices, Bank's network now encompasses 81,400 villages i.e. over 93.16% of the country's 87,362 villages. A questionnaire survey has been conducted in four division of Bangladesh namely Rajshahi, Dhaka, Khulna and Chittagong for which GB has operation and borrowers are accessible (Please see Figure 3.1). Rajshahi division has 11 zones namely Thakurgaon, Nilphamary, Kurigram, Dinajpur, Rangpur, Gaibandha, Nogaon, Bogra, Rajshahi, Sirajgong and Pabna. This researcher has randomly selected 4 zones namely Nilphamary Gaibandha, Rajshahi and Pabna out of these 11 zones. Dhaka division has 13 zones namely Sherpur, Jamalpur, Tangail, Mymensing, Netrkona, Gazipur, Kishoregonj, Sunamgonj, Shylhet, Hobigonj, Narsindi, Narayangonj and Manikgonj. This study has randomly selected 4 zones namely Mymensing, Kishoregonj, Shylhet and Hobigonj out of these 13 zones. Khulna division has 9 zones namely Jhinaidah, Jessore, Faridpur, Khulna, Madaripur, Barisal, Patuakhali, Bhola and Pirojpur. 4 zones have been randomly selected namely Jhinaidah, Khulna, Madaripur and Pirojpur. Chittagong Division has 7 zones namely Chandpur, Comilla, Noakhali, Feni, Chittagong, Rangamati and Coxbazar. 4 zones have also been randomly selected namely Chandpur, Comilla, Feni and Rangamati out of these 7 zones.

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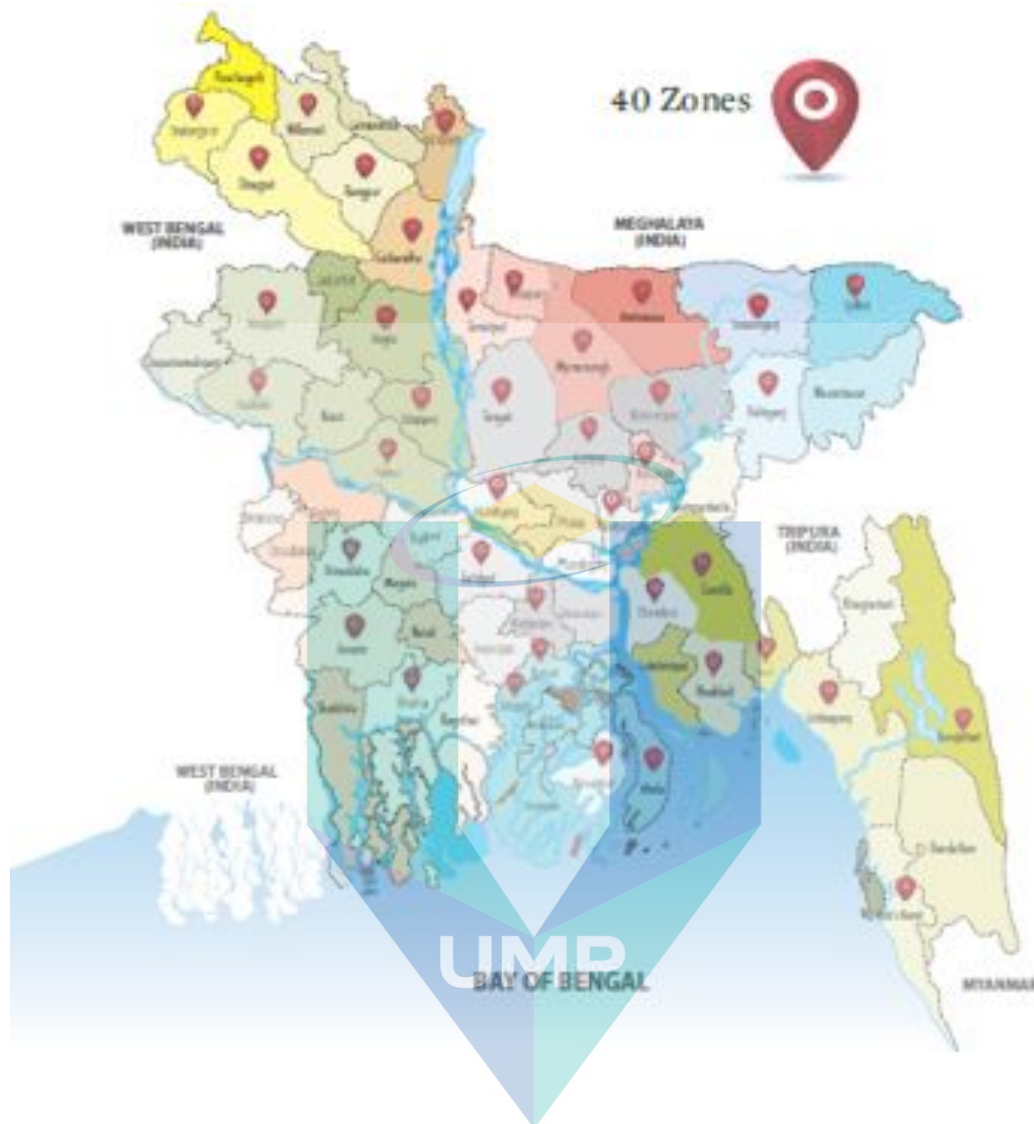


Figure 3.1 Study Area: Bangladesh
 Source: Google Bangladesh Map

Thereafter, 25 respondents have been randomly selected from each aforesaid randomly selected 4 zones for 4 divisions that make total sample size 400 for each group of participant and non-participant borrowers (25 randomly selected respondents \times 4 randomly selected zones \times 4 divisions \rightarrow Total 400 respondents) (Please see Figure 3.2). BRAC has total 4.19 million borrowers and 279,175 village organizations all over aforesaid four divisions of Bangladesh. Since it has operation and accessibility in similar areas of Grameen Bank, it is followed by the same procedure for BRAC as well. While selecting participant borrowers from any particular area, non-participant borrowers have also been selected objectively by snowballing them to the best extent possible within same microfinance institute among their nearest relatives, friends, neighbors etc. so that they are comparable in the same socio-economic background.

Face to face interviews are conducted with questionnaire as per Appendix B for both participant and non-participant borrowers.

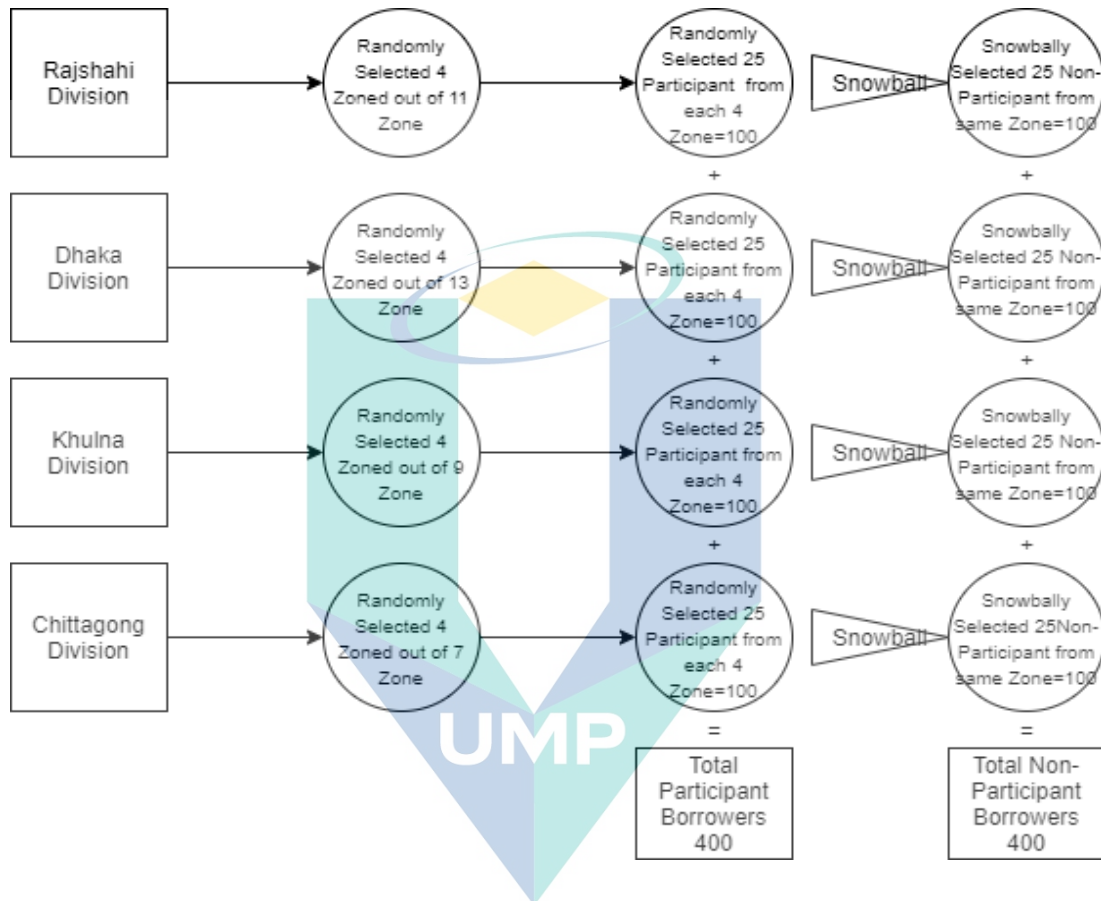


Figure 3.2 Respondent Selection Flow-Chart: Bangladesh

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 TEKUN delivers the services of microfinance all over Malaysian states namely
 Johor, Kedah, Kelantan, Kuala Lumpur, Melaka, Negeri Sembilan, Pahang, Perak,
 Perlis, Palau Pinang, Sabah, Sarawak, Selangor and Terengganu (Please see Figure
 3.3).
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Figure 3.3 Study Area: Malaysia

Source: Google Malaysia Map

TEKUN got about 557,947 borrowers in July 2019 TEKUN (2019b). For this microfinance institute, a questionnaire survey has been conducted in the four randomly selected states namely Selangor, Pahang, Sembilan, and Terengganu. The respondents are selected randomly from the regional areas of selected states for which it has operation and borrowers are accessible. This study has randomly selected 100 respondents from each aforesaid states that make total sample size 400 for each group of participant and non-participant borrowers (100 randomly selected respondents \times 4 randomly selected states \rightarrow Total 400 respondents) (Please see Figure 3.4). While selecting participant borrowers from any particular area, non-participant borrowers have also been selected objectively by snowballing them to the best extent possible within same microfinance institute among their nearest relatives, friends, neighbors etc. so that they are comparable in the same socio-economic background.

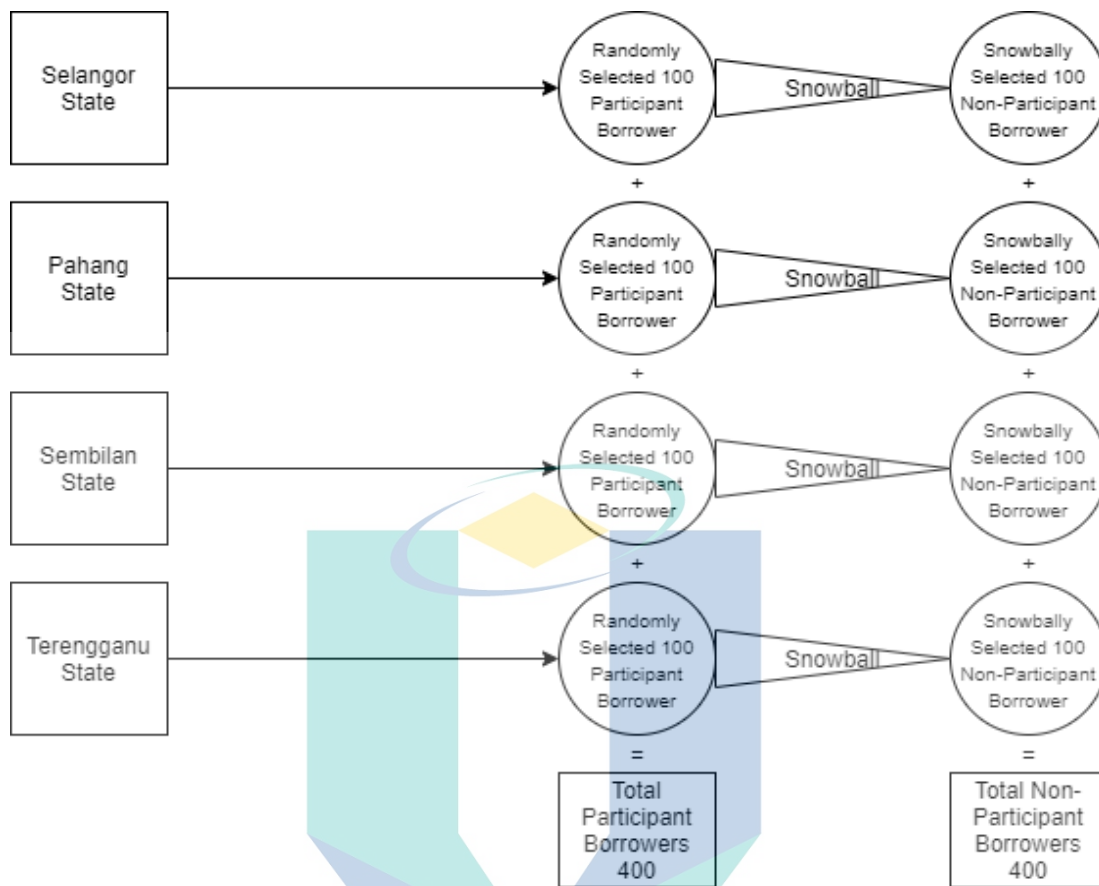


Figure 3.4 Respondent Selection Flow-Chart: Malaysia

3.5 Research Period and Research Data

Respondents are selected from those borrowers who have completed minimum one-year microfinance intervention within the latest five years namely 2014, 2015, 2016, 2017, and 2018. The new borrowers for 2019 were not included in the sample as they did not complete one-year operation. Their responses have been collected through survey questionnaires during the middle of 2019 for both the countries. Secondary data for microfinance institute performance are from annual Microcredit Regulatory Authority (MRA) Report for each year ended 30 June of 2015, 2016, and 2017. Latest five years cannot be included due to limited access of same nature of data specifically for 2014 and 2018. Secondary data for microfinance institute performance analysis is only for Bangladesh. Malaysia microfinance institute performance could not be done due to non-availability of data.

Both the primary and secondary data are used in this research. Primary data are collected by face to face interview using close-ended questionnaires as per Appendix

B. A pre-test of the designed questionnaire has been carried by selecting 30 borrowers for each selected microfinance institution before the main survey. This helps to assess the precision, reliability, and correctness of the questionnaire. The survey questions are modified or amended through the feedback of comments and recommendation from this pilot survey. The survey has been conducted from July 2019 and continue up until December 2019 because of huge amount of data and scattered borrowers in delta Bangladesh and peninsular Malaysia. Research data has been processed with Excel, SPSS, STATA, and Smart PLS as per the requirement of the relevant objective in this study.

With reference to Appendix B, the survey questionnaires are allocated into eight sections. Section-1, Section-2 and Section-3 have been designed to observe the demographic, business, and loan characteristics of borrowers respectively. Section-4, Section-5, Section-6 and Section-7 have been designed to observe the impact of microfinance on borrower business, household, individual and security level respectively and finally, Section-8 constructs the poverty index for different dimensions of borrowers. To save time and to simplify the borrowers answer, close-ended questionnaires has been used in the survey. Few minutes are required to fill up the questionnaires. The respondents completed the questionnaires at the time of their trainings, loan repayments or other purposes in their respective microfinance institutions when intercepted face to face. Many respondents also completed the questionnaire at their homes, weekly meetings, social gatherings, or convenient places after perusing them face to face.

In the case of secondary data, all three microfinance institutions (GB, BRAC and TEKUN) are strict about disseminating financial and other information regarding the institution. Hence, secondary data are obtained from available public domain and website of the respective microfinance institutions. The information gathered includes the introduction of the institution, the total number of borrowers, staff and branches, social and financial indicators, etc.

3.6 Sampling Size

This research takes both participant (Experiment Group) and non-participant (Control Group) borrowers from GB, BRAC, and TEKUN to investigate the impact of microfinance on poverty in Bangladesh and Malaysia. Different microfinance scheme borrowers from several sectors like small entrepreneurs, agricultural plantation, service sectors, animal husbandry, small-scale manufacturing and fishery are randomly selected for this research. Simple Random Sampling has been used to select and interview borrowers.

With reference to Krejcie and Morgan (1970), this study required about 400 borrowers from each microfinance institution under study (GB, BRAC, and TEKUN) in calculating the satisfactory sample response (Please see Appendix A). This table is simple and convenient in determining sample size. The sample size must be greater than the planned sample responses required to overcome sample attrition. The rate of response pointed out in various survey questionnaires in past studies were generally between the ranges of 60% to 90% (Coleman, 1999; Husain, 1998). The calculated working sample sizes for this research were 500 by taking about 80% estimated rate of response or some incomplete response.

3.7 Constructs and Item for PLS-SEM

3.7.1 Item Generation

With respect to causal impact of microfinance on poverty, the constructs have been developed using various scales. Multi- items constructs are used to represent the comprehensive impact assessment in line with HEPM Model. Churchill Jr (1979) suggested multifaceted or multi-items construct to observe a particular phenomenon that would be more inclusive and comprehensive for plotting the whole scenario explicitly. The research items have been selected based on their reliability and validity together with HEPM framework that capture the constructs domain. Most of the scales were adapted from previous studies and few were self-developed for this study. Table – 3.1 lists the number and sources of the items used to measure each construct.

Table 3.1 Total of Scale Items Used to Measure Each Construct

Construct	Number of Items	Source
Microfinance	1 item	(M. Robinson, 2001)
Poverty		(J. Chen, 2019)
Business Level	4 items	(Dunn & Arbuckle, 2001a; Mokhtar, 2011)
Household Level	4 items	(Mokhtar, 2011; Nader, 2008)
Individual Level	4 items	(Al Mamun, Abdul Wahab, & Malarvizhi, 2011; M. Chen & Dunn, 1996)
Security Level	4 items	Self - Developed

3.7.2 Operationalization of the Construct

This research operationalizes its constructs using Likert Scale. The poverty variables (e.g. Business Revenue, Fixed Asset etc.) have been measured by respondent's score in the Five Point Likert Scale as per the survey questionnaire (Appendix B): The given scale is as below:

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Respondents are requested to score how much they agree about positive difference on their poverty variables. Multiple items are measures in business, household, individual and security level that avoid the drawbacks of using single item and it also ensures comprehensive measure in all dimension of poverty to tackle fungibility issues in microfinance assessment.

3.7.3 Exogenous Construct

This study used microfinance as an exogenous construct containing one categorical item. Microfinance presents small magnitude of financial services primarily microcredit designed for borrowers living below poverty line (M. Robinson, 2001). In this study, Microfinance is a categorical variable represented through either participant or non-participant borrowers. More specifically, participant category means

microfinance institutes (In this case GB, BRAC and TEKUN) give small loans to participant borrowers for alleviating poverty through revenue generating activities.

3.7.4 Endogenous Construct

This study used poverty as endogenous construct at business, household, individual, and security level in line with HPEM framework. Poverty is a state or condition in which a person or community lacks resources essential for minimum life standard and living below national poverty line (J. Chen, 2019). Hagenars and De Vos (1988) defined poverty as a feeling that people do not have enough to get along. In this study, poverty is measured in relative term (Change in borrowers' poverty position) rather than in absolute term (Mokhtar, 2011). It is done by different poverty variables (e.g. business revenue, fixed assets, etc.) of participant and non-participant borrowers through five point Likert scale.

3.7.5 Measurement of Items

Microfinance success has been depending on the positive impact on borrowers' poverty through using this loan. Economic or social benefit for the borrowers may happen through starting revenue generating activities. Since the microfinance fund providers invest their money, they need to know how this small loans are performing for alleviating poverty. Microfinance investors like others always demand good or at least acceptable return on their investments based on risk of the portfolio. There are two identifiable impacts on the borrowers' poverty due to microfinance. The preliminary impact may be intermediate outcome through borrowers' nutrition intake, other consumption, increased income and expenditure, wealth accumulation, qualitative children education, employment generation, savings etc. The final impact may occur when microfinance borrowers get rid of poverty at the end. If we combine overall microfinance impact on borrowers' poverty together, it may happen at three level such as borrowers' businesses, households and individual level plus borrowers' security level. When microfinance makes significant welfare impact on borrowers' poverty, it can be claimed that microfinance programs are successful or it is a good performance as development tool. Table – 3.2 lists the measurement of items at business, household, individual, and security level.

Table 3.2 Measurement of Items

No.	Original Scale Item / Concept	Modified Item	Tech. of Develop.	Source
1. Microfinance	Participant borrowers take loan for alleviating poverty.	GB, BRAC and TEKUN borrowers take loan for alleviating poverty.	Adapted	(Mosley, 1997) (Armendáriz & Morduch, 2010)
2. Poverty	Poverty is a state or condition in which a person or community lacks resources.	Poverty is measured in relative poverty position.	Adapted	(J. Chen, 2019), Hagenaars and De Vos (1988)
2.1 Business Level				
2.1.1 Business Revenue	Microfinance made positive impact on the microenterprise revenue.	Microfinance increased business revenue.	Adapted	(Mokhtar, 2011)
2.1.2 Fixed Asset	Microfinance made positive impact on the microenterprise asset.	Microfinance increased fixed asset.	Adapted	(Mokhtar, 2011)
2.1.3 Current Asset	Concept from (Hossain & Diaz, 1997) - Microfinance made positive impact on growth and asset.	Microfinance increased current asset.	Self-Dev. -	
2.1.4 Employment	Microfinance made positive impact on the microenterprise employment.	Microfinance increased employment.	Adapted	(Mokhtar, 2011)
2.2 Household Level				
2.2.1 Household Income	Microfinance increased house quality.	Microfinance increased household income.	Adapted	(Mokhtar, 2011)
2.2.2 Immovable Property	Concept from (Coleman, 2002) - Microfinance increased household and firming land.	Microfinance increased immovable property.	Self-Dev. -	
2.2.3 Movable Property	Concept from (Coleman, 2002) - Microfinance increased household appliance and livestock.	Microfinance increased movable property.	Self-Dev. -	

2.2.4 Expenditure	Microfinance increased household income that cause increase expenditure.	Microfinance increased expenditure.	Adapted	(Mokhtar, 2011)
2.3 Individual Level				
2.3.1 Control	Microfinance caused rise in borrower's self-esteem.	Microfinance increased control.	Adapted	(Al Mamun, Abdul Wahab, & Malarvizhi, 2011)
2.3.2 Honor	Microfinance caused rise in borrower's self-esteem.	Microfinance increased honor.	Adapted	(Mokhtar, 2011)
2.3.3 Capacity	Concept from (Woller & Parsons, 2002) - Microfinance raised borrower's effectiveness in coping shocks.	Microfinance increased capacity.	Self-Dev.	-
2.3.4 Confidence	Microfinance raised borrower's effectiveness in coping shocks.	Microfinance increased confidence.	Adapted	(Mokhtar, 2011)
2.4 Security Level				
2.4.1 Social	Concept from (Epstein & Crane, 2005) -Microfinance improved gender disparities and empowerment.	Microfinance social security.	Self-Dev.	-
2.4.2 Financial	Microfinance improved savings.	Microfinance financial security.	Adapted	(Al Mamun, Abdul Wahab, & Malarvizhi, 2011)
2.4.3 Food	Concept from (Epstein & Crane, 2005) -Microfinance improved nutrition and food.	Microfinance food security.	Self-Dev.	-
2.4.4 Health	Concept from (Epstein & Crane, 2005) - Microfinance improved health and quality of life.	Microfinance health security.	Self-Dev.	-

3.8 Impact Assessment Methodology

3.8.1 Household Economic Portfolio Model (HEPM)

This model hosted by AIMS (Assessing the Impact of Microenterprises Services) in 1996 has been used in this study to measure microfinance impact assessment on the borrowers. This had been applied by Dunn and Arbuckle (2001b) to evaluate microfinance impact assessment. It recommended that the impact assessment research should be conducted at the following three levels such as Microenterprise Level, Household Level, Individual Level. The HEPM model has been selected for this research because it can resolve the fungibility problem that is quite common in microfinance impact assessment. The problem arises when a microfinance impact study has been conducted solely on the microenterprise, household or individual. Because it causes over estimation of the impact of the borrowed loan. In order to overcome the issue, this impact study conglomerates the impact of microfinance on the business, household, and individual borrowers in one research.

Business Level: Business revenue is the microenterprise income generated by the borrower through business activities that use both fixed assets like land, premises, equipment, tools, etc. and current assets like cash, inventory, etc. Employment means the borrowers self-employment plus any human resource hired by them to run business activities. T. Islam (2007) together with Hossain and Diaz (1997) established the fact that the profitability and growth of microenterprise business thorough microfinance are correlated with the growth of its fixed assets and employment generation. Many borrowers could not afford to purchase land to carry out their business before getting microfinance loans. They have to either lease or rent to serve the purpose. Furthermore, the borrowers have to use old and poor business premises with restricted equipment and tools. M. Chen and Dunn (1996) found that borrowers would be able to buy new land, increase quality business premises, increase equipment and tool and recruit human resources with microfinance.

Household Level: Household income may come from totally microenterprise business revenue if the borrowers do it solely. Otherwise, it may be from partly income done with the business partners. Borrowers' immovable property contains house, household land, firming land, etc. and the movable property contains household

appliances, livestock, etc. The impact of microfinance will increase house quality, number of appliance, household land, firming land and number of livestock as well (Coleman, 2002; Dunn & Arbuckle, 2001a; Khandker et al., 1998; Nader, 2008). The household's growth of income has been also helping to rise the borrower's expenditure education Dunn and Arbuckle (2001b). The increase in the household's income will also expect to increase family spending on food (Khandker, 2005; Zaman, 1999).

Individual Level: This level means borrowers' individual empowerment with the sound socio-economic positions. M. Chen and Dunn (1996) stated five important variables such as the borrowers' control of business and family, borrowers' self-esteem, borrowers' savings, borrowers' attitude towards the future and borrowers' effectiveness in managing unfavorable shocks. Female borrowers' power in decision making about the resource distributions in their businesses and households provides the clue to overall control of business and family. Male typically have superior control over decision-making. This research examines whether female borrowers have a superior voice in business and family decisions after they got microfinance credit. Woller and Parsons (2002) found that revenue generated from the business would make the borrower contribute to the household. This results in a rise in the borrower's self-esteem or honor. M. Chen and Dunn (1996) and Dunn and Arbuckle (2001b) opined that the growth in the business will increase the borrower's effectiveness in coping with effectiveness in managing unfavorable shocks. It may increase borrower capacity building. Hashemi et al. (1996) established better stability and higher growth in the business after getting the microfinance credit. It means that microfinance will provide confidence towards the future.

Security Level: Microfinance impact indicators include improvements in health, nutrition, education, food security, quality of housing, infant mortality, gender disparities and women empowerment, self-esteem and respect (Epstein & Crane, 2005; Kabeer, 2005). Mokhtar (2011) found that microfinance promoted borrowers in many ways like decision making, self-esteem, etc. and economic or financial security increasing personal savings, more optimistic for future, effectiveness in coping with negative shocks. Nader (2008) and Hashemi et al. (1996) also showed that microfinance provided financial and social security to the borrowers. Based on these indicators and experience of the questionnaire survey, this study found that many

microfinance borrowers have impacts in terms of their respective security level from different perspectives. Hence, this level has been added with previous three levels and measured in line with them. The security level impact has been further split into social, financial, food and health levels as per discussion and experience with the borrowers in the pilot survey.

This research finds out the impact of microfinance on different poverty variables at borrowers' business, household, individual and security level in Bangladesh and Malaysia. Afrane (2002) studied ex-ante and ex-post analysis for microfinance intervention in Ghana and South Africa. His studies had been done to establish the extent of changes from microfinance interventions on clients' poverty as they got benefit from the programs. Here, respondents were compared with their poverty position before they joined the programs with their respective position after the intervention. The assumption taken here had been that respondents would be able to remember accurately and fairly their historical poverty position before benefiting from microfinance. Dhungana et al. (2016) asked participants about their health awareness and practices, before and after microfinance intervention with the limitation that there was a possibility of recall bias. Their study reported positive effect of microfinance on self-reported health awareness and practices among different ethnic groups of Nepal.

This research also uses before and after approach in evaluating the impact of microfinance on the borrowers' poverty variables. This approach has also been used subsequently by Mokhtar (2011) for microfinance impact assessment in Malaysia. The impact has been observed through finding the difference on poverty variables within participant and non-participant borrowers (Within impact) and between participant and non-participant borrowers (Between impact). The poverty variables (e.g. Business Revenue, Fixed Asset etc.) have been measured by respondent's score in the Five Point Likert Scale as per the survey questionnaire (Appendix B): The given scale is as below:

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Respondents are requested to score how much they agree about positive difference on their poverty variables. Since it happens within the same borrowers

before microfinance and after microfinance, this has been termed as within impact for both type of borrowers as hypothesized below:

H₁: Microfinance makes significant difference on borrowers' business (Business Revenue, Fixed Asset, Current Asset and Employment), household (Household Income, Immovable Property, Movable Property and Expenditure), individual (Control, Honor, Capacity and Confidence) and security (Social, Financial, Food and Health) level **within** participant borrowers and non-participant borrowers.

Chi-Square Test has been used to measure whether there is significant difference of microfinance on borrowers' business, household, individual, and security levels **within** the participant borrowers (Experiment Group) and the non-participant borrowers (Control Group). A typical calculation is given below to show the difference on borrowers' poverty variables (e. g. Business Revenue) for microfinance:

In case of Business Revenue, the participant borrowers responded in the following ways:

Observed Frequency for Business Revenue					
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
19	78	85	119	99	400

If there is no difference for microfinance, the participant borrowers should have responded close to the following ways:

Expected Frequency for Business Revenue					
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
80	80	80	80	80	400

Chi-Square Test finds out the significant difference in the observed and expected frequency. If the favorable difference is statistically significant after microfinance treatment, it can be shown that microfinance has significant positive impact on borrowers' business revenue. In the same way, it can be applied for other poverty variables at different levels.

This research also compares the difference between participant borrowers (Experiment Group) and non-participant borrowers (Control group). Since it happens between participant borrowers and non-participant borrowers, this has been termed as between impact as hypothesized below:

H₂: Microfinance makes significant difference on borrowers' business (Business Revenue, Fixed Asset, Current Asset and Employment), household (Household Income, Immovable Property, Movable Property and Expenditure), individual (Control, Honor, Capacity and Confidence), and security (Social, Financial, Food and Health) level **between** participant borrowers and non-participant borrowers.

Mann Whitney U-Test has been used to compare medians between participant borrowers and non-participant borrowers. This test has been used to measure whether participant borrowers have differences with non-participant borrowers in term of their level of poverty variables. If participant borrowers have higher level of business revenue, it can be shown that microfinance has significant positive impact on borrowers' business revenue. In the same way, it can be applied for other poverty variables at different levels.

It has been more than a century; social scientists use statistical tools in their research. Computer hardware and software advancement have made statistical tools application more dramatically expanding. More specifically, user-friendly interfaces with high tech knowledge in currents years give enormous access to many more advance statistical methods. In past years, Researchers primarily depend on univariate and bivariate investigation to comprehend data and relationships. It has been gradually obligatory to apply more sophisticated multivariate and multifaceted data analysis methods to understand more complex relationships associated with current research directions in the social sciences. Multivariate or multifaceted analysis include statistical application method dealing with multiple variables simultaneously. These multiple dimensions naturally include measurements related to persons, firms, events, activities, circumstances, and so on. The data are frequently obtained from surveys or observations through collecting primary data and sometimes through secondary data from databases.

The statistical methods based on regression approaches such as multiple regression, logistic regression and analysis of variance, factor analysis, cluster analysis and multidimensional scaling have often been used by social scientists are typically called first-generation techniques. These methods have been used to either confirm a priori established theories or identify data patterns and relationships as applied to any particular research question. When testing the hypotheses of existing theories and concepts, they are called confirmatory research. When search for patterns in the data in case there is no or only little prior knowledge about variables association, they are called exploratory research. It is important to note that the distinction between confirmatory and exploratory is not always as clear-cut as it seems (Hair, Hult, Ringle, & Sarstedt, 2016). This research uses exploratory concept to materialize microfinance impact on borrowers' poverty represented by multifaceted measurement items. This technique has been used to explore whether additional poverty items prove valuable for extending the concept being tested. Exploratory analysis has been applied to this data set that helps to understand relationship in an effort to reduce a large number of items to one poverty construct. However, while the technique is exploratory in nature, having a priori knowledge through HEPM Model guided the decision on how many items are needed to be considered. It has been turned to second-generation techniques following Structural Equation Modeling (SEM) to overcome the limitations of first-generation methods. This technique enables us to incorporate unobservable variables measured indirectly by indicator variables. It also facilitates accounting for measurement error in observed variables (Chin, 1998). There are two types of Structure Equation Modeling. One is Covariance-Based SEM (CB-SEM) and another is Partial Least Squares SEM (PLS-SEM). This researcher used PLS-SEM to explore the relationship between microfinance and poverty. This has been done through focusing on explaining the variance when examining the model. Furthermore, Farahani, Rahiminezhad, and Same (2010)'s findings indicated that the PLS model provides much more stable results than the OLS model in their studies.

Regression analysis with Partial Least Square - Structure Equation Modeling (PLS – SEM) has been used to measure whether there is significant impact of microfinance on borrowers' poverty at business, household, individual and security level. In order to operationalize the HEP framework, the study has taken twelve items

as per HEPM plus four more for security level. As it has been known, model estimation brings empirical measures of the relationships between the indicators and the constructs (Measurement Model) and between the constructs (Structural Model). The empirical measures enable to compare the theoretically established measurement and structural models in reality through research data. In other words, it can be observed how well the theory fits the data. PLS-SEM model assessment initially focuses on the measurement models. Examination of PLS-SEM estimates enables to evaluate the reliability and validity of the construct measures. More specifically, multivariate measurement involves using several variables (i.e., multi-items) to measure a construct. Here, poverty is the construct or latent variable reflected by sixteen variables such as Business level – Business Revenue, Fixed Asset, Current Asset and Employment, Household level – Household Income, Immovable Property, Movable Property and Expenditure, Individual level – Control, Honor, Capacity and Confidence and Security level – Social, Financial, Food and Health. The logic of using multiple items as opposed to single items for construct measurement is that the measure will be more accurate. The anticipated improved accuracy is based on the assumption that using several indicators to measure a single concept is more likely to represent all the different aspects of the concept. However, even when using multiple items, the measurement is very likely to contain some degree of measurement error. This research puts every effort to reduce the measurement error to the best extent it is possible. Multifaceted measurement enables us to more precisely identify measurement error and therefore account for it in research findings. This study deals with the following hypothesis through PLS-SEM Modeling:

H₃: Microfinance makes significant impact on borrowers' poverty at business, household, individual, and security level.

This study intends to follow some indices cited from Ramayah, Cheah, Chuah, Ting, and Memon (2018) for measurement model and structural model for selected microfinance institutes repeatedly - GB, BRAC, and TEKUN. A summary of indices are gives in Table – 3.3.

Table 3.3 Summary of Indices for PLS-SEM Modeling

Measurement Model Analysis using PLS-SEM			
Assessment	Name of Index	Definition	Reference Value
Internal Consistency	Composite Reliability (CR)	It measures items within the construct have similar range and meaning	CR > 0.7-0.9 Satisfactory (Hair et al., 2016)
	Factor Loadings (FL)	It denotes the proportion of indicators variance that is explained by the latent variable.	FL > 0.40 Adequate (Hulland, 1999)
Convergent Validity	Average Variance Extracted (AVE)	It is the grand mean value of the squared loadings of all indicators associated with the constructs.	AVE > 0.50 Adequate (Hair et al., 2016)
	Heterotrait-Monotrait Ratio (HTMT)	It refers to the ratio of correlation within the constructs to correlation between the constructs	HTMT Ratio < 0.90 Conservative (Gold, Malhotra, & Segars, 2001)

Table 3.3 Continued

Structural Model Analysis using PLS-SEM			
Assessment	Name of Index	Definition	Reference Value
Lateral Collinearity	Variance	It deals with collinearity problem.	VIF > 0.50 (Hair et al., 2016)
	Inflator Factor (VIF)		
Path Coefficient	Path Coefficient	It is the beta coefficient.	P < 0.05 At 5% Significance level
Co-efficient of Determination	R ²	It measures model's predictive accuracy.	R ² >0.67,0.33,0.19; High, Moderate, Week respectively (Chin, Marcolin, & Newsted, 2003)
Effect Size to R ²	f ²	It assess how strongly one exogenous construct contributes to explain endogenous construct in terms of R ²	f ² >0.35,0.15,0.02; High, Moderate, Week respectively (Cohen, 1988)
Predictive Relevance	Q ²	It indicates whether exogenous constructs have predictive relevance for endogenous construct.	Q ² > 0 (Hair et al., 2016)

3.8.2 Modified Household Economic Portfolio Model (M - HEPM)

With reference to Review of Literature in Chapter 2, E. Dunn (2002) suggested a mixed method in the application of HEPM. He recommended a combination of

survey and case study. Therefore, it becomes a comprehensive model by two kinds of information. One is quantitative relating to size and direction and another is relating to the process through which microfinance impact happens (E. Dunn, 2002). After evaluating HEPM, Alia et al. (2017) also suggested a modified version of the portfolio model. They recommended using M-HEPM to overcome the two limitations of the diversity of impact and absence of records. For the former, they suggested simplifying the HEP and, for the latter, they suggested using diaries instead of experiments. As per their suggestions, the microfinance impact can be evaluated from analysing borrowers' diary. They did a case study on a single borrower named Sarah through financial and activity diaries showing two-week period and analysed her dairies for impact assessment through modified HEPM. Therefore, each borrower diary can be taken as a case study.

In this research, five diaries have been taken covering each three months' period for the experiment group (Participant borrowers) and the control group (Non-participant borrowers) of GB, BRAC, and TEKUN borrowers. Although the number of diaries have been considered small for statistical representation, the quality of the data is satisfying enough to understand the difficult circumstances of the sampled respondent that are similar to the circumstances of millions of others in the country (Rutherford, 2003). Subsequently, those case studies experiences are accumulated to conclude for impact of microfinance on borrowers qualitatively. Typical Financial diary and Activity diary have been given in Table 3.4, and Table 3.5 respectively for each case study of a borrower.

Table 3.4 Financial Diary of a Borrower

Time-Period:	Receipts	Payments
Balance b/d		Food
Income		Cloths
Loan		Medical
Donation		Entertainment
Others		Consumables
		Saving
		Refund
		Others
		Balance c/d

Table 3.5 Activity Diary of a Borrower

Date	Activity
Time	
Hour 00.00	
Hour 01.00	
Hour 02.00	
Hour 03.00	
Hour 04.00	
Hour 05.00	
Hour 06.00	
Hour 07.00	
Hour 08.00	
Hour 09.00	
Hour 10.00	
Hour 11.00	
Hour 12.00	
Hour 13.00	
Hour 14.00	
Hour 15.00	
Hour 16.00	
Hour 17.00	
Hour 18.00	
Hour 19.00	
Hour 20.00	
Hour 21.00	
Hour 22.00	
Hour 23.00	
Hour 24.00	

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Microfinance research by financial dairies: In Bangladesh, David Hulme and Stuart Rutherford applied respondents' financial dairies in microfinance research for the first time during 1999-2000. This assists understanding poor borrowers' financial requirements and resource movements in conducting their daily lives. Every borrower should be visited weekly for checking the daily monetary transaction noted down in an idle manner and recommend revision whenever required. Borrowers require to compose every transaction with date, worth and reason behind it. Their life quality is surely understood by this technique despite the fact that number of diarist is

few (Rutherford, 2003). This scrutiny pointed out whether poor borrowers have optimum monetary transaction and alternative choices. Focused income and expenditure categories may be reviewed to find the complete outlook of the borrowers' livelihood. At the point when borrowers are investing in accumulating physical, intellectual and financial capital, they are mitigating poverty or in any case the other way around.

Microfinance research by activity diaries: Some researchers used activity diary to find out related poverty level as discoursed onwards. This activity diary is also called time-use diary. Up until now, many household activities like production, consumption, savings, etc. are not able to draw substantial research attention. Time use diary may supply important information for measuring socio-economic inter-household activities, more specifically through division of labour (Gammage, 2010). Respective borrowers' welfare can be observed through the allocation of their individual time in different household activities. At the point when level of poverty is measured, both time and resource utilization are significant for drawing conclusion (Bardasi & Wodon, 2010). It is critical to separate between production-oriented (unpaid and paid job) and consumption-oriented (leisure and sports) time use (Burchardt, 2008). Goodin, Rice, Bittman, and Saunders (2005) thought sketching out time poverty line as a measure of time poverty in contract with income poverty line. There might be a base measure of time setting below which the borrowers could be viewed as time-poor. The amount of necessary time may be defined for essential personal care time and unpaid household labor time. Comparatively small amount of time for investment in the human capital seems a symptom of time poverty (Gammage, 2010). Contemplating time allocation in poverty-related studies is related generally with gender issues and the division of household labor and market labor time between male and female. Estimating microfinance impact on female borrowers' ought to consider the inter-household time used by female between paid employment and nonpaid housework.

Activity diaries display the reasons why borrowers are poor by analysing the summary of time-use. It is quite apparent that poverty is resulting from lack of paid job. This researcher classified the activities according to Maslow (1943)'s hierarchy of needs as presented in Figure 3.5.

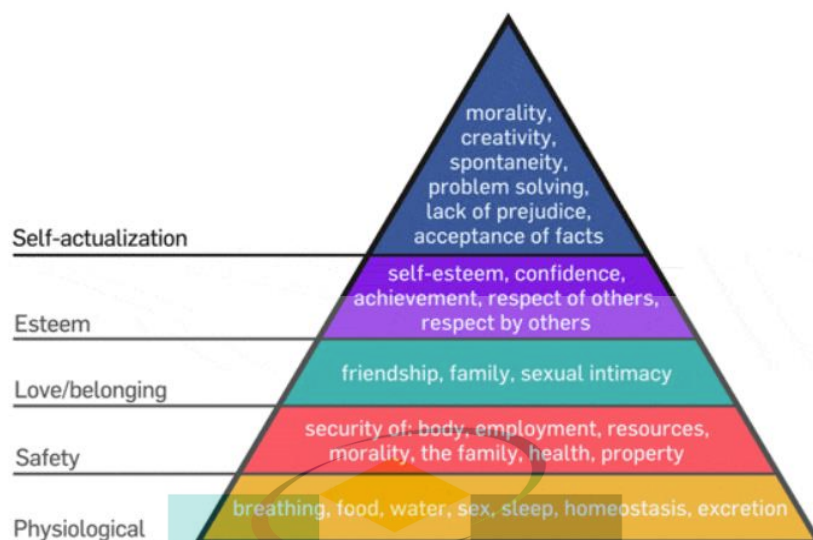


Figure 3.5 An interpretation of Maslow's Hierarchy of Needs

Source: Interpreted from Maslow (1943)

Poverty magnitude can be explained through categorizing the borrowers in which the group they belong to. Beginning from physiological need (Category 1), then safety need (Category 2), then love/belonging need (Category 3), then esteem need (Category 4) and then final destination self-actualization need (Category 5), borrowers become out of poverty eventually. Alternatively, when borrowers have been engaged more in production and investing activities and/or less in consumption activities, they are keeping pace with poverty alleviation. Furthermore, when borrowers utilize more time in unpaid job, they have been expected to plunge below poverty in later time. Alia et al. (2017) classified borrowers' category with reference to Maslow's hierarchy of needs for observing the level of poverty.

3.9 Poverty Incidence and Intensity Measurement

It has been expected that borrowers' particular poverty incidence and intensity may come down subsequent to extended credit. This study engages an experiment group (participant borrowers) and a control group (non-participant borrowers) for measuring microfinance impact on borrowers' poverty. Participant borrowers are successful borrowers who get their loan after conforming all the rules and regulations of respective microfinance institution. On the other hand, non-participant borrowers are those people who applied for the loans but remain unsuccessful or who intended to be borrower but cannot get loan for their individual limitations. Subsequent to finishing

one-year treatment with microfinance, the participant borrowers have been compared with non-participant borrowers. This research constructed Multidimensional Poverty Index (MPI) for both participant and non-participant borrowers and compared those indices to assess their poverty magnitude. Relatively higher index shows higher poverty level and the other way around. If MPI indicates less index for participant borrowers compared to non-participant borrowers after macrofinance intervention for one year, poverty appears to be decreased among participant borrowers and microfinance appears fruitful instrument as a development tool.

3.9.1 Multidimensional Poverty Index (MPI)

With reference to Literature Review Chapter-2 (Section 2.10), the advantage of the MPI index goes beyond monetary based assessment. Many developing nations have been applying MPI as a global standard measurement for poverty incidence and intensity. MPI supplements customary income based estimation by including intense deprivation that individuals face concerning health, education, and living standard. This is an evaluation at the individual poverty level. When an individual has been deprived in a 1/3rd or more of 10 weighted indicators, MPI categorizes the individual as 'MPI poor' and else not poor. The degree or intensity of poverty is measured through the number of deprivations in ten factors, which comprises Education (Year of Schooling and School Attendance), Health (Child Mortality, Nutrition) and Living Standards (Electricity, Sanitation, Drinking Water, Housing, Cooking Fuel and Asset Ownership). Thus, it is a comprehensive estimation. It can likewise be utilized to compare poverty in different population. It can assess the poverty level among different strata or group within a country. This index is useful scientific technique to perceive vulnerable people who may be the poorest of the poor within particular area at specific time (Alkire et al., 2018; Wikipedia, 2019b). Following the aforesaid cited literature, the education, and health indicators have been given three times weightage for their individual importance and necessity compared to living standards as the index are constructed with that conception.

3.9.2 MPI Indicator

MPI includes the following ten indicators:

Education (Each indicator is weighted equally at 3/18)

- Years of schooling: deprived if no household member has finished six years of schooling
- School attendance: deprived if any school-aged child is not appearing school up to class eight

Health (Each indicator is weighted equally at 3/18)

- Child mortality: deprived if any child has expired in the family in the past five years
- Nutrition: deprived if any adult or child, for whom there is nutritional information, is underdeveloped

Living Standards (Each indicator is weighted equally at 1/18)

- Electricity: deprived if the household has no electricity
- Sanitation: deprived if the household's sanitation facility is not improved
- Drinking water: deprived if the household does not have access to safe drinking water
- Housing: deprived if the household has a dirt, sand or dung floor
- Cooking fuel: deprived if the household cooks with dung, wood or charcoal
- Assets ownership: deprived if the household does not own more than one of radio, TV, telephone, bike, motorbike or refrigerator and does not own a car or truck

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3.9.3 MPI Formula

Incidence of Poverty: A person is considered poor if they are deprived in at least (33.33%) a third of the weighted indicator. Alternatively, it is headcount of the persons deprived.

Intensity of Poverty: The intensity of poverty denotes the average of poverty of the persons deprived. Alternatively, it is the average of poverty from headcount persons found in incident of poverty.

The MPI is calculated as $MPI = H \text{ (Headcount)} * A \text{ (Average rate)}$

Where, H indicates the ratio of people who are MPI poor (incidence of poverty) and A indicates the average intensity of MPI poverty across the poor (%) (Alkire et al., 2018; Wikipedia, 2019b). Higher MPI shows higher poverty and vice-versa. This study compares MPI of participant borrowers with that of non-participant borrowers to observe the microfinance impact.

3.9.4 A Typical Calculation and Interpretation

A microfinance institution's selected respondents comprised of individuals A, B and C. Table 3.1 shows the deprivation on each of the 10 indicators for the aforesaid individuals where "0" indicates no deprivation in that indicator, while "1" indicates deprivation in that indicator. Putting all the values for the respective indicators, MPI has been calculated for a particular X Microfinance institution (Please see Table 3.6).

Table 3.6 A typical calculation of MPI for a Microfinance Institute

Indicator	Weight	Person A	Person B	Person C
Years of Schooling	3/18	0	0	0
School Attendance	3/18	0	0	0
Child Mortality	3/18	1	1	0
Nutrition	3/18	0	1	0
Electricity	1/18	0	1	1
Sanitation	1/18	0	1	1
Drinking Water	1/18	0	0	1
Housing	1/18	1	1	1
Cooking Fuel	1/18	1	0	1
Assets Ownership	1/18	1	0	0
Weighted Score		33.33%	50.00%	27.78%
Status (Poor \geq 33.33%)		Poor	Poor	Not Poor
Score (Poor = 1, Not Poor = 0)		1	1	0
Incidence of Poverty (H)	$H=(1+1+0)/3$	0.667		
Intensity of Poverty (A)	$A=(33.33+50.00)/2$	0.417		
MPI Index	$H*A$	0.278		
Higher Index shows higher poverty				

Source: Wikipedia, (2019b)

3.10 Loan Default Determinants

3.10.1 Experimental Framework

With reference to Review of Literature Chapter 2, the loan defaults determinants have been functioning under three broad categories and the variables are as follows:

- Borrower Characteristic – Gender, Living Style, Education Level, Age, Alternative Income and Number of Dependent etc.
- Business Characteristic – Business Type, Revenue Amount etc.
- Loan Characteristic – Repayment Period, Repayment Mode, Alternative Loan, Repayment Amount, Interest Rate etc.

All selected microfinance institutions GB, BRAC, and TEKUN borrowers have been studied in this research for loan default determinants. This study does not have accessibility for data and information from the selected microfinance institute due to sensitivity of the issue related to loan defaults being private and confidential for the borrowers. Alternatively, this study gathered loan default data and information over the counter in line with Sexton (1977) who discriminates good borrowers and bad borrowers. A borrower is good who repays as loan becomes due whereas a borrower is bad who fails to repay within the stipulated time. A borrower with repayment issue in the past will have most probably the same issue in the future. Due to formal data unavailability, the borrowers have been asked in the questionnaire if they fail to pay back loan instalment more than two times within stipulated period.

3.10.2 Assessment Tools

Loan default determinants are analysed using the Logistic Regression technique. As stated by Gujarati (1988), the loan repayment problem is a function of three broad categories of characteristics as shown in Equation 3.1 below:

$$\text{Loan default} = f(\text{Borrower characteristics, Business characteristics, Loan characteristics}) \quad 3.1$$

In the Equation 3.2, Y_i is equal to 1 if the borrower failed loan repayments more than two times in the stipulated period since receiving the microfinance loan (having a repayment problem); 0 if the borrower not failed otherwise a loan repayment (not having a repayment problem). P_i is the estimated probability of a loan default (higher value of P_i states a higher loan default). Z_i is the probability of loan default. α and β_j are an intercept term and parameter, respectively. X_{ij} are the vectors of borrower characteristics, business characteristics, and microfinance loan characteristics and ε_i is the error term.

$$P_i = E(Y_i = 1 | X_{ij}) = \frac{1}{1 + e^{-Z_i}} = \frac{1}{1 + e^{-(\alpha + \sum \beta_j X_{ij} + \varepsilon_i)}} \quad 3.2$$

Equation 3.2 symbolizes the cumulative logistic distribution function. If P_i is the probability of having loan repayment problem, then the probability of not having loan repayment problem or $(1 - P_i)$ is given by:

$$(1 - P_i) = \frac{1}{1 + e^{Z_i}} \quad 3.3$$

Therefore, the odds in favor of having a default or $\frac{P_i}{1 - P_i}$ can be written as:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad 3.4$$

Taking the natural log, Equation 3.4 becomes:

$$Z_i = \ln \left(\frac{P_i}{1 - P_i} \right) = \alpha + \sum \beta_j X_{ij} + \varepsilon_i \quad 3.5$$

Where, Z_i is the natural logarithm of the odds ratio in favor of having a loan default.

3.10.3 Loan Default Variables

Dependent Variable

- The dependent variable takes a value of “1” for borrowers who default loan and it takes a value of “0” if they are not defaulted otherwise.

Independent Variables

- The positive signs in parentheses “(+)” denote the hypothesized positive relationship between independent variables and loan default.
- The negative signs in parentheses “(-)” denote the hypothesized negative relationship between independent variables and loan default.
- It is to be noted that because of perfect collinearity or dummy trap problem, it is not possible to indicate all dummy variables or an overall constant term in the model (Balestra, 1990). Therefore, one category with the fewest response has been dropped in the respective independent variable.
- The analysis has been done within the scope of finding significant coefficient with positive or negative sign and concerned odd ratio indicating one category borrower estimated to be more or less likely to report loan default than another category. The coding and interpretations done for the logistic regression analysis in this study are in line with Pallant (2013).

Followings are the independent variables:

X_1 = Gender (+): Borrower gender (0 for Female and 1 for Male)

X_2 = Age (-): Dummy variables denoting borrower age group [where $X_{2(1)}= 1$ for up to 25 years old and 0 for Otherwise; $X_{2(2)}=1$ for 26 to 35 years old and 0 for Otherwise; $X_{2(3)} = 1$ for 36 to 45 years old and 0 for Otherwise; $X_{2(4)}= 1$ for 46 to 55 years

old and 0 for Otherwise; $X_{2(5)}= 1$ for above 55 years old and 0 for Otherwise]

X_3 = Living Style (+): Borrowers living style (0 for Conjugal and 1 for Single)

X_4 = Education Level (-): Borrower educational level (0 for Otherwise and 1 for Educated meaning higher than primary education level)

X_5 = Dependant Number (+): Dummy variables denoting borrower dependant number in their household [where $X_{5(1)}= 1$ for up to 2 person and 0 for Otherwise; $X_{5(2)}=1$ for 3 to 4 person and 0 for Otherwise; $X_{5(3)}= 1$ for 5 to 6 person and 0 for Otherwise; $X_{5(4)}= 1$ for 7 to 8 person and 0 for Otherwise $X_{5(5)}= 1$ for above 8 person and 0 for Otherwise]

X_6 = Business Type (+): Borrower business type (0 for Otherwise business activities including service, trading, animal husbandry etc. and 1 for Agricultural business activities)

X_7 = Monthly Revenue (-): Dummy monthly revenue denoting amount received as monthly revenue from business activities [where $X_{7(1)}= 1$ for up to \$100 and 0 for Otherwise; $X_{7(2)}=1$ for \$101 to \$200 and 0 for Otherwise; $X_{7(3)}= 1$ for \$201 to \$300 and 0 for Otherwise; $X_{7(4)}= 1$ for \$301 to \$400 and 0 for Otherwise; $X_{7(5)}= 1$ for above \$400 and 0 for Otherwise]

X_8 = Alternative Income (-): Borrower alternative income source (0 for Otherwise and 1 for existence of alternative income source from somewhere else)

X_9 = Alternative Loan (+): Borrower alternative loan source (0 for Otherwise and 1 for existence of alternative loan source from somewhere else)

X_{10} = Repayment Mode (+): Borrower weekly repayment mode (0 for Otherwise and 1 for weekly repayment installment)

X_{11} = Repayment Period (+): Loan repayment time (0 for Otherwise and 1 for long period meaning more than 1 year)

X_{12} = Repayment Amount (+): Dummy repayment amount denoting repayment amount [where $X_{12(1)}=1$ for up to \$25 and 0 for Otherwise; $X_{12(2)}=1$ for \$26 to \$50 and 0 for Otherwise; $X_{12(3)}=1$ for \$51 to \$75 and 0 for Otherwise; $X_{12(4)}=1$ for \$76 to \$100 and 0 for Otherwise; $X_{12(5)}=1$ for above \$100 and 0 for Otherwise]

X_{13} = Interest Rate (+): Dummy interest rate denoting percentage charged as interest cost on loan [where $X_{13(1)}=1$ for up to 5% and 0 for Otherwise; $X_{13(2)}=1$ for 6% to 10% and 0 for Otherwise; $X_{13(3)}=1$ for 11% to 15%, 0 for Otherwise; $X_{13(4)}=1$ for 16% to 20%, 0 for Otherwise; $X_{13(5)}=1$ for above 20% and 0 for Otherwise]

Gender indicates whether a borrower is male or female. Chaudhary and Ishfaq (2003) and Roslan and Karim (2009)s' works exposed that male borrowers are less accountable and less orderly in loan repayment. Therefore, it can be hypothesized that a male borrower is more likely to be microfinance loan defaulter (For Independent variable X_I).

Age denotes the borrowers age. It may contribute to borrower's capacity to pay back the loan. Relatively older borrowers are expected to have more responsibility than

younger borrowers (Brehanu & Fufa, 2008). Thus, it can be hypothesized that an older borrower is less likely to make loan default (For Independent variable X_2).

Living Style designates as conjugal when a borrower is married and living a conjugal life and as single when a borrower is unmarried or divorced and living a single life. Marriage has been often taken as optimum behavior and family accountability. Since there is no spouse and / or no children to support financially, the single borrower would be less accountable. Therefore, single borrower might not need to keep a positive relationship with the microfinance service provider to increase the likelihood of having prospective loan compared to a married borrower (Peng et al., 2009). Hence, it is hypothesized that a single borrower is more likely to have default problem (For Independent variable X_3).

Education Level specifies the literacy of the borrower. A borrower with a relatively higher educational level would be negatively associated with a loan default (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Because learned borrower has management capability and carries out the business operation efficiently and effectively. Therefore, it is hypothesized that higher Educational level is negatively associated with loan default (For Independent variable X_4).

Dependants are the persons living with borrowers in their household with no income sources of their own. The number of dependants can contribute borrowers' capability for loan repayment. For higher number of dependants, the borrower will face more obligation for their basic amenities and other expenses (Brehanu & Fufa, 2008). Hence, it is hypothesized that borrowers with more number of dependants are likely to have the higher probability of loan default (For Independent variable X_5).

Business Type means the borrower's category of business like either an agriculture business or otherwise. For example, microenterprise may be involved in the farming activity or may do small trading. An agricultural business would be associated with a lower cycle of cash flow than a small business (Chaudhary & Ishfaq, 2003). Hence, it is hypothesized that the type of agricultural business is more likely to create loan default issue (For Independent variable X_6).

Monthly Revenue means the monthly income from borrower business financed by microfinance loan. It may contribute to the borrower capacity to pay back the loan.

A lower amount of business revenue is related to a higher probability of a loan default (Okorie, 1986) It is hypothesized that borrower with low business revenue is more like to be a loan defaulter. (For Independent variable X_7).

Alternative Income besides income related to microfinance business will lead to higher capacity for the borrower to pay back that microfinance loan (Brehanu & Fufa, 2008). Hence, it can be hypothesized that borrower with extra income is less likely to be loan defaulter (For Independent variable X_8).

Alternative Loan means the additional loans that borrowers have taken other than microfinance loans. Discussion with many borrowers, it has been found that the microfinance loan is not adequate sometimes to run their business operation and therefore they have taken loan from other sources. This creates the additional commitments for extra loan repayment and reduce their capacity to pay back microfinance loan (Mokhtar, 2011). Hence, it is hypothesized that extra loan is more likely to contribute microfinance loan default (For Independent variable X_9).

Repayment Mode displays the frequency of loan repayment. It may be weekly or monthly repayment program. Loan default can be associated with repayment mode set by the respective microfinance institution (Derban et al., 2005). Therefore, it can be hypothesized that weekly loan repayment mode is more likely to contribute microfinance loan default. (For Independent variable X_{10}).

Repayment Period is the period within which the borrowers have to repay the loan back. It can be categorized as long-term for more than one-year period and short term for otherwise. Borrowers having long term mean that they have longer commitment to repay the loan and ultimately it contributes to positive relationship of having a loan default (Roslan & Karim, 2009). It is hypothesized that the long-term period is more likely to have loan default problem. (For Independent variable X_{11}).

Repayment Amount denotes the amount that has to be paid back by the borrowers in a timely instalment. Unfavorable loan program features such as loan repayment mode and loan instalment amount can contribute to loan default (Derban et al., 2005). Therefore, it is hypothesized that the borrower with the higher loan repayment amount is more likely to be a loan defaulter (For Independent variable X_{12}).

Interest Rate denotes the amount that has to be paid back by the borrowers in addition to principal amount receipt by them. In case of Bangladesh, the maximum interest chargeable set at twenty-seven percent per annum. Calculation of interest on loans should be done on a Declining Balance Method. The minimum number of instalments on general loans must be forty-six. There will be a grace period of a minimum of fifteen days between the date of loan disbursement and the repayment of the first instalment for loan given for one year. Recently, the Microcredit Regulatory Authority announced guidelines for Microfinance Institute in Bangladesh to follow those as an obligation. (Faruqee & Khalily, 2011). Grameen bank charges twenty percent on reducing balance basis for its main credit product or income generating activities (Fernando, 2006; GrameenBank, 2017). In Malaysia, the bulk of the microloans sit around a flat rate of 8 to 11 percent for Government Banks and an annual rate of 20 to 35 percent for commercial banks. While this is lower than the global microfinance average interest and fee rate of 37 percent and much lower than the shocking 70 percent seen in certain markets, some argue that this is still a case of banks profiting over the poor as they may end up poorer as a result of accepting the loans. Their business might fail in earning the higher rate of return than the high interest rates (Lau, 2018). This research hypothesized that the borrower with higher interest rate is more likely to be a loan defaulter (For Independent variable X_{13}).

3.11 Institute Performance Measurement

3.11.1 Introduction

Social performance highlights outreach to the maximum number of poor borrowers to get rid them out of poverty. Taxpayers' money should not be utilized to achieve social and political motive. However, it can be claimed that promoting a section of the society with the resource provided by another section of the society is nothing but the transfer of wealth without real development. Financial performance guarantees the viability of microfinance institute through maximization of profit like typical commercial businesses which may be compromising social performance.

3.11.2 Measurement Indicators

Social performance indicators: Navajas et al. (2000) pointed out six dimensions such as Breadth, Depth, Length, Scope, Cost and Worth for measuring outreach. These dimensions include borrower numbers and mean loan size among other indicators. Mean loan size is related to individual loan size per borrower. But total loan outstanding is the total amount of loan for all borrowers at a particular date. With reference to totality of loan and data unavailability, the social outreach indicators have been taken through the number of borrowers and the amount of loan outstanding. It is important to consider borrowers' number when emphasizing on the depth of outreach. The number of borrowers and amount of loan outstanding at the end of each financial year have been used as proxies for the depth of outreach in line with Microfinance Regulatory Authority in Bangladesh (MicrocreditRegulatoryAuthority, 2017). These are the numbers at the end of financial year.

- Number of Borrowers (NOB) reflect the institution's active borrowers at the end of each financial year.
- Loan Outstanding (LO) reflects the institution's loan balance at the end of each financial year.

Financial performance indicators: It can be typical three financial variables as has been used as usual in banks and commercial enterprise and also in line with Microfinance Regulatory Authority in Bangladesh. These are the numbers (Percentage) at the end of financial year as below:

- Return on Assets (ROA) reflects the institution's capability to utilize its assets efficiently and effectively for particular financial year.
- Operating Self-Sufficiency (OSS) reflects the institution's ability to cover all incurred cost for particular financial year.
- Operating Margin (OM) reflects the institution's margin produced after deducting all the expenditure for the particular financial year.

A microfinance institution has been considered as sustainable and profitable if it can produce favorable ROA, OSS, and OM. It has been considered having favorable OSS if it can cover 100% expenses it has incurred. Higher values of these indicators

refer to more efficiency for the microfinance institution. Relative measures are not possible for non-availability of data. All the measurement indicators are in absolute number and interpreted accordingly. Bassem (2012) used both absolute and relative terms in his study and interpreted the results accordingly. Natural logarithm has been taken for all aforesaid social and financial indicators while performing the regression analysis.

Through performing multiple regression analysis, it is to be checked whether there is a link (positive, neutral or negative) existing between financial performance and social performance for microfinance institutions. It shows the presence or absence of a trade-off between these two performances. The Lagrange Multiplier (LM) test has been applied to choose between pooled-ordinary least square regression model and panel data regression model. Variance Inflation Factor (VIF) addresses the multi collinearity issues among predictor variables. As a thumb rule, VIF value of 5.0 and higher indicate a potential collinearity problem for the indicators in the measurement model (Hair et al., 2016). Multi collinearity has been checked through VIF. The Breusch-Godfrey LM test has been done for autocorrelation.

With reference to Trebucq and d'Arcimoles (2002), there are two hypotheses while assuming the presence of relationship between financial and social performance. The first one is with reference to the "Slack Resources Theory" stating positive/favorable impact of financial performance on the social performance of an entity. Some empirical evidences provide support for the slack resources theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988).

H₁₇: Higher Financial Performance leads to higher Outreach, *ceteris paribus*.

Here, the dependent variable is Outreach (OUTREACH) with indicators like Number of Borrowers (NOB) and Loan Outstanding (LO). The independent variable is Financial Performance (FP) with indicators like Return on asset (ROA), Operating Self-Sufficiency (OSS), and Operating Margin (OM). This research has taken the available data of the year 2015, 2016 and 2017 from Microfinance Regulatory Authority Report and randomly selected 40 microfinance institute of Bangladesh namely ASA, BRAC, BURO, TMSS, SFDW, SSS, JCF, UDDIPAN, CSS, PMUK, RDRS, ARS, CARITAS, DSK, POPI, MSS, RRF, PMK, ADDIN, SF, CDIP, BEES, RIC, GUK, GKF, CDC, IDF, EWF, ESDO, GUKE, PTOTTY, CASTT, SDI, GBK,

DFRED, DSSASU, CCDA, ASRAI, SDS, and DISA. Bangladesh government implements microfinance policy through centrally regulated statutory body (Microcredit Regulatory Authority). Secondary data for microfinance institute performance are from annual reports of this authority. Malaysian microfinance institutes are not included in this study for non-availability of data as they are very restricted in sharing financial information (Mokhtar, 2011). Therefore, the econometric model corresponding to this analysis where $t = 2015, 2016$ and 2017 and $i = 1$ to 40 has been expressed as below:

$$\text{OUTREACH}_{t,i} = f(\text{FP}_{t,i})$$

Where,

$\text{OUTREACH}_{t,i}$ = Outreach by Number of Borrowers (NOB) and Loan Outstanding (LO) for the year.

$\text{FP}_{t,i}$ = Financial Performance by Return on Asset (ROA), Operational Self-Sufficiency (OSS) and Operating Margin (OM) for the year.

The second hypothesis is with reference to "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989). Bassem (2012) has also explored higher social performance leading to higher financial performance.

H₁₈: Higher Outreach leads to higher Financial Performance, *ceteris paribus*.

Here, the dependent variable is Financial Performance (FP) with indicators like Return on Asset (ROA), Operating Self-Sufficiency (OSS), and Operating Margin (OM). The independent variable is Outreach Performance (OUTREACH) with indicators like Number of Borrowers and Loan Outstanding (LO). This research has also taken the available data of the year 2015, 2016 and 2017 from Microfinance Regulatory Authority Report and randomly selected 40 microfinance institute of Bangladesh namely ASA, BRAC, BURO, TMSS, SFDW, SSS, JCF, UDDIPAN, CSS, PMUK, RDRS, ARS, CARITAS, DSK, POPI, MSS, RRF, PMK, ADDIN, SF, CDIP, BEES, RIC, GUK, GKF, CDC, IDF, EWF, ESDO, GUKE, PTOTTY, CASTT, SDI,

GBK, DFRED, DSSASU, CCDA, ASRAI, SDS, and DISA. Bangladesh government implements microfinance policy through centrally regulated statutory body (Microcredit Regulatory Authority). Secondary data for microfinance institute performance are from annual report of this authority. Malaysian microfinance institutes are not included in this study for non-availability of data as they are very restricted in sharing financial information (Mokhtar, 2011). Therefore, the econometric model corresponding to this analysis where $t = 2015, 2016$ and 2017 and $i = 1$ to 40 has been expressed as below:

$$FP_{t,i} = f(\text{OUTREACH}_{t,i})$$

Where,

$FP_{t,i}$ = Financial Performance by Return on Asset (ROA), Operating Self-Sufficiency (OSS) and Operating Margin (OM) for the year

$\text{OUTREACH}_{t,i}$ = Outreach by Number of Borrowers (NOB) and Loan Outstanding (LO) for the year

3.12 Summary of the Chapter

This chapter discussed relevant methodologies applied to satisfy the objectives of this study. It explores research approach and philosophy. It also explained how different research methods can be devised to address the research problem. It discussed the study design, population and sampling, research period and data including sampling size, constructs and items for PLS-SEM. This study used both quantitative measurement and qualitative description to find out the impact of microfinance on poverty. To be more specific, HEPM Model and modified HEPM Model have been devised for quantitative and qualitative analysis, respectively. To find out the poverty level, the multinational poverty index has been applied after treating borrowers through microfinance. Logistic regression has also been applied to find out the factors contributing to loan default and do panel data analysis to check whether microfinance is achieving financial sustainability through ignoring its social objective of alleviating poverty.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the empirical analysis and interpretation of the data and information gathered by primary and secondary sources for the study. With due effort, there have been adequate respondents for this study for each group for participant and non-participant borrowers. Data from fully completed questionnaires are used for results and discussion pertinent to this chapter. Section 4.2, Section 4.3, and Section 4.4 deal with Grameen Bank, BRAC, and TEKUN, respectively. Each aforesaid Section further comprised of Sub-Section like the demographic, business and loan characteristics, microfinance impact by quantitative and qualitative analysis, the poverty index analysis and the loan default issues. Section 4.5 gives the scenario of microfinance institutes for alleviating poverty (Social Performance) versus making money (Financial Performance) to find out whether there is mission drift. Finally, Section 4.6 summarizes the chapter.

4.2 Grameen Bank

This section discusses different responses of the participant and non-participant borrowers of Grameen Bank (GB). These responses are collected by the questionnaire as per Appendix B. It describes GB borrowers' demographic, business, and loan characteristics. It also describes the impact of microfinance on borrowers' business, household, individual, and security levels for quantitative analysis and financial and activity diaries for qualitative analysis. It further describes the poverty index and factors responsible for loan default.

4.2.1 Demographic Characteristic

With reference to Table 4.1, GB offers microfinance loans to females mostly and very few to males. In this study, selected samples are all females for both the cases

of participant and non-participant borrowers. About 60 percent participant borrowers are more than thirty-five years' old which means GB is dealing with relatively older people. The borrowers are mostly Muslim followed by Hindu, Christian, Buddhist and others. More than half of the borrowers are living conjugal lives. About half participant borrowers get education whereas majority of non-participant borrowers have been found educated. However, more than three-fourth of both categories of borrowers have more than four household members. Among them, there are only one or two income earners in most households and more people are depending on these earnings. The majority of borrowers have three to six children. However, in many cases educated children are quite few in the households.

Table 4.1 Demographic Characteristic

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Gender				
Female	400	100.0	400	100.0
Male	0	0.0	0	0.0
Total	400	100.0	400	100.0
Age				
Up to 25	98	24.5	82	20.5
26 to 35	64	16.0	92	23.0
36 to 45	103	25.8	113	28.3
46 to 55	110	27.5	72	18.0
Above 55 year	25	6.2	41	10.2
Total	400	100.0	400	100.0
Ethnic Group				
Muslim	291	72.8	293	73.3
Hindu	50	12.5	55	13.8
Christian	28	7.0	17	4.3
Buddhist	17	4.2	13	3.2
Others	14	3.5	22	5.4
Total	400	100.0	400	100.0
Living Style				
Conjugal	229	57.3	221	55.3
Single	171	42.7	179	44.7
Total	400	100.0	400	100.0

Table 4.1 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Education				
Non - Educated	202	50.5	163	40.8
Educated	198	49.5	237	59.2
Total	400	100.0	400	100.0
Household Member				
Up to 2	18	4.4	12	3.0
3 to 4	79	19.8	58	14.5
5 to 6	103	25.8	105	26.2
7 to 8	105	26.3	103	25.8
Above 8	95	23.7	122	30.5
Total	400	100.0	400	100.0
Income Earner				
Up to 2	259	64.8	217	54.2
3 to 4	116	29.0	127	31.8
5 to 6	25	6.2	56	14.0
7 to 8	0	0.0	0	0.0
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0
Dependant				
Up to 2	79	19.8	112	28.0
3 to 4	150	37.5	106	26.5
5 to 6	106	26.5	136	34.0
7 to 8	48	12.0	34	8.5
Above 8	17	4.2	12	3.0
Total	400	100.0	400	100.0
Total Children				
Up to 2	94	23.5	118	29.5
3 to 4	165	41.3	119	29.8
5 to 6	98	24.5	129	32.2
7 to 8	36	9.0	28	7.0
Above 8	7	1.7	6	1.5
Total	400	100.0	400	100.0
Educated Children				
Up to 2	236	59.0	231	57.7
3 to 4	112	28.0	124	31.0
5 to 6	41	10.2	38	9.5
7 to 8	10	2.5	6	1.5
Above 8	1	0.3	1	0.3
Total	400	100.0	400	100.0

4.2.2 Business Characteristic

With reference to Table 4.2, majority participant borrowers do non-agricultural activities like small trading, manufacturing, workshop, services, etc. whereas majority non-participant borrowers are involved in agricultural activities like farming, fishing, animal husbandry, horticulture, etc. Majority borrowers together with their spouses hold ownership in their business and make business decision whereas some borrowers share ownership and decision making with business partners and others. Monthly revenue with many households tends to be between \$201 to \$400. Maximum borrowers do not have alternative income other than main business activities.

Table 4.2 Business Characteristic

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Type				
Agricultural	174	43.5	254	63.5
Non-Agricultural	226	56.5	146	36.5
Total	400	100.0	400	100.0
Ownership				
Borrower	125	31.2	145	36.2
Spouse	106	26.5	105	26.2
Business Partner	80	20.0	61	15.3
Participatory	78	19.5	69	17.3
Others	11	2.8	20	5.0
Total	400	100.0	400	100.0
Decision Maker				
Borrower	111	27.7	158	39.5
Spouse	119	29.7	108	27.0
Business Partner	65	16.3	44	11.0
Participatory	93	23.3	76	19.0
Others	12	3.0	14	3.5
Total	400	100.0	400	100.0
Monthly Revenue				
Below \$100	18	4.5	17	4.3
\$101 to \$200	94	23.5	81	20.2
\$201 to \$300	119	29.7	108	27.0
\$301 to \$400	108	27.0	121	30.2
Above \$400	61	15.3	73	18.3
Total	400	100.0	400	100.0
Alternative Income				
No Alternative	305	76.3	294	73.5
Yes Alternative	95	23.7	106	26.5
Total	400	100.0	400	100.0

4.2.3 Loan Characteristic

With reference to Table 4.3, the largest category of borrowing frequency time is three. However, only a few respondents take loans above four times. The majority cases borrowing amount ranges from \$501 to \$2000 for both participant and non-participant borrowers. Majority says that the loan given is not adequate for the intended purpose and they do not have alternative sources for taking more loans. For participant borrower, the repayment mode is weekly but non-participant borrowers have other random options which do not follow any particular pattern and not systematic because of the absence of formal loan contract. Longer repayment periods (More than one year) have been reported for majority cases. Many participant borrowers are obliged to repay up to \$50 in their respective instalments whereas non-participant borrowers do not follow any particular pattern again lack of formal loan agreement. There is a ceiling of interest rate (27%) set by Microfinance Regulatory Authority in Bangladesh, above which no microfinance institute can charge. In our sample, the interest rate charged by GB ranges from 16 % to 20% as large category for participant borrowers. Only nine percent of participant borrowers have been reported loan defaulters as they fail their instalment more than two times during the agreement period and if they default, the main causes are business problem followed by family problem, health issue, natural disaster and others. In the case of non-participant borrowers, the default cannot be defined due to the absence of a formal loan contract.

Table 4.3 Loan Characteristic

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Borrowing Times				
One Times	89	22.3	67	16.8
Two Times	90	22.5	102	25.4
Three Times	112	28.0	127	31.8
Four Times	82	20.5	73	18.2
Above Four	27	6.7	31	7.8
Total	400	100.0	400	100.0
Borrowing Amount				
Up to \$500	77	19.2	94	23.5
\$501 to \$1000	101	25.3	92	23.0
\$1001 to \$1500	104	26.0	89	22.2
\$1501 to \$2000	76	19.0	82	20.5
Above \$2000	42	10.5	43	10.8
Total	400	100.0	400	100.0

Table 4.3 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Loan Adequacy				
Not Adequate	246	61.5	229	57.3
Yes Adequate	154	38.5	171	42.7
Total	400	100.0	400	100.0
Alternative Loan				
No Alternative	216	54.0	249	62.2
Yes Alternative	184	46.0	151	37.8
Total	400	100.0	400	100.0
Repayment Mode				
Weekly	400	100.0	0	0.0
Otherwise	0	0.0	400	100.0
Total	400	100.0	400	100.0
Repayment Period				
Longer	278	69.5	269	67.2
Shorter	122	30.5	131	32.8
Total	400	100.0	400	100.0
Repayment Amount				
Up to \$25	142	35.5	N/A*	-
\$26 to \$50	146	36.5	N/A	-
\$51 to \$75	56	14.0	N/A	-
\$76 to \$100	40	10.0	N/A	-
Above \$100	16	4.0	N/A	-
Total	400	100.0	400	100.0
Interest Rate				
Up to 5%	10	2.5	N/A	-
6% to 10%	60	15.0	N/A	-
11% to 15%	74	18.5	N/A	-
16% to 20%	175	43.8	N/A	-
Above 20%	81	20.2	N/A	-
Total	400	100.0	400	100.0
Loan Default				
Not Default	364	91.0	N/A	-
Yes Default	36	9.0	N/A	-
Total	400	100.0	400	100.0
Default Cause				
Not Applicable	364	91.0	N/A	-
Business Problem	18	4.5	N/A	-
Family Problem	6	1.5	N/A	-
Health Issue	4	1.0	N/A	-
Natural Disaster	3	0.8	N/A	-
Others	5	1.2	N/A	-
Total	400	100.0	400	100.0

* N/A means "Not Applicable" as informal loans do not have formal agreement as the case of non-participant borrowers.

4.2.4 Quantitative Impact Measurement – HEPM

Within impact relates to the first research objective and Hypothesis (H₁) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level within participant borrowers and non-participant borrowers. **Between impact** relates to the second research objective and Hypothesis (H₂) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level between participant borrowers and non-participant borrowers. **Causal impact** relates to the third research objective and Hypothesis (H₃) that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual and security level.

4.2.4.1 Impact Measurement: Within the Group

Business Impact: It discusses the impact of microfinance on borrowers' poverty at business level within the group (Please see Table 4.4). The impact has been observed through finding the difference on poverty variable within participant and non-participant borrowers. The *Chi-Square* test has been used to find out whether there is any significant difference within the group who strongly disagree, disagree, neutral, agree and strongly agree for increase in their business revenue, fixed asset, current asset, and employment.

Table 4.4 Business Impact

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	%	Frequency	%
Business Revenue				
Strongly Disagree	19	4.8	124	31.0***
Disagree	78	19.4	111	27.7
Neutral	85	21.2	87	21.8
Agree	119	29.8***	34	8.5
Strongly Agree	99	24.8	44	11.0
Total	400	100.0	400	100.0

Table 4.4 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
Fixed Asset				
Strongly Disagree	57	14.2	132	33.0*** 95.1, (.00)
Disagree	81	20.2	88	22.0
Neutral	85	21.3	109	27.2
Agree	86	21.5	31	7.8
Strongly Agree	91	22.8* 8.9, (.06)	40	10.0
Total	400	100.0	400	100.0
Current Asset				
Strongly Disagree	49	12.3	114	28.4
Disagree	72	18.0	127	31.8 91.1, (.00)
Neutral	84	21.0	87	21.8
Agree	98	24.5*** 20.6, (.00)	38	9.5
Strongly Agree	97	24.2	34	8.5
Total	400	100.0	400	100.0
Employment				
Strongly Disagree	10	2.4	85	21.2
Disagree	61	15.2	115	28.8
Neutral	85	21.3	141	35.2 126.6, (.00)
Agree	105	26.3	35	8.8
Strongly Agree	139	34.8*** 117.4, (.00)	24	6.0
Total	400	100.0	400	

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 29.8% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their business revenue and 24.8% participant borrowers strongly agree the same. In total, about 54.6% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 31% respondents strongly disagree (at 1% significance level) that their business revenue has increased and 27.7% respondents disagree the same. Totally, about 58.7% respondents disagree that their business revenue has increased and only 19.5% respondents have reported increase in their business revenue. This is in sharp contrast to the findings of participant borrowers where 54.6% have reported increase in business revenue. This result is similar to studies on microfinance borrowers by

Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue.

In case of fixed asset, about 22.8% participant borrowers strongly agree (at 10% significance level) that microfinance borrowings have increased it and 21.5% participant borrowers agree on the same. In total, about 44.3% participant borrowers have reported positive impact of microfinance for fixed asset. In case of non-participant borrowers, about 33.0% respondents strongly disagree (at 1% significance level) that their fixed asset has increased and 22.0% respondents disagree the same. Totally, about 55.0% respondents disagree that their fixed asset has increased and only 17.8% respondents have reported increase in their fixed asset. This is quite opposite to the findings of participant borrowers where 44.3% have reported positive impact. This result conforms the finding of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loans significantly increased the microenterprise's assets.

About 24.5% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their current asset and 24.2% participant borrowers strongly agree the same. In total, about 48.7% participant borrowers have reported positive impact of microfinance. In case of non-participant borrowers, about 31.8% respondents disagree (at 1% significance level) that their current asset has increased and 28.4% respondents strongly disagree the same. Totally, about 60.2% respondents disagree that their current asset has increased and only 18.0% respondents have reported increase in their current asset. This is also in sharp contrast to the findings of participant borrowers where 48.7% have reported increase the same. This result also conforms the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets.

In terms of employment generation, about 34.8% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased it and 26.3% participant borrowers agree the same. In total, about 61.1% participant borrowers have reported positive impact of microfinance for employment generation. In case of non-participant borrowers, about 35.2% respondents have been neutral (at 1% significance level) that employment generation has increased and 21.2% and 28.8% respondents strongly disagree and disagree, respectively the same. Totally, about 50.0% respondents disagree that employment generation has increased and only 14.8% respondents have reported increase the same. This is dissimilar to the findings of participant borrowers where 61.1% have reported increase in employment

generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997).

Household Impact: It deliberates the impact of microfinance on borrowers' poverty at household level within the group (Please see Table 4.5). The impact has been observed through finding the difference on poverty variables within participant and non-participant borrowers. The *Chi-Square* test has been used to find out whether there is any significant difference within the group who strongly disagree, disagree, neutral, agree, and strongly agree for increase in their household income, immovable property, movable property, and expenditure.

Table 4.5 Household Impact

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	%	χ ² , (Sig.)	Frequency % χ ² , (Sig.)
Household Income				
Strongly Disagree	48	12.0		74 18.5
Disagree	58	14.5		115 28.8*** 51.1, (.00)
Neutral	90	22.5		83 20.7
Agree	83	20.7		30 7.5
Strongly Agree	121	30.3***	41.2, (.00)	98 24.5
Total	400	100.0		400 100.0
Immovable Property				
Strongly Disagree	63	15.8		75 18.8
Disagree	89	22.2	5.7, (.21)	90 22.5
Neutral	85	21.2		117 29.3*** 60.3, (.00)
Agree	87	21.8		94 23.5
Strongly Agree	76	19.0		24 6.0
Total	400	100.0		400 100.0
Movable Property				
Strongly Disagree	10	2.5		70 17.5
Disagree	49	12.3		98 24.5
Neutral	122	30.5***	118.4, (.00)	173 43.2*** 177.9, (.00)
Agree	117	29.3		35 8.8
Strongly Agree	102	25.4		24 6.0
Total	400	100.0		400 100.0
Expenditure				
Strongly Disagree	17	4.3		85 21.3
Disagree	26	6.5		68 17.0
Neutral	91	22.8		104 26.0*** 23.7, (.00)
Agree	126	31.4		49 12.3
Strongly Agree	140	35.0***	159.0, (.00)	94 23.4
Total	400	100.0		400 100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively

About 30.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their household income and 20.7% participant borrowers agree the same. In total, about 51.0% participant borrowers have reported positive impact of microfinance for household income. In case of non-participant borrowers, about 28.8% respondents disagree (at 1% significance level) that their household income has increased and 18.5% respondents strongly disagree the same. Totally, about 47.3% respondents disagree but 32.0% respondents agree that their household income has increased. This is contrast to the findings of participant borrowers, where 51.0% have reported increase in household income. This finding conformed Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrower in Bangladesh and in Egypt, respectively.

In case of immovable property, there has been no statistically significant result that confirms that microfinance borrowing has increased it. However, 21.8% and 19.0% participant borrowers agree and strongly agree respectively the same. In case of non-participant borrowers, about 29.3% respondents have been neutral (at 1% significance level) that their fixed asset has increased. Therefore, microfinance borrowings have little impact on addition of immovable property.

With reference to movable property, 30.5% and 43.3% have neutral view (at 1% significance level) for participant and non-participant borrowers, respectively. Since both participant and non-participant borrowers are neutral, microfinance borrowings have almost no impact for the addition of movable property.

35.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their expenditure on basic amenities and 31.4% participant borrowers agree the same. In total, about 66.4% participant borrowers have reported positive impact of microfinance in this case. In case of non-participant borrowers, about 26.0% respondents have been neutral (at 1% significance level) that their expenditure has increased. Therefore, participant borrowers have positive impact on their expenditure of basic amenities whereas non-participant borrowers remain at same level of expenditure.

Individual Impact: It discusses the impact of microfinance on borrowers' poverty at individual level within the group (Please see Table 4.6). The impact has been observed through finding the difference on poverty variable within participant and non-participant borrowers. The *Chi-Square* test has been used to find out whether there is any significant difference within the group who strongly disagree, disagree, neutral, agree and strongly agree for increase in their control, honor, capacity, and confidence.

Table 4.6 Individual Impact

	Participant Borrowers N ₁ = 400		χ^2 , (Sig.)	Non-Participant Borrowers N ₂ = 400	
	Frequency	%		Frequency	%
Control					
Strongly Disagree	29	7.3		85	21.3
Disagree	36	9.0		61	15.3
Neutral	117	29.2		131	32.8*** 49.8, (.00)
Agree	89	22.2		49	12.2
Strongly Agree	129	32.3***	104.8, (.00)	74	18.4
Total	400	100.0		400	100.0
Honor					
Strongly Disagree	66	16.5		53	13.3
Disagree	93	23.3		68	17.0
Neutral	122	30.5***	49.7, (.00)	136	34.0*** 64.5, (.00)
Agree	37	9.2		49	12.3
Strongly Agree	82	20.5		94	23.4
Total	400	100.0		400	100.0
Capacity					
Strongly Disagree	29	7.2		85	21.2
Disagree	35	8.8		68	17.0
Neutral	86	21.5		93	23.3
Agree	70	17.5		11	2.8
Strongly Agree	180	45.0***	184.5, (.00)	143	35.7*** 113.3, (.00)
Total	400	100.0		400	100.0
Confidence					
Strongly Disagree	19	4.8		74	18.4
Disagree	48	12.0		68	17.0
Neutral	103	25.8		104	26.0
Agree	65	16.2		5	1.3
Strongly Agree	165	41.2	159.0, (.00)	149	37.2*** 139.2, (.00)
Total	400	100.0		400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 32.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their individual control and 22.2% participant borrowers agree the same. In total, about 54.5% participant borrowers have reported positive impact of microfinance in this case. In case of non-participant borrowers, about 32.8% respondents have been neutral (at 1% significance level) that their individual control has increased. Therefore, participant borrowers have positive impact on individual control. The findings were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions.

With respect to individual honor, 30.5% and 34.0% participant and non-participant borrowers have been neutral (at 1% significance level) respectively. Both the groups do not show any impact for having more individual honor through borrowings. Therefore, microfinance borrowings do not make any difference for increasing their individual honor.

For individual capacity building, 45.0% participant and 35.7% non-participant borrowers have strongly agreed (at 1% significance level) their enhancement. Both the groups show positive impact for having individual capacity building. Therefore, microfinance borrowings do not make comparative difference for increasing their individual capacity.

With respect to individual confidence, 41.2% participant and 37.2% non-participant borrowers have strongly agreed (at 1% significance level). Both the groups show positive impact for having individual confidence building. Therefore, microfinance borrowings do not make comparative difference for increasing their individual confidence. The findings are not consistent with those of Nader (2008), Afrane (2002), Goetz and Gupta (1996) and (Hashemi et al., 1996) who found microfinance loan improved the borrowers' confidence in managing their business and income.

Security Impact: It deliberates the impact of microfinance on borrowers' poverty at security level within the group (Please see Table 4.7). The impact has been observed through finding the difference on poverty variable within participant and non-

participant borrowers. The *Chi-Square* test has been used to find out whether there is any significant difference within the group who strongly disagree, disagree, neutral, agree and strongly agree for increase in borrower social, financial, food, and health security.

Table 4.7 Security Impact

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400			
	Frequency	%	χ^2 , (Sig.)	Frequency	%	χ^2 , (Sig.)
Social						
Strongly Disagree	23	5.7		116	29.0***	71.2, (.00)
Disagree	28	7.0		78	19.5	
Neutral	99	24.8		92	23.0	
Agree	85	21.2		17	4.3	
Strongly Agree	165	41.3***	169.5, (.00)	97	24.2	
Total	400	100.0		400	100.0	
Financial						
Strongly Disagree	13	3.2		128	32.0***	93.2, (.00)
Disagree	44	11.0		85	21.3	
Neutral	104	26.0		95	23.7	
Agree	82	20.5		10	2.5	
Strongly Agree	157	39.3***	153.6, (.00)	82	20.5	
Total	400	100.0		400	100.00	
Food						
Strongly Disagree	7	1.7		140	35.0***	132.1, (.00)
Disagree	31	7.7		105	26.2	
Neutral	97	24.3		99	24.8	
Agree	96	24.0		11	2.8	
Strongly Agree	169	42.3***	202.4, (.00)	45	11.2	
Total	400	100.0		400	100.0	
Health						
Strongly Disagree	57	14.2		133	33.2***	121.5, (.00)
Disagree	83	20.8		101	25.2	
Neutral	95	23.8**	9.7, (0.04)	111	27.8	
Agree	81	20.2		27	6.8	
Strongly Agree	84	21.0		28	7.0	
Total	400	100.0		400	100.0	

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 41.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their social security and 21.2% participant borrowers agree the same. In total, about 62.5% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 29.0% respondents strongly disagree (at 1% significance level) that their social security has increased and 19.5% respondents disagree the same. Totally, about 48.5% respondents disagree that their social security has increased and only 28.5% respondents have reported increase in their business revenue. This is in sharp contrast to the findings of participant borrowers, where 62.5% have reported increase in this respect.

For financial security, about 39.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their financial security and 20.5% participant borrowers agree the same. In total, about 59.8% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 32.0% respondents strongly disagree (at 1% significance level) that their financial security has increased and 21.3% respondents disagree the same. Totally, about 53.3% respondents disagree that their financial security has increased and only 23.0% respondents have reported increase in their financial security. This is in sharp contrast to the findings of participant borrowers, where 59.8% have reported increase in this respect.

With respect to food security, about 42.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their food security and 24.0% participant borrowers agree the same. In total, about 66.3% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 35.0% respondents strongly disagree (at 1% significance level) that their food security has increased and 26.2% respondents disagree the same. Totally, about 61.2% respondents disagree that their food security has increased and only 14.0% respondents have reported increase in their food security. This is also in sharp contrast to the findings of participant borrowers, where 66.3% have reported increase in this respect.

For health security, about 23.8% participant borrowers have been neutral (at 5% significance level) that microfinance borrowings have increased their health

security. In case of non-participant borrowers, about 33.2% respondents strongly disagree (at 1% significance level) that their health security has increased and 25.2% respondents disagree the same. Totally, about 58.4% respondents disagree that their health security has increased and only 13.8% respondents have agreed the same. Therefore, it can be concluded that microfinance has comparative positive impact in this respect.

4.2.4.2 Impact Measurement: Between the Group

Business Impact: This part discusses microfinance impact on borrowers' poverty at business level through difference in score between participant and non-participant borrowers (Please see Table 4.8). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for business revenue, fixed asset, current asset and employment between the participant, and non-participant borrowers.

Table 4.8 Business Impact

Business Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean	Median	Mean	Median	Mann-Whitney U	Z	Sig.
	Rank		Rank				
Business Revenue***	492.04	4.00	308.96	2.00	43385.50	-11.44	0.000
Fixed Asset***	464.39	3.00	336.61	2.00	54442.50	-8.00	0.000
Current Asset***	477.07	3.00	323.93	2.00	49372.00	-9.58	0.000
Employment***	509.71	4.00	291.29	2.50	36315.50	-13.70	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for business revenue, fixed asset,

current asset, and employment compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at business level.

Household Impact: This part deals with microfinance impact on borrowers' poverty at household level through difference in score between participant and non-participant borrowers (Please see Table 4.9). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for household income, immovable property, movable property, and expenditure between participant and non-participant borrowers.

Table 4.9 Household Impact

Household Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean	Median	Mean	Median	Mann-Whitney U	Z	Sig.
	Rank	Rank	Rank	Rank			
Household Income***	441.60	4.00	359.40	3.00	63560.00	-5.15	0.000
Immovable Property***	425.88	3.00	375.12	3.00	69849.00	-3.18	0.001
Movable Property***	497.38	4.00	303.62	3.00	41249.50	-12.28	0.000
Expenditure***	468.90	4.00	332.10	3.00	52639.50	-8.60	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach neutral as they score 3. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for household income, immovable property, movable property, and expenditure compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at household level.

Individual Impact: This part discusses microfinance impact on borrowers' poverty through difference in score between the participant and non-participant borrowers (Please see Table 4.10). The *Mann-Whitney U-Test* has been used to find

out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for borrower control, honor, capacity, and confidence between the participant and non-participant borrowers.

Table 4.10 Individual Impact

Individual Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Control***	459.99	4.00	341.01	3.00	56203.50	-7.49	0.000
Honor**	381.15	3.00	419.85	3.00	72259.50	-2.43	0.015
Capacity***	448.72	4.00	352.28	3.00	60710.50	-6.16	0.000
Confidence***	439.82	4.00	361.18	3.00	64271.50	-5.02	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach neutral as they score 3. Their respective median scores are statistically different at 1% except honor, which is different at 5% significance level. It can be concluded that participant borrowers are better off for borrowers' individual control, honor, capacity, and confidence compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at individual level.

Security Impact: This part deliberates microfinance impact on borrowers' poverty through difference in score between the participant and non-participant borrowers (Please see Table 4.11). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for borrower social, financial, food, and health security between the participant and non-participant borrowers.

Table 4.11 Security Impact

Security Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Social***	481.66	4.00	319.34	3.00	47536.00	-10.23	0.000
Financial***	494.14	4.00	306.86	2.00	42545.00	-11.77	0.000
Food***	531.43	4.00	269.57	2.00	27626.00	-16.42	0.000
Health***	470.47	3.00	330.54	2.00	52014.00	-8.77	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between about 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for borrowers' social, financial, food and health security compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at security level.

4.2.4.3 Impact Measurement: Causal Relationship

This part discusses microfinance impact on borrowers' poverty at business level (business revenue, fixed asset, current asset and employment), household level (Household Income, Immovable Property, Movable Property and Expenditure), Individual level (Control, Honor, Capacity, and Confidence), and Security level (Social, Financial, Food and Health). This is pertinent to research objective and research question 3. Regression Analysis has been performed using Partial Least Square (PLS) with Reflective Measurement Model (RMM) taking microfinance as an independent variable and poverty as dependent variable. Poverty is measured through four latent variables reflected by four items at business, household, individual, and security levels (Please see Figure 4.1).

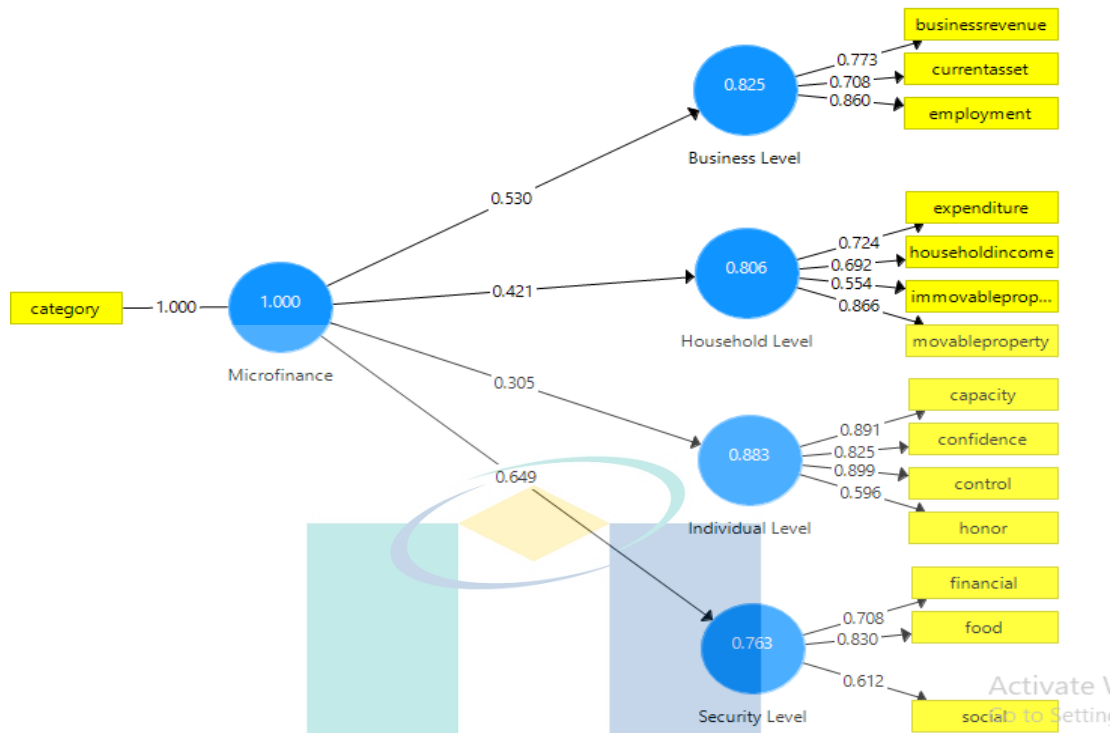


Figure 4.1 Causal Relationship: Grameen Bank

With reference to Table 3.1 - Summary of Indices for PLS Modeling in methodology chapter, for internal consistency, the acceptable values for Composite Reliability (CR) between 0.70 to 0.90 can be regarded as satisfactory (Hair et al., 2016). For convergent validity, Factors Loadings (FLs) values equal to and greater than 0.40 are acceptable (Hulland, 1999) and Average Variance Extracted (AVE) should be greater than 0.500 (Hair et al., 2016). For discriminant validity, Heterotrait - Monotrait Ratio (HTMT) values should be lower than 0.900 (Gold et al., 2001). In this analysis, CRs are between 0.70 to 0.90 confirming satisfactory internal consistency. Items with FLs above 0.40 have been kept considering its impact on content validity. AVEs are greater than 0.500 confirming convergent validity as well. Fornell-Larcker Criterion, Cross Loadings and HTMT have also met the threshold levels confirming discriminant validity (Please see Table 4.12). All the calculations are done using Smart PLS and shown in Appendix C. Considering the PLS output results and HEPM Model, this research deleted fixed asset at business level, health at security level. Items with weaker outer loadings are sometimes retained on the basis of their contribution to content validity (Hair et al., 2016). The HEPM Model has been applied

by Dunn and Arbuckle (2001b) to evaluate microfinance impact assessment. It deals with poverty as a content through different aspects at the business, household, individual, and security level and suggest to explore these items for avoiding fungibility.

Table 4.12 Measurement Model

Construct	Items	Internal	Convergent	Discriminant	
		Consistency	Validity	Validity	
		Composite	Factor	Average	Heterotrait-
		Reliability	Loading	Variance	Monotrait
		(CR)	(FL)	Extracted	Ratio
				(AVE)	(HTMT)
Microfinance		1.000	1.000	1.000	0.633
Business Level	Business Revenue	0.825	0.773	0.613	-
	Fixed Asset		-		
	Current Asset		0.706		
	Employment		0.860		
Household Level	Household Income	0.806	0.692	0.515	0.965
	Immovable Property		0.554		
	Movable Property		0.866		
	Expenditure		0.724		
Individual Level	Control	0.883	0.899	0.660	0.690
	Honor		0.596		
	Capacity		0.891		
	Confidence		0.825		
Security Level	Social	0.763	0.612	0.522	0.542
	Financial		0.708		
	Food		0.830		
	Health		-		

The estimated path coefficients of microfinance on poverty at business, household, individual, and security level are 0.530, 0.421, 0.305 and 0.649 respectively. They are all statistically significant ($P < 0.000$). These individual path coefficients can be interpreted just as the beta coefficients like the estimated change in the dependent variable for a unit change in the independent variable. This means participant borrowers are estimated to be 0.530, 0.421, 0.305 and 0.649 times better off in poverty at business, household, individual and security level respectively compared to non-participant borrowers. According to the Rule of Thumb recommended by Chin et al. (2003), the Coefficient of Determination (R^2) values more of 0.67, 0.33, and 0.19 consider substantial, moderate, and weak level respectively. The R^2 of microfinance on poverty at business, household, individual and security level (0.281, 0.178, 0.093 and 0.421 respectively) can be considered weak to moderate. According to Cohen (1988), f^2 values more of 0.35, 0.15, and 0.02 reflect large, medium, and small effect sizes respectively. The calculated f^2 (0.391, 0.216, 0.103 and 0.727 respectively) indicates that microfinance has small to large effect in producing the R^2 for poverty at business, household, individual and security level. Besides, the predictive relevance of the model has been examined. If the Q^2 value is larger than zero, the model has predictive relevance for a certain endogenous construct (Hair et al., 2016). In this case, the Q^2 value (0.163, 0.075, 0.031 and 0.209 respectively) are more than zero, indicating that the models have sufficient predictive relevance (Please see Table 4.13). Considering both measurement and structural model, this can be concluded that microfinance has a significant positive impact on Grameen Bank borrowers' poverty level. This finding is consistent with Khandker (1998b). He found positive evidence for microfinance by different variables like income, consumption, expenditure, savings, employment, etc. He also concluded that about five percent of the borrowers got rid of poverty by their respective categories per year. Similarly, positive impact on borrowers' poverty was found for microfinance intervention (Hashemi et al., 1996; Husain, 1998).

Table 4.13 Structural Model

Hypothesis	Relationship	Std. Beta	Std. Dev	T - Value	Decision	R ²	f ²	Q ²
H ₃	Microfinance → Business Level	0.530	0.024	21.820***	Sup- ported	0.281	0.391	0.163
	Microfinance → Household Level	0.421	0.022	18.761***	Sup- ported	0.178	0.216	0.075
	Microfinance → Individual Level	0.305	0.021	14.675***	Sup- ported	0.093	0.103	0.031
	Microfinance → Security Level	0.649	0.019	33.325***	Sup- ported	0.421	0.727	0.209

Note: *** P < 0.01.

4.2.5 Qualitative Impact Measurement – Modified HEPM

The counterfactual problem occurs when it has been tried to measure the socio-economic impact of microfinance quantitatively. However, the qualitative method may be alternative way of clarifying the microfinance impact on borrowers' poverty through comprehensive case studies. In this research, Modified HEPM has been applied for microfinance qualitative impact measurement. This approach overcomes limitation and complexities and also provides alternative explanations. It has simple and exhaustive two types of diaries known as financial diary for money receipt and payment and activity dairy for time usage in different activities of borrowers. Examining the figures provided by aforesaid two diaries is not simple but they deliver worth evidence about borrowers' poverty level as these five case studies display for each category of borrowers.

4.2.5.1 Financial Diary Analysis

Participant borrowers: All selected five borrowers generally do not pursue to engage alternative fund source in addition they are involved borrowing fund merely

from Grameen Bank. One case out of five shows microloans from other sources. It may mean that GB borrowers seem to be provided enough fund for carrying out their income-producing works. They have not been starving to avail more credits that save them from involving much effort and time since each borrowing alternative demands individual compulsion for availing them. They generally do not lose their wages for conforming with formalities as an obligation. Consequently, flexible and appropriate loan size diminished their physical and mental stress. A part of borrowers' money used for paying only GB loan settlements and procuring essential stuffs that serve their life quality. The researcher did not find any selected borrower required to recycle their debts. Moreover, this researcher found evidence that their total money inflow and outflow do not fluctuate very much at the aggregate level. They utilize the loan productively except for very few instances. In all cases, participant borrowers are working as self-employed persons in their individual occupied areas. For this, they generate income out of the activities usually estimated per month. They hardly do any alternative activity for other employers on hourly or daily payments. They are very much focused on their self-revenue generating activities financed by Grameen Bank.

Non - Participant borrowers: Some borrowers pursue to engage alternative sources of finance in addition to borrow merely from one informal source. Three cases out of five get loans from multiple sources. It means these borrowers appeared to be underprovided in terms of the size of loans that they receive from any particular source. This demand for extra loan requires them not only approaching alternative sources but also making the loans expensive through more effort and time. Each alternative source demands the respective obligations for availing them. The cost of fulfilling obligation is more as it is found that these three borrowers who have been doing job need to ignore few hours' wages to meet those formalities. Therefore, inflexible loan size and contingencies on borrower risk profile would increase the physical and mental stress for managing funds from multiple sources. A rather alarming finding is the high amount of some borrowers' money that goes towards serving loan repayment. Four borrowers' fund has been consumed on servicing prevailing loans and purchasing foodstuff. They have small capability to expend other necessary things such as health, education, etc. They also have been perceived to recycle their debts to the substantial extent. It is viewed that most of the major outflows that are followed by major borrowings are on consumption stuffs like jewellery, household accessories, etc.

Moreover, if the researcher looks at the aggregate level, they find indication that all selected borrowers' total income surpasses their total expense plus loan repayment during this period. The circumstance discloses that some borrowings do not make productivity. In four cases, non-participant borrowers are serving as daily labourer or wage earner in alternative working places. They generally do some works for others besides their main income-generating activities. Because their alternative loans financed work are not adequate enough to support them exclusively.

4.2.5.2 Activity Diary Analysis

Participant borrowers: As per Abraham Maslow's hierarchy of need, particularly all participant borrowers in this case studies satisfy the physiological needs. They additionally cover overall safety needs like security of body, employment, resources, morality, family, health, and property. For love or belonging, this researcher cannot locate the specific circumstance as they feel modest and not keen on talking details but it appears there is no significant matters in this hierarchy need. At the outset, no activity was found for esteem hierarchy need. Nonetheless, there are concerns about viewing some of the unique behavior for different activities. In four cases, borrowers attempt to achieve esteem through participating or organizing social events, giving some commitment to welfare activities or attempt to achieve respect through art and culture. In any case, clearly it is exceptionally normal not to achieve the self-actualization need.

Non-Participant borrowers: All non-participant borrowers in these case studies do not seem in a decent situation for fulfilling all physiological need. Four cases do not cover basic requirements or necessities such as food, clothes, shelter, medicine, and education. They are attempting to satisfy these requirements at different levels. Just two cases report fulfilling their safety need. As a matter of fact, in the case studies, it is found that non-participant borrowers as daily wage earner without employer stability. They just get their work on regular routine by luck and sometimes through compromise. Their work doesn't have steady commitment by either nature or time. They work on whatever they find for their existence every once in a while. At the point when they don't get their paid work, then they are in some cases doing for their family works for which they are not able to pay. They also enjoy time in low cost entertainment like watching nearby teal-stall television, listing radio, involving

indigenous sports, sharing with friends, and so forth. Attending these sorts of activities typically in groups assists them to gather information if any job is accessible for them in the encompassing zones. For love or belonging, this researcher cannot find the precise situation as they sense cautious and not interested sharing in details, though it seems there is no major issue in this hierarchy need level except some household quarrels or sometimes violence. There is very little indication for esteem hierarchy need. However, there were concerned about observing some of the special behavior for diverse activities. Now and again, borrowers try to achieve esteem through participating or organizing social gathering, giving some donation through small money or effort in welfare activities or try to increase respect through art and culture. Once more, it is exceptionally typical not to locate the self-realization need.

It appears from both the diaries analysis that participant borrowers are in relatively better position than non-participant borrowers which ultimately shows the positive impact of microfinance. Productive time either can earn money or save expenses that help poverty alleviation. In their case study, Alia et al. (2017) showed that time activity and money are certainly related. Time may mean money for a rich person. However, for a poor person she may spend time on non-income generating activity adding to her social esteem when money is not coming. In addition, she may also consume inexpensive assets for spending leisure time at low cost.

4.2.6 Multidimensional Poverty Index Analysis

Participant Borrowers:

- Incidence of Poverty (H): The borrower has been considered poor if she/he is deprived in at least one-third (33.33 percent) of the weighted indicators. This researcher found 283 poverty headcount through the survey of 400 respondents in this category. It means 283 incidence of poverty occurred as per their weighted score are more than 33.33 percent. Hence, the incidence of poverty (H) scored 0.7075 (283 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This researcher found 283 intensity of poverty with different percentages as per their respective score through the survey of 400

respondents in this category. As a result, the average intensity of poverty (A) scored 0.4623 (Average poverty rate of 283 borrowers).

$$\text{MPI} = H * A = 0.7075 * 0.4623 = 0.3271 \quad 4.1$$

The lower index displays comparatively lower poverty level and vice versa. This constructed Index as shown in Equation 4.1 shows lower deprivation and poverty among respondents in this category of Grameen Bank. This category's standards of living are not comparatively below than non-participant group. However, it still calls for further considerable attention. Calculation details have been provided in the Table 4.14

Table 4.14 MPI for Grameen Bank -Participant Borrowers

Indicator*	Weight	Borrower1	Borrower2	Borrower3	...
Years of School	3/18	1	0	0	...
School Attendance	3/18	0	0	1	...
Child Mortality	3/18	1	0	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	0	1	1	...
Sanitation	1/18	0	0	1	...
Drinking Water	1/18	0	1	1	...
Housing	1/18	1	1	1	...
Cooking Fuel	1/18	1	0	1	...
Assets Ownership	1/18	1	0	0	...
Weighted Score		50.00%	16.67%	44.44%	...
Status (Poor \geq 33.33%)		Poor	Not Poor	Poor	...
Score (Poor = 1, Not Poor = 0)		1	0	1	...
Incidence of Poverty (H)	$H=(1+0+1)/400$	0.7075			
Intensity of Poverty (A)	$A=(50.00+44.44)/283$	0.4623			
MPI Index	$H*A$	0.3271			

*0 for "Not Poor and No deprivation", 1 for "Poor and Deprivation"

Non-Participant Borrowers:

- Incidence of Poverty (H): Again, the borrower has been considered poor if she/he is deprived in at least one- third (33.33 percent) of the weighted indicators. This researcher found 360 poverty headcount through the survey of 400 respondents in this category. It means 360 incidence of poverty occurred as per their weighted score are more than 33.33 percent. Hence, the incidence of poverty (H) scored 0.9000 (360 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This researcher found 360 intensity of poverty with different percentages as per their respective score in the same survey of 400 respondents in this category. As a result, the average intensity of poverty (A) scored 0.5031 (Average poverty rate of 360 borrowers).

$$\text{MPI} = H * A = 0.9000 * 0.5031 = 0.4528 \quad 4.2$$

The higher index indicates comparatively higher poverty as well and vice versa. This constructed Index as shown in Equation 4.2 depicts relatively higher deprivation and poverty among non-participant borrowers compared to participant borrowers. This category standard of living is quite below than participant group. It definitely calls for further significant attention. Details of the calculation are provided in Table 4.15.

Table 4.15 MPI for Grameen Bank –Non-Participant Borrowers

Indicator*	Weight	Borrower 1	Borrower2	Borrower3	...
Years of School	3/18	1	1	0	...
School Attendance	3/18	0	0	1	...
Child Mortality	3/18	1	0	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	0	1	1	...
Sanitation	1/18	1	0	1	...

Table 4.15 Continued

Indicator*	Weight	Borrower 1	Borrower2	Borrower3	...
Drinking Water	1/18	0	1	1	...
Housing	1/18	1	1	1	...
Cooking Fuel	1/18	1	0	1	...
Assets Ownership	1/18	1	0	0	...
Weighted Score		55.56%	33.33%	44.44%	...
Status (Poor \geq 33.33%)		Poor	Poor	Poor	...
Score (Poor = 1, Not Poor = 0)		1	1	1	...
Incidence of Poverty (H)	$H=(1+1+1)/400$	0.9000			
Intensity of Poverty (A)	$A=(55.56+33.33+44.44)/360$	0.5031			
MPI Index	$H*A$	0.4528			

*0 for "Not Poor and No deprivation", 1 for "Poor and Deprivation"

Finally, the incidence of poverty scored 0.7075 and the average intensity of poverty calculated 0.4623 which constructed MPI Index 0.3271 in case of participant borrower. The constructed MPI index shows comparatively lower deprivation and poverty among participant borrowers of Grameen Bank. Conversely, incidence of poverty calculated 0.9000 and the average intensity of poverty scored 0.5031 which constructed MPI Index 0.4528 for non-participant borrower. This constructed MPI depicts comparatively higher deprivation and poverty among non-participant borrower in comparison to participant borrower. Their standards of living have been quite below than that of participant borrower and require for additional significant care. As a result, microfinance has positive impact on participant borrowers' deprivation and poverty as their respective index is comparatively lower in comparison to non-participant borrowers. Therefore, microfinance seems an effective development tool to alleviate poverty. However, the national MPI as reported 0.198 in Bangladesh during 2019 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the country (OPHI, 2019).

4.2.7 Loan Default Analysis

For finding out the factors which are contributing to the probability of loan default, logistic regression has been executed in case of Grameen Bank participant borrowers. Loan default is the dependent variable which takes two categories (Default =1, Otherwise=0). This logistic model encompasses thirteen independent variables plus dummy variables created for some independent variables (Gender, Age, Living Style, Education Level, Dependant Number, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount and Interest Rate). In case of this model for Grameen Bank participant borrowers, two predictors like *Gender and Repayment Mode* have been left out. The reason is that in this case, all selected samples appear to be female and they comply with only weekly payback mode. The full model covering all predictors appears significant statistically, χ^2 (Degrees of freedom = 26, N = 400) = 61.719, $P < .000$, showing that this model is capable to differentiate likelihood between borrowers who will report and will not report loan default. In general, this logistic model correctly classifies 93.30 percent of the cases. The outcome of this model is tabulated in Table 4.16. Some predictors' coefficients appear significant statistically in case of 10%, 5%, and 1% significance level.

Table 4.16 Predicting Likelihood for Loan Default

Dependent Variable ¹	Loan Default (Default=1, Otherwise=0)		
Independent Variables ²	Estimated Coefficient	P Value	Odd Ratio
1. Gender	Dropped as all are female		
2. Dummy Variables for (Age)			
(Age) X ₂₍₁₎	0.021	0.989	1.021
(Age) X ₂₍₂₎	2.228	0.125	9.285
(Age) X ₂₍₃₎	1.723	0.198	5.603
(Age) X ₂₍₄₎	1.251	0.344	3.495
(Age) X ₂₍₅₎	Dropped for dummy trap problem ³		
3. Living Style	-1.082*	0.100	0.339
4. (Education Level)	-0.309	0.552	0.734
5. Dummy Variables for Dependant Number			
(Dependant Number) X ₅₍₁₎	0.103	0.918	1.109

Table 4.16 Continued

Dependent Variable¹	Loan Default (Default=1, Otherwise=0)		
(Dependant Number) X ₅₍₂₎	0.013	0.990	1.013
(Dependant Number) X ₅₍₃₎	-0.543	0.591	0.581
(Dependant Number) X ₅₍₄₎	0.694	0.513	2.002
(Dependant Number) X ₅₍₅₎	Dropped for dummy trap problem ³		
6. Business Type	-0.340	0.522	0.712
7. Dummy Variables for (Monthly Revenue)			
(Monthly Revenue) X ₇₍₁₎	Dropped for dummy trap problem ³		
(Monthly Revenue) X ₇₍₂₎	-0.502	0.595	0.605
(Monthly Revenue) X ₇₍₃₎	-1.150	0.246	0.317
(Monthly Revenue) X ₇₍₄₎	-0.756	0.431	0.469
(Monthly Revenue) X ₇₍₅₎	-0.625	0.521	0.535
8. Alternative Income	0.990	0.195	2.691
9. Alternative Loan	0.138	0.790	1.148
10. Repayment Mode	Dropped as all are weekly repayment		
11. Repayment Period	-0.618	0.229	0.539
12. Dummy Variables for Repayment Amount			
Repayment Amount X ₁₂₍₁₎	-2.183	0.171	0.113
Repayment Amount X ₁₂₍₂₎	-5.357***	0.002	0.005
Repayment Amount X ₁₂₍₃₎	-1.796	0.231	0.166
Repayment Amount X ₁₂₍₄₎	-3.376*	0.056	0.034
Repayment Amount X ₁₂₍₅₎	Dropped for dummy trap problem ³		
13. Dummy Variables for Interest Rate			
Interest Rate X ₁₄₍₁₎	Dropped for dummy trap problem ³		
Interest Rate X ₁₄₍₂₎	-0.893	0.468	0.409
Interest Rate X ₁₄₍₃₎	-2.070**	0.047	0.126
Interest Rate X ₁₄₍₄₎	-2.143**	0.021	0.117
Interest Rate X ₁₄₍₅₎	-3.596***	0.003	0.027

*, **, ***, represents 10%, 5% and 1% significance level respectively.

Note: 1. Dependent variable, Loan Default = 1 for loan defaulter who missed loan repayment more than two times in instalment repayment schedule and Loan Default = 0 for otherwise, who did not miss loan repayment.

2. It has been negatively hypothesized with loan default for Independent variable shown in parentheses.

3. A dummy variable has been dropped in each group with the fewest respondents to avoid the dummy trap problem.

Gender: All respondents appear to be female borrowers in this sample. Therefore, this variable has been dropped out for predicting the likelihood of GB participant borrowers loan default analysis. However, it has been quite familiar in the microfinance loan recovery that female borrowers are more accountable and more orderly in loan repayment. Chaudhary and Ishfaq (2003) and Roslan and Karim (2009)s' findings showed that relatively male borrowers are more prone to turn out to be loan defaulters in comparison to female borrowers.

Age: Borrowers' age might indicate their respective capability to pay back the loan. The dummy variable *Age*₍₅₎ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of Grameen Bank participant borrowers, age does not seem for contributing to loan default issue. Although it is well known that older borrowers are supposed to be more responsible than the younger borrowers. The result of this model does not support the outcomes that relatively younger borrowers will be more probable to become loan defaulters (Brehanu & Fufa, 2008). This may be for the reason that borrowers change their character over time.

Living Style: It refers to single or conjugal lifestyle. In the society, conjugal or married lives have often been regarded as an optimal behavior. Single living style are not supposed to be more responsible or accountable than conjugal counterpart. A single borrower might be less dependable as there appears no partner or spouse for supporting or financing daily activities. This situation can be linked with significant likelihood of loan default. This model outcome finds that this predictor variable appears negative and statistically significant at 10% level of significance. As a result, a single borrower has less likelihood of being a loan defaulter in comparison to a conjugal borrower. The estimated odd ratio displays that a single borrower has been projected 0.339 times less likelihood of becoming a loan defaulter compared to a conjugal borrower, ceteris paribus. This outcome does not support the results that single borrowers may not need to maintain positive connection with lenders for increasing their likelihood of receiving future credits. It also does not support that they may be more probable to become defaulters in comparison to married borrowers (Peng et al., 2009). The probable reason

for this outcome may be that single borrowers become responsible and want to keep good relation with prospective lenders.

Education Level: Much educated borrowers have been anticipated to be less defaulters. The probable cause is that the learned borrowers will achieve capability for managing their activities well, understanding data and information, maintaining documentation and carrying out cash management and profitability analysis. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, an educated borrower has no contributing issue of being a loan defaulter in comparison to a lower educated or uneducated borrower. As a result, borrowers' education level does not make any contribution for becoming loan defaulter in this case. Nevertheless, it contradicts with the result that a borrower with comparatively more education will be less prone in becoming a loan defaulter (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Educated borrowers seem to become less responsible or engaged otherwise than intended revenue generating activities.

Dependant Number: This predictor may also be a contributing factor which can influence the ability of borrowers for repaying their credits. The borrowers assume more obligation to spend for basic amenities like food, clothes, education, medical, etc. when their dependant number are more to maintain and support. Therefore, dependant number can be a contributing factor to loan default. The dummy variable *Dependant Number*₍₅₎ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of Grameen Bank participant borrowers, dependant number does not seem to contribute to loan default issue. This has not been supported by previous study which confirms that a borrower who has relatively large number of dependants will assume more likelihood to be a loan defaulter (Brehanu & Fufa, 2008). Probable reason for this may be the borrowers are efficient enough to manage large household.

Business Type: This predictor includes an agricultural type of business else otherwise like trading etc. Agricultural business type has been limited with natural catastrophes like rain, flood, drought, etc. This business type is usually related with lower cash cycle. Hence, this is presumed that the agricultural business type will contribute more likelihood for loan default. This model outcome finds that this

predictor variable appears negative but statistically insignificant. As a result, an agricultural business has no contributing issue of being loan defaulter in comparison to trading business in case of GB borrowers. An agricultural business type may be associated with lower cash cycle than small business category (Chaudhary & Ishfaq, 2003). This aspect may be contributing to the higher probability of loan default. This result does not support this fact may be due to natural calamities are often unpredictable and random.

Monthly Revenue: Comparatively high monthly revenue gives the borrowers' ability for paying the loan back on time. This circumstance may not invite a borrower to be loan defaulter. The dummy variable *Monthly Revenue* (5) recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of Grameen Bank participant borrowers, *Monthly Revenue* does not seem for contributing to loan default issue. This finding is not similar with that comparatively lower amount of business revenue is accompanied with the higher likelihood of loan default (Okorie, 1986). This may be due to the fact that borrowers can manage their fund efficiently to be on time payment.

Alternative Income: Sometimes borrowers have more than one source of income. There may have inverse relationship for loan default with borrowers who have alternative or extra income source. However, there appears positive but not statistically significant coefficient for alternative income. Therefore, in case of Grameen Bank participant borrowers, alternative income does not seem to contribute to loan default issue. Although, it is well assumed that borrowers with extra income are supposed to be more reliable than the borrowers with no alternative source. The result of this model does not support this outcome that a borrower who has extra or alternative income besides her micro credit financed income will have the higher capability for paying back her micro credit (Brehanu & Fufa, 2008). This may be due to the fact that alternative source also attracts much obligation that can tempt borrower capability towards loan repayment.

Alternative Loan: Sometimes borrowers have more than one sources of loan. There may have inverse relationship for loan default with borrowers who have alternative loan source. Extra or alternative loan can affect borrowers' capability for

paying back their microfinance loan. These extra credits assume more limitations to fulfil the obligation in addition to microfinance loan. This researcher finds adequate number of microfinance borrower taking loan from multiple sources when carrying out pilot survey. When borrowers prevail extra or alternative loans from other sources, they find themselves encountering complexities and challenges for their individual payback. This model outcome finds that this predictor variable appears positive but statistically insignificant. As a result, alternative or extra loan has no contributing issue of being loan defaulter in comparison to single loan source in case of GB borrowers. Alternative loan can induce multiple fund management capacity.

Repayment Mode: This research investigates whether repayment mode, say weekly, has been contributing for loan default problem. This may be more specifically correct for borrowers with lower revenue cycle. Microfinance institute enforced loan repayment mode may play significant role for loan payback attitude of the borrower Derban et al. (2005). Since Grameen Bank merely provides weekly repayment mode, it appears to be not possible for finding contributory issue of this variable towards loan default.

Repayment Period: This research investigates whether longer loan repayment period, say more than one year in this case, is contributing to the loan default issue. Borrowers with longer repayment period can be related with more loan default problem in comparison to borrowers with shorter repayment period. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, longer repayment period has no contributing issue of being loan defaulter in comparison to shorter repayment period in case of GB borrowers. This finding does not match that a borrower with longer repayment period implying longer commitment to repay loan contributes positively for loan default (Roslan & Karim, 2009). This may be for the reason that individual borrower operating cycle appears to be incompatible with loan repayment period.

Repayment Amount: It is the size of amount what a borrower repays back as loan instalment weekly or otherwise. This research investigates whether repayment amount has been contributing to loan default problem. This may be more specifically connected with borrowers with revenue and business cycle. Grameen Bank enforced loan repayment amount may play significant role for loan payback attitude of the

borrower. A borrower paying back comparatively higher loan repayment amount may appear to become more loan defaulter in comparison to a borrower making lower repayment amount. The dummy variable *Repayment Amount* (5) recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. This model outcome finds that this predictor variable *Repayment Amount* (1) appears negative but statistically insignificant. As a result, *Repayment Amount* (1) has no contributing issue of being loan defaulter. This model outcome also finds that this predictor variable *Repayment Amount* (2) appears negative and statistically significant at 1% level of significance. The estimated odd ratio displays that repayment amount from \$26 to \$50 has been projected 0.005 times less likelihood of becoming a loan defaulter compared to other category, ceteris paribus. Again predictor variable *Repayment Amount* (3) appears negative but statistically insignificant. As a result, *Repayment Amount* (3) has no contributing issue as well. This model outcome also finds that this predictor variable *Repayment Amount* (4) appears negative and statistically significant at 10% level of significance. The estimated odd ratio displays that repayment amount from \$76 to \$100 has been projected 0.034 times less likelihood of becoming a loan defaulter compared to other category, ceteris paribus. This findings conforms the similar outcome by Derban et al. (2005). They make a conclusion that the unfavorable loan product can play significant role in case of loan default. Because loan should be suitably designed for the intended purpose.

Interest Rate: This represents interest rate charged to cover operational and other costs for microfinance institute. Grameen Bank charges interest rate for covering some parts or all of its operational cost to raise and disburse fund. Whether a borrower confronts her loan repayment for comparatively higher interest rate is very important to investigate. A borrower with high interest rate has been assumed to become a loan defaulter in comparison to a borrower with low interest rate. This researcher finds adequate number of microfinance borrower being charged different rates for different borrowers on the basis of their individual portfolio when carrying out pilot survey. Borrowers find themselves encountering complexities and challenges for comparatively higher interest rate. The dummy variable *Interest Rate* (5), recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. This model outcome finds that this predictor variable *Interest Rate* (1), appears negative but statistically insignificant. As a result, this category has no

contributing issue of being loan defaulter. This model outcome also finds that this predictor variable *Interest Rate* ⁽²⁾ appears negative and statistically significant at 5% level of significance. The estimated odd ratio displays that interest rate 11% to 15% has been projected 0.126 times less likelihood of becoming a loan defaulter compared to other category, ceteris paribus. This model outcome also finds that this predictor variable *Interest Rate* ⁽³⁾ appears negative and statistically significant at 5% level of significance. The estimated odd ratio displays that interest rate 16% to 20% has been projected 0.117 times less likelihood of becoming a loan defaulter compared to other category, ceteris paribus. Again, this model outcome finds that this predictor variable *Interest Rate* ⁽⁴⁾ appears negative and statistically significant at 1% level of significance. The estimated odd ratio displays that interest rate above 20% has been projected 0.027 times less likelihood of becoming a loan defaulter compared to other category, ceteris paribus. These findings conform the similar outcome by Derban et al. (2005). They make a conclusion that the unfavorable loan product can play significant role in case of loan default. Because loan should be suitably designed for the intended purpose.

4.3 Bangladesh Rural Advancement Committee

This section discusses different responses of the participant and non-participant borrowers of BRAC. These responses are collected by the questionnaire as per Appendix B. It describes BRAC borrowers' demographic, business, and loan characteristics. It also describes the impact of microfinance on borrowers' business, household, individual, and security levels for quantitative analysis and financial and activity diaries for qualitative analysis. It further describes poverty index and factors responsible for loan default.

4.3.1 Demographic Characteristic

With reference to Table 4.17, BRAC provides microfinance to both female and male but females are predominating. The females are 81.5% and 18.5% in the participant and non-participant borrowers, respectively. By their age group, BRAC deals with relatively mid-age borrowers. These borrowers are mostly Muslim followed by Hindu, Christian, Buddhist and others. Nearly half of the borrowers are living conjugal lives. Non-participant borrowers are relatively a little bit educated than

participant borrowers. Majority participant borrowers have more household members than non-participant borrowers. Majority participant and non-participant borrowers have only up to 2 income earners. However, number of dependants is higher for participant borrowers. Most borrowers have up to four number of children. However, few of them are educated.

Table 4.17 Demographic Characteristic

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Gender				
Female	326	81.5	334	83.5
Male	74	18.5	66	16.5
Total	400	100.0	400	100.0
Age				
Up to 25	89	22.2	51	12.7
26 to 35	86	21.5	91	22.7
36 to 45	107	26.8	104	26.0
46 to 55	81	20.2	81	20.3
Above 55 year	37	9.3	73	18.3
Total	400	100.0	400	100.0
Ethnic Group				
Muslim	299	74.7	256	64.0
Hindu	64	16.0	62	15.4
Christian	18	4.5	27	6.8
Buddhist	9	2.3	16	4.0
Others	10	2.5	39	9.8
Total	400	100.0	400	100.0
Living Style				
Conjugal	197	49.2	196	49.0
Single	203	50.8	204	51.0
Total	400	100.0	400	100.0
Education				
Non - Educated	235	58.7	192	48.0
Educated	165	41.3	208	52.0
Total	400	100.0	400	100.0

Table 4.17 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Household Member				
Up to 2	15	3.8	20	5.0
3 to 4	66	16.5	113	28.2
5 to 6	78	19.5	124	31.0
7 to 8	103	25.8	73	18.3
Above 8	138	34.4	70	17.5
Total	400	100.0	400	100.0
Income Earner				
Up to 2	242	60.5	219	54.7
3 to 4	138	34.5	131	32.7
5 to 6	20	5.0	43	10.8
7 to 8	0	0.0	7	1.8
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0
Dependant				
Up to 2	70	17.5	204	51.0
3 to 4	134	33.5	154	38.4
5 to 6	115	28.8	37	9.3
7 to 8	63	15.8	5	1.3
Above 8	18	4.4	0	0.0
Total	400	100.0	400	100.0
Total Children				
Up to 2	178	44.5	226	56.4
3 to 4	127	31.8	154	38.5
5 to 6	65	16.3	19	4.8
7 to 8	26	6.4	1	0.3
Above 8	4	1.0	0	0.0
Total	400	100.0	400	100.0
Educated Children				
Up to 2	303	75.8	277	69.2
3 to 4	90	22.4	118	29.5
5 to 6	7	1.8	5	1.3
7 to 8	0	0.0	0	0.0
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0

4.3.2 Business Characteristic

With reference to Table 4.18, nearly half respondents do agricultural activities for both participant and non-participant cases. Many borrowers do not hold ownership

in the business and do not have control over their decision making power. Rather they depend on their spouses, business partners, and others. Monthly revenue with large category tends to be \$101 to \$200, meaning borrowers are not economically solvent for quality lives. Maximum borrowers do not have alternative income other than main business activities related to microfinance.

Table 4.18 Business Characteristic

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Type				
Agricultural	205	51.2	193	48.3
Non-Agricultural	195	48.8	207	51.7
Total	400	100.0	400	100.0
Ownership				
Borrower	194	48.5	205	51.3
Spouse	133	33.3	130	32.4
Business Partner	42	10.5	32	8.0
Participatory	23	5.7	15	3.8
Others	8	2.0	18	4.5
Total	400	100.0	400	100.0
Decision Maker				
Borrower	176	44.0	183	45.8
Spouse	133	33.2	132	33.0
Business Partner	48	12.0	49	12.2
Participatory	34	8.5	28	7.0
Others	9	2.3	8	2.0
Total	400	100.0	400	100.0
Monthly Revenue				
Below \$100	64	16.0	25	6.3
\$101 to \$200	125	31.2	136	34.0
\$201 to \$300	78	19.5	78	19.5
\$301 to \$400	68	17.0	84	21.0
Above \$400	65	16.3	77	19.2
Total	400	100.0	400	100.0
Alternative Income				
No Alternative	323	80.8	289	72.3
Yes Alternative	77	19.2	111	27.7
Total	400	100.0	400	100.0

4.3.3 Loan Characteristic

With reference to Table 4.19, the majority respondents borrow 2 to 3 times per year in their respective income-generating activities. However, below 10.0% respondents take loans above four times. The largest borrowing amount category is \$501 to \$1,000. Majority says that the loan given is not adequate for the intended purpose but they have alternative sources for taking more loans. For participant borrowers, the repayment mode is weekly but non-participant borrowers have other options, which do not follow any particular pattern. The repayment period is longer, meaning more than one year, for majority cases. Many participant borrowers are obliged to repay less than \$50 in their respective repayment instalments whereas non-participant borrowers do not follow any pattern. Many participant borrowers pay interest rates ranging from 16 to 20 percent. Again, non-participant borrowers' interest costs are not ascertainable for lack of formal contract. Approximately 87% of the borrowers are not loan defaulters who missed their repayment instalments more than two times during the stipulated period and if they default, the main cause is business problem followed by the family problem, health issue, and natural disaster. Default is not applicable for non-participant borrowers due to the lack of a formal contract.

Table 4.19 Loan Characteristic

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Borrowing Times				
One Times	70	17.5	57	14.2
Two Times	110	27.5	95	23.8
Three Times	100	25.0	136	34.0
Four Times	86	21.5	75	18.8
Above Four	34	8.5	37	9.2
Total	400	100.0	400	100.0
Borrowing Amount				
Up to \$500	46	11.5	30	7.5
\$501 to \$1000	114	28.5	130	32.5
\$1001 to \$1500	112	28.0	119	29.7
\$1501 to \$2000	81	20.3	73	18.3
Above \$2000	47	11.7	48	12.0
Total	400	100.0	400	100.0

Table 4.19 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Loan Adequacy				
Not Adequate	248	62.0	219	54.7
Yes Adequate	152	38.0	181	45.3
Total	400	100.0	400	100.0
Alternative Loan				
No Alternative	225	56.3	179	44.8
Yes Alternative	175	43.7	221	55.2
Total	400	100.0	400	100.0
Repayment Mode				
Weekly	375	93.8	0	0.0
Otherwise	25	6.2	400	100.0
Total	400	100.0	400	100.0
Repayment Period				
Longer	317	79.3	265	66.2
Shorter	83	20.7	135	33.8
Total	400	100.0	400	100.0
Repayment Amount				
Up to \$25	98	24.5	N/A*	-
\$26 to \$50	104	26.0	N/A	-
\$51 to \$75	82	20.5	N/A	-
\$76 to \$100	54	13.5	N/A	-
Above \$100	62	15.5	N/A	-
Total	400	100.0	400	100.0
Interest Rate				
Up to 5%	19	4.8	N/A	-
6% to 10%	73	18.2	N/A	-
11% to 15%	100	25.0	N/A	-
16% to 20%	137	34.2	N/A	-
Above 20%	71	17.8	N/A	-
Total	400	100.0	400	100.0
Loan Default				
Not Default	317	79.2	N/A	-
Yes Default	83	20.8	N/A	-
Total	400	100.0	400	100.0
Default Cause				
Not Applicable	317	79.2	N/A	-
Business Problem	60	15.0	N/A	-
Family Problem	9	2.3	N/A	-
Health Issue	8	2.0	N/A	-
Natural Disaster	4	1.0	N/A	-
Others	2	0.5	N/A	-
Total	400	100.0	400	100.0

4.3.4 Quantitative Impact Measurement – HEPM

Within impact relates to the first research objective and Hypothesis (H₁) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level within participant borrowers and non-participant borrowers. **Between impact** relates to the second research objective and Hypothesis (H₂) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level between participant borrowers and non-participant borrowers. **Causal impact** relates to the third research objective and Hypothesis (H₃) that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual, and security level.

4.3.4.1 Impact Measurement: Within the Group

Business Impact: It begins with a discussion of the impact of loan on borrower business level within the group (Please see Table 4.20). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their business revenue, fixed asset, current asset, and employment in case of both participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.20 Business Impact

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400			
	Frequency	%	χ ² , (Sig.)	Frequency	%	χ ² , (Sig.)
Business Revenue						
Strongly Disagree	16	4.0		96	24.0	
Disagree	74	18.5		105	26.2***	41.5,(.00)
Neutral	87	21.8		100	25.0	
Agree	145	36.3***	105.1,(.00)	40	10.0	
Strongly Agree	78	19.4		59	14.8	
Total	400	100.0		400	100.0	
Fixed Asset						
Strongly Disagree	54	13.5		96	24.0	
Disagree	136	34.0***	60.4,(.00)	94	23.5	
Neutral	91	22.8		130	32.5***	77.5,(.00)
Agree	54	13.5		35	8.8	
Strongly Agree	65	16.2		45	11.2	
Total	400	100.0		400	100.0	

Table 4.20 Continued

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	%	Frequency	%
Current Asset				
Strongly Disagree	72	18.0	120	30.0
Disagree	54	13.4	122	30.5*** 105.3,(.00)
Neutral	89	22.3	96	24.0
Agree	105	26.3*** 18.0,(.00)	30	7.5
Strongly Agree	80	20.0	32	8.0
Total	400	100.0	400	100.0
Employment				
Strongly Disagree	6	1.5	82	20.5
Disagree	65	16.2	113	28.2
Neutral	62	15.5	154	38.5*** 157.7,(.00)
Agree	124	31.0	33	8.3
Strongly Agree	143	35.8*** 149.1,(.00)	18	4.5
Total	400	100.0	400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 36.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their business revenue and 19.4% participant borrowers strongly agree the same. In total, about 55.7% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 26.2% respondents disagree (at 1% significance level) that their business revenue has increased and 24.0% respondents strongly disagree the same. Totally, about 50.2% respondents disagree that their business revenue has increased and only 24.8% respondents have reported increase in their business revenue. This is in sharp distinction to the findings of participant borrowers where 55.7% have reported increase in business revenue. This result is similar to the result of studies on microfinance borrowers by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loan significantly increased the microenterprise's business revenue.

In case of fixed asset, 34.0% participant borrowers disagree (at 1% significance level) that microfinance borrowings have increased it and 13.5% participant borrowers strongly disagree the same. In total, about 47.5% participant borrowers have reported negative impact of microfinance for fixed asset. In case of non-participant borrowers, about 32.5% respondents are neutral (at 1% significance level) that their fixed asset

has increased and 24.0% and 23.5% respondents strongly disagree and disagree the same and only 20.0% respondents have reported increase in their fixed asset. This is not similar to the findings of participant borrowers where 47.5% have reported negative impact. This result does not conform the finding of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loans significantly increased the microenterprise's assets.

About 26.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their current asset and 20.0% participant borrowers strongly agree the same. In total, about 46.3% participant borrowers have reported positive impact of microfinance. In case of non-participant borrowers, about 30.5% respondents disagree (at 1% significance level) that their current asset has increased and 30.0% respondents strongly disagree the same. Totally, about 60.5% respondents disagree that their current asset has increased and only 15.5% respondents have reported increase in their current asset. This is also in sharp contrast to the findings of participant borrowers, where 46.3% have reported increase the same. This result conforms the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found that microfinance loan significantly increased the microenterprise's assets.

In terms of employment generation, about 35.8% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased it and 31.0% participant borrowers agree the same. In total, about 66.8% participant borrowers have reported positive impact of microfinance for employment generation. In case of non-participant borrowers, about 38.5% respondents have been neutral (at 1% significance level) that employment generation has increased and 20.5% and 28.2% respondents strongly disagree and disagree the same, respectively. Totally, about 48.7% respondents disagree that employment generation has increased and only 12.8% respondents have reported increase the same. This is dissimilar to the findings of participant borrowers where 66.8% have reported increase in employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997).

Household Impact: It provides a discussion of the impact of loan on borrower household level within the group (Please see Table 4.21). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who

strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their household income, immovable property, movable property, and expenditure in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.21 Household Impact

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	%	Frequency	%
Household Income				
Strongly Disagree	37	9.3	78	19.5
Disagree	62	15.5	136	34.0*** 73.1,(.00)
Neutral	92	23.0	81	20.3
Agree	102	25.4	28	7.0
Strongly Agree	107	26.8*** 44.1,(.00)	77	19.2
Total	400	100.0	400	100.0
Immovable Property				
Strongly Disagree	37	9.2	78	19.5
Disagree	135	33.8*** 77.4,(.00)	87	21.8
Neutral	80	20.0	122	30.5*** 68.0,(.00)
Agree	99	24.8	92	23.0
Strongly Agree	49	12.2	21	5.3
Total	400	100.0	400	100.0
Movable Property				
Strongly Disagree	23	5.8	72	18.0
Disagree	73	18.2	100	25.0
Neutral	134	33.5*** 82.5,(.00)	169	42.2*** 168.6,(.00)
Agree	98	24.5	31	7.8
Strongly Agree	72	18.0	28	7.0
Total	400	100.0	400	100.0
Expenditure				
Strongly Disagree	7	1.8	76	19.0
Disagree	65	16.2	58	14.5
Neutral	86	21.4	126	31.5*** 36.4,(.00)
Agree	113	28.3	63	15.8
Strongly Agree	129	32.3*** 113.5,(.00)	77	19.2
Total	400	100.0	400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 26.8% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their household income and 25.4% participant borrowers agree the same. In total, about 52.2% participant borrowers have reported positive impact of microfinance for household income. In case of non-participant borrowers, about 34.0% respondents disagree (at 1% significance level) that their household income has increased and 19.5% respondents strongly disagree the same. Totally, about 53.5% respondents disagree and only 26.2% respondents agree that their household income has increased. This is in contrast to the findings of participant borrowers where 52.2% have reported increase in household income. This finding conformed Mahjabeen (2008) and Nader (2008) findings who showed that microfinance loan increased household income of microfinance borrower in Bangladesh and in Egypt, respectively.

In case of immovable property, about 33.8% participant borrowers disagree (at 1% significance level) that microfinance borrowings have increased their immovable property and 9.2% participant borrowers strongly disagree the same. In total, about 43.0% participant borrowers have reported negative impact of microfinance for immovable property. In case of non-participant borrowers, about 30.5% respondents are neutral (at 1% significance level) that their household income has increased and 41.3% respondents disagree the same. Only 28.3% respondents agree that their household income has increased. This is contrast to the findings of participant borrowers where 43.0% have reported decrease in household income. Therefore, microfinance borrowings have negative impact on addition of immovable property.

With reference to movable property, 33.5% and 44.2% have neutral view (at 1% significance level) for the participant and non-participant borrowers respectively. Since both participant and non-participant borrowers are neutral, microfinance borrowings have almost no impact for the addition of movable property.

32.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their expenditure on basic amenities and 28.3% participant borrowers agree the same. In total, about 60.6% participant borrowers have reported positive impact of microfinance in this case. In case of non-participant borrowers, about 31.5% respondents have been neutral (at 1% significance level) that their expenditure has increased. Therefore, participant borrowers have positive impact on their expenditure of basic amenities whereas non-participant

borrowers remain at same level of expenditure. It can be concluded that microfinance borrowings have some positive impact for expenditure.

Individual Impact: It provides a discussion of the impact of loan on borrower individual level within the group (Please see Table 4.22). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their control, honor, capacity and confidence in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.22 Individual Impact

	Participant Borrowers N ₁ = 400			Non-Participant Borrowers N ₂ = 400		
	Frequency	%	χ^2 , (Sig.)	Frequency	%	χ^2 , (Sig.)
Control						
Strongly Disagree	13	3.3		74	18.5	
Disagree	68	17.0		52	13.0	
Neutral	137	34.3***	102.7,(.00)	139	34.8***	70.3,(.00)
Agree	98	24.4		45	11.3	
Strongly Agree	84	21.0		90	22.5	
Total	400	100.0		400	100.0	
Honor						
Strongly Disagree	26	6.4		82	20.5	
Disagree	81	20.2		59	14.8	
Neutral	135	33.8***	75.9,(.00)	119	29.8***	41.4,(.00)
Agree	71	17.8		46	11.5	
Strongly Agree	87	21.8		94	23.4	
Total	400	100.0		400	100.0	
Capacity						
Strongly Disagree	23	5.7		139	34.8***	104.5,(.00)
Disagree	71	17.7		80	20.0	
Neutral	105	26.3		95	23.8	
Agree	108	27.0***	61.3,(.00)	12	3.0	
Strongly Agree	93	23.3		74	18.4	
Total	400	100.0		400	100.0	
Confidence						
Strongly Disagree	18	4.5		141	35.3***	71.2,(.00)
Disagree	79	19.7		54	13.5	
Neutral	83	20.7		82	20.5	
Agree	107	26.8		44	11.0	
Strongly Agree	113	28.3***	70.9,(.00)	79	19.7	
Total	400	100.0		400	100.0	

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

With reference to borrower individual control, 34.3% and 34.8% have neutral view (at 1% significance level) for participant and non-participant borrowers respectively. Since both participant and non-participant borrowers are neutral, microfinance borrowings have almost no impact for the gaining borrower control over the environment they are living. The findings are not similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions.

With respect to individual honor, 33.8% participant and 29.8% non-participant borrowers have been neutral (at 1% significance level). Both the groups do not show any impact for having more individual honor through borrowings. Therefore, microfinance borrowings do not make any difference for increasing borrowers' individual honor.

About 27.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their capacity and 23.3% participant borrowers strongly agree the same. In total, about 50.3% participant borrowers have reported positive impact of microfinance for capacity building. In case of non-participant borrowers, about 34.8% respondents strongly disagree (at 1% significance level) that their capacity has increased and 20.0% respondents disagree the same. Totally, about 54.8% respondents disagree and only 21.4% respondents agree that their capacity has increased. This is contrast to the findings of participant borrowers where 50.3% have reported increase in capacity building.

In case of borrower confidence building, about 28.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased it and 26.8% participant borrowers agree the same. In total, about 55.1% participant borrowers have reported positive impact of microfinance for confidence building. In case of non-participant borrowers, about 35.3% respondents strongly disagree (at 1% significance level) that their confidence has increased and 13.5% respondents disagree the same. Only 30.7% respondents agree that their confidence has increased. This is contrast to the findings of participant borrowers where 55.1% have reported increase in confidence building. Therefore, microfinance borrowings have positive impact for borrower confidence building. The findings are consistent with those of Nader (2008), Afrane (2002), Goetz and Gupta (1996) and (Hashemi et al., 1996) who found

microfinance loan improved the borrowers' confidence in managing their business and income and increased their involvement in the community.

Security Impact: It provides a discussion for the impact of loan on borrower security level (Please see Table 4.23). The *Chi-Square* test has been used to find out whether there are any significant differences between the groups who strongly disagree, disagree, neutral, agree and strongly agree (5 point Likert Scale) for increase in borrower social, financial, food, and health security in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.23 Security Impact

	Participant Borrowers N ₁ = 400			Non-Participant Borrowers N ₂ = 400		
	Frequency	%	χ^2 , (Sig.)	Frequency	%	χ^2 , (Sig.)
Social						
Strongly Disagree	18	4.5		120	30.0***	55.0,(.00)
Disagree	65	16.3		85	21.2	
Neutral	100	25.0		100	25.0	
Agree	103	25.8		36	9.0	
Strongly Agree	114	28.4***	76.9,(.00)	59	14.8	
Total	400	100.0		400	100.0	
Financial						
Strongly Disagree	7	1.8		117	29.3***	43.4,(.00)
Disagree	68	17.0		89	22.3	
Neutral	92	23.0		93	23.3	
Agree	132	33.0***	109.5,(.00)	43	10.7	
Strongly Agree	101	25.2		58	14.4	
Total	400	100.0		400	100.0	
Food						
Strongly Disagree	7	1.8		134	33.5***	129.6,(.00)
Disagree	40	10.0		119	29.7	
Neutral	110	27.5		94	23.5	
Agree	136	34.0***	146.1,(.00)	29	7.3	
Strongly Agree	107	26.7		24	6.0	
Total	400	100.0		400	100.0	
Health						
Strongly Disagree	18	4.5		131	32.7	
Disagree	57	14.3		132	33.0***	175.3,(.00)
Neutral	98	24.5		104	26.0	
Agree	117	29.3***	87.0,(.00)	23	5.8	
Strongly Agree	110	27.4		10	2.5	
Total	400	100.0		400	100.0	

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 28.4% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their social security and 25.8% participant borrowers agree the same. In total, about 54.2% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 30.0% respondents strongly disagree (at 1% significance level) that their social security has increased and 21.3% respondents disagree the same. Totally, about 51.2% respondents disagree that their social security has increased and only 23.8% respondents have reported increase in their social security. This is contrast to the findings of participant borrowers, where 54.2% have reported increase in this respect. Therefore, microfinance has increased social security of the borrowers.

For financial security, about 33.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their financial security and 25.2% participant borrowers strongly agree the same. In total, about 58.2% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 29.3% respondents strongly disagree (at 1% significance level) that their financial security has increased and 22.3% respondents disagree the same. Totally, about 51.6% respondents disagree that their financial security has increased and only 25.1% respondents have reported increase in their financial security. This is in sharp contrast to the findings of participant borrowers where 58.2% have reported increase in this respect. It shows the positive impact of microfinance.

With respect to food security, about 34.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their food security and 26.7% participant borrowers agree the same. In total, about 60.7% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 33.5% respondents strongly disagree (at 1% significance level) that their food security has increased and 29.8% respondents disagree the same. Totally, about 63.3% respondents disagree that their food security has increased and only 13.3% respondents have reported increase in their food security. This is also in severe distinction to the findings of participant borrowers where 60.7% have reported increase in this respect. It also shows microfinance positive impact.

For health security, about 29.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their health security and 27.4% participant borrowers strongly agree the same. In total, about 56.7% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 33.0% respondents disagree (at 1% significance level) that their health security has increased and 32.7% respondents strongly disagree the same. Totally, about 65.7% respondents disagree that their health security has increased and only 8.3% respondents have reported increase in their health security. This is also in harsh dissimilarity to the findings of participant borrowers, where 56.7% have reported increase in this case.

4.3.4.2 Impact Measurement: Between the Group

Business Impact: This part discusses microfinance impact on borrowers' poverty at business level through difference in score between participant and non-participant borrowers (Please see Table 4.24). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for business revenue, fixed asset, current asset, and employment between participant and non-participant borrowers.

Table 4.24 Business Impact

Business Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean	Median	Mean	Median	Mann-Whitney U	Z	Sig.
Business Revenue***	473.10	4.00	327.91	2.00	50962.00	-9.08	0.000
Fixed Asset***	420.52	3.00	380.48	3.00	71992.50	-2.52	0.012
Current Asset***	469.72	3.00	331.28	2.00	52311.00	-8.66	0.000
Employment***	518.87	4.00	282.13	3.00	32652.50	-14.84	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% significance level (Except Fixed Asset which is statistically different at 5% significance level). It can be concluded that participant borrowers are better off for business revenue, fixed asset, current asset, and employment compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at business level.

Household Impact: This part deals with microfinance impact on borrowers' poverty at household level through difference in score between participant and non-participant borrowers (Please see Table 4.25). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for household income, immovable property, movable property, and expenditure between the participant and non-participant borrowers.

Table 4.25 Household Impact

Household Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean	Median	Mean	Median	Mann-Whitney U	Z	Sig.
Household Income***	460.77	4.00	340.23	2.00	55892.50	-7.54	0.000
Immovable Property***	420.45	3.00	380.56	3.00	72022.00	-2.51	0.012
Movable Property***	467.59	3.00	333.42	3.00	53166.00	-8.52	0.000
Expenditure***	459.52	4.00	341.49	3.00	56394.00	-7.41	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% significance level (Except Immovable Property which is statistically different at 5% significance level). It can be

concluded that participant borrowers are better off for household income, immovable property, movable property, and expenditure compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at household level.

Individual Impact: This part discusses microfinance impact on borrowers' poverty through difference in score between participant and non-participant borrowers (Please see Table 4.26). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for borrower control, honor, capacity, and confidence between the participant and non-participant borrowers.

Table 4.26 Individual Impact

Individual Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Control***	430.65	3.00	370.35	3.00	67940.50	-3.81	0.000
Honor**	420.42	3.00	380.58	3.00	72031.00	-2.50	0.012
Capacity***	477.02	4.00	323.98	2.00	49391.00	-9.57	0.000
Confidence***	467.65	4.00	333.35	3.00	53141.50	-8.39	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% except honor, which is different at 5% significance level. It can be concluded that participant borrowers are better off for borrowers' individual control, honor, capacity, and confidence compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at individual level.

Security Impact: This part deliberates microfinance impact on borrowers' poverty through difference in score between participant and non-participant borrowers (Please see Table 4.27). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) for borrower social, financial, food, and health security between participant and non-participant borrowers.

Table 4.27 Security Impact

Security Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Social***	482.12	4.00	318.88	2.00	47351.50	-10.21	0.000
Financial***	486.50	4.00	314.50	2.00	45601.50	-10.75	0.000
Food***	530.22	4.00	270.78	2.00	28111.00	-16.23	0.000
Health***	528.03	4.00	272.97	2.00	28987.50	-15.96	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach to agree as they score 4. However, in case of non-participant borrowers, all the four variables approach to disagree as they score 2. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for borrowers' social, financial, food, and health security compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at security level.

4.3.4.3 Impact Measurement: Causal Relationship

This part discusses microfinance impact on borrowers' poverty at business level (business revenue, fixed asset, current asset and employment), household level (Household Income, Immovable Property, Movable Property and Expenditure), Individual level (Control, Honor, Capacity and Confidence), and Security level

(Social, Financial, Food and Health). This is pertinent to research objective and research question 3. Regression Analysis has been performed using Partial Least Square (PLS) with Reflective Measurement Model (RMM) taking microfinance as an independent variable and poverty as dependent variable. Poverty is measured through four latent variables reflected by four items at business, household, individual, and security levels (Please see Figure 4.2).

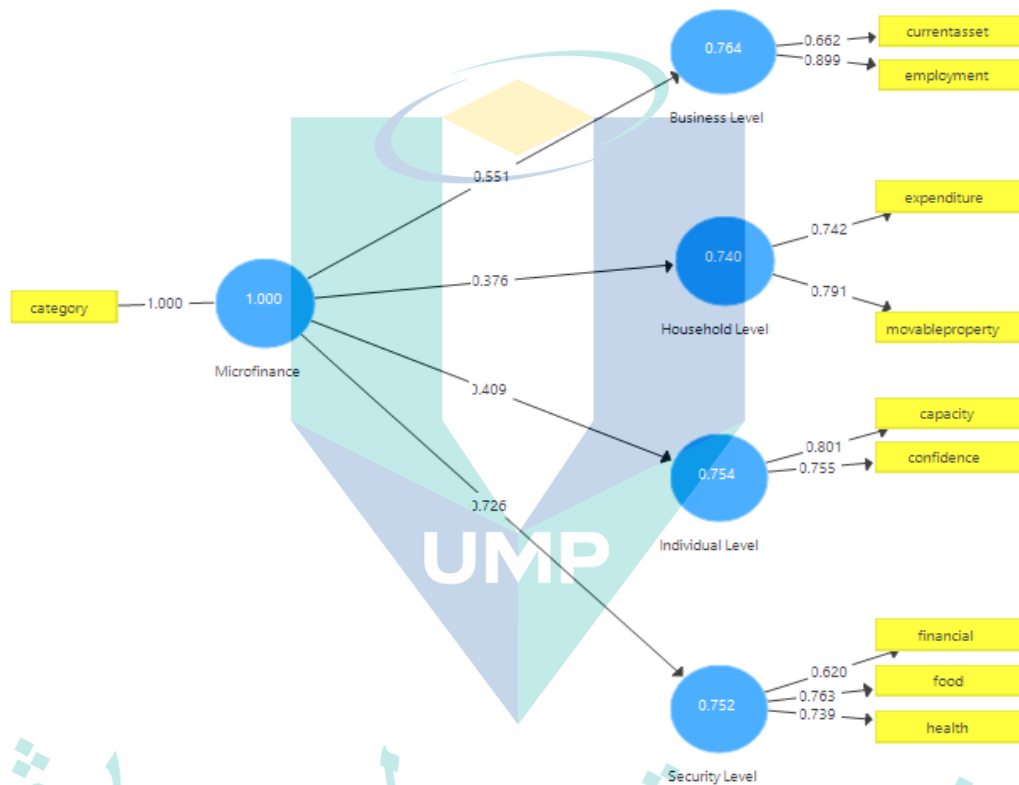


Figure 4.2 Causal Relationship: BRAC

With reference to Table 3.1 - Summary of Indices for PLS Modeling in methodology chapter, for internal consistency, the acceptable values for Composite Reliability (CR) between 0.70 to 0.90 can be regarded as satisfactory (Hair et al., 2016). For convergent validity, Factors Loadings (FLs) values equal to and greater than 0.40 are acceptable (Hulland, 1999) and Average Variance Extracted (AVE) should be greater than 0.500 (Hair et al., 2016). For discriminant validity, Heterotrait - Monotrait Ratio (HTMT) values should be lower than 0.900 (Gold et al., 2001). In this analysis, CR is between 0.70 to 0.90 confirming satisfactory internal consistency. Items with FLs above 0.40 have been kept considering its impact on content validity.

AVEs are greater than 0.500 confirming convergent validity. Fornell-Larcker Criterion, Cross Loadings and HTMT have also met the threshold levels confirming discriminant validity (Please see Table 4.28). All the calculations are done using Smart PLS and shown in Appendix C. Considering the PLS output results and HEPM Model, this researcher deleted business revenue and fixed asset at business level, household income and immovable property at household level, control and honor at individual level and social security at security level. Items with weaker outer loadings are sometimes retained on the basis of their contribution to content validity (Hair et al., 2016). This HEPM Model has been applied by Dunn and Arbuckle (2001b) to evaluate microfinance impact assessment. It deals with poverty as a content through different aspects at the business, household, individual, and security level and suggest to explore these items for avoiding fungibility.

Table 4.28 Measurement Model

Construct	Items	Internal Consistency	Convergent Validity	Discriminant Validity	
		Composite Reliability (CR)	Factor Loading (FL)	Average Variance Extracted (AVE)	Heterotrait-Monotrait Ratio (HTMT)
Microfinance		1.000	1.000	1.000	0.807
Business Level	Business Revenue	0.764	-	0.624	-
	Fixed Asset		-		
	Current Asset		0.662		
	Employment		0.899		
Household Level	Household Income	0.740	-	0.588	0.984
	Immovable Property		-		
	Movable Property		0.791		
	Expenditure		0.742		
Individual Level	Control	0.754	-	0.606	0.780
	Honor		-		
	Capacity		0.801		
	Confidence		0.755		
Security Level	Social	0.752	-	0.504	0.863
	Financial		0.620		
	Food		0.763		
	Health		0.739		

The estimated path coefficients of microfinance on poverty at business, household, individual, and security level are 0.551, 0.376, 0.409 and 0.726 respectively. They are all statistically significant ($P < 0.000$). These individual path coefficients can be interpreted just as the beta coefficient like the estimated change in the dependent variable for a unit change in the independent variable. This means participant borrowers are estimated to be 0.551, 0.376, 0.409 and 0.726 times better off in poverty at business, household, individual, and security level respectively compared to non-participant borrowers. According to the Rule of Thumb recommended by Chin et al. (2003), the Coefficient of Determination (R^2) values more of 0.67, 0.33, and 0.19 consider substantial, moderate, and weak level respectively. The R^2 of microfinance on poverty at business, household, individual, and security level (0.303, 0.142, 0.168 and 0.527 respectively) can be considered weak to moderate. According to Cohen (1988), f^2 values more of 0.35, 0.15, and 0.02 reflect large, medium, and small effect sizes respectively. The calculated f^2 (0.435, 0.165, 0.201 and 1.115 respectively) indicate that microfinance has small to large effect in producing the R^2 for poverty.

Besides, the predictive relevance of the model has been examined. If the Q^2 value is larger than zero, the model has predictive relevance for a certain endogenous construct (Hair et al., 2016). In this case, the Q^2 value (0.179, 0.079, 0.097 and 0.253 respectively) is more than zero, indicating that the model has sufficient predictive relevance (Please see Table 4.29). Considering both measurement and structural model, this can be concluded that microfinance has a significant positive impact on BRAC borrowers' poverty level. This finding is consistent with Khandker (1998b). He found positive evidence for microfinance by different variables like income, consumption, expenditure, savings, employment, etc. He also concluded that about five percent of the borrowers got rid of poverty by their respective categories per year. Similar nature positive impact on borrowers' poverty was found for microfinance intervention (Hashemi et al., 1996; Husain, 1998).

Table 4.29 Structural Model

Hypothesis	Relationship	Std. Beta	Std. Dev	T - Value	Decision	R ²	f ²	Q ²
H ₃	Microfinance → Business Level	0.551	0.024	22.844***	Sup- ported	0.303	0.435	0.179
	Microfinance → Household Level	0.376	0.030	12.664***	Sup- ported	0.142	0.165	0.079
	Microfinance → Individual Level	0.409	0.030	13.795***	Sup- ported	0.168	0.201	0.097
	Microfinance → Security Level	0.726	0.015	48.047***	Sup- ported	0.527	1.115	0.253

Note: *** P < 0.01.

4.3.5 Qualitative Impact Measurement – Modified HEPM

The counterfactual issue arises when it has been tried to measure the socio-economic impact of microfinance quantitatively. However, the qualitative perspective may be another way of explaining the microfinance impact on borrowers' poverty through in depth case studies. In this study, Modified HEPM has been applied for microfinance qualitative effect analysis. This approach supersedes limitations and complexities and also provide alternative ways. It has simple and detailed two types of diaries known as financial diary for money receipt and payment and activity dairy for time use in different activities of borrower. Considering the information generated by previously mentioned two diaries is quite difficult, but they convey quality and sound information about borrowers' poverty level as our five case studies disclose for each type of borrowers.

4.3.5.1 Financial Diary Analysis

Participant borrowers: All chosen five borrowers typically do not search for alternative sources of finance in addition to borrowing solely from BRAC. No case out

of five displays extra loans from substitute lenders. It discloses very well that BRAC borrowers seem to be delivered sufficient loans to carry out their income-generating jobs. They are not looking for to get more credit that save them from expending more effort and time since extra borrowing source creates respective commitment to avail them. They customarily do not drop wages for conforming with formalities as an obligation. As a result, suitable and flexible loan size release physical and mental pressure. A portion of borrowers' money used for serving only BRAC loan refunds and purchasing basic things that serve the quality of their lives. This researcher did not find any selected borrowers required to recycle their debts. In addition, this researcher found evidence that their total income and expenditure do not fluctuate at all the aggregate levels. They utilize the loan productively except for very small fluctuations. In all cases, participant borrowers are serving as self-employed entrepreneurs in their respective jobs. For this, they generate revenue out of their jobs usually measured on monthly basis. They seldom do extra job for other employers on hourly or daily rate. They are very much absorbed on their self-revenue enduring job mainly financed by BRAC.

Non - Participant borrowers: Some borrowers follow to connect extra sources of fund besides receiving only from one informal source. Two cases out of five get small funds from compound sources. This implies that these poor people appeared to be undersupplied in terms of the size of loan that they receive from any individual source. Their demand for extra fund requires them not only pursuing extra sources but also to making the loans expensive through more effort and time. Each extra source calls for its respective compulsions for enjoying it. The cost of fulfilling obligation is more as it is found that these two borrowers who have been doing job need to expend few hour's payments to comply with those formalities. Hence, inflexible loan size and contingencies on borrower risk portfolio would enhance the physical and mental stress for managing funds from multiple sources. A rather alarming finding is the high ratio of some borrowers' money that goes towards serving loan instalments. Three borrowers' fund has been expended on servicing current loans and purchasing necessary food intakes. They have small capability to make expenses under other important categories such as healthcare, education, entertainment, etc. They have been also found to recycle their debts to substantial magnitude. It is obviously seen that most of the major outflows that are followed by major borrowings are on expenditure like

jewellery, household accessories, etc. Moreover, if the researcher looks at the aggregate level, they find indication that all selected borrowers' total income surpasses their total expense plus loan repayment during this period. This situation reveals that some borrowings do not generate productive use. In three cases, non-participant borrowers serve as daily labourers or wage earners in alternative working places. They typically do extra works for others besides their main income-generating works. Because their extra loans supported work are not adequate enough to support them entirely.

4.3.5.2 Activity Diary Analysis

Participant borrowers: As per Abraham Maslow's hierarchy of need, particularly all selected five participant borrowers in the case studies satisfy the physiological needs. They additionally cover overall safety needs like security of body, employment, resources, morality, family, health and property. For love or belonging, this researcher cannot observe the specific position as they feel modest and not attentive to talking details but it appears there are no key significant matters in this hierarchy level. In the beginning, this researcher finds no activity for esteem hierarchy need. Nevertheless, there are concerns about displaying some of the distinct attitude for different types of activities. In all cases, borrowers attempt to achieve esteem through participating or organizing social events, giving some donation to welfare activities or attempt to achieve respect through art and culture. Still, it is quite not abnormal not to achieve self-actualization need.

Non - Participant borrowers: In these case studies, four selected non-participant borrowers do not seem in decent situation for fulfilling all physiological need. In these four cases, there is no covering for basic necessities or requirements such as food, cloths, shelter, medicine, and education. They attempt to satisfy these requirements at different levels. Only one case reports to fulfil their safety needs. As a matter of fact, in these case studies, this researcher finds non-participant borrowers as daily wage earners without continuing work security. They just get their work on regular routine by their luck and sometimes through hard bargaining. Their work doesn't have steady commitment by either nature or time. They work on whatever they find for their existence from time to time. At the point when they don't assure the paid work, then they are in some in cases involving for their households' works for which

they cannot pay. They also enjoy time in low cost entertainment like listening radio, watching nearby teal-stall television, taking local sports, gossiping with fellow friends and so forth. Attending these sorts of activities typically in groups assists them to gather notification if any work is available for them in nearby areas. For love or belonging, this researcher cannot observe the particular situation as they sense nervous and not keen in sharing details, though it seems there is no key issue in this hierarchy need except some household quarrels or extreme cases some violence. There is very little indication for esteem hierarchy need. Nevertheless, there were concerned about observing some of attitude for diverse activities. In a particular case, borrowers try to achieve esteem through participating or organizing social activities by giving some money or effort for those activities or try to achieve recognition through art and culture. Once more, it is quite obvious that there should not be any self-actualization need.

It appears from both the diary analysis that participant borrowers are in relatively better position than non-participant borrowers which ultimately shows the positive impact of microfinance. In their case study, Alia et al. (2017) showed that time activity and money are certainly related. Time could mean money for well-off individual. However, poor person might spend time on non-income generating activity adding to her social esteem when money is not coming. In addition, she may also utilize inexpensive assets for enjoying leisure time at lower cost. Productive time either can earn money or save expenses that help poverty alleviation.

4.3.6 Multidimensional Poverty Index Analysis

Participant Borrowers:

- Incidence of Poverty (H): The borrower has been considered poor if she/he is deprived of at least one-third (33.33 percent) of the weighted indicators. This researcher found 246 poverty headcount through the survey of 400 respondents in this category. It means 283 incidences of poverty occurred as per their weighted score are more than 33.33 percent. Hence, the incidence of poverty (H) scored 0.6150 (246 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This researcher found 246 intensity of poverty with

different percentages as per their respective score through the survey of 400 respondents in this category. For that reason, the average intensity of poverty (A) scored 0.4736 (Average poverty rate of 246 borrowers).

$$\text{MPI} = H * A = 0.6150 * 0.4736 = 0.2913 \quad 4.3$$

The lower index displays comparatively lower side of the poverty level and vice versa. This constructed Index as shown in Equation 4.3 shows relatively lower deprivation and poverty among respondents in this category of BRAC. These category's standard of living are not quite below than that of non-participant group. However, it still calls for further deep attention. Calculated details have been provided by Table 4.30.

Table 4.30 MPI for BRAC -Participant Borrowers

Indicator*	Weight	Borrower 1	Borrower2	Borrower3	...
Years of School	3/18	0	1	1	...
School Attendance	3/18	1	0	1	...
Child Mortality	3/18	1	0	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	1	0	0	...
Sanitation	1/18	0	0	1	...
Drinking Water	1/18	0	1	0	...
Housing	1/18	1	0	1	...
Cooking Fuel	1/18	1	0	1	...
Assets Ownership	1/18	1	0	0	...
Weighted Score		55.56%	22.22%	50.00%	...
Status (Poor ≥ 33.33%)		Poor	Not Poor	Poor	...
Score (Poor = 1, Not Poor = 0)		1	0	1	...
Incidence of Poverty (H)	$H=(1+0+1)/400$	0.6150			
Intensity of Poverty (A)	$A=(55.56+50.00)/246$	0.4736			
MPI Index	$H*A$	0.2913			

*0 for "Not Poor and No deprivation", 1 for "Poor and Deprivation"

Non-Participant Borrowers:

- Incidence of Poverty (H): Again, the borrower has been considered poor if she/he is deprived in at least one-third (33.33 percent) of the weighted indicators. This researcher found 344 poverty headcount through the survey of 400 non-participant borrowers. It means 344 incidence of poverty as per their weighted score are more than 33.33 percent. Therefore, the incidence of poverty (H) scored 0.8600 (344 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This researcher found 344 intensity of poverty with different percentages as per their respective score in the same survey of 400 respondents in this category. Hence, the average intensity of poverty (A) scored 0.5394 (Average poverty rate of 344 borrowers).

$$\text{MPI} = \text{H} * \text{A} = 0.8600 * 0.5394 = 0.4639 \quad 4.4$$

The higher index illustrates comparatively higher poverty level and vice versa. This constructed Index displays relative higher deprivation and poverty among non-participant borrowers compared to participant borrowers of BRAC. Their standard of living has been quite below than that of participant borrowers and demands for additional profound care. Calculated details are provided in Table 4.31

Table 4.31 MPI for BRAC – Non-Participant Borrowers

Indicator*	Weight	Borrower1	Borrower2	Borrower3	...
Years of School	3/18	1	0	0	...
School Attendance	3/18	0	1	1	...
Child Mortality	3/18	0	1	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	0	1	1	...
Sanitation	1/18	1	0	0	...
Drinking Water	1/18	0	1	0	...
Housing	1/18	1	1	0	...

Table 4.31 Continued

Indicator*	Weight	Borrower1	Borrower2	Borrower3	...
Cooking Fuel	1/18	0	0	1	...
Assets Ownership	1/18	1	0	0	...
Weighted Score		33.33%	50.00%	27.78%	...
Status (Poor \geq 33.33%)		Poor	Poor	Not Poor	...
Score (Poor = 1, Not Poor = 0)		1	1	0	...
Incidence of Poverty (H)	$H=(1+1+0)/400$	0.8600			
Intensity of Poverty (A)	$A=(33.33 +50.00)/344$	0.5394			
MPI Index	$H*A$	0.4639			

*0 for "Not Poor and No deprivation", 1 for "Poor and Deprivation"

In conclusion, the incidence of poverty scored 0.6150 and the average intensity of poverty calculated 0.4736 which constructed MPI Index 0.2913 in case of participant borrowers. The constructed MPI index shows comparatively lower deprivation and poverty among participant borrowers of BRAC. By opposite side, incidence of poverty calculated 0.8600 and the average intensity of poverty scored 0.5394 which constructed MPI Index 0.4639 in case of non-participant borrower. The constructed MPI index depicts comparatively higher deprivation and poverty among non-participant borrowers in comparison to participant borrowers. Their standards of living have been quite below than that of participant borrowers and demand for further deep attention. Hence, microfinance has positive impacts on participant borrowers' poverty as their index is relatively lower in comparison to non-participant borrower. Hence, microfinance deems as effective development tool to alleviate poverty. However, the national MPI as reported 0.198 in Bangladesh during 2019 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the country (OPHI, 2019).

4.3.7 Loan Default Analysis

For finding out the factors which are contributing to the probability of loan default, logistic regression has been executed in case of BRAC participant borrowers. Loan default is the dependent variable which takes two categories (Default =1, Otherwise=0). This logistic model encompasses thirteen independent variables plus dummy variables created for some independent variables (Gender, Age, Living Style, Education Level, Dependant Number, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount, and Interest Rate). In case of this model for BRAC participant borrowers, no predictors need to be dropped. The reason is that in this case, all selected sample appears to include all category. The full model covering all predictors appears significant statistically, χ^2 (Degrees of freedom = 28, N = 400) = 114.107, $P < .000$, showing that this model is capable to differentiate likelihood between borrowers who will report and will not report loan default. In general, this logistic model correctly classifies 86.0 percent of the cases. The outcome of this model have been tabulated in Table 4.32. Some predictors' coefficients appear significant statistically in case of 10%, 5%, and 1% significance level.

Table 4.32 Predicting Likelihood for Loan Default

Dependent Variable ¹	Likelihood for Loan Default			
	Independent Variables ²	Estimated Coefficient	P Value	Odd Ratio
1. Gender		0.996***	0.009	2.707
2. Dummy Variables for (Age)				
(Age) X ₂₍₁₎		1.190*	0.069	3.288
(Age) X ₂₍₂₎		-0.157	0.816	0.855
(Age) X ₂₍₃₎		0.552	0.382	1.736
(Age) X ₂₍₄₎		-0.630	0.370	0.533
(Age) X ₂₍₅₎		Dropped for dummy trap problem ³		
3. Living Style		-0.243	0.466	0.784
4. (Education Level)		-0.653*	0.058	0.520
5. Dummy Variables for Dependant Number				
(Dependant Number) X ₅₍₁₎		1.088	0.274	2.967
(Dependant Number) X ₅₍₂₎		0.578	0.548	1.782
(Dependant Number) X ₅₍₃₎		1.053	0.278	2.866

Table 4.32 Continued

Dependent Variable¹	Likelihood for Loan Default		
	Independent Variables²	Estimated Coefficient	P Value
(Dependant Number) X ₅₍₄₎	1.191	0.231	3.289
(Dependant Number) X ₅₍₅₎	Dropped for dummy trap problem ³		
6. Business Type	0.176	0.575	1.193
7. Dummy Variables for (Monthly Revenue)			
(Monthly Revenue) X ₇₍₁₎	Dropped for dummy trap problem ³		
(Monthly Revenue) X ₇₍₂₎	-0.872*	0.065	0.418
(Monthly Revenue) X ₇₍₃₎	-0.738	0.154	0.478
(Monthly Revenue) X ₇₍₄₎	-0.647	0.233	0.524
(Monthly Revenue) X ₇₍₅₎	-0.992*	0.077	0.371
8. Alternative Income	0.072	0.851	1.074
9. Alternative Loan	-0.200	0.524	0.819
10. Repayment Mode	0.210	0.771	1.234
11. Repayment Period	0.475	0.247	1.608
12. Dummy Variables for Repayment Amount			
Repayment Amount X ₁₂₍₁₎	-1.456***	0.006	0.233
Repayment Amount X ₁₂₍₂₎	-1.048**	0.033	0.351
Repayment Amount X ₁₂₍₃₎	-1.416***	0.010	0.243
Repayment Amount X ₁₂₍₄₎	-0.574	0.275	0.563
Repayment Amount X ₁₂₍₅₎	Dropped for dummy trap problem ³		
13. Dummy Variables for Interest Rate			
Interest Rate X ₁₄₍₁₎	Dropped for dummy trap problem ³		
Interest Rate X ₁₄₍₂₎	1.260	0.273	3.524
Interest Rate X ₁₄₍₃₎	0.510	0.658	1.666
Interest Rate X ₁₄₍₄₎	1.889*	0.090	6.610
Interest Rate X ₁₄₍₅₎	1.365	0.230	3.916

*, **, ***, represents 10%, 5% and 1% significance level respectively.

Note: 1. Dependent variable, Loan Default = 1 for loan defaulter who missed loan repayment more than two times in instalment repayment schedule and Loan Default = 0 for otherwise, who did not miss loan repayment.

2. It has been negatively hypothesized with loan default for Independent variable shown in parentheses.

3. A dummy variable has been dropped in each group with the fewest respondents to avoid the dummy trap problem.

Gender: Female borrowers appears mostly in number in this sample. This also reflects that overall 71% BRAC borrowers are females. A male borrower shows less accountability to the family and may be in relation with higher likelihood for loan defaulting compared to a female borrower. The model result indicates that this predictor coefficient appears positive and statistically significant at 1% significance level. Therefore, a male borrower has higher likelihood to be a loan default in comparison to a female borrower. The reported odd ratio designates that a male borrower is predicted 2.707 times more likely to become loan defaulter compared to a female borrower, *ceteris paribus*. However, it has been quite familiar in the microfinance loan recovery that female borrowers are more accountable and more orderly in loan repayment. Chaudhary and Ishfaq (2003) and Roslan and Karim (2009)s' findings showed that relatively male borrowers are more prone to turn out to be loan defaulter in comparison to female borrowers.

Age: Borrowers' age might indicate their respective capability to pay back the loan. Young borrowers may be less responsible with less life experience. The dummy variable Age (5) recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. The model outcome displayed the positive coefficient at 10% level of significance in case of Age (1). The reported odd ratio designates that borrowers related with age group up to 25 years are 3.288 times more likely to be loan defaulter, *ceteris paribus*. However, there appears no statistically significant predictor in case of Age (2), Age (3), Age (4) dummy variables in this group. Therefore, in case of BRAC participant borrowers, age seems to contribute to loan default issue. It is well known that older borrowers are supposed to be more responsible than the younger borrowers. The result of this model supports the outcome that relatively younger borrowers will be more probable to become loan defaulters (Brehanu & Fufa, 2008). This may be for the reason that borrowers are persistently behaving over time.

Living Style: It refers to single or conjugal lifestyle. In the society, conjugal or married lives have often been regarded as an optimal behavior. Single living style is not supposed to be more responsible or accountable than conjugal counterpart. A single borrower might be less dependable as there appears no partner or spouse for supporting

or financing daily activities. This situation can be linked with significant likelihood of loan default. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, a single borrower has no contributing issue of being a loan defaulter in comparison to a conjugal borrower. This outcome does not support the results that single borrowers may not need to maintain positive connection with lenders for increasing their likelihood of receiving future credits. It also does not support that they may be more probable to become defaulters in comparison to married borrowers (Peng et al., 2009). The probable reason for this outcome may be that single borrowers become responsible and want to keep good relation with prospective lenders.

Education Level: Much educated borrowers have been anticipated for becoming less defaulters. The probable cause is that the learned borrowers will achieve capability for managing their activities well, understanding data and information, maintaining documentation and carrying out cash management and profitability analysis. The model result indicates that this predictor coefficient appears negative and statistically significant at 10% significance level. Therefore, an educated borrower has lower likelihood to be a loan default in comparison to an uneducated borrower. The reported odd ratio designates that an educated borrower is predicted 0.0520 times less likely to become loan defaulter compared to an uneducated borrower, ceteris paribus. As a result, an educated borrower appears to be less loan defaulter in comparison to a less educated or uneducated borrower. Hence, borrowers' education level did not make any contribution for becoming loan defaulter in this case. It matches with the result that a borrower with comparatively more education will be less probe for becoming a loan defaulter (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Educated borrowers seem to become more responsible or engaged in intended revenue generating activities.

Dependant Number: This predictor may also be a contributing factor which can influence the ability of borrowers for repaying their credits. The borrowers assume more obligation to spend for basic amenities like food, clothes, education, medical, etc. when their dependant number are more to maintain and support. Therefore, dependant number can be a contributing factor to loan default. The dummy variable *Dependant Number* (5) recorded lowest respondents in this case, has been dropped for this category

to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of BRAC participant borrowers, dependant number does not seem for contributing to loan default issue. This has not been supported by previous study which confirms that a borrower who has relatively large number of dependant will assume more likelihood to be a loan defaulter (Brehanu & Fufa, 2008). Probable reason for this may be the borrowers are efficient enough to manage large household.

Business Type: This predictor includes an agricultural type of business else otherwise like trading, etc. Agricultural business type has been limited with natural catastrophes like rain, flood, drought, etc. This business type is usually related with the lower cash cycle. Hence, this is presumed that the agricultural business type will contribute more likelihood for loan default. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, an agricultural business has no contributing issue of being loan defaulter in comparison to trading business in case of BRAC borrowers. An agricultural business type may be associated with lower cash cycle than small business category (Chaudhary & Ishfaq, 2003). This aspect may be contributing to the higher probability of loan default. This result does not support this fact may be due to natural calamities are often unpredictable and random.

Monthly Revenue: Comparatively high monthly revenue gives the borrower ability to pay the loan back on time. This circumstance may not invite a borrower to be loan defaulter. The dummy variable *Monthly Revenue (1)* recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. The model outcome displays positive coefficient at 10% level of significance in case of *Monthly Revenue (2)*. The reported odd ratio designates that borrowers related with monthly revenue of \$101 to \$200 are 0.418 times less likely to be loan defaulter, ceteris paribus. However, there appears no statistically significant predictor in case of *Monthly Revenue (3)* and *Monthly Revenue (4)* dummy variables in this group. The model outcome also displays positive coefficient at 10% level of significance in case of *Monthly Revenue (5)*. The reported odd ratio designates that borrowers related with monthly revenue of above \$400 are 0.371 times less likely to be loan defaulter, ceteris

paribus. Therefore, in case of BRAC participant borrowers, *Monthly Revenue* seems for contributing to loan default issue. This finding is not similar with that comparatively lower amount of business revenue is accompanied with the higher likelihood of loan default (Okorie, 1986). This may be due to the fact that borrowers can manage their fund efficiently to be on time payment.

Alternative Income: Sometimes borrowers have more than one sources of income. There may have inverse relationship for loan default with borrowers who have alternative or extra income source. However, there appears positive but not statistically significant coefficient for alternative income. Therefore, in case of BRAC participant borrowers, alternative income does not seem for contributing to loan default issue. Although it is well assumed that borrowers with extra income are supposed to be more reliable than the borrowers with no alternative source. The result of this model does not support this outcome that a borrower who has extra or alternative income besides her micro credit financed income will have the higher capability for paying back her micro credit (Brehanu & Fufa, 2008). This may be due to the fact that alternative source also attracts much obligation what can tempt borrower capability for loan repayment.

Alternative Loan: Sometimes borrowers have more than one sources of loan. There may have inverse relationship for loan default with borrowers who have alternative loan source. Extra or alternative loan can affect borrowers' capability for paying back their microfinance loan. These extra credits assume more limitations to fulfil the obligation in addition to microfinance loan. This research found adequate number of microfinance borrowers taking loan from multiple sources when carrying out pilot survey. When borrowers prevail extra or alternative loans from other sources, they find themselves encountering complexities and challenges for their individual payback. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, alternative or extra loan has no contributing issue of being loan defaulter in comparison to single loan source in case of BRAC borrowers. Alternative loan can induce multiple fund management capacity.

Repayment Mode: This research investigates whether repayment mode, say weekly, has been contributing for loan default problem. This may be more specifically correct for borrowers with lower revenue cycle. Although there appear other

repayment modes, BRAC follows mainly weekly repayment. This model outcome finds that this predictor variable appears positive but statistically insignificant. As a result, repayment mode has no contributing issue of being loan defaulter in comparison to other modes in case of BRAC borrowers. The result of this model does not support this outcome that borrowers who have weekly mode will have the higher ability to pay back their microfinance loan. Microfinance institute enforced loan repayment mode may play significant role for loan payback attitude of the borrower (Derban et al., 2005). This may be due to the fact that weekly mode is not compatible with the revenue cycle of the borrowers in this case.

Repayment Period: This research investigates whether longer loan repayment period, say more than one year in this case, contribute to the loan default issue. Borrowers with longer repayment period can be related with more loan default problem in comparison to borrowers with shorter repayment period. This model outcome finds that this predictor variable appears positive but statistically insignificant. As a result, longer repayment period has no contributing issue of being loan defaulter in comparison to shorter repayment period in case of BRAC borrowers. This finding does not match that a borrower with longer repayment period imply longer commitment to repay loan contributes positively for loan default (Roslan & Karim, 2009). This may be for the reason that individual borrower operating cycle appears not compatible with loan repayment period.

Repayment Amount: It is the size of amount what a borrower repays back as loan instalment weekly or otherwise. This research investigates whether repayment amount has been contributing for loan default problem. This may be more specifically connected to borrowers with revenue and business cycle. BRAC enforced loan repayment amount may play significant role for loan payback attitude of the borrower. A borrower paying back comparatively higher loan repayment amount may appear to become more loan defaulter in comparison to a borrower making lower repayment amount. The dummy variable *Repayment Amount* ₍₅₎ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. This model outcome finds that this predictor variable *Repayment Amount* ₍₁₎ appears negative and statistically significant at 1% level of significance. The estimated odd ratio displays

that repayment amount up to \$25 has been projected 0.233 times less likelihood of becoming a loan defaulter compared to other category, *ceteris paribus*. This model outcome also finds that this predictor variable *Repayment Amount* ⁽²⁾ appears negative and statistically significant at 5% level of significance. The estimated odd ratio displays that repayment amount \$26 to \$50 has been projected 0.351 times less likelihood of becoming a loan defaulter compared to other category, *ceteris paribus*. Again, this model outcome finds that this predictor variable *Repayment Amount* ⁽³⁾ appears negative and statistically significant at 1% level of significance. The estimated odd ratio displays that repayment amount \$51 to \$75 has been projected 0.243 times less likelihood of becoming a loan defaulter compared to other category, *ceteris paribus*. This model outcome finds that this predictor variable *Repayment Amount* ⁽⁴⁾ appears negative but statistically insignificant. As a result, *Repayment Amount* ⁽⁴⁾ has no contributing issue of being loan defaulter. These findings conform the similar outcome by Derban et al. (2005). They concluded that the unfavorable loan product could play significant role in case of loan default. Because loan should be suitably designed for the intended purpose.

Interest Rate: This represents interest rate charged to cover operational and other costs for microfinance institute. BRAC charges interest rate for covering some parts or all of its operational cost to raise and disburse fund. Whether a borrower confronts her loan repayment for comparatively higher interest rate is very important to investigate. A borrower with high interest rate has been assumed to become a loan defaulter in comparison to a borrower with low interest rate. This researcher finds adequate number of microfinance borrower being charged different rates for different borrowers on the basis of their individual portfolio when carrying out pilot survey. Borrowers find themselves encountering complexities and challenges for comparatively higher interest rate. The dummy variable *Interest Rate* ⁽¹⁾, recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. This model outcome finds that this predictor variables *Interest Rate* ⁽²⁾ and *Interest Rate* ⁽³⁾ appear positive but statistically insignificant. As a result, these categories have no contributing issue of being loan defaulter. This model outcome also finds that this predictor variable *Interest Rate* ⁽⁴⁾ appears positive and statistically significant at 10% level of significance. The estimated odd ratio displays that interest

rate 16% to 20% has been projected 6.610 times more likelihood of becoming a loan defaulter compared to other category, *ceteris paribus*. Again, this model outcome finds that this predictor variable *Interest Rate* (5) appears positive but statistically insignificant. As a result, this category has no contributing issue of being loan defaulter. These findings conform the similar outcome by Derban et al. (2005). They concluded that the unfavorable loan product could play significant role in case of loan default. Therefore, loan should be suitably designed for the intended purpose.

4.4 Tabung Ekonomi Kumpulan Usaha Niaga

This section discusses different responses of the participant and non-participant borrowers of TEKUN. These responses are collected by the questionnaire as per Appendix B. It describes TEKUN borrowers' demographic, business, and loan characteristics. It also describes the impact of microfinance on borrowers' business, household, individual and security levels for quantitative analysis and financial and activity diaries for qualitative analysis. It further describes the poverty index and factors responsible for loan default.

4.4.1 Demographic Characteristic

With reference to Table 4.33, TEKUN provides microfinance to both female and male but males are the majority. The males are 63.8% and 69.5% in the participant and non-participant borrowers, respectively. By their age group, TEKUN is dealing with relatively mid-age borrowers. These borrowers are mostly Muslim followed by Buddhist, Hindu, Christian, and others. More than half of the borrowers are living conjugal lives. Participant borrowers are relatively a little bit educated than non-participant borrowers. Majority of participant and non-participant borrowers have five to eight household members. Majority of them also have only up to two income earners. As a consequence, the number of dependants is higher for both participant and non-participant borrowers. Most borrowers have up to four number of children. However, many of them are educated.

Table 4.33 Demographic Characteristic

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Gender				
Female	145	36.2	122	30.5
Male	255	63.8	278	69.5
Total	400	100.0	400	100.0
Age				
Up to 25	110	27.5	67	16.8
26 to 35	98	24.5	88	22.0
36 to 45	116	29.0	111	27.7
46 to 55	55	13.8	79	19.8
Above 55 year	21	5.2	55	13.7
Total	400	100.0	400	100.0
Ethnic Group				
Muslim	234	58.5	241	60.2
Hindu	44	11.0	33	8.3
Christian	41	10.3	25	6.3
Buddhist	76	19.0	85	21.2
Others	5	1.2	16	4.0
Total	400	100.0	400	100.0
Living Style				
Conjugal	218	54.5	258	64.5
Single	182	45.5	142	35.5
Total	400	100.0	400	100.0
Education				
Non - Educated	55	13.8	59	14.8
Educated	345	86.2	341	85.2
Total	400	100.0	400	100.0
Household Member				
Up to 2	29	7.3	40	10.0
3 to 4	79	19.7	55	13.7
5 to 6	131	32.7	115	28.7
7 to 8	102	25.5	105	26.3
Above 8	59	14.8	85	21.3
Total	400	100.0	400	100.0
Income Earner				
Up to 2	309	77.3	234	58.5
3 to 4	79	19.7	129	32.2
5 to 6	12	3.0	34	8.5
7 to 8	0	0.0	3	0.8
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0

Table 4.33 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Dependant				
Up to 2	121	30.3	161	40.2
3 to 4	163	40.8	118	29.5
5 to 6	102	25.4	78	19.5
7 to 8	14	3.5	43	10.8
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0
Total Children				
Up to 2	141	35.3	186	46.5
3 to 4	180	45.0	128	32.0
5 to 6	77	19.3	62	15.5
7 to 8	2	0.4	24	6.0
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0
Educated Children				
Up to 2	224	56.0	248	62.0
3 to 4	151	37.8	129	32.2
5 to 6	25	6.2	23	5.8
7 to 8	0	0.0	0	0.0
Above 8	0	0.0	0	0.0
Total	400	100.0	400	100.0

4.4.2 Business Characteristic

With reference to Table 4.34, nearly one-fifth of respondents do agricultural activities in both participant and non-participant cases. Majority borrowers hold ownership in the business and many of them have control over their decision making. They depend little on spouse, business partner, and others. Majority of the borrowers have monthly revenue above \$400, meaning borrowers are more or less enjoying basic quality lives. Maximum borrowers do not have alternative income other than main business activities related to microfinance.

Table 4.34 Business Characteristic

Type	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Type				
Agricultural	111	27.8	91	22.7
Non-Agricultural	289	72.2	309	77.3
Total	400	100.0	400	100.0
Ownership				
Borrower	218	54.5	269	67.3
Spouse	90	22.5	83	20.7
Business Partner	45	11.3	16	4.0
Participatory	25	6.2	13	3.3
Others	22	5.5	19	4.7
Total	400	100.0	400	100.0
Decision Maker				
Borrower	189	47.3	253	63.2
Spouse	106	26.5	94	23.4
Business Partner	64	16.0	27	6.8
Participatory	24	6.0	17	4.3
Others	17	4.2	9	2.3
Total	400	100.0	400	100.0
Monthly Revenue				
Below \$100	0	0.0	0	0.0
\$101 to \$200	0	0.0	0	0.0
\$201 to \$300	20	5.0	42	10.5
\$301 to \$400	102	25.5	163	40.7
Above \$400	278	69.5	195	48.8
Total	400	100.0	400	100.0
Alternative Income				
No Alternative	245	61.2	314	78.5
Yes Alternative	155	38.8	86	21.5
Total	400	100.0	400	100.0

4.4.3 Loan Characteristic

With reference to Table 4.35, participant borrowers have fewer frequencies or times in taking loans than non-participant borrowers. The largest borrowing amount category is above \$2,000. Majority says that the loan given is not adequate for the

intended purpose and they do not have alternative sources for taking more loans. For participant borrowers, the repayment mode is otherwise than weekly in majority cases but non-participant borrowers have other options, which do not follow any particular pattern. The repayment period is nearly equally divided between longer and shorter period for participant borrowers. However, Repayment periods are longer for most non-participant borrowers. Many participant borrowers are obliged to repay less than \$50 in their respective repayment instalments whereas non-participant borrowers do not follow any patterns. Participant borrowers also pay interest rate (Management fee) up to 5% for all the cases as set by TEKUN authority. Approximately 81% of the borrowers are not loan defaulters who missed their repayment instalments more than two times during the stipulated period and if they default, the main cause is business problem followed by the family problem, health issue, natural disaster, and others. Management fee and Default are not applicable for non-participant borrowers due to lack of formal contract.

Table 4.35 Loan Characteristic

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Borrowing Times				
One Time	46	11.4	10	2.5
Two Times	153	38.3	31	7.7
Three Times	87	21.8	96	24.0
Four Times	79	19.8	134	33.5
Above Four	35	8.7	129	32.3
Total	400	100.0	400	100.0
Borrowing Amount				
Up to \$500	11	2.8	17	4.3
\$501 to \$1000	15	3.8	25	6.3
\$1001 to \$1500	71	17.7	68	17.0
\$1501 to \$2000	143	35.7	141	35.2
Above \$2000	160	40.0	149	37.2
Total	400	100.0	400	100.0
Loan Adequacy				
Not Adequate	243	60.8	331	82.8
Yes Adequate	157	39.2	69	17.2
Total	400	100.0	400	100.0

Table 4.35 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	Percentage	Frequency	Percentage
Alternative Loan				
No Alternative	277	69.3	334	83.5
Yes Alternative	123	30.7	66	16.5
Total	400	100.0	400	100.0
Repayment Mode				
Weekly	129	32.2	0	0.0
Otherwise	271	67.8	400	100.0
Total	400	100.0	400	100.0
Repayment Period				
Longer	202	50.5	363	90.8
Shorter	198	49.5	37	9.2
Total	400	100.0	400	100.0
Repayment Amount				
Up to \$25	99	24.7	N/A*	-
\$26 to \$50	124	31.0	N/A	-
\$51 to \$75	67	16.8	N/A	-
\$76 to \$100	26	6.5	N/A	-
Above \$100	84	21.0	N/A	-
Total	400	100.0	400	100.0
Interest Rate/Mgt Fee				
Up to 5%	400	100.0	N/A	-
6% to 10%	0	0.0	N/A	-
11% to 15%	0	0.0	N/A	-
16% to 20%	0	0.0	N/A	-
Above 20%	0	0.0	N/A	-
Total	400	100.0	400	100.0
Loan Default				
Not Default	324	81.0	N/A	-
Yes Default	76	19.0	N/A	-
Total	400	100.0	400	100.0
Default Cause				
Not Applicable	324	81.0	N/A	-
Business Problem	61	15.3	N/A	-
Family Problem	7	1.8	N/A	-
Health Issue	3	0.7	N/A	-
Natural Disaster	2	0.5	N/A	-
Others	3	0.7	N/A	-
Total	400	100.0	400	100.0

4.4.4 Quantitative Impact Measurement – HEPM

Within impact relates to the first research objective and Hypothesis (H₁) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level within participant borrowers and non-participant borrowers. **Between impact** relates to the second research objective and Hypothesis (H₂) that measures whether there is significant difference for microfinance on poverty at business, household, individual, and security level between participant borrowers and non-participant borrowers. **Causal impact** relates to the third research objective and Hypothesis (H₃) that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual, and security level.

4.4.4.1 Impact Measurement: Within the Group

Business Impact: It begins with a discussion for the impact of the loan on borrower business level within the group (Please see Table 4.36). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their business revenue, fixed asset, current asset, and employment in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.36 Business Impact

	Participant Borrowers N ₁ = 400		χ^2 , (Sig.)	Non-Participant Borrowers N ₂ = 400	
	Frequency	%		Frequency	%
Business Revenue					
Strongly Disagree	5	1.3		78	19.5
Disagree	54	13.5		124	31.0*** 70.8,(.00)
Neutral	98	24.5		101	25.2
Agree	144	36.0***	138.5,(.00)	74	18.5
Strongly Agree	99	24.7		23	5.8
Total	400	100.0		400	100.0

Table 4.36 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400			
	Frequency	%	χ^2 , (Sig.)	Frequency	%	χ^2 , (Sig.)
Fixed Asset						
Strongly Disagree	39	9.6		89	22.3	
Disagree	151	37.8***	144.0,(.00)	134	33.4***	157.2,(.00)
Neutral	124	31.0		132	33.0	
Agree	35	8.8		34	8.5	
Strongly Agree	51	12.8		11	2.8	
Total	400	100.0		400	100.0	
Current Asset						
Strongly Disagree	91	22.7		81	20.2	
Disagree	55	13.8		153	38.2***	168.2,(.00)
Neutral	95	23.7		119	29.8	
Agree	100	25.0***	22.6,(.00)	34	8.5	
Strongly Agree	59	14.8		13	3.3	
Total	400	100.0		400	100.0	
Employment						
Strongly Disagree	10	2.5		77	19.2	
Disagree	81	20.3		125	31.3	
Neutral	74	18.5		139	34.7***	143.2,(.00)
Agree	128	32.0***	99.6,(.00)	50	12.5	
Strongly Agree	107	26.7		9	2.3	
Total	400	100.0		400	100.0	

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 36.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their business revenue and 24.7% participant borrowers strongly agree the same. In total, about 60.7% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 31.0% respondents disagree (at 1% significance level) that their business revenue has increased and 19.5% respondents strongly disagree the same. Totally, about 50.5% respondents disagree that their business revenue has increased and only 24.3% respondents have reported increase in their business revenue. This is in sharp distinction to the findings of participant borrowers where 60.7% have reported increase in business revenue. This result is similar to the result of studies on microfinance borrowers by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who

found that microfinance loan significantly increased the microenterprise's business revenue.

In case of fixed asset, 37.8% participant borrowers disagree (at 1% significance level) that microfinance borrowings have increased it and 9.6% participant borrowers strongly disagree the same. In total, about 47.4% participant borrowers have reported negative impact of microfinance for fixed asset. In case of non-participant borrowers, about 33.4% respondents disagree (at 1% significance level) that their fixed asset has increased and 22.3% respondents strongly disagree the same. In total, about 55.7% non-participant borrowers have reported negative impact of microfinance for fixed asset. This is similar to nature of the findings of participant borrowers where 47.4% have reported negative impact. This result does not conform the similar nature finding of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loans significantly increased the microenterprise's assets.

About 25.0% of the participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their current asset and 14.8% participant borrowers strongly agree on the same. In total, about 39.8% participant borrowers have reported the positive impact of microfinance. In case of non-participant borrowers, about 38.2% respondents disagree (at 1% significance level) that their current asset has increased and 20.2% respondents strongly disagree the same. Totally, about 58.4% respondents disagree that their current asset has increased and only 11.8% respondents have reported increase in their current asset. This is also in sharp contrast to the findings of participant borrowers where 39.8% have reported increase the same. This result conforms the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found that microfinance loan significantly increased the microenterprise assets.

In terms of employment generation, about 32.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased it and 26.7% participant borrowers strongly agree the same. In total, about 58.7% participant borrowers have reported positive impact of microfinance for employment generation. In case of non-participant borrowers, about 34.7% respondents have been neutral (at 1% significance level) that employment generation has increased and 19.2% and 31.3% respondents strongly disagree and disagree, respectively the same. Totally, about 50.5% respondents disagree that employment generation has increased and only

14.8% respondents have reported increase the same. This is dissimilar to the findings of participant borrowers where 58.7% have reported increase in employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997).

Household Impact: It provides a discussion of the impact of loan on borrower household level within the group (Please see Table 4.37). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their household income, immovable property, movable property, and expenditure in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.37 Household Impact

	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₂ = 400			
	Frequency	%	χ ² , (Sig.)	Frequency	%	χ ² , (Sig.)
Household Income						
Strongly Disagree	15	3.8		83	20.7	
Disagree	46	11.5		131	32.8***	66.0,(.00)
Neutral	112	28.0		87	21.8	
Agree	143	35.7***	129.4,(.00)	69	17.2	
Strongly Agree	84	21.0		30	7.5	
Total	400	100.0		400	100.0	
Immovable Property						
Strongly Disagree	24	6.0		94	23.5	
Disagree	125	31.2***	146.3,(.00)	132	33.0***	142.6,(.00)
Neutral	112	28.0		121	30.2	
Agree	121	30.3		50	12.5	
Strongly Agree	18	4.5		3	0.8	
Total	400	100.0		400	100.0	
Movable Property						
Strongly Disagree	45	11.3		67	16.8	
Disagree	79	19.8		153	38.2***	168.6,(.00)
Neutral	122	30.5***	44.8,(.00)	124	31.0	
Agree	94	23.5		46	11.5	
Strongly Agree	60	15.0		10	2.5	
Total	400	100.0		400	100.0	

Table 4.37 Continued

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	%	Frequency	%
Expenditure				
Strongly Disagree	20	5.0	38	9.5
Disagree	64	16.0	126	31.5
Neutral	95	23.7	132	33.0***
Agree	112	28.0***	78	19.5
Strongly Agree	109	27.3	26	6.5
Total	400	100.0	400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 35.7% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their household income and 25.4% participant borrowers strongly agree on the same. In total, about 56.7% participant borrowers have reported the positive impact of microfinance for household income. In case of non-participant borrowers, about 32.8% respondents disagree (at 1% significance level) that their household income has increased and 20.7% respondents strongly disagree the same. Totally, about 53.5% respondents disagree and only 24.7% respondents agree that their household income has increased. This is in contrast to the findings of participant borrowers where 56.7% have reported increase in household income. The finding conformed Mahjabeen (2008) and Nader (2008) findings who showed that microfinance loan increased household income of microfinance borrowers in Bangladesh and in Egypt, respectively.

In case of immovable property, about 31.2% participant borrowers disagree (at 1% significance level) that microfinance borrowings have increased their immovable property and 6.0% participant borrowers strongly disagree the same. In total, about 37.2% participant borrowers have reported negative impact of microfinance for immovable property. In case of non-participant borrowers, about 33.0% respondents disagree (at 1% significance level) that their household income has increased and 23.5% respondents strongly disagree the same. In total, about 56.5% non-participant borrowers have reported the negative impact of microfinance on fixed asset. This is similar nature to the findings of participant borrowers, where 47.4% have reported

negative impact. Therefore, microfinance borrowings have little impact on the addition of immovable property.

With reference to movable property, about 30.5% participant borrowers are neutral (at 1% significance level) that microfinance borrowings have increased their movable property. However, 23.5% and 15.0% participant borrowers agree and strongly agree, respectively the same. In case of non-participant borrowers, about 38.2% respondents disagree (at 1% significance level) that their movable property has increased and 16.8% respondents strongly disagree the same. Totally, about 55.0% respondents disagree that their current asset has increased and only 14.0% respondents have reported the increase in their current asset. This is dissimilar compared to participant borrowers' response. Therefore, microfinance borrowings have some positive impact on movable property.

About 28.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their expenditure on basic amenities and 27.3% participant borrowers strongly agree on the same. In total, about 55.3% participant borrowers have reported the positive impact of microfinance in this case. In case of non-participant borrowers, about 33.0% respondents have been neutral (at 1% significance level) that their expenditure has increased. It can be concluded that participant borrowers have more expenditure on basic amenities whereas non-participant borrowers remain at the same level. Therefore, microfinance borrowings have some positive impact on expenditure.

Individual Impact: It provides a discussion for the impact of loan on borrowers' individual level within the group (Please see Table 4.38). The *Chi-Square* test has been used to find out whether there are any significant differences within the group who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in their control, honor, capacity, and confidence in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.38 Individual Impact

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	%	Frequency	%
Control				
Strongly Disagree	7	1.8	40	10.0
Disagree	74	18.5	120	30.0
Neutral	132	33.0***	137	34.2***
Agree	105	26.2	81	20.3
Strongly Agree	82	20.5	22	5.5
Total	400	100.0	400	100.0
Honor				
Strongly Disagree	17	4.3	31	7.8
Disagree	85	21.3	129	32.2
Neutral	97	24.3	141	35.3***
Agree	99	24.7	73	18.2
Strongly Agree	102	25.4***	26	6.5
Total	400	100.0	400	100.0
Capacity				
Strongly Disagree	28	7.0	57	14.2
Disagree	70	17.5	135	33.8***
Neutral	96	24.0	126	31.5
Agree	127	31.7***	60	15.0
Strongly Agree	79	19.8	22	5.5
Total	400	100.0	400	100.0
Confidence				
Strongly Disagree	4	1.0	42	10.5
Disagree	77	19.3	138	34.5***
Neutral	105	26.3	129	32.2
Agree	115	28.7***	73	18.3
Strongly Agree	99	24.7	18	4.5
Total	400	100.0	400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

With reference to borrowers' individual control, 33.0% and 34.2% have neutral views (at 1% significance level) for the participant and non-participant borrowers respectively. Since both the participant and non-participant borrowers are neutral, microfinance borrowings have almost no impact on the gaining borrower control over the environment they are living. The findings are not similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance

loans provided a greater opportunity for female borrowers to make business and family decisions.

About 25.4% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their individual honor and 24.7% participant borrowers agree the same. In total, about 50.1% participant borrowers have reported positive impact of microfinance for individual honor. In case of non-participant borrowers, about 35.3% are neutral (at 1% significance level) that their honor has increased and 40.0% respondents disagree the same and only 24.7% respondents agree that their capacity has increased. This is in contrast to the findings of participant borrowers where 50.1% have reported increase in honor.

About 31.7% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their capacity and 19.8% participant borrowers strongly agree on the same. In total, about 51.5% participant borrowers have reported positive impact of microfinance on capacity building. In case of non-participant borrowers, about 33.8% respondents disagree (at 1% significance level) that their capacity has increased and 14.2% respondents strongly disagree on the same. Totally, about 48.0% respondents disagree and only 20.5% respondents agree that their capacity has increased. This is in contrast to the findings of participant borrowers where 51.5% have reported increase in capacity building.

In case of borrower confidence building, about 28.7% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased it and 24.7% participant borrowers strongly agree on the same. In total, about 53.4% participant borrowers have reported positive impact of microfinance for confidence building. In case of non-participant borrowers, about 34.5% respondents disagree (at 1% significance level) that their confidence has increased and 10.5% respondents strongly disagree on the same. Only 22.8% respondents agree that their confidence has increased. This is in contrast to the findings of participant borrowers where 53.4% have reported increase in confidence building. Therefore, microfinance borrowings have positive impact for borrower confidence building. The findings are consistent with those of Nader (2008), Afrane (2002), Goetz and Gupta (1996) and (Hashemi et al., 1996) who found microfinance loan improved the borrowers' confidence in managing their business and income and increased their involvement in the community.

Security Impact: It provides a discussion for the impact of loan on borrowers' security level (Please see Table 4.39). The *Chi-Square* test has been used to find out whether there are any significant differences between the groups who strongly disagree, disagree, neutral, agree, and strongly agree (5 point Likert Scale) for increase in borrower social, financial, food, and health security in case of both the participant (Experiment Group) and non-participant borrowers (Control Group).

Table 4.39 Security Impact

	Participant Borrowers N₁ = 400		Non-Participant Borrowers N₂ = 400	
	Frequency	%	Frequency	%
				$\chi^2, (\text{Sig.})$
Social				
Strongly Disagree	6	1.5	37	9.2
Disagree	91	22.7	147	36.8*** 193.7,(.00)
Neutral	100	25.0	143	35.8
Agree	109	27.3*** 87.9,(.00)	63	15.8
Strongly Agree	94	23.5	10	2.4
Total	400	100.0	400	100.0
Financial				
Strongly Disagree	18	4.5	30	7.5
Disagree	61	15.3	149	37.2*** 179.3,(.00)
Neutral	105	26.3	133	33.2
Agree	122	30.5*** 84.8,(.00)	73	18.3
Strongly Agree	94	23.4	15	3.8
Total	400	100.0	400	100.0
Food				
Strongly Disagree	2	0.5	35	8.8
Disagree	36	9.0	149	37.2*** 185.0,(.00)
Neutral	126	31.5	136	34.0
Agree	133	33.3*** 168.4,(.00)	69	17.2
Strongly Agree	103	25.7	11	2.8
Total	400	100.0	400	100.0
Health				
Strongly Disagree	5	1.3	44	11.0
Disagree	58	14.5	149	37.2*** 196.1,(.00)
Neutral	112	28.0	139	34.8
Agree	155	38.7*** 160.7,(.00)	65	16.2
Strongly Agree	70	17.5	3	0.8
Total	400	100.0	400	100.0

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

About 27.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their social security and 23.5% participant borrowers strongly agree on the same. In total, about 50.8% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 36.8% respondents disagree (at 1% significance level) that their social security has increased and 9.2% respondents strongly disagree on the same. Totally, 46.0% respondents have reported negative view and 35.8% respondents are neutral that their social security has increased and only 18.2% respondents have reported increase in their social security. This is in contrast to the findings of participant borrowers where 50.8% have reported positive impact in this respect.

For financial security, about 30.5% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their financial security and 23.4% participant borrowers strongly agree on the same. In total, about 53.9% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, 37.2% respondents disagree (at 1% significance level) that their financial security has increased and 7.5% respondents strongly disagree on the same. Totally, about 44.7% respondents have taken negative views and 33.2% are neutral that their financial security has increased and only 22.1% respondents have reported increase in their financial security. This is different outcomes to the finding of participant borrowers where 53.9% have reported positive impact in this respect.

With respect to food security, about 33.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their food security and 25.7% participant borrowers strongly agree on the same. In total, about 59.0% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 37.2% respondents disagree (at 1% significance level) that their food security has increased and 8.8% respondents strongly disagree on the same. Totally, about 46.0% respondents disagree and 34.0% respondents are neutral that their food security has increased and only 20.0% respondents have reported positive impact in their food security. This is also different to the findings of participant borrowers, where 59.0% have reported positively in this respect.

For health security, about 38.7% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their health security and 17.5% participant borrowers strongly agree on the same. In total, about 56.2% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 37.2% respondents disagree (at 1% significance level) that their health security has increased and 11.0% respondents strongly disagree the same. Totally, about 48.2% respondents disagree and 34.8% respondents are neutral that their health security has increased and only 17.0% respondents have reported increase in their health security. This is also dissimilar to the findings of participant borrowers, where 56.2% have reported positive impact in this case.

4.4.4.2 Impact Measurement: Between the Group

Business Impact: This part discusses microfinance impact on borrowers' poverty at business level through difference in score between participant and non-participant borrowers (Please see Table 4.40). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree, and Strongly agree) for business revenue, fixed asset, current asset, and employment between the participant and non-participant borrowers.

Table 4.40 Business Impact

Business Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Mann-Whitney U	Z	Sig.
	Mean	Median	Mean	Median			
Business Revenue***	500.30	4.00	300.70	2.00	40078.50	-12.54	0.000
Fixed Asset***	436.17	3.00	364.83	2.00	65733.00	-4.55	0.000
Current Asset***	451.62	3.00	349.38	2.00	59553.00	-6.42	0.000
Employment***	502.86	4.00	298.15	2.00	39058.00	-12.86	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach to disagree as they score 2. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for business revenue, fixed asset, current asset, and employment compared to the non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at business level.

Household Impact: This part deals with microfinance impact on borrowers' poverty at household level through difference in score between the participant and non-participant borrowers (Please see Table 4.41). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree, and Strongly agree) for household income, immovable property, movable property and expenditure between the participant and non-participant borrowers.

Table 4.41 Household Impact

Household Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean	Median	Mean	Median	Mann-Whitney U	Z	Sig.
	Rank	Rank	Rank	Rank			
Household Income***	492.03	4.00	308.98	2.00	43390.00	-11.49	0.000
Immovable Property***	464.00	3.00	337.00	2.00	54599.00	-8.06	0.000
Movable Property***	464.12	3.00	336.89	2.00	54554.00	-8.04	0.000
Expenditure***	471.49	4.00	329.51	3.00	51603.00	-8.93	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for household income, immovable property, movable property, and expenditure compared to the non-participant

borrowers. Therefore, it indicates that microfinance has positive impact on poverty at household level.

Individual Impact: This part discusses microfinance impact on borrowers' poverty through difference in score between participant and non-participant borrowers (Please see Table 4.42). The *Mann-Whitney U-Test* has been used to find out whether there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree, and Strongly agree) for borrower control, honor, capacity, and confidence between the participant and non-participant borrowers.

Table 4.42 Individual Impact

Individual Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Control***	463.09	3.00	337.91	3.00	54374.00	-7.93	0.000
Honor**	459.57	4.00	341.44	3.00	56374.00	-7.45	0.000
Capacity***	472.80	4.00	328.20	3.00	51080.00	-9.09	0.000
Confidence***	482.36	4.00	318.64	3.00	47255.00	-10.33	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach neutral as they score 3. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for borrowers' individual control, honor, capacity, and confidence compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at individual level.

Security Impact: This part deliberates microfinance impact on borrowers' poverty through difference in score between participant and non-participant borrowers (Please see Table 4.43). The *Mann-Whitney U-Test* has been used to find out whether

there is any significant difference between these two groups. The test score is measured by 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree, and Strongly agree) for borrower social, financial, food, and health security between the participant and non-participant borrowers.

Table 4.43 Security Impact

Security Level Variables	Participant Borrowers N ₁ = 400		Non-Participant Borrowers N ₁ = 400		Test Statistics		
	Mean Rank	Median	Mean Rank	Median	Mann-Whitney U	Z	Sig.
Social***	480.31	4.00	320.69	3.00	48077.00	-10.33	0.000
Financial***	480.09	4.00	320.92	3.00	48166.00	-10.11	0.000
Food***	509.28	4.00	291.72	3.00	36489.00	-13.78	0.000
Health***	502.44	4.00	298.56	3.00	39224.50	-12.93	0.000

Note: *, **, *** denote 10%, 5% and 1% significance level respectively.

In case of participant borrowers, all the four variables approach to agree as they score 4. However, in case of non-participant borrowers, all the four variables approach to neutral as they score 2. Their respective median scores are statistically different at 1% significance level. It can be concluded that participant borrowers are better off for borrowers' social, financial, food, and health security compared to non-participant borrowers. Therefore, it indicates that microfinance has positive impact on poverty at security level.

4.4.4.3 Impact Measurement: Causal Relationship

This part discusses microfinance impact on borrowers' poverty at business level (business revenue, fixed asset, current asset and employment), household level (Household Income, Immovable Property, Movable Property, and Expenditure), Individual level (Control, Honor, Capacity and Confidence), and Security level (Social, Financial, Food, and Health). This is pertinent to research objective and research question 3. Regression Analysis has been performed using Partial Least Square (PLS) with Reflective Measurement Model (RMM) taking microfinance as an

independent variable and poverty as dependent variable. Poverty is measured through four latent variables reflected by four items at business, household, individual and security levels (Please see Figure 4.3).

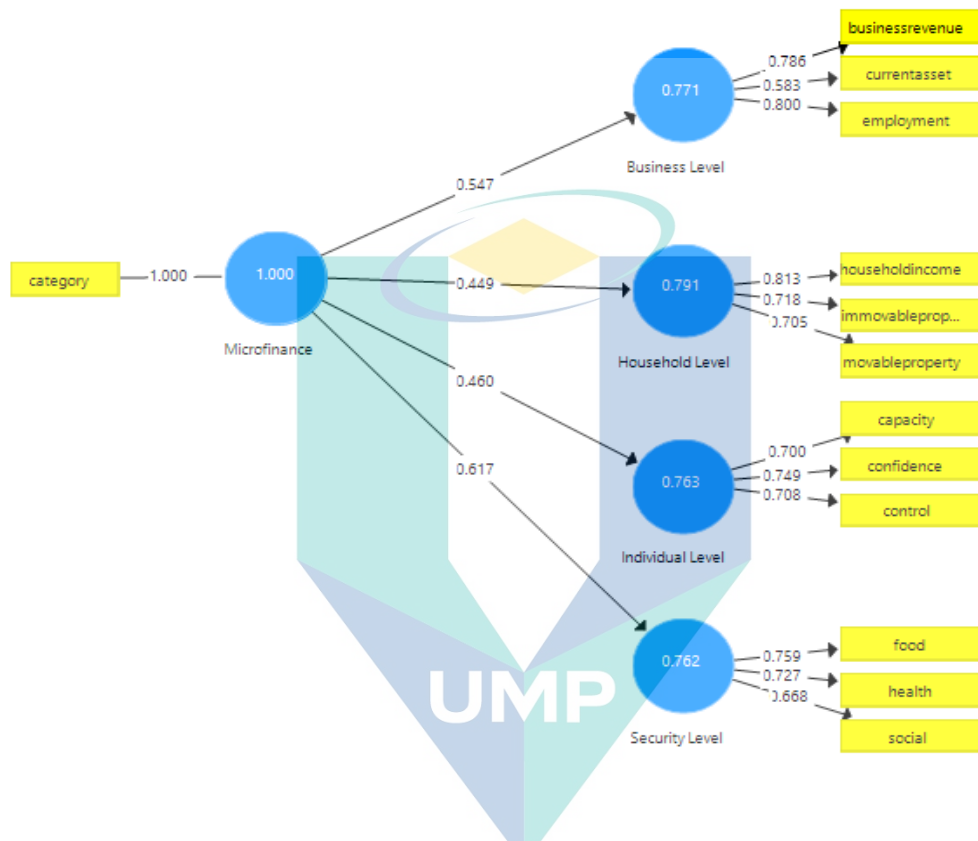


Figure 4.3 Causal Relationship: TEKUN

With reference to Table 3.1 - Summary of Indices for PLS Modeling in methodology chapter, for internal consistency, the acceptable values for Composite Reliability (CR) between 0.70 to 0.90 can be regarded as satisfactory (Hair et al., 2016). For convergent validity, Factors Loadings (FLs) values equal to and greater than 0.40 are acceptable (Hulland, 1999) and Average Variance Extracted (AVE) should be greater than 0.500 (Hair et al., 2016). For discriminant validity, Heterotrait - Monotrait Ratio (HTMT) values should be lower than 0.900 (Gold et al., 2001). In this analysis, CRs are between 0.70 to 0.90 confirming satisfactory internal consistency. Items with FLs above 0.40 have been kept considering its impact on content validity. AVEs are greater than 0.500 confirming convergent validity as well. Fornell-Larcker Criterion, Cross Loadings and HTMT have also met the threshold levels confirming discriminant validity (Please see Table 4.44). All the calculations are

done using Smart PLS and shown in Appendix C. Considering the PLS output results and HEPM Model, this researcher deleted fixed asset at business level, expenditure at household level, honor at individual level and financial security at security level. Items with weaker outer loadings are sometimes retained on the basis of their contribution to content validity (Hair et al., 2016). This HEPM Model has been applied by Dunn and Arbuckle (2001b) to evaluate microfinance impact assessment. It deals with poverty as a content through different aspects at the business, household, individual, and security level and suggest to explore these items for avoiding fungibility.

Table 4.44 Measurement Model

Construct	Items	Internal Consistency	Convergent Validity	Discriminant Validity	
		Composite Reliability (CR)	Factor Loading (FL)	Average Variance Extracted (AVE)	Heterotrait-Monotrait Ratio (HTMT)
Microfinance		1.000	1.000	1.000	0.688
Business Level	Business Revenue	0.771	0.786	0.533	-
	Fixed Asset		-		
	Current Asset		0.583		
	Employment		0.800		
Household Level	Household Income	0.791	0.813	0.558	1.00
	Immovable Property		0.718		
	Movable Property		0.705		
	Expenditure		-		
Individual Level	Control	0.763	0.708	0.518	0.897
	Honor		-		
	Capacity		0.700		
	Confidence		0.749		
Security Level	Social	0.762	0.668	0.517	0.924
	Financial		-		
	Food		0.759		
	Health		0.727		

The estimated path coefficients of microfinance on poverty at business, household, individual, and security level are 0.547, 0.449, 0.460 and 0.617 respectively. They are all statistically significant ($P < 0.000$). This individual path coefficient can be interpreted just as the beta coefficient like the estimated change in the dependent variable for a unit change in the independent variable. This means participant borrowers are estimated to be 0.547, 0.449, 0.460 and 0.617 0.655 times better off in poverty at business, household, individual and security level respectively compared to non-participant borrowers. According to the Rule of Thumb recommended by Chin et al. (2003), the Coefficient of Determination (R^2) values more of 0.67, 0.33, and 0.19 consider substantial, moderate, and week level respectively. The R^2 of microfinance on poverty at business, household, individual and security level (0.299, 0.202, 0.211 and 0.381) can be considered week to moderate. According to Cohen (1988), f^2 values more of 0.35, 0.15, and 0.02 reflect large, medium, and small effect sizes respectively. The calculated f^2 (0.426, 0.253, 0.268 and 0.616 respectively) indicates that microfinance has medium to large effect in producing the R^2 for poverty at business, household, individual and security level. Besides, the predictive relevance of the model has been examined. If the Q^2 value is larger than zero, the model has predictive relevance for a certain endogenous construct (Hair et al., 2016). In this case, the Q^2 values (0.149, 0.106, 0.103 and 0.188 respectively) are more than zero, indicating that the model has sufficient predictive relevance (Please see Table 4.45). Considering both measurement and structural model, this can be concluded that microfinance has a significant positive impact on TEKUN borrowers' poverty level. This finding is consistent with Khandker (1998b). He found positive evidence for microfinance by different variables like income, consumption, expenditure, savings, employment, etc. He also concluded that about five percent of the borrowers got rid of poverty by their respective categories per year. Similar nature positive impact on borrowers' poverty was found for microfinance intervention (Hashemi et al., 1996; Husain, 1998).

Table 4.45 Structural Model

Hypothesis	Relationship	Std. Beta	Std. Dev	T - Value	Decision	R ²	f ²	Q ²
H ₃	Microfinance → Business Level	0.547	0.023	24.177***	Sup- ported	0.299	0.426	0.149
	Microfinance → Household Level	0.449	0.029	15.395***	Sup- ported	0.202	0.253	0.106
	Microfinance → Individual Level	0.460	0.028	16.563***	Sup- ported	0.211	0.268	0.103
	Microfinance → Security Level	0.617	0.022	28.249***	Sup- ported	0.381	0.616	0.188

Note: *** P < 0.01.

4.4.5 Qualitative Impact Measurement – Modified HEPM

The counterfactual issue arises when it has been tried to assess the socio-economic microfinance impact quantitatively. In any case, the qualitative methodology might be alternative way of explaining the effect of microfinance contributing to poor borrowers' lives through extended case studies. In this research, Modified HEPM has been applied for qualitative impact measurement for microfinance. This model supersedes limitations and complexities and also gives alternative solution. It is easy and exhaustive with two types of diaries namely financial diary for fund receipt and payment and activity dairy for time use in different activities of borrower. Inspecting the information created by these two diaries has not been relaxed but delivers quality information about borrowers' poverty level as our five different case studies show.

4.4.5.1 Financial Diary Analysis

Participant borrowers: Besides taking loan only from TEKUN, Borrowers look for achieving alternative sources of finance. Two cases out of five get microloans from alternative sources. It means, TEKUN borrowers do not deem to receive adequate loan to carry out their respective revenue producing jobs. These borrowers are a bit ambitious to acquire more loan that incurs them expending more effort and time since each borrowing alternative source demands their individual limitation for having them. They sometimes drop working time for fulfilling with obligations and formalities. Therefore, inappropriate and inflexible loan size induces mental and sometime physical difficulties. Partly, borrowers' fund is employed to serve the existing loan instalments and purchasing daily basic staff that serve the quality of their lives. One selected borrower needs recycle existing loans. Moreover, this researcher discovered evidence that their total income and expenditure fluctuate at the aggregate level. Two selected borrowers use the loan in otherwise than the intended purpose for which loan is taken. In three cases, participant borrowers are working as a self-employed entrepreneur in their individual places. For this self-employed activities, they receive income out of their work normally calculated on the monthly basis. These three borrowers do not do the jobs in others places on daily, hourly or monthly basis. They have been focused on their job primarily financed by microfinance. However, other two borrowers have alternative income-generating activities.

Non - Participant borrowers: Borrowers seek to join alternative sources of finance besides borrowing solely from one informal source. Four cases out of five availed small loans from multiple sources. It means the poor borrowers appear to be under provided in terms of the size of the loan that they receive from any source. This hunger for extra credit requires borrowers not only to approach alternative borrowing sources but also to make the loans expensive in terms of time and effort. Each borrowing source requires the respective obligations for availing loans. The cost of attending formalities is higher as this research found that all these three borrowers lost their productive working hours to satisfy those formalities and obligations. Therefore, making the size of loans flexible and contingent on the risk profile of borrowers would reduce the need for physical and mental stress of managing money with multiple sources. A rather alarming finding is a portion of these four borrowers' money that

goes towards servicing loan repayments. Four borrowers' fund has been spent on servicing existing loans and buying food items. They have less ability to spend under other budget categories such as health, education etc. They also have been observed to recycle their debts to a substantial extent. This research also observed that most of the major outflows that were followed by a major borrowing are on consumption items like jewellery, household accessories, etc. Additionally, if we look at the aggregate level, it finds evidence that all selected borrowers' total income exceeds their total expenditure plus loan repayment during this period. The fact reveals that all borrowings do not boost productive purpose use. All cases borrowers have not been serving as a self-employed person in their respective working places for which they get revenue out of their income generating activities usually calculated on monthly basis. All borrowers do jobs in others places on hourly, daily or monthly basis. They are much more concentrated on alternative work not financed by small loan taken informally.

4.4.5.2 Activity Diary Analysis

Participant borrowers: In these case studies, all selected five participant borrowers fulfil the physiological needs following Abraham Maslow's hierarchy need. These borrowers also enjoy general safety needs such as security of body, employment, resources, morality, family, health, and property. This research discovered them satisfied and there are no significant matters in the hierarchy level of love or belonging. In all cases, borrowers look for achieving esteem through organizing or participating social sports and events as per their respective art and culture. However, this researcher did not observe any self-actualization need which may not be possible normally.

Non - Participant borrowers: All selected non-participant borrowers in the case studies also appear in a good position for satisfying all physiological needs. In these five cases, all enjoy basic amenities or requirements like food, cloths, housing, medication, and education. They are not stressed to fulfil these amenities at different levels. Only one case reports not to fulfil safety needs. In these case studies, this research found that non-participant borrowers were employed otherwise besides their small loan based activity. They get jobs usually on monthly basis through negotiation. Their jobs do not have regular engagement by either nature or time. These borrowers are sometimes engaged for their households' jobs for which they cannot make

expenses when they do not have the paid job. They also spend leisure time in low cost entertainment. For love or belonging, they were also found to be satisfied and contented. There is a little symptom to satisfy for esteem hierarchy need. Again, it has been not very abnormal not to find the self-actualization need among these borrowers.

It appears from both the diaries analysis that participant borrowers are in a bit better position than non-participant borrowers which ultimately shows a little positive impact of microfinance. Productive time either can earn money or save expenses that help poverty alleviation. In their case study, Alia et al. (2017) shows that time activity and money are certainly related. Time may mean money for a rich person. However, for a poor person she may spend time on non-income generating activity adding to her social esteem when money is not coming. In addition, she may also consume inexpensive assets for spending leisure time at low cost.

4.4.6 Multidimensional Poverty Index Analysis

Participant Borrowers:

- Incidence of Poverty (H): The borrower has been considered poor if she/he is deprived in at least one-third (33.33 percent) of the weighted indicators. This researcher found only 6 poverty headcount through the survey of 400 respondents in this category. It means 6 incidence of poverty occurred as per their weighted score are more than 33.33 percent. Hence, the incidence of poverty (H) scored 0.0150 (6 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This researcher found 6 intensity of poverty with different percentages as per their respective score through the survey of 400 respondents in this category. Consequently, the average intensity of poverty (A) scored 0.3704 (Average poverty rate of 6 borrowers).

$$\text{MPI} = H * A = 0.0150 * 0.3704 = 0.0056 \quad 4.5$$

The lower index displays comparatively lower side of the poverty level and vice versa. This constructed Index as shown in Equation 4.5 depicts relatively lower

deprivation and poverty among participant borrowers compared to non-participant borrowers of TEKUN. This category's standard of living is not quite below than that of non-participant group. However, it calls for further attention. Calculated details have been provided in Table 4.46

Table 4.46 MPI for TEKUN -Participant Borrowers

Indicator*	Weight	Borrower1	Borrower2	Borrower3	...
Years of School	3/18	0	0	0	...
School Attendance	3/18	0	0	0	...
Child Mortality	3/18	0	0	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	0	0	0	...
Sanitation	1/18	0	0	0	...
Drinking Water	1/18	0	0	0	...
Housing	1/18	0	0	0	...
Cooking Fuel	1/18	0	0	0	...
Assets Ownership	1/18	0	0	0	...
Weighted Score		00.000%	00.00%	00.00%	...
Status (Poor \geq 33.33%)		Not Poor	Not Poor	Not Poor	...
Score (Poor = 1, Not Poor = 0)		0	0	0	...
Incidence of Poverty (H)	$H=(0+0+..)/400$	0.0150			
Intensity of Poverty (A)	$A=(00.00+ 00.00 +)/6$	0.3704			
MPI Index	$H*A$	0.0056			

Non-Participant Borrowers:

- Incidence of Poverty (H): Once again, the borrower has been considered poor if she/he is deprived in at least one-third (33.33 percent) of the weighted indicators. This researcher found 11 poverty headcount through the survey of 400 non-participant borrowers. It means 11 incidence of poverty as per their weighted score are more than 33.33 percent. Therefore, the incidence of poverty (H) counted 0.0275 (11 out of 400).
- Intensity of Poverty (A): A indicates the average intensity rate of poverty across already scored poor. This research found 11 intensity of poverty with different percentages as per their respective score in the same survey of 400 respondents in this category. Consequently, the average intensity of poverty (A) came 0.5394 (Average percentage of 11 borrowers).

$$\text{MPI} = H * A = 0.0275 * 0.3485 = 0.0096 \quad 4.6$$

The higher index confirms relatively the higher poverty level and vice versa. This constructed Index confirms relative higher deprivation and poverty among non-participant borrowers compared to participant borrowers of BRAC. Their standard of living has been quite below than that of participant borrowers and require for more consideration. Details of the calculation are given in Table 4.47

Table 4.47 MPI for TEKUN –Non-Participant Borrowers

Indicator*	Weight	Borrower		Borrower3	...
		1	2		
Years of School	3/18	0	0	0	...
School Attendance	3/18	0	0	0	...
Child Mortality	3/18	0	0	0	...
Nutrition	3/18	0	0	0	...
Electricity	1/18	0	0	0	...
Sanitation	1/18	0	0	0	...
Drinking Water	1/18	0	0	0	...

Housing	1/18	0	0	0	...
Cooking Fuel	1/18	0	0	0	...
Assets Ownership	1/18	0	0	0	...
Weighted Score		00.00%	00.00%	00.00%	...
Status (Poor \geq 33.33%)		Not Poor	Not Poor	Not Poor	...
Score (Poor = 1, Not Poor = 0)		0	0	0	...
Incidence of Poverty (H)	$H=(0+0+...)/400$	0.0275			
Intensity of Poverty (A)	$A=(00.00+00.00)/11$	0.3485			
MPI Index	$H*A$	0.0096			

In conclusion, the incidence of poverty appeared 0.0150 and the average intensity of poverty scored 0.3704 which constructed MPI Index 0.0056 in case of participant borrower.

The constructed MPI index shows comparatively lower deprivation and poverty among participant borrowers of TEKUN. In the opposite side, incidence of poverty scored 0.0275 and the average intensity of poverty scored 0.3485 which constructed MPI Index 0.0096 in case of non-participant borrowers. The constructed MPI index depicts relatively higher deprivation and poverty among non-participant borrower in comparison to participant borrower. Their standards of living have been quite below than that of participant borrowers and require further serious attention. Therefore, microfinance has positive impacts on participant borrowers' poverty as their index is relatively lower in comparison to non-participant borrowers. Hence, microfinance appears as a useful development tool to alleviate poverty. However, the national MPI as reported 0.0033 in Malaysia during 2016 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the country (MalayMail, 2019).

4.4.7 Loan Default Analysis

For finding out the factors which are contributing to the probability of loan default, logistic regression has been executed in case of TEKUN participant borrowers. Loan default is the dependent variable which takes two categories (Default =1, Otherwise=0). This logistic model encompasses thirteen independent variables plus dummy variables created for some independent variables (Gender, Age, Living Style, Education Level, Dependant Number, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount and Interest Rate/Management fee). In case of this model for TEKUN participant borrowers, one predictor like *Interest Rate/Management fee* have been left out. The reason is that in this case, all borrowers are charged 4% management fee irrespective of their portfolio. The full model covering all predictors appears significant statistically, χ^2 (Degrees of freedom = 21, N = 400) = 47.114, $P < .001$, showing that this model is capable to differentiate likelihood between borrowers who will report and will not report loan default. In general, this logistic model correctly classifies 83.8 percent of the cases. The outcome of this model have been tabulated in Table 4.48. Some predictors' coefficients appear significant statistically in case of 10%, 5%, and 1% significance level.

Table 4.48 Predicting Likelihood for Loan Default

Dependent Variable ¹	Likelihood for Loan Default			
	Independent Variables ²	Estimated Coefficient	P Value	Odd Ratio
1. Gender		0.089	0.767	1.093
2. Dummy Variables for (Age)				
(Age) X ₂₍₁₎		0.990	0.202	2.691
(Age) X ₂₍₂₎		0.368	0.642	1.445
(Age) X ₂₍₃₎		0.732	0.350	2.079
(Age) X ₂₍₄₎		0.948	0.250	2.580
(Age) X ₂₍₅₎		Dropped for dummy trap problem ³		
3. Living Style		1.031***	0.000	2.804
4. (Education Level)		-0.364	0.345	0.695
5. Dummy Variables for Dependant Number				
(Dependant Number) X ₅₍₁₎		0.199	0.812	1.221
(Dependant Number) X ₅₍₂₎		0.160	0.847	1.174

Table 4.48 Continued

Dependent Variable ¹	Likelihood for Loan Default		
	Estimated Coefficient	P Value	Odd Ratio
Independent Variables ²			
(Dependant Number) X ₅₍₃₎	-0.055	0.948	0.946
(Dependant Number) X ₅₍₄₎	Dropped for dummy trap problem ³		
(Dependant Number) X ₅₍₅₎	Dropped for no frequency		
6. Business Type	0.267	0.386	1.306
7. Dummy Variables for (Monthly Revenue)			
(Monthly Revenue) X ₇₍₁₎	Dropped for no frequency		
(Monthly Revenue) X ₇₍₂₎	Dropped for no frequency		
(Monthly Revenue) X ₇₍₃₎	Dropped for dummy trap problem ³		
(Monthly Revenue) X ₇₍₄₎	1.407*	0.091	4.083
(Monthly Revenue) X ₇₍₅₎	0.863	0.284	2.371
8. Alternative Income	-0.925***	0.004	0.396
9. Alternative Loan	-0.248	0.440	0.780
10. Repayment Mode	-0.562	0.339	0.570
11. Repayment Period	-0.154	0.654	0.857
12. Dummy Variables for Repayment Amount			
Repayment Amount X ₁₂₍₁₎	0.872	0.250	2.392
Repayment Amount X ₁₂₍₂₎	0.700	0.307	2.013
Repayment Amount X ₁₂₍₃₎	-0.077	0.905	0.926
Repayment Amount X ₁₂₍₄₎	-0.129	0.856	0.879
Repayment Amount X ₁₂₍₅₎	Dropped for dummy trap problem ³		
13. Interest Rate/Mgt. Fee ⁴	Dropped as all are charged 4% Management Fee		

*, ** and *** represents 10%, 5% and 1% significance level respectively.

Note: 1. Dependent variable, Loan Default = 1 for loan defaulter who missed loan repayment more than two times in instalment repayment schedule and Loan Default = 0 for otherwise, who did not miss loan repayment.

2. It has been negatively hypothesized with loan default for Independent variable shown in parentheses.

3. A dummy variable has been dropped in each group with the fewest respondents to avoid the dummy trap problem.

4. With the applicability of Muslim Law (*Shariah Law*), interest cannot be charged on loans in Malaysia. TEKUN charges "Management Fee" to cover its cost.

Gender: Male borrowers appears the majority (64 percent) in number in our sample. However, it has been quite familiar in the microfinance loan recovery that female borrowers are more accountable and more orderly in loan repayment. This model outcome indicates that this predictor coefficient appears positive and but

insignificant statistically. Therefore, in this case, male borrowers appear not significantly with higher likelihood of being loan defaulter compared to female borrowers. It does not confirm the findings of Chaudhary and Ishfaq (2003) and Roslan and Karim (2009) who concluded that male borrowers are more prone to turn out to be loan defaulters in comparison to female borrowers. The probable reason may be male borrowers have changed their perception and character regarding loan repayment.

Age: Borrowers' age might indicate their respective capability to pay back the loan. The dummy variable *Age*₍₅₎ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of TEKUN participant borrowers, age does not seem to contribute to loan default issue. Although it is well known that older borrowers are supposed to be more responsible than the younger borrowers. The result of this model does not support the outcomes that relatively younger borrowers will be more probable to become loan defaulters (Brehanu & Fufa, 2008). This may be for the reason that borrowers change their character over time.

Living Style: It refers to single or conjugal lifestyle. In the society, conjugal or married lives have often been regarded as an optimal behavior. Single living style are not supposed to be more responsible or accountable than conjugal counterpart. A single borrower might be less dependable as there appears no partner or spouse for supporting or financing daily activities. This situation can be linked with significant likelihood of loan default. This model outcome finds that this predictor variable appears positive and statistically significant at 1% level of significance. As a result, a single borrower has more likelihood of being a loan defaulter in comparison to a conjugal borrower. The estimated odd ratio displays that a single borrower has been projected 2.804 times more likelihood of becoming a loan defaulter compared to a conjugal borrower, ceteris paribus. This outcome supports the results that single borrowers may not need to maintain positive connection with lenders for increasing their likelihood of receiving future credits. It supports that they may be more probable to become defaulters in comparison to married borrowers (Peng et al., 2009). The probable reason for this outcome may be that single borrowers remain irresponsible over the time in this case.

Education Level: Much educated borrowers have been anticipated for becoming less defaulters. The probable cause is that the learned borrowers will achieve capability for managing their activities well, understanding data and information, maintaining documentation and carrying out cash management and profitability analysis. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, an educated borrower has no contributing issue of being a loan defaulter in comparison to a lower educated or uneducated borrower. As a result, borrowers' education level is not making any contribution for becoming loan defaulter in this case. Nevertheless, it does not confirm with the result that a borrower with comparatively more education will be less probable for becoming a loan defaulter (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Educated borrowers seem irrelevant for more revenue generating activities.

Dependant Number: This predictor may also be a contributing factor which can influence the ability of borrowers for repaying their credits. The borrowers assume more obligation to spend for basic amenities like food, clothes, education, medical, etc. when their dependant number are more to maintain and support. Therefore, dependant number can be a contributing factor to loan default. The dummy variable *Dependant Number* ₍₅₎, having no respondent, is dropped in this group. Again, the dummy variable *Dependant Number* ₍₄₎ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. However, there appears no statistically significant predictor for all other dummy variables in this group. Therefore, in case of TEKUN participant borrowers, dependant number does not seem for contributing to loan default issue. This has not been supported by previous study which confirms that a borrower who has relatively large number of dependant will assume more likelihood to be a loan defaulter (Brehanu & Fufa, 2008). Probable reason for this may be the borrowers are efficient enough to neutralize large household member.

Business Type: This predictor includes an agricultural type of business else otherwise like trading, etc. Agricultural business type has been limited with natural catastrophes like rain, flood, drought, etc. This business type is usually related with the lower cash cycle. Hence, this is presumed that the agricultural business type will contribute more likelihood for loan default. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, an

agricultural business has no contributing issue of being loan defaulter in comparison to trading business in case of TEKUN borrowers. An agricultural business type may be associated with lower cash cycle than small business category (Chaudhary & Ishfaq, 2003). This aspect may be contributing to the higher probability of loan default. This result does not support this fact may be due to natural calamities are often unpredictable and random.

Monthly Revenue: Comparatively high monthly revenue gives the borrower ability to pay the loan back on time. This circumstance may not invite a borrower to be loan defaulter. The dummy variables *Monthly Revenue* (1) and *Monthly Revenue* (2) have been dropped for having no respondent in these categories. The dummy variable *Monthly Revenue* (3) recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. The model outcome displays positive coefficient at 10% level of significance in case of *Monthly Revenue* (4). The reported odd ratio designates that borrowers related with monthly revenue of \$301 to \$400 is 4.083 times more likely to be loan defaulter, ceteris paribus. However, there appears no statistically significant predictor in case of *Monthly Revenue* (5) dummy variable in this group. Therefore, in case of TEKUN participant borrowers, *Monthly Revenue* for certain amount seems to contribute to loan default issue. This finding is not exactly similar to that comparatively lower amount of business revenue is accompanied with the higher likelihood of loan default (Okorie, 1986). This may be due to the fact that borrowers can manage their fund efficiently on certain category amount of revenue.

Alternative Income: Sometimes borrowers have more than one sources of income. There may have inverse relationship for loan default with borrowers who have alternative or extra income source. The model outcome displays negative coefficient at 1% level of significance in case of *Alternative Income*. The reported odd ratio designates that borrowers with alternative income is 0.396 times less likely to be loan defaulters compared to borrower without alternative income, ceteris paribus. Therefore, in case of TEKUN participant borrowers, alternative income seems for contributing to loan default issue. It is well assumed that borrowers with extra income are supposed to be more reliable than the borrowers with no alternative source. The result of this model supports this outcome that a borrower who has extra or alternative income besides her micro credit financed income will have the higher capability for

paying back her micro credit (Brehanu & Fufa, 2008). This may be due to the fact that alternative source induces borrowers' capability for loan repayment.

Alternative Loan: Sometimes borrowers have more than one sources of loan. There may have inverse relationship for loan default with borrowers who have alternative loan source. Extra or alternative loan can affect borrowers' capability in paying back their microfinance loan. These extra credits assume more limitations to fulfil the obligation in addition to microfinance loan. This researcher finds adequate number of microfinance borrower taking loan from multiple sources when carrying out pilot survey. When borrowers prevail extra or alternative loans from other sources, they find themselves encountering complexities and challenges for their individual payback. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, alternative or extra loan has no contributing issue of being loan defaulter in comparison to single loan source in case of TEKUN borrowers. Alternative loan can induce multiple fund management capacity.

Repayment Mode: This research investigates whether repayment mode, say weekly, has been contributing to loan default problem. This may be more specifically correct for borrowers with lower revenue cycle. Although there appear other repayment modes, TEKUN also follows mainly weekly repayment. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, repayment mode has no contributing issue of being loan defaulter in comparison to other modes in case of TEKUN borrowers. The result of this model does not support this outcome that borrowers who have weekly mode will have the higher ability to pay back their microfinance loan. Microfinance institute enforced loan repayment mode may play significant role for loan payback attitude of the borrower (Derban et al., 2005). This may be due to the fact that weekly mode is not compatible with the revenue cycle of the borrowers in this case.

Repayment Period: This research investigates whether longer loan repayment period, say more than one year in this case, contributes to the loan default issue. Borrowers with longer repayment period can be related to more loan default problem in comparison to borrowers with shorter repayment period. This model outcome finds that this predictor variable appears negative but statistically insignificant. As a result, longer repayment period has no contributing issue of being loan defaulter in

comparison to shorter repayment period in case of TEKUN borrowers. This finding does not match that a borrower with longer repayment period implying longer commitment to repay loan contributes positively for loan default (Roslan & Karim, 2009). This may be for the reason that individual borrower's operating cycle appears not compatible with loan repayment period.

Repayment Amount: It is the size of amount what a borrower repays back as loan instalment weekly or otherwise. This research investigates whether repayment amount has been contributing for loan default problem. This may be more specifically connected with borrowers with revenue and business cycle. TEKUN enforced loan repayment amount may play significant role for loan payback attitude of the borrower. A borrower paying back comparatively higher loan repayment amount may appear to become more loan defaulter in comparison to a borrower making lower repayment amount. The dummy variable *Repayment Amount* ⁽⁵⁾ recorded lowest respondents in this case, has been dropped for this category to handle dummy trap issue. This model outcome finds that this predictor variables *Repayment Amount* ⁽¹⁾, *Repayment Amount* ⁽²⁾, *Repayment Amount* ⁽³⁾ and *Repayment Amount* ⁽⁴⁾ appear negative but statistically insignificant. As a result, these dummies have no contributing issue of being loan defaulter. These findings do not conform the similar outcome by Derban et al. (2005). They make a conclusion that the unfavorable loan product can play significant role in case of loan default. Because loan should be suitably designed for the intended purpose.

Interest Rate/Management Fee: This represents interest rate or management fee charged to cover operational and other costs for microfinance institute. TEKUN charges interest rate for covering some parts or all of its operational cost to raise and disburse fund. Whether a borrower confronts her loan repayment for comparatively higher such charge or fee is very important to investigate. A borrower with high charge or fee has been assumed to become a loan defaulter in comparison to a borrower with low charge or fee. This researcher finds adequate number of microfinance borrower being charged differently on the basis of their individual portfolio when carrying out pilot survey. TEKUN charges management fee instead of interest rate as it is forbidden by Shariah law in Malaysia. In this case of TEKUN, all borrowers irrespective of their respective portfolio have been charged 4% management fee. Therefore, this variable

has been dropped out for predicting the likelihood of TEKUN participant borrowers loan default analysis. However, it has been quite familiar in the microfinance loan recovery that comparatively higher degree of interest rate/management fee is related with more loan default. This has been in line with the finding that the unfavorable credit product can make effect on paying back credit by the borrower on time (Derban et al., 2005).

4.5 Social versus Financial Performance: Panel Data Analysis

Table 4.49 shows descriptive statistics of different indicators used in this research such as the Outreach indicators (NOB and LO) and Financial indicators (ROA, OSS and OM).

Table 4.49 Descriptive Statistics

Indicators	Definition	Mean	S.D	Min	Max
Number of Borrowers (NOB)	Number of borrowers at the end of each financial year	463,692	1,214,176	26,401	6,794,853
Loan Outstanding (LO)	Loan outstanding at the end of each financial year (Million \$)	9,790	27,500	58	155,000
Return on Asset (ROA)	Net operating income/Average total assets*100	4.44	2.36	0.09	11.54
Operating Self-Sufficiency (OSS)	Financial revenue/ (Financial expense + Net loan loss)*100	127.79	29.23	43.58	313.73
Operating Margin (OM)	Operating margin / Financial revenue*100	8.44	8.85	1.05	47.19

This researcher calculated the correlation coefficients to provide the preliminary glance for the relationship that may occur between the variables before further proceeding with the regression analysis, (Please see Table 4.50).

Table 4.50 Correlation Matrix

	NOB	LO	ROA	OSS	OM
NOB	1.0000				
LO	0.8612***	1.0000			
ROA	-0.0202	-0.1446	1.0000		
OSS	0.1874**	0.1586*	0.4431*	1.0000	
OM	-0.1472	-0.2165**	0.5228***	0.2609***	1.0000

*Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level.

The NOB and LO have been significantly positively correlated with high degree of relationship. Obviously, the higher association between NOB and LO indicates more outstanding loan with more number of borrowers. However, NOB has not also been significantly correlated with ROA and OM but significantly positively correlated with OSS. It means that the higher number of borrowers can bring higher operating self-sufficiency. Again, the LO is not significantly correlated with ROA but significantly positively and negatively correlated with OSS and OM, respectively. It means that the high amount of loan outstanding can also bring higher operating self-sufficiency but lower operating margin. The ROA is also significantly positively correlated with OSS and OM. Finally, the OSS is also significantly positively correlated with OM. It shows partly indication whether there is trade-off between microfinance institutes' social performance and financial performance. The objective of the following regression models is intended for detecting existence, direction and degree of the association between the social performance and financial performance. It helps to draw the conclusion about whether microfinance institutions encounter trade-off or mission drift between social performance and financial performance. If there is trade-off, may be microfinance institutes are making money like other commercial institutions and they are not alleviating poverty. Hence, it can be a symptom that microfinance does not have impact on poverty alleviation. The following first and second regression models support "Slack Resources Theory" stating

positive/favorable impact of financial performance on the social performance of an entity and the third, fourth and fifth regression models support “Good Management Theory” stating positive/favorable impact of social performance on the financial performance as hypothesized in line with Trebucq and d'Arcimoles (2002).

Table 4.51 Diagnostic test for Regression with outreach indicator NOB as dependent variable

Breusch-Godfrey LM Test for Autocorrelation	Chi2 = 97.054, df = 2, Prob > Chi2 = 0.0000	
Variance Inflation Factor (VIF) Test for Multicollinearity	VIF	
	ROA	1.60
	OSS	1.38
	OM	1.25
Breusch-Pegan Test for Heteroscedasticity	F (3, 116) = 4.56	Prob> F = 0.0046

With reference to Table 4.51, the Breusch-Godfrey LM test has been applied to find out whether any autocorrelation exists in this model. The obtained values suggest that there is autocorrelation. Thus, panel data regression is pursued rather than ordinary least square. As a thumb rule, VIF value of 5 or higher indicate potential multicollinearity problem for the indicators in the model (Hair et al., 2016). In this case, calculated VIF for ROA, OSS, and OM have been found less than 5 that suggest no multicollinearity. The Breusch-Pegan test has been done to check heteroscedasticity and the calculated values suggest no such issue. While testing the first regression about microfinance social and financial performance, this study obtains the results presented in Table 4.52.

Table 4.52 Regression with outreach indicator NOB as dependent variable

	NOB		
	Coefficient	Z	Sig.
ROA	-0.0639***	-3.6100	0.0000
OSS	0.2621***	3.0800	0.0020
OM	0.0275	1.5000	0.1340
CONS	10.8276***	25.4900	0.0000
Wald Chi2	16.24	(Prob>Chi2)	0.0010
R²		0.1778	

*** meaning significance at 1% level.

While using the number of borrowers as an indicator of the depth of outreach, this study uses Random effect as per Hausman Test $\text{Prob} > \text{Chi}^2 = 0.8962$ which is more than 0.0500 (Random effect model has been suggested if $\text{Prob} > \text{Chi}^2$ is more than 0.0500). Furthermore, the model is significant overall as it is found Wald $\text{Chi}^2 = 16.24$ with $\text{Prob} > \text{Chi}^2 = 0.0010$ which is less than 0.0500, the significance level chosen in this case. The impact of financial performance on NOB is negative for ROA, positive for OSS, and insignificant for OM. Therefore, there is a mixed relationship between social and financial performance for return on asset and operating self-sufficiency. The microfinance can serve higher number of borrowers with the lower return on asset but higher operating self-sufficiency. There is partly mission drift for social and financial performance. Bassem (2012) found the relationship between social performance and financial performance neutral for some indicators like social range index, age, size, type, etc. However, they were able to confirm the presence of mission drift when microfinance institutions desired to reduce their respective portfolio risk. Cull et al. (2007) also attested the existence of trade-off between serving the poor (depth of outreach) and profitability (financial performance). This regression model partly supports "Slack Resources Theory" stating positive/favorable impact of financial performance on the social performance of an entity (Trebucq & d'Arcimoles, 2002). Some empirical evidences also provide support for this theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988).

Table 4.53 Diagnostic test for Regression with outreach indicator LO as dependent variable

Breusch-Godfrey LM	Chi2 = 75.332, df = 2, Prob > Chi2 = 0.0000	
Test for Autocorrelation		
Variance Inflation	VIF	
Factor (VIF) Test for Multicollinearity		
	ROA	1.60
	OSS	1.38
	OM	1.25
Breusch-Pagan Test for Heteroscedasticity	F (3, 116) = 6.17	Prob > F = 0.0006

With reference to Table 4.53, the Breusch-Godfrey LM test has been applied to find out whether any autocorrelation exists in this model. The obtained values suggest that there is autocorrelation. Thus, panel data regression is pursued rather than ordinary least square. As a thumb rule, VIF value of 5 or higher indicate potential multicollinearity problem for the indicators in the model (Hair et al., 2016). In this case, calculated VIF for ROA, OSS, and OM have been found less than 5 that suggest no multicollinearity. The Breusch-Pagan test has been done to check heteroscedasticity and the calculated values suggest no such issue. While testing the second regression about microfinance social and financial performance, this study obtains the results presented in Table 4.54.

Table 4.54 Regression with outreach indicator LO as dependent variable

	LO		
	Coefficient	Z	Sig.
ROA	-0.2444***	-8.8200	0.0000
OSS	0.5092	3.8300	0.0000
OM	0.0901***	3.1300	0.0020
CONS	19.4608***	30.1100	0.0000
Wald Chi2	78.7000	(Prob>Chi2)	0.0000
R²		0.5260	

*** meaning significance at 1% level.

In the same way, while using the loan outstanding as an indicator of the depth of outreach, this research uses Random effect as per Hausman Test Prob>Chi2 = 0.8665 which is more than 0.0500 (Random effect model has been suggested if Prob>Chi2 is more than 0.0500). Furthermore, the model is significant overall as it is found Wald Chi2 = 78.70 with Prob>Chi2 = 0.0000 which is less than 0.0500, the significance level chosen in this case. The impact of financial performance on LO is negative for ROA, positive for OSS and OM. Therefore, there is mixed outcome between social and financial performance for return on asset, operational self-sufficiency and operating margin indicators. Microfinance can serve higher amount of loans with the lower return on asset but higher operating self-sufficiency and operating margin. Again, there is partly mission drift for social and financial performance. However, Cull et al. (2007) found the coefficient for financial self-sufficiency negative and significant for loan size as social performance. This regression model partly supports "Slack Resources Theory" stating positive/favorable impact of

financial performance on the social performance of an entity (Trebucq & d'Arcimoles, 2002). Some empirical evidences also provide support for this theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988).

Table 4.55 Diagnostic test for Regression with outreach indicator ROA as dependent variable

Breusch-Godfrey LM Test for Autocorrelation	Chi2 = 37.590, df = 2, Prob > Chi = 0.0000	
Variance Inflation Factor (VIF) Test for Multicollinearity	VIF	
	NOB	3.87
	LO	3.87
Breusch-Pegan Test for Heteroscedasticity	F (2, 117) = 6.75	Prob > F = 0.0017

With reference to Table 4.55, the Breusch-Godfrey LM test has been applied to find out whether any autocorrelation exists in this model. The obtained values suggest that there is autocorrelation. Thus, panel data regression is pursued rather than ordinary least square. As a thumb rule, VIF value of 5 or higher indicate potential multicollinearity problem for the indicators in the model (Hair et al., 2016). In this case, calculated VIF for NOB and LO have been found less than 5 that suggest no multicollinearity. The Breusch-Pegan test has been done to check heteroscedasticity and the calculated values suggest no such issue. While testing the third regression about microfinance social and financial performance, this study obtains the results presented in Table 4.56.

Table 4.56 Regression with financial performance indicator ROA as dependent variable

	ROA		
	Coefficient	T	Sig.
NOB	0.6390	0.7900	0.4290
LO	-2.4282***	-6.1000	0.0000
CONS	46.9507***	4.8400	0.0000
F (2, 78)	20.8900	(Prob>F)	0.0000
R²		0.3488	

*** Significant at 1% level.

While using the ROA as an indicator of financial performance, this research uses Fixed effect as per Hausman Test $\text{Prob} > \text{Chi}^2 = 0.0000$ which is less than 0.0500 (Fixed effect model has been suggested if $\text{Prob} > \text{Chi}^2$ is less than 0.0500). Furthermore, the model is significant overall as it is found the $F(2,78) = 20.89$ with $\text{Prob} > \text{Chi}^2 = 0.0000$ which is less than 0.0500, the significance level chosen in this case. The impact of social performance on ROA is insignificant for NOB and negative for LO. Therefore, there is partial relationship between social and financial performance for number of borrower and loan outstanding. Microfinance can earn the higher return on asset with the lower amount of loan outstanding. Therefore, there is partial mission drift for social and financial performance. Bassem (2012) was able to confirm the presence of mission drift when microfinance institutions desired to reduce their respective portfolio risk. This regression model partially supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

Table 4.57 Diagnostic test for Regression with outreach indicator OSS as dependent variable

Breusch-Godfrey LM Test for Autocorrelation	Chi2 = 5.067, df = 2, Prob > Chi = 0.0794	
Variance Inflation Factor (VIF) Test for Multicollinearity	VIF	
	NOB	3.87
	LO	3.87
Breusch-Pagan Test for Heteroscedasticity	F (2, 117) = 5.20	Prob > F = 0.0068

With reference to Table 4.57, the Breusch-Godfrey LM test has been applied to find out whether any autocorrelation exists in this model. The obtained values suggest that there is no autocorrelation. Thus, ordinary least square is pursued rather than panel data regression. As a thumb rule, VIF value of 5 or higher indicate potential multicollinearity problem for the indicators in the model (Hair et al., 2016). In this case, calculated VIF for NOB and LO have been found less than 5 that suggest no multicollinearity. The Breusch-Pagan test has been done to check heteroscedasticity and the calculated values suggest no such issue. While testing the fourth regression

about microfinance social and financial performance, this study obtains the results presented in Table 4.58.

Table 4.58 Regression with financial performance indicator OSS as dependent variable

OSS			
	Coefficient	T	Sig.
NOB	0.0400	1.1000	0.2730
LO	-0.0016	-0.0600	0.9520
CONS	4.3806***	13.9300	0.0000
F (2, 117)		(Prob>Chi2)	0.1233
R²		0.0352	

*** Significant at 1% level.

While using the OSS as an indicator of financial performance, this research uses pooled regression. However, the model is not significant overall as it is found the $F(2,117) = 2.1300$ with $\text{Prob} > F = 0.1233$ which is not less than 0.0500, the significance level chosen in this case. The impact of social performance on OSS is insignificant for both NOB and LO. Therefore, there is no significant relationship between social and financial performance for number of borrower and loan outstanding. Microfinance is indifferent for operational self-sufficiency with number of borrower and loan outstanding. Hence, there is undeterminable drift for social and financial performance in this case. This result is not consistent with Cull et al. (2007) who found the coefficient for financial self-sufficiency negative and significant for some indicator in social performance such as loan size. This regression model is indifferent to supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

Table 4.59 Diagnostic test for Regression with outreach indicator OM as dependent variable

Breusch-Godfrey LM Test for Autocorrelation	Chi2 = 12.267, df = 2, Prob > Chi = 0.0022	
Variance Inflation Factor (VIF) Test for Multicollinearity	VIF	
	NOB	3.87
	LO	3.87
Breusch-Pegan Test for Heteroscedasticity	F (2, 117) = 2.38	Prob > F = 0.0972

With reference to Table 4.59, the Breusch-Godfrey LM test has been applied to find out whether any autocorrelation exists in this model. The obtained values suggest that there is autocorrelation. Thus, panel data regression is pursued rather than ordinary least square. As a thumb rule, VIF value of 5 or higher indicate potential multicollinearity problem for the indicators in the model (Hair et al., 2016). In this case, calculated VIF for NOB and LO have been found less than 5 that suggest no multicollinearity. The Breusch-Pegan test has been done to check heteroscedasticity and the calculated values suggest no such issue. While testing the fifth regression about microfinance social and financial performance, this study obtains the results presented in Table 4.60.

Table 4.60 Regression with financial performance indicator OM as dependent variable

	OM		
	Coefficient	Z	Sig.
NOB	0.1309	0.8600	0.3910
LO	-0.2271**	-1.9600	0.0500
CONS	6.0831***	4.6100	0.0000
Wald Chi2	6.5300	(Prob>Chi2)	0.0383
R²		0.2276	

** Significant at 5% level, *** Significant at 1% level.

While using the OM as an indicator of financial performance, this study uses Random effect as per Hausman Test, $\text{Prob} > \text{Chi}^2 = 0.7238$ which is more than 0.0500 (Random effect model has been suggested if $\text{Prob} > \text{Chi}^2$ is more than 0.0500). Furthermore, the model is significant overall as it is found the Wald $\text{Chi}^2 = 6.53$ with $\text{Prob} > \text{Chi}^2 = 0.0383$ which is less than 0.0500, the significance level chosen in this case. The impact social performance on OM is not significant for NOB but negative for LO. Therefore, there is partly relationship between social and financial performance for operating margin. Microfinance can earn the lower operating margin with the higher loan outstanding. Hence, there is partial mission drift for social and financial performance in this case as well. This result is consistent with Bassem (2012) except indicator like portfolio risk. This regression model also partly supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

In summary, the impact of return on asset on number of borrowers is negative which means that higher return on asset causes lower number of borrower. However, the impact of operational self-sufficiency on number of borrowers is positive which means that higher operational self-sufficiency causes higher number of borrower. In addition, the impact of return on asset on loan outstanding is negative which means that higher return on asset causes lower loan outstanding. However, the impact of operational self-sufficiency and operating margin on loan outstanding is positive which means that higher operational self-sufficiency and operating margin cause higher loan outstanding. Since there is significant mixed relationship between social and financial performance for different indicators, it can be considered partial mission drift. Justification for this different type of behaviour is quite challenging when it is considered good financial performance leading to good social financial performance (Slack Resource Theory) as a totality. However, if it is split separately, it can be interpreted for individual prediction and used for microfinance specific need in particular.

The impact of loan outstanding on return on asset is negative which means that higher loan outstanding causes lower return on asset. However, the impact of number

of borrower and loan outstanding on operational self-sufficiency is insignificant. In addition, the impact of loan outstanding on operating margin is negative which means that higher loan outstanding causes lower operating margin. Since there is significant mixed relationship between social and financial performance for different indicators, it can be considered partial mission drift. Justification for this different type of behaviour is quite challenging when it is considered good social performance leading to good financial performance (Good Management Theory) as a totality. However, if it is split separately, it can be interpreted for individual prediction and used for microfinance specific need in particular. Therefore, it can again be concluded that there is significant mixed relationship between social and financial performance and partial mission drift in Bangladesh.

This study cannot measure the social versus financial performance in case of Malaysia for non-availability of data. The respective microfinance institutes of Malaysia are very restricted to share any financial data. Mokhtar (2011) also mentioned that the three microfinance institutions namely AIM, TEKUN and YUM were strict about giving out some data and information concerning the institution for which her study could not access the financial statements to evaluate the financial performance.

4.6 Summary of the Chapter

The empirical analysis and interpretation of the data and information gathered by primary and secondary sources was discussed in this chapter for this study. Grameen Bank, BRAC and TEKUN have been discussed chronologically to draw the respective findings adherence to them. Each aforesaid microfinance institute was further discussed with its demographic, business and loan characteristic, microfinance impact on borrowers' poverty quantitatively and qualitatively, multidimensional poverty index analysis and loan default issues. Finally, it gave the scenario of microfinance institutes for alleviating poverty (Social performance) versus making money (Financial Performance) to find out whether there is a mission drift followed by a summarization of the chapter.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This last chapter narrates the research concluding remarks and recommendation out of the study results. Specifically, Section 5.2 discusses research findings in line with this research specific objectives for Grameen Bank, BRAC and TEKUN consecutively together with microfinance mission drift issues of social and financial performance. Research contributions are discussed in Section 5.3. Section 5.4 deliberates recommendations out of this research. Section 5.5 provides limitations of the study and Section 5.6 gives direction for future research and to end, Section 5.7 gives a summary of this chapter.

5.2 Research Findings

The product, services, administration and characteristics are different for each selected microfinance institution. Grameen Bank has microenterprise loans, housing for the poor, scholarship for the children, higher education loans, nursing education loans, loan insurance, life insurance, village phone and beggars' members programme. BRAC has soft loan for ultra-poor, dabi scheme, protogti scheme and sme loans. TEKUN has tekun niaga, teman tekun, temannita, contract, ar rahnu, iced and special programme. Details have been discussed in section 2.14: Characteristic of selected microfinance institution. All these programs have different features devised by their respective financial institutes although common objective is to alleviate poverty through microfinance intervention. GB and BRAC can take deposit but TEKUN cannot take any deposit for restriction imposed on the basis of the Malaysia Banking and Financial Act, 1989 stating "No person shall carry on banking services, including receiving deposits on current account, deposit account, savings account or no other similar account, without a licence as a bank or financial institutions" (P. B. McGuire et al., 1998). Moreover, interest cannot be charged on loans in Malaysia as per the restrictions imposed by Muslim Sharia Law and hence, it is devised with management fees. GB and BRAC can charge interest but TEKUN charges management fee. GB is

run by independent act where BRAC is under MRA authority. Mokhtar et al. (2012) studied AIM, YUM and TEKUN and found their separate own lending system and subsidy from the government since their inception. They compared subsidised TEKUN lending systems with the unsubsidised Grameen Bank and found the Grameen Bank had more variety of services and flexible lending system. Therefore, their individual research findings are generalized for their respective borrowers rather combining them together. Any new microfinance institute can replicate either one of the selected institute and can go further with individual product. Previously, AIM successfully replicated GB model in Malaysia, not all other more than 600 microfinance institute in Bangladesh. Policy maker may pursue and support microfinance institute performing better for poverty alleviation.

5.2.1 Grameen Bank

5.2.1.1 Characteristics

GB is female oriented microfinance institute and deals with relatively aged borrowers who are Muslim by faith and living conjugal lives in majority cases. Many of them are educated but having big household members with few income earners. Majority borrowers have more children in number with little literacy. Borrowers deal with non-agriculture activities mainly. They own their business activities with their spouses and make business decisions. Their monthly revenues are not big enough to support quality lives and the majority has single source. They borrow two or three times in their revenue generating activities with moderate amount of loan. Though the loans are not enough, they did not have alternative sources. They pay back weekly and take more than one-year time. The interest rate charged is tolerable and in line with the ceiling set by the regulatory body. Grameen bank charges twenty percent on reducing balance basis for its main credit product or revenue producing entrepreneurship (Fernando, 2006; GrameenBank, 2017). There are no major loan default issues although some borrowers (About 9%) face business failure and cannot pay back in stipulated time.

5.2.1.2 Microfinance Quantitative Impact

Within impact: This serves the first research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level within participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H_1) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty within participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, fixed asset, current asset and employment. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Revenue could generate employment as well. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance has the positive impact on household income and expenditure but little impact on immovable and movable property. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. However, microfinance impact on property found insignificant. This may be due to the reason that the income is not enough for acquiring property which are usually expensive. At the individual level, microfinance has the positive impact on borrowers' individual control and confidence but little effect on their increment in honor and capacity building. The findings were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions. Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Between impact: This part contributes the second research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level between participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H_2) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty between

participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, fixed asset, current asset and employment. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it also confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Revenue could generate employment as well. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance made significant difference on household income, immovable property, movable property and expenditure. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance has the positive impact on borrowers' individual control, honor, capacity and confidence. These results were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity to contribute in decision making. Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Causal impact: This part deals with the third research objective that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual and security level. [Hypothesis H₃]. This objective has been achieved through testing Hypothesis (H₃) that supported microfinance caused significant impact on borrowers' business, household, individual and security level poverty. At the business level, microfinance caused positive impact on business revenue, current asset and employment but not on fixed asset. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. However, it is not true for fixed asset that contradicts Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Microfinance also caused employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance caused positive impact on household income, immovable property, movable property

and expenditure. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance also caused positive impact on borrowers' individual control, honor, capacity and confidence. Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) also found that microfinance loans provided a greater opportunity to contribute in decision making. Finally, at the security level, microfinance caused the positive impact on social, financial, food and health.

5.2.1.3 Microfinance Qualitative Impact

Qualitative method emphasizes on result why microfinance intervention could make perceived change while its counterpart the quantitative one is concerned with statistically significant impact (White, 2009). Later method can provide more actual and detailed impact on borrowers' lives. It explains how microfinance impact happens and why some products have better impact and on which type of borrowers (Rhyne, 2009). Qualitative method can explain the impact of microfinance on the lives of poor borrowers through case studies. With reference to modified HEPM, five case studies of financial and activity diaries between the participant and non-participant borrowers produce quality information about them. It appears from both the diaries analysis that participant borrowers are in relatively better position than non-participant borrowers which ultimately shows the positive impact of microfinance. Productive time either can earn money or save expenses that help poverty alleviation.

Financial Diary: All selected five participant borrowers generally do not pursue to engage alternative fund source. One case out of five shows microloans from other sources. They generally do not lose their wages for conforming with formalities as an obligation. Consequently, flexible and appropriate loan size diminished their physical and mental stress. A part of borrowers' money used for paying only GB loan settlements and procuring essential stuffs that serve their life quality. This researcher did not find any selected borrower required to recycle their debts. Moreover, this researcher found evidence that their total money inflow and outflow do not fluctuate very much at the aggregate level. In all cases, participant borrowers are working as self-employed persons from which they generate their income. They hardly do any alternative activity and very much focused on their self-revenue generating activities financed by Grameen Bank. On the other hand, non-participant borrowers pursue to

engage alternative sources of finance in addition to borrow merely from one informal source. Three cases out of five get loans from multiple sources. This demand for extra loan requires them not only approaching alternative sources but also making the loans expensive through more effort and time. Therefore, inflexible loan size and contingencies on borrower risk profile would increase the physical and mental stress for managing funds from multiple sources. A rather alarming finding is the high amount of some borrowers' money that goes towards serving loan repayment. Four borrowers' fund has been consumed on servicing prevailing loans and purchasing foodstuff. They also have been perceived to recycle their debts to the substantial extent. It is viewed that most of the major outflows that are followed by major borrowings are on consumption stuffs like jewellery, household accessories, etc. Moreover, if the researcher looks at the aggregate level, they find indication that all selected borrowers' total income surpasses their total expense plus loan repayment during this period. In four cases, non-participant borrowers are serving as daily labourer or wage earner in alternative working places. They generally do some works for others besides their main income-generating activities. Collins (2008)'s work produced qualitative understandings using financial diaries about the financial behaviour of the poor. Alia et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation.

Activity Diary: All participant borrowers in our case studies satisfy the physiological needs. They additionally cover overall safety needs like security of body, employment, resources, morality, family, health and property. For love or belonging, this researcher cannot locate the specific circumstance as they feel modest and not keen on talking details but it appears there is no significant matters in this hierarchy need. At the outset, this researcher found no activity for esteem hierarchy need. Nonetheless, there are concerns about viewing some of the unique behavior for different activities. In four cases, borrowers attempt to achieve esteem through participating or organizing social events, giving some commitment to welfare activities or attempt to achieve respect through art and culture. On the other hand, all non-participant borrowers in these case studies do not seem in a decent situation for fulfilling all physiological need. Four cases do not cover basic requirements or necessities such as food, clothes, shelter, medicine and education. They are attempting to satisfy these requirements at different

levels. Just two cases report fulfilling their safety need. As a matter of fact, in our case studies, it finds non-participant borrowers as daily wage earner without employer stability. They just get their work on regular routine by luck and sometimes through compromise. Their work doesn't have steady commitment by either nature or time. They work on whatever they find for their existence every once in a while. At the point when they don't get their paid work, then they are in some cases doing for their family works for which they are not able to pay. They also enjoy time in low cost entertainment like watching nearby teal-stall television, listening radio, involving indigenous sports, sharing with friends and so forth. Attending these sorts of activities typically in groups assists them to gather information if any job is accessible for them in the encompassing zones. For love or belonging, this researcher cannot find the precise situation as they sense cautious and not interested chatting in details, though it seems there is no major issue in this hierarchy need level except some household quarrels or sometimes violence. There is very little indication for esteem hierarchy need. Again, Alia et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation. Studying time consumption for relating activity has equal importance like studying money consumption for understanding the poverty (Bardasi & Wodon, 2009). In addition, less time investment for human capital shows as an indicator of time poverty (Gammage, 2010).

5.2.1.4 Poverty Index

MPI Index 0.3271 showed relatively lower deprivation and poverty level among Grameen Bank participant borrowers. In contrast, MPI Index 0.4528 showed relatively higher deprivation and poverty among non-participant borrowers in comparison to participant borrowers. Their life quality appears to be relatively inferior to the participant borrowers and demand for additional profound care. As a result, microfinance has positive impacts on participant borrowers' poverty as their constructed index has been reasonably lower compared to non-participant borrowers. Hence, microfinance deems to be effective tool to alleviate poverty. However, the national MPI as reported 0.198 in Bangladesh during 2019 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the

country (OPHI, 2019). Al-Mamun, Mazumder, et al. (2014) utilized economic vulnerability index and showed microfinance participant borrowers scored lower economic vulnerability. There is acknowledged relationship between poverty and vulnerability (Gaillard, Texier, & Gehlich-Shillabeer, 2008). Microfinance has been expected to lead to a decline in the level of economic vulnerability among borrowers' households. It assists borrowers for economic opportunity, reducing vulnerability and investing towards themselves and their children as well (Bayulgen, 2008). Microfinance institutes try to give best effort to reduce poverty and economic vulnerability and related comparative poverty index is the prime facia evidence to observe their intention.

5.2.1.5 Loan Default

This serves the sixth research objective that measured whether Gender, Age, Living Style, Education, Number of Dependant, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount, Interest rate / Management Fee contributed to loan default. This objective has been achieved through testing Hypothesis (Hypothesis H₄ to H₁₆) that intended to find out what factors contribute to microfinance loan default. Predicting the likelihood of loan default is very important in microfinance. Less default rate has been the symptom that loans are being used effectively and efficiently for the intended purpose of alleviating poverty. Therefore, factors contributing to the likelihood of loan default are studied in this research. In case of Grameen Bank borrowers, among thirteen factors, this researcher finds living style, repayment amount and interest rate are significant indicators to contribute for loan default. A single borrowers have the lower likelihood of facing loan default problem than a conjugal borrower. This outcome appears different from the outcome that a single borrower may not need to continue good relationship with the potential lender for increasing her likelihood of having future loans and she will become a loan defaulter most likely compared to a married borrower (Peng et al., 2009). Borrowers with certain magnitude of repayment amount are less likely to have loan default problem. Borrowers with relatively higher interest rate are less likely to become a defaulter. It can be concluded that the unfavorable loan product to the borrowers may influence them not to repay loans which may make the whole microfinance process in question. Derban et al. (2005)

emphasized favorable loan products as per borrowers' portfolios so that they can contribute to loan recovery positively. Grameen Bank needs to concentrate on the aforesaid significant factors at the time of loan disbursement that would ensure lower loan default.

5.2.2 Bangladesh Rural Advancement Committee

5.2.2.1 Characteristics

BRAC is also female oriented microfinance institute and deals with relatively middle-aged borrowers who are Muslim by faith and living conjugal or single lives equally. Majority of them are not educated with big household members but few income earners. Majority borrowers have many children in number with little literacy. About half of borrowers deal with non-agriculture activities. They own their business activities with their spouses and make business decisions. Their monthly revenues are not big enough to support quality lives and the majority has single source. They borrow two or three times in their revenue-generating activities with the moderate amount of loan. Though the loans are not enough, they did not have alternative sources. They pay back weekly in most cases and take more than one-year time. The interest rate charged is tolerable and in line with ceiling set by the regulatory body. Recently, the Microcredit Regulatory Authority announced guidelines for Microfinance Institute in Bangladesh to follow prescribed interest rates (Faruqee & Khalily, 2011). There are loan default issues although some borrowers (21%) face business failure and cannot pay back in stipulated time.

5.2.2.2 Microfinance Quantitative Impact

Within Impact: This serves the first research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level within participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H_1) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty within participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, fixed asset, current asset and employment. This result is consistent

by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Relatively higher revenue could generate higher employment. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance has the positive impact on household income and expenditure but negative impact on immovable and no impact on movable property. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. However, it is obvious that through running small revenue generating activities, it is difficult to attain movable and immovable property. At the individual level, microfinance has no impact on borrowers' individual control and honor but positive impact on their capacity and confidence building. The findings were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions. Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Between Impact: This part contributes the second research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level between participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H₂) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty between participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, fixed asset, current asset and employment. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it also confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Revenue could generate employment as well. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance

made significant difference on household income, immovable property, movable property and expenditure. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance has the positive impact on borrowers' individual control, honor, capacity and confidence. These results were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity to contribute in decision making. Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Causal Impact: This part deals with the third research objective that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual and security level. [Hypothesis H₃]. This objective has been achieved through testing Hypothesis (H₃) that supported microfinance caused significant impact on borrowers' business, household, individual and security level poverty except few items. At the business level, microfinance caused positive impact on current asset and employment but not on business revenue and fixed asset. This result is not supported by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. However, it is not true for fixed asset that contradicts Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Microfinance also caused employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance caused positive impact on movable property and expenditure but not on household income and immovable property. This is not consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance also caused positive impact on borrowers' individual capacity and confidence but not on control and honor. Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) found that microfinance loans provided a greater opportunity to contribute in decision making. Finally, at the security level, microfinance caused the positive impact on financial, food and health security but not on social security.

5.2.2.3 Microfinance Qualitative Impact

Qualitative method emphasizes on result why microfinance intervention could make perceived change while its counterpart the quantitative one is concerned with statistically significant impact (White, 2009). Later method can provide more actual and detailed impact on borrowers' lives. It explains how microfinance impact happens and why some products have better impact and on which type of borrowers (Rhyne, 2009). Qualitative method can explain the impact of microfinance on the lives of poor borrowers through case studies. With reference to modified HEPM, five case studies of financial and activity diaries between the participant and non-participant borrowers produce quality information about them. It appears from both the diaries analysis that participant borrowers are in relatively better position than non-participant borrowers which ultimately shows the positive impact of microfinance. Productive time either can earn money or save expenses that help poverty alleviation.

Financial Diary: All chosen five borrowers typically do not search for alternative sources of finance in addition to borrowing solely from BRAC. No case out of five displays extra loans from substitute lenders. It discloses very well that BRAC borrowers deem to be delivered sufficient loans to carry out their income-generating jobs. They are not looking for get more credit that save them from expending more effort and time since extra borrowing source creates respective commitment for enjoying them. They customarily do not drop wages for conforming with formalities as an obligation. As a result, suitable and flexible loan size release physical and mental pressure. A portion of borrowers' money used for serving only BRAC loan refunds and purchasing basic things that serve the quality of their lives. This researcher did not find any selected borrowers required to recycle their debts. In addition, this researcher found evidence that their total income and expenditure do not fluctuate at all the aggregate level. In all cases, participant borrowers are serving as self-employed entrepreneur in their respective jobs. On the other hand, some non-participant borrowers follow to connect extra sources of fund. Two cases out of five get small funds from compound sources. This implies that these poor people are appeared to be undersupplied in terms of the size of loan that they receive from any individual source. Their demand for extra fund requires them not only pursuing extra sources but also to making the loans expensive through more effort and time. Each extra source calls for its respective compulsions for enjoying it. The cost of fulfilling obligation is more as

it found that these two borrowers who have been doing job need to expend few hour's payments to comply with those formalities. Hence, inflexible loan size and contingencies on borrower risk portfolio would enhance the physical and mental stress for managing funds from multiple sources. A rather alarming finding is the high ratio of some borrowers' money that goes towards serving loan instalments. Three borrowers' fund has been expended on servicing current loans and purchasing necessary food intakes. They have been also found to recycle their debts to substantial magnitude. At the aggregate level, all selected borrowers' total income surpasses their total expense plus loan repayment during this period. Collins (2008)'s work produced qualitative understandings using financial diaries about the financial behaviour of the poor. Alia et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation.

Activity Diary: All five participant borrowers in our case studies satisfy the physiological needs. They additionally cover overall safety needs like security of body, employment, resources, morality, family, health and property. For love or belonging, this researcher cannot observe the specific position as they feel modest and not attentive to talking details but it appears there are no key significant matters in this hierarchy level. In the beginning, this researcher finds no activity for esteem hierarchy need. Nevertheless, there are concerns about displaying some of the distinct attitude for different types of activities. In all cases, borrowers attempt to achieve esteem through participating or organizing social events, giving some donation to welfare activities or attempt to achieve respect through art and culture. Still, it is quite normal not to achieve self-actualization need. On the other hand, four selected non-participant borrowers do not seem in decent situation for fulfilling all physiological need. In these four cases, there is no covering for basic necessities or requirements. Only one case reports to fulfil their safety needs. As a matter of fact, in these case studies, this researcher finds non-participant borrowers as daily wage earner without continuing work security. They just get their work on regular routine by their luck and sometimes through hard bargaining. Their work doesn't have steady commitment by either nature or time. They work on whatever they find for their existence from time to time. At the point when they don't assure the paid work, then they are in some in cases involving for their households' works for which they cannot pay. They also enjoy time in low

cost entertainment like listening radio, watching nearby teal-stall television, taking local sports, gossiping with fellow friends and so forth. For love or belonging, this researcher cannot observe the particular situation as they sense nervous and not keen in chatting details, though it seems there is no key issues in this hierarchy need except some household quarrels or extreme cases some violence. There is very little indication for esteem hierarchy need. Again, Alia et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation. Studying time consumption for relating activity has equal importance like studying money consumption for understanding the poverty (Bardasi & Wodon, 2009). In addition, less time investment for human capital shows as an indicator of time poverty (Gammage, 2010).

5.2.2.4 Poverty Index

MPI Index 0.2913 showed relatively lower deprivation and poverty level among BRAC participant borrowers. In contrast, MPI Index 0.4639 showed relatively higher deprivation and poverty among non-participant borrowers' comparison to participant borrowers. Their life quality appears to be relatively inferior to the participant borrowers and demand for additional deep care. As a result, microfinance has positive impacts on participant borrowers' poverty as their constructed index has been reasonably lower compared to non-participant borrowers. Hence, microfinance seems to be effective device to alleviate poverty. However, the national MPI as reported 0.198 in Bangladesh during 2019 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the country (OPHI, 2019). Al-Mamun, Mazumder, et al. (2014) utilized economic vulnerability index and showed microfinance participant borrowers scored lower economic vulnerability. There is acknowledged relationship between poverty and vulnerability (Gaillard et al., 2008). Microfinance has been expected to lead to a decline in the level of economic vulnerability among borrowers' households. It assists borrowers for economic opportunity, reducing vulnerability and investing towards themselves and their children as well (Bayulgen, 2008). Microfinance institutes try to give best effort to reduce poverty and economic vulnerability and related comparative poverty index is the prime facia evidence to observe their intention.

5.2.2.5 Loan Default

This serves the sixth research objective that measured whether Gender, Age, Living Style, Education, Number of Dependants, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount, Interest rate / Management Fee contributed to loan default. This objective has been achieved through testing Hypothesis (Hypothesis H₄ to H₁₆) that intended to find out what factors contribute to microfinance loan default. Predicting the likelihood of loan default is very important in microfinance. Less default rate has been the symptom that loans are being used effectively and efficiently for the intended purpose of alleviating poverty. Therefore, factors contributing to the likelihood of loan default are studied in this research. In case of BRAC borrowers, among thirteen factors, we find gender, age, education level, monthly revenue, repayment amount and interest rate are significant factors contributing the likelihood of loan defaults. Male borrowers have the higher probability of encountering loan default than female borrowers. It confirms the findings of Chaudhary and Ishfaq (2003) and Roslan and Karim (2009)s' who conclude that a male borrower is more susceptible to become a defaulter. Young borrowers appear to be contributing to loan default problem. This results support with the findings that relatively older borrowers will be less likely to be loan defaulter (Brehanu & Fufa, 2008). Borrowers with higher education are less likely to be defaulters. It matches the finding that borrowers with relatively higher education will be less likely to be loan defaulter (Bhatt & Tang, 2002; Chaudhary & Ishfaq, 2003). Borrowers with certain magnitude of monthly revenue are also less likely to be loan defaulters. It does not exactly match that relatively lower monthly business revenue has been associated with the higher likelihood of loan default (Okorie, 1986). Further, borrowers with certain magnitude of repayment amount are less likely to have loan default problem. Borrowers with relatively higher interest rate are more likely to become defaulters. It can be concluded that the unfavorable loan product to the borrowers may influence them not to repay loans which may make the whole microfinance process in question. Derban et al. (2005) emphasized favorable loan products as per borrowers' portfolios so that they can contribute to loan recovery positively. BRAC needs to concentrate on the aforesaid significant factors at the time of loan disbursement that would ensure lower loan default.

5.2.3 Tabung Ekonomi Kumpulan Usaha Niaga

5.2.3.1 Characteristics

TEKUN is mixture of female and male borrowers. It deals with relatively young-aged borrowers who are majority Muslim by faith and living conjugal lives. Most of them are educated with big household members but few income earners. Majority borrowers have many children in number with little literacy. Majority borrowers deal with non-agriculture activities. They own their business activities with their spouses and make business decisions. Their monthly revenues are not big enough to support quality lives and the majority has single source. They borrow two or three times in their revenue-generating activities with relatively higher amount of loan. Though the loans are not enough, they did not have alternative sources. They pay back other than weekly in most cases and non-participant borrowers take more than one-year time. TEKUN charges 4% management fee irrespective of borrowers' portfolio (TEKUN, 2019a). There are loan default issues with TEKUN borrowers (19%) facing business problem followed by other problems and cannot pay back in stipulated time.

5.2.3.2 Microfinance Quantitative Impact

Within Impact: This serves the first research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level within participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H_1) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty within participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, current asset and employment but not on fixed asset. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Relatively higher revenue could generate higher employment. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance has the positive impact on household income, movable property and expenditure but not on immovable

property. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. However, it is obvious that through running small revenue generating activities, it is difficult to attain immovable property. At the individual level, microfinance has no impact on borrowers' individual control but positive impact on honor, capacity and confidence building. The findings were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions. Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Between Impact: This part contributes the second research objective that measures whether there is significant difference for microfinance on poverty at business, household, individual and security level between participant borrowers and non-participant borrowers. This objective has been achieved through testing Hypothesis (H₂) that supported microfinance made significant difference on borrowers' business, household, individual and security level poverty between participant borrowers and non-participant borrowers. At the business level, microfinance had positive impact on business revenue, fixed asset, current asset and employment. This result is consistent by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. Again, it also confirmed the findings of Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Revenue could generate employment as well. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance made significant difference on household income, immovable property, movable property and expenditure. This is consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance has the positive impact on borrowers' individual control, honor, capacity and confidence. These results were similar to those by Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) who found that microfinance loans provided a greater opportunity to contribute in decision making.

Finally, at the security level, microfinance also has the positive impact on social, financial, food and health.

Causal Impact: This part deals with the third research objective that estimates whether microfinance causes significant impact on borrowers' poverty at business, household, individual and security level. [Hypothesis H₃]. This objective has been achieved through testing Hypothesis (H₃) that supported microfinance caused significant impact on borrowers' business, household, individual and security level poverty except few items. At the business level, microfinance caused positive impact on business revenue, current asset and employment but not on fixed asset. This result is not supported by Khandker (1998b), Afrane (2002) and Dunn and Arbuckle (2001a) who found that microfinance loans significantly increased the microenterprise's business revenue. However, it is not true for fixed asset that contradicts Dunn and Arbuckle (2001a) and Khandker (1998b) who found microfinance loan significantly increased the microenterprise's assets. Microfinance also caused employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain & Diaz, 1997). At the household level, microfinance caused positive impact on household income, movable property and immovable property but not on household expenditure. This is not consistent with Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrowers. At the individual level, microfinance also caused positive impact on borrowers' individual capacity, confidence and control but not on honor. Garikipati (2008), Dunn and Arbuckle (2001a) and Husain (1998) found that microfinance loans provided a greater opportunity to contribute in decision making. Finally, at the security level, microfinance caused the positive impact on food, health and social security but not on financial security.

5.2.3.3 Microfinance Qualitative Impact

Qualitative technique highlights on result why microfinance intervention could make perceived change while its counterpart the quantitative one is concerned with statistically significant impact (White, 2009). Later method can provide more actual and detailed impact on borrowers' lives. It explains how microfinance impact happens and why some products have better impact and on which type of borrowers (Rhyne, 2009). Qualitative method can explain the impact of microfinance on the lives of poor

borrowers through case studies. With reference to modified HEPM, five case studies of financial and activity diaries between the participant and non-participant borrowers produce quality information about them. It appears from both the diaries analysis that participant borrowers are in relatively better position than non-participant borrowers which ultimately shows the positive impact of microfinance. Productive time either can earn money or save expenses that help poverty alleviation.

Financial Diary: Besides taking loan only from TEKUN, participant borrowers look for achieving alternative sources of finance. Two cases out of five get microloans from alternative sources. It means, TEKUN borrowers do not deem to be received adequate loan to carry out their respective revenue producing jobs. They sometimes drop working time for fulfilling with obligations and formalities. Partly, borrowers' fund is employed to serve existing loan instalments and purchasing daily basic staff that serve the quality of their lives. One selected borrower needs recycle existing loans. Moreover, this researcher discovered evidence that their total income and expenditure fluctuate at the aggregate level. Two selected borrowers use the loan in otherwise than the intended purpose for which loan is taken. Three cases participant borrowers are working as a self-employed entrepreneur in their individual places. On the other hand, non-participant borrowers seek to join alternative sources of finance besides borrowing solely from one informal source. Four cases out of five get small loans from multiple sources. This hunger for extra credit requires borrowers not only to approach alternative borrowing sources but also to make the loans expensive in terms of time and effort. The cost of attending formalities is higher as this researcher find that all these three borrowers lose their productive working hours to satisfy those formalities and obligations. A rather alarming finding is a portion of these four borrowers' money that goes towards servicing loan repayments. Four borrowers' fund has been spent on servicing existing loans and buying food items. They have less ability to spend under other budget categories such as health, education etc. They also have been observed to recycle their debts to a substantial extent. Additionally, this researcher found evidence that all selected borrowers' total income exceeded their total expenditure plus loan repayment. All cases borrowers have not been serving as a self-employed person in their respective working places. All borrowers do jobs in others places on hourly, daily or monthly basis. Collins (2008)'s work produced qualitative understandings using financial diaries about the financial behaviour of the poor. Alia

et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation.

Activity Diary: In these case studies, all selected five participant borrowers fulfil the physiological needs following Abraham Maslow's hierarchy need. These borrowers also enjoy general safety needs such as security of body, employment, resources, morality, family, health and property. This researcher discovered them satisfied and there are no significant matters in the hierarchy level of love or belonging. In all cases, borrowers look for achieving esteem through organizing or participating social sports and events as per their respective art and culture. However, this researcher did not observe any self-actualization need which may not be possible normally. On the other hand, all selected non-participant borrowers in our case studies also appear in a good position for satisfying all physiological needs. In these five cases, all enjoy basic amenities or requirements like food, cloths, housing, medication and education. They are not stressed to fulfil these amenities at different levels. Only one case reports not to fulfil safety needs. In these case studies, this researcher find non-participant borrowers are employed otherwise besides their small loan based activity. They get jobs usually monthly basis through negotiation. Their jobs do not have regular engagement by either nature or time. These borrowers are sometimes engaged for their households' jobs for which they cannot make expenses when they do not have the paid job. They also spend leisure times in low cost entertainment. For love or belonging, we also find them satisfied and contented. There is a little symptom to satisfy for esteem hierarchy need. Again, it has been not very abnormal not to find the self-actualization need among these borrowers. Again, Alia et al. (2017) explored microfinance impact through using both activity and financial diaries and found that time activity and money are certainly related. Productive time either can earn money or save expenses that help poverty alleviation. Studying time consumption for relating activity has equal importance like studying money consumption for understanding the poverty (Bardasi & Wodon, 2009). In addition, less time investment for human capital shows as an indicator of time poverty (Gammage, 2010).

5.2.3.4 Poverty Index

MPI Index 0.0056 showed relatively lower deprivation and poverty level among TEKUN participant borrowers. Conversely, MPI Index 0.0096 showed relatively higher deprivation and poverty among non-participant borrowers in comparison to participant borrowers. Their life quality appears to be relatively inferior to the participant borrower and require for more consideration. Thus, microfinance has positive impacts on participant borrowers' poverty as their constructed index has been apparently lower compared to non-participant borrowers. Hence, microfinance seems to be useful tool to reduce poverty. However, the national MPI as reported 0.0033 in Malaysia during 2016 implied that overall microfinance borrowers' carried much intensity of poverty compared to rest of the country (MalayMail, 2019). Al-Mamun, Mazumder, et al. (2014) utilized economic vulnerability index and showed microfinance participant borrowers scored lower economic vulnerability. There is acknowledged relationship between poverty and vulnerability (Gaillard et al., 2008). Microfinance has been expected to lead to a decline in the level of economic vulnerability among borrowers' households. It assists borrowers for economic opportunity, reducing vulnerability and investing towards themselves and their children as well (Bayulgen, 2008). Microfinance institutes try to give best effort to reduce poverty and economic vulnerability and related comparative poverty index is the prime facia evidence to observe their intention.

5.2.3.5 Loan Default

This serves the sixth research objective that measured whether Gender, Age, Living Style, Education, Number of Dependant, Business Type, Monthly Revenue, Alternative Income, Alternative Loan, Repayment Mode, Repayment Period, Repayment Amount, Interest rate / Management Fee contributed to loan default. This objective has been achieved through testing Hypothesis (Hypothesis H₄ to H₁₆) that intended to find out what factors contribute to microfinance loan default. Predicting the likelihood of loan default is very important in microfinance. Less default rate is the symptom that loans are being used effectively and efficiently for the intended purpose of alleviating poverty. Therefore, factors contributing to the likelihood of loan default are studied in this research. In case of TEKUN borrowers, among thirteen factors, we find living style, monthly revenue and alternative income are significant factors

contributing the likelihood of loan defaults. Single borrowers have the higher probability of encountering loan default than conjugal borrowers. this finding is similar to the finding that single borrowers may not require to keep a positive relationship with the lender to increase their likelihoods of getting prospective loans and more likely to be defaulter compared to married or conjugal borrowers (Peng et al., 2009). Borrowers with certain magnitude of monthly revenue are also less likely to become loan defaulters. Monthly revenue with the specific amount appears to be contributing to loan default problem in case of TEKUN borrowers. It does not exactly match that relatively higher monthly business revenue may be associated with lower likelihood of loan default (Okorie, 1986). Further, Borrowers with alternative income have the lower probability of encountering loan default. It corroborates that borrowers who have alternative or extra income apart from the microfinance loan related activities will have the higher ability to pay back their microfinance loan (Brehanu & Fufa, 2008). It can be concluded that the unfavorable loan product to the borrowers may influence them not to repay loans which may make the whole microfinance process in question. Derban et al. (2005) emphasized favorable loan products as per borrowers' portfolios so that they can contribute to loan recovery positively. TEKUN needs to concentrate on the aforesaid significant factors at the time of loan disbursement that would ensure lower loan default.

5.2.4 Social versus Financial Performance

This serves the seventh research objective that measured whether microfinance is serving the social objective or financial objective. This objective has been achieved through testing Hypothesis (Hypothesis H₁₇ to H₁₈) that intended to find out whether microfinance is alleviating poverty through social performance or making money through financial performance. This objective is based on the "Slack Resources Theory" stating positive / favorable impact of financial performance on social performance and "Good Management Theory" stating positive impact of social performance on the financial performance of an entity. This researcher correlate and subsequently regress these two performances with each other to find out the mission drift.

The NOB and LO have been significantly positively correlated with high degree of relationship. Obviously, the higher association between NOB and LO

indicates more outstanding loan with more number of borrowers. However, NOB has not also been significantly correlated with ROA and OM but significantly positively correlated with OSS. It means that the higher number of borrowers can bring higher operating self-sufficiency. Again, the LO is not significantly correlated with ROA but significantly positively and negatively correlated with OSS and OM respectively. It means that the high amount of loan outstanding can also bring higher operating self-sufficiency but lower operating margin. The ROA is also significantly positively correlated with OSS and OM. Finally, the OSS is also significantly positively correlated with OM. It shows the partly indication whether there is trade-off between microfinance institutes' social performance and financial performance. However, exact relationship was detected through regression models for their existence, direction and degree of the association between these two performances.

While using the number of borrowers as an indicator of the depth of outreach, the impact of financial performance on NOB is negative for ROA, positive for OSS and insignificant for OM. Therefore, there is a mixed relationship between social and financial performance for return on asset and operating self-sufficiency. The microfinance can serve the higher number of borrowers with the lower return on asset but higher operating self-sufficiency. There is partly mission drift for social and financial performance. Bassem (2012) found the relationship between social performance and financial performance neutral for some indicators like social range index, age, size, type etc. However, they were able to confirm the presence of mission drift when microfinance institutions desired to reduce their respective portfolio risk. Cull et al. (2007) also attested the existence of trade-off between serving the poor (depth of outreach) and profitability (financial performance). This regression model partly supports "Slack Resources Theory" stating positive/favorable impact of financial performance on the social performance of an entity (Trebucq & d'Arcimoles, 2002). Some empirical evidences also provide support for this theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988).

While using the loan outstanding as an indicator of the depth of outreach, the impact of financial performance on LO is negative for ROA, positive for OSS and OM. Therefore, there is mixed outcome between social and financial performance for return on asset, operational self-sufficiency and operating margin indicators. The

microfinance can serve the higher amount of loans with the lower return on asset but higher operating self-sufficiency and operating margin. Again, there is partly mission drift for social and financial performance. However, Cull et al. (2007) found the coefficient for financial self-sufficiency negative and significant for loan size as social performance. This regression model partly supports "Slack Resources Theory" stating positive/favorable impact of financial performance on the social performance of an entity (Trebucq & d'Arcimoles, 2002). Some empirical evidences also provide support for this theory (J. B. McGuire et al., 1990; J. B. McGuire et al., 1988).

While using the return on asset as an indicator of financial performance, the impact of social performance on ROA is insignificant for NOB and negative for LO. Therefore, there is partial relationship between social and financial performance for number of borrower and loan outstanding. Microfinance can earn the higher return on asset with the lower amount of loan outstanding. Therefore, there is partial mission drift for social and financial performance. Bassem (2012) was able to confirm the presence of mission drift when microfinance institutions desired to reduce their respective portfolio risk. This regression model partially supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

While using the operating self-sufficiency as an indicator of financial performance, the impact of social performance on OSS is insignificant for both NOB and LO. Therefore, there is no significant relationship between social and financial performance for number of borrower and loan outstanding. Microfinance is indifferent for operational self-sufficiency with number of borrower and loan outstanding. Hence, there is undeterminable drift for social and financial performance in this case. This result is not consistent with Cull et al. (2007) who found the coefficient for financial self-sufficiency negative and significant for some indicator in social performance such as loan size. This regression model is indifferent to supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves

relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

While using the operating margin as an indicator of financial performance, the impact social performance on OM is not significant for NOB but negative for LO. Therefore, there is partly relationship between social and financial performance for operating margin. Microfinance can earn the lower operating margin with the higher loan outstanding. Hence, there is partial mission drift for social and financial performance in this case as well. This result is consistent with Bassem (2012) except indicator like portfolio risk. This regression model also partly supports "Good Management Theory" stating the positive impact of social performance on the financial performance of an entity. This is simply because attention to social performance spheres improves relationships with key stakeholder groups resulting in better overall performance (Freeman & Gilbert, 1989).

In conclusion, the impact of return on asset on number of borrowers is negative which means that higher return on asset causes lower number of borrower. However, the impact of operational self-sufficiency on number of borrowers is positive which means that higher operational self-sufficiency causes higher number of borrower. In addition, the impact of return on asset on loan outstanding is negative which means that higher return on asset causes lower loan outstanding. However, the impact of operational self-sufficiency and operating margin on loan outstanding is positive which means that higher operational self-sufficiency and operating margin cause higher loan outstanding. Since there is significant mixed relationship between social and financial performance for different indicators, it can be considered partial mission drift. Justification for this different type of behaviour is quite challenging when it is considered good financial performance leading to good social financial performance (Slack Resource Theory) as a totality. However, if it is split separately, it can be interpreted for individual prediction and used for microfinance specific need in particular. On the other hand, the impact of loan outstanding on return on asset is negative which means that higher loan outstanding causes lower return on asset. However, the impact of number of borrower and loan outstanding on operational self-sufficiency is insignificant. In addition, the impact of loan outstanding on operating margin is negative which means that higher loan outstanding causes lower operating

margin. Since there is significant mixed relationship between social and financial performance for different indicators, it can be considered partial mission drift. Justification for this different type of behaviour is quite challenging when it is considered good social performance leading to good financial performance (Good Management Theory) as a totality. However, if it is split separately, it can be interpreted for individual prediction and used for microfinance specific need in particular. Therefore, we can again conclude that there is significant mixed relationship between social and financial performance and partial mission drift in Bangladesh. This researcher cannot measure the social versus financial performance in case of Malaysia for non-availability of data.

5.3 Research Contribution

5.3.1 Theoretical Contribution

Everybody should be given an opportunity to become a successful entrepreneur. But vast majority of people, more specifically the poor, have not given chances to materialize their dreams when excluded outside formal financial system. Most probably these people living below the poverty line are the best to think of themselves how to get rid of poverty. For example, BRAC give small value of assets in the form of microfinance loan and some training to operate those assets. After providing with money and technology, it finds these poor people ends up with more assets and more earning from those assets. It ultimately increases their consumption and positive outlook for lives. This is a good argument that microfinance may work to a certain extent. The problem of microfinance includes financing tiny enterprises and they do not make much money and usually without paid staff and with few operating assets. It is not impossible to have a self-sustaining big business with microfinance but there are few example and special case. Although microfinance is important in helping the poor survive it would not be wise for mass exit from poverty. As a solution for the global poverty, microfinance gives hope for poverty elimination by providing financial services to the poor. It gains attention of most international development organizations, governments, the United Nations and World Bank devoting huge resources to promoting it. However, microfinance is also subject to corruption and abuse. A series of catastrophes sparked the crash of microfinance in India and other parts of the world and the dark side of microfinance activated to be uncovered.

Currently, it becomes a major debatable issue then to find out the impact of microfinance on borrowers' poverty (Duvendack et al., 2011; Milana & Ashta, 2012). Bhuiya et al. (2016), Pitt et al. (2006), Rahman et al. (2015) and Woller and Parsons (2002) found microfinance positive impacts. Khandker et al. (1998) found that women made themselves empowered by their respective contributions to household income and asset building. However, Bateman (2010), Hulme (2000b), Roodman and Morduch (2014) and Sinclair (2012) did not find any significant positive impact on borrowers for microfinance. Furthermore, many works concluded that there had been positive impact in case of few development indicators but not for others indicators (De Mel et al., 2008; Ghalib et al., 2015; Imai et al., 2010; Imai et al., 2012; McKenzie & Woodruff, 2006; Mukherjee, 2015; Van Rooyen et al., 2012) whereas other works did not agree the same rather put positive impact for some else indicators (McIntosh et al., 2011). Therefore, it become a dilemma about microfinance impact for its inadequate proof (Lascelles & Mendelson, 2012).

It has been clearly observed that a lot of researches are carried over the time exploring microfinance impact on borrowers' poverty and they produce mixed results. Microfinance has not been the silver bullet as it is considered once. Some researchers have revealed that many borrowers consume their credits to maintain short term crises rather than initiate long term development which makes microfinance minimal impact. Some programs end up with over-indebtedness. Microfinance loans are costly and incurs relatively higher interest for meeting the necessary operational costs of find provider. It is hardly viable among the poor borrowers at such high interest rates and seldom touches the poorest part of the borrowers. It also encourages economic inefficiency. Both absence of consumer demand and market competition in developing economies make business catastrophe and the new businesses fail within a short time in majority cases. Many microfinance operation exploit borrowers rather than empower them. When exploitative interest rates are combined with extortion, heavy handed collection procedure become unbearable and they are well documented. As a prerequisite for credit or loan products, financial literacy and education are very necessary that have often been excluded. Accordingly, a large portion of poor borrowers get trapped in debt cycles and ultimately poverty.

Still, microfinance has been contributing to make impact on borrowers' welfare and many microfinance operations are really tackling poverty at the ground level. Nowadays, the informed and developed world has detached itself from even applying the word microfinance rather focusing on reaching universal financial inclusion. This research contributes by taking either for or against the position in the academic debate of microfinance impact on borrowers' poverty. However, M. S. Robinson (2001) claimed that credit promoted through subsidy undermines small credit effect on borrowers welfare. The reason may be that subsidy based credit promoted by many governments are utilized as political tools for attracting supporters who can be not-so-poor people. Microfinance can be used as development technique to alleviate poverty or it can entrap through spiralling the debt and producing the worst scenario despite good intention. This works enclaves both quantitative and qualitative aspects for microfinance impact assessment. It explores microfinance impact through constructing multidimensional poverty index between the participant and non-participant borrowers. It emphasizes that favorable loan product for particular borrowers should be made for good loan recovery.

The institutionalist approach highlighted that microfinance institutions must attain financial self-sufficiency for providing and continuing their products and services to the poor (Brau & Woller, 2004; Zeller & Meyer, 2002). Institutional programs must not be dependent on free lunch like subsidy or donation rather they should be financed by their own and become independent to achieve long-term sustainability. Morduch (2000) emphasized that microfinance institutions required to make profit as a key objective to achieve self-sufficiency by giving service to the maximum number of borrowers reaching from the poorest to not so poor. Simply giving services to the poorest might high transaction or operation cost that could be balanced by providing loan to not-so-poor borrowers. This study also showed that microfinance could make money other commercial entities and also could serve social objectives at the same time.

The aforesaid paragraphs confirm microfinance positive impact on borrowers' poverty. This is only possible when participant borrowers have been successfully intervened with microfinance through application of microfinance theories. Positive impact can happen when the borrowers are working to the best extent to serve the

lenders and the propensity of borrower to choose relatively optimum revenue generating activities from the lender perspective (Moral Hazard Theory). When the information is asymmetric among market participants (lenders and borrowers), the market can behave in strange ways, and therefore, lender must have all relevant information for not selecting wrong/adverse borrowers (Adverse Selection Theory). The borrowers can be persuaded to behave in a deserving way by offering some incentives (Contract Enforcement Theory). Slack resource theorists argue that better financial performance potentially results in the availability of slack financial and other resources that provide the opportunity for organizations to invest in social performance and good management theorists argue that there is a high correlation between good management practice and social performance for microfinance institutes. Through application of these theories, positive significant impact may happen on borrowers' poverty. Alternatively, microfinance may not have impact on poverty alleviation and become a wrong development tool despite good intention Therefore, it can be concluded that microfinance has positive impact on borrowers' poverty.

5.3.2 Practical Contribution

Global microfinance market has been projected to grow rapidly accompanied by around 14.3% growth during 2019-2025. Global policy maker may take an opportunity to leverage this emerged idea. It has been expected that microfinance will bring in strong advantages accumulating important momentum to global growth. With global growth trend, regional markets are also responding in an effective way. In case of the United States, it has been expected to continue a 12% growth momentum. It may also be accompanied with Europe growth as important parts in the global economy. As the new game changer and the world's second largest economy, China may gain the significant growth rate at 20.5% during this period in global markets. Microfinance has been escalating their products and services in innovative ways with the quick changes in technology. Specifically, mobile technology has been contributing a lot to the delivery of microfinance product and services. In addition, microfinance institutes are becoming potentially professional in investing their portfolios by reducing cost through utilizing new technologies. The major global performers in the microfinance industry are 51Give, Bank Rakyat Indonesia, Bangladesh Rural Advancement Committee, Bharat Financial Inclusion, Grameen Foundation, Jamii Bora, Kiva, Micro

Place, Prosper Marketplace and Bank Rakyat Indonesia, etc. For private sector financial institutions across global emerging markets is contributing towards consistent upward growth in this microfinance industry. For pursuing innovative businesses in the microenterprise market, many private banks induce superior incentives for incurring switching cost. One of the key driving trends for innovation are the large private firms. It increases the world growth for the microenterprises segment in developing countries. Previously their clients or borrowers were either not served or underserved. By the year 2018, it got a portfolio of \$ 124 billion with 140 million borrowers across the world. India is the highest followed by Bangladesh, Vietnam, Mexico, Philippines, and other countries by the number of borrowers in 2018.

Bangladesh is pioneer in conceptualising and applying microfinance idea. During this period, over 31 million borrowers (including Grameen Bank) are being served with a loan portfolio of about \$ 8.0 billion in Bangladesh. Here, modern microfinance has expanded its scope far beyond from household activities and self-employment through diversifying borrowers' economic activities. Borrowings based on trade and commerce are gradually increasing though historically agriculture sector has remained the highest loan recipient. Microfinance sector employed more than 231,000 people by this time. All microfinance institutions are centrally regulated by the Microcredit Regulatory Authority (MRA) although Grameen Bank operated under different legislation. This industry has caught swiftly increasing segment of rural financial inclusion across the country. These programs are executed by different official financial institutes such as nationalized commercial banks, specialized banks, specialized government organizations and Non-Government Organizations. Although more than a thousand institutions are running microfinance programs, only 10 large microfinance institutions including Grameen Bank represent 81% of the total outstanding loan. If current growth of 23% sustains, the loan disbursed projected in 2022 would be more than \$ 21.8 billion and would continue to grow further.

In Malaysia, poverty alleviation effort was commenced since its independence in 1957 through encouraging entrepreneurship. It was more strengthened during the New Economic Policy from 1971 to 1990. It highlighted the importance of entrepreneur and industrial ideas. With the introduction of Knowledge Economy concept (K-Economy), entrepreneurial notion becomes more significant for the

purpose of achieving the objective of National Mission Plan 2020. This plan is in line with poverty alleviation programs. The government has taken key interest on the small and medium enterprises, particularly the microenterprise because of its small size, easy entry and little capital prerequisite in comparison to large industries. However, accessing to financial services is the foremost obstacle for opening microenterprise by majority entrepreneurs especially who are living below poverty line. Majority of microentrepreneurs faced severe difficulty in starting and operating their own businesses in Malaysia as they lack in getting capital from banks or other financial institutions. They cannot give proper guarantee, formal business plan, and complete transaction records to support their loans. Banks also have the perception that it is not viable to give loan to small entrepreneurs because of high probability of loan default. Here comes the microfinance for funding those efforts that may ultimately mitigate poverty. The Malaysian microfinance provides services to approximately 82% of Malaysian poor and low income households. The provided loan is based on Islamic principles free of interest except 4% as operational and managerial fee. Malaysian microfinance industry has been serving more than one million borrowers. Among others, there are relatively large microfinance institutions in Malaysia like AIM and TEKUN that targeted to different groups of people. Amanah Ikhtiar Malaysia has provided loan to more than 396,000 borrowers with a total loan amount of more than \$4.3 billion. TEKUN has also provided loan to more than half a million borrowers with total loan amount of \$ 1.34 billion.

This research practically contributed thorough finding microfinance impact assessment on borrowers' poverty. More specifically, this research finding confirm that borrowers are better off within themselves before and after microfinance intervention and between themselves with and without microfinance. This research found significant difference for microfinance on poverty at business, household, individual, and security level, except few items, within and between participant and non-participant borrowers. It also found causal impact for microfinance intervention except few items. Through studying financial and activity diaries as formal records, it showed participant borrowers were better off qualitatively as they satisfied more need compared through Abraham Maslow need hierarchy. Poverty indices were also found in better position for participant borrowers compared to non-participant borrowers. Some factors found significant for loan default that need to be addressed by

macrofinance practitioners. Microfinance lender could choose both social and financial performance when designing their operation. Therefore, with proper impact assessment as has been done by this research, microfinance industry may get its direction for further way forward. Practitioner and policymakers can get an insight of current impact scenario of microfinance. As it has been found positive impact on borrowers' poverty, microfinance may be continued and subsidized by government and / or donors as the case may be.

5.3.3 Methodological Contribution

M. Chen and Dunn (1996) suggested that HEPM model measures microfinance impact through business, household and individual level. The impact of microfinance with one more level in line with aforesaid model has been added. This is the security level, which is further split into the impact of microfinance on borrowers' social security, financial security, food security, and health security. This type of impact assessment studies is usually quantitative. Researchers inclined to measure the absolute or relative poverty of borrowers with microfinance intervention. However, this research added a qualitative method to see the impacts of microfinance on borrowers' poverty. This measures the process that how the impacts are going to happen on borrowers' lives through a formal record through financial and activity diary. Poverty index has been created and applied to different countries across the globe to measure and compare poverty level among themselves. Multidimensional poverty index has been applied for determining the level of microfinance borrowers' poverty level. To the best of the knowledge, introduction of this type of index in microfinance study is new.

5.4 Recommendations from the Study

Policymakers continue to support microfinance institute together with their product for good contribution and use it as a tool for poverty alleviation. They also inject more money in the microfinance industry to incorporate more borrowers as if all capable workforce can get loans to materialize their dreams. More specifically, they need to support the industry through creating funds, formulating rules, and regulations for both borrowers and industry. Microfinance seems favourable projects for both the governments for the welfare of their respective people. This study is skeptical that

policy makers may stop subsidizing and supporting microfinance industry. Sometimes, it has been treated as a politically motivated tool for attracting supporters, especially the poor people. This research suggests to give subsidy by the government or donor agencies to the microfinance industry in both the countries as positive impacts are found for borrowers' poverty. In Bangladesh context, Grameen Bank introduced Grameen Trust Fund for auxiliary support to the industry. For example, this trust fund provides necessary training and technical assistance to various domestic and foreign institutions to support Grameen Bank replication. It received funds from international donors such as the World Bank and the United Nations Capital Development Fund. This study suggests more funds to escalate such initiatives in large scale. In Malaysian context, this study suggests to take such initiative to establish specialized fund designated for specific auxiliary purpose for microfinance industry. Government together with private donors may contribute to create similar fund. Like devising a strategy, the government may also provide tax exemptions for respective contributors to the fund. This can help for existing microfinance operation and introduction of new institutions with new branches.

This study gives recommendation to eliminate standard loan contract applicable for any particular group irrespective of borrowers' individual portfolio. Loan products need to be customized and unique to each particular scenario and requirement in line with respective borrowers' portfolio. Many borrowers have different nature of revenue generating activities with different cash flow pattern and cycle. Therefore, different loan characteristics like loan amount, repayment instalment, duration of contract, etc. need to be designed in line with respective revenue generating activities. Alternatively, source of fund requires to be matched with application of fund for efficient and effective utilization confirming maximum utility out of the microfinance loan arrangement.

With the experience of questionnaire survey, this study finds many borrowers who are not so poor to be qualified as microfinance loan recipient. But they get the loan sometimes through misrepresentation and competitive to deal with microfinance institutes and their loan officers. There may have some bias to the selection of loan recipients when it lacks proper evidence and documentation in loan arrangement process. Loan officers need to be objective and not to be biased for any borrower or

particular class of borrowers. Prime concern should be serving the poor rather than making money out of the loan. Only the poor should be served and fund should not be diverged other than revenue-generating activities.

5.5 Implications for Research, Practice and Society

Poor people should be given opportunity to produce revenue generating activities. They need to be included in the financial system through microfinance when it alleviates poverty. As a solution for the global poverty, microfinance gives hope for poverty elimination by providing financial services to the poor. It gains attention of most international development organizations, governments, the United Nations and World Bank devoting huge resources to promoting it. However, microfinance is also subject to corruption and abuse. A series of catastrophes sparked the crash of microfinance in India and other parts of the world and the dark side of microfinance activated to be uncovered. It has been clearly observed that a lot of researches are carried out the time exploring microfinance impact on borrowers' poverty and they produce mixed results. Some researchers have revealed that many borrowers consume their credits to maintain short term crises rather than initiate long term development which makes microfinance minimal impact. Some programs end up with over-indebtedness. Microfinance loans are costly and incurs relatively higher interest for meeting the necessary operational costs of fund provider. It is hardly viable among the poor borrowers at such high interest rates and seldom touches the poorest part of the borrowers. Accordingly, a large portion of poor borrowers get trapped in debt cycles and ultimately poverty. Still, microfinance has been contributing to make impact on borrowers' welfare and many microfinance operations are really tackling poverty at the ground level. Nowadays, the informed and developed world has detached itself from even applying the word microfinance rather focusing on reaching universal financial inclusion. This research contributes by taking favorable position in the academic debate of microfinance impact on borrowers' poverty. This works enclaves both quantitative and qualitative aspects for microfinance impact assessment. It explores microfinance impact through constructing multidimensional poverty index between the participant and non-participant borrowers. It emphasizes that favorable loan product for particular borrowers should be made for good loan recovery. It also helps designing microfinance social and financial performance.

Currently, microfinance got a portfolio of \$ 124 billion with 140 million borrowers across the world. India is the highest followed by Bangladesh, Vietnam, Mexico, Philippines, and other countries by the number of borrowers in 2018. Global microfinance market has been projected to grow rapidly accompanied with around 14.3% growth during 2019-2025. Global policy makers may take an opportunity to leverage this emerged idea. It has been expected that microfinance will bring in strong advantages accumulating important momentum to global growth. Microfinance has been escalating their products and services in innovative ways with the quick changes in technology, more specifically, mobile technology. In addition, microfinance institutes are becoming potentially professional in investing their portfolios by reducing cost through utilizing new technologies. Financial institutions across the globe is contributing towards consistent growth in the microfinance industry for its positive impact.

Bangladesh, being a pioneer, serves over 31 million borrowers with a loan portfolio of about \$ 8.0 billion. Here, modern microfinance has expanded its scope far beyond from household activities and self-employment through diversifying borrowers' economic activities. Borrowings based on trade and commerce are gradually increasing though historically agriculture sector has remained the highest loan recipient. Microfinance sector employed more than 231,000 people by this time. This industry has caught swiftly increasing segment of rural financial inclusion across the country. In Malaysia, the government is taking key interest on the SMEs, particularly the microenterprise because of its small size, easy entry, and little capital. However, accessing to financial services is the foremost obstacle for opening microenterprise. Here comes the microfinance for funding those efforts that may ultimately mitigate poverty. The Malaysian microfinance provides services to approximately 82% of Malaysian poor and low income households. The provided loan is based on Islamic principles free of interest except 4% as operational and managerial fee. Malaysian microfinance industry has been serving more than one million borrowers. Among others, there are relatively large microfinance institutions in Malaysia like AIM and TEKUN that targeted to different groups of people. Amanah Ikhtiar Malaysia has provided loan to more than 396,000 borrowers with a total loan amount of more than \$4.3 billion. TEKUN has also provided loan to more than half a million borrowers with total loan amount of \$ 1.34 billion.

In the society at large, microfinance involves huge wealth and large number of borrowers lives. These huge amounts of investment involving millions of borrowers in microfinance have been assessed for the industry survival and growth. This research practically contributed thorough finding microfinance impact assessment on borrowers' poverty. More specifically, this research finding confirm that borrowers are better off within themselves before and after microfinance intervention and between themselves with and without microfinance. It also confirms among others borrowers' welfare qualitatively and microfinance institute performance for poverty alleviation. Therefore, with proper impact assessment as has been done by this research, microfinance industry may get its direction for further way forward. Practitioners can get an insight on the current impact scenario of microfinance. They can design and operate their loan portfolio in line with this research finding to operate efficient and effective microfinance.

5.6 Limitations of the Study

This study uses variables in line with HEPM Model. There is scope to incorporate more variables from the field of business, economics, politics, sociology, education and training, law, etc. This study did not take monetary value for the respective variables rather it asked borrowers opinion to score their position as strongly disagree, disagree, neutral, agree, and strongly agree due to microfinance loans. This study also does not take the moral or ethical variables that are more in line with social indicators rather than financial indicators. Information given by the borrowers may be biased or overstated to make favorable position to the particular microfinance institute. The information provided are based on borrowers' perception rather than formal record. This research used control group as non-participant borrowers as it carried out on large scale. Since it used three different microfinance institutes namely GB, BRAC in Bangladesh and TEKUN in Malaysia, it was difficult to select non-participant borrowers in same area confirming same socio-economic environment. There might have some selection bias, although it has been given due effort to be objective in selecting them. Hulme (2000a) stated that research approach taken by researchers to find out microfinance impact depended on the researcher's budget including time and costs together with available human resource. Poverty index contraction is also limited to variables that could be extended more. In terms of the determinant for loan default,

this research does not consider the moral hazard variables such as attitude towards payment, ethical values, etc.

Sample design together with its application are quite challenging in microfinance impact study. When randomly selected respondents are not found or reluctant for an interview, the next available respondents are contacted to pursue further. Some branch offices under certain particular zone reluctant to cooperate are ignored and then it is need to go for alternative arrangements. In creating control group, it has been tried to be unbiased through selecting respondent with same socio-economic status which is quite challenging. Financial data from respective microfinance institutes are also quite challenging. More specifically, these type of data are not available for analysis in case of Malaysian microfinance institute. They are very sensitive in disseminating financial data. For checking social and financial performance, this research used limited panel data availed for the study. Therefore, microfinance institute performance analysis is only done from Bangladesh perspective. The information given by the borrowers could be prejudiced, biased, or overstated to favor the particular microfinance institutions' staff and the institution's continuous provision of microfinance services to them. Moreover, the probable research findings are within the experience of Bangladesh and Malaysia in a particular given time. Therefore, this may not be generalized for all time and across other countries.

5.7 Directions for Future Research

This study suggests future research through taking more variables and financial information about the borrowers' business, household, individual, and security level. Future research may incorporate more variables from the field of business, economics, politics, sociology, education and training, law, etc. Future studies can take monetary value for the respective variables rather than merely asking the borrowers to score their respective position as strongly disagree, disagree, neutral, agree and strongly agree due to microfinance loans. They can also take moral or ethical variables that are more in line with social indicators rather than financial indicators. Both time series and cross-section studies can be done to compare different time and sector impact measurement. May be particular time and / or particular sector are more sensitive to microfinance treatment.

Usually microfinance impact assessment on borrowers' poverty studies are done based on broad economic and social indicators like income, consumption, health, education etc. However, it may have other implications like income disparity, consumption inequality etc. Future research can take place through examining microfinance impact on inequality and disparity for different indicators in case of Bangladesh and Malaysia. Business, Household, Individual, and Security level panel dataset can be taken to observe those inequalities with reference to microfinance treatment. Several standard tools may be used for those future studies. For example, Gini-Coefficient, Co-efficient of Variation, Theil Index etc. The data can be collected from several rounds of respondent surveys like baseline data and subsequent follow-up data. Microfinance impact assessment can also be done through Randomized Control Trials (RCT) as done by A. Banerjee et al. (2015) in case of India. This type of trials are prospective studies that quantify the impact of novel intervention or treatment. Though there is no study that likely to prove causality on its own, randomization decreases bias and delivers severe instrument to scrutinize cause-effect relationships between an intervention or treatment and outcome. This is because the act of randomization cancels out participant characteristics (both observed and unobserved) between the experiment group and control group allowing attribution of any differences in outcome to the study intervention. This may not be possible with any other study design.

The information provided by the respondents are based on borrowers' perception rather than formal record for different poverty variables. These type of information could be prejudiced, biased, or overstated to favor the particular microfinance institutions' staff and the institution's continuous provision of microfinance services to them. Alternatively, further research can be done through educating borrowers for recording financial information from which impact can be measured more precisely. Poverty index limited to certain variables that could be extended more. Loan default determinants may further consider moral hazard variables such as attitude towards payment, ethical values, etc. Financial data from respective microfinance institutes are also quite challenging. More specifically, these type of data are not available for analysis in case of Malaysian microfinance institute. They are very sensitive in disseminating financial data. For checking social and financial performance, future research can use vast amount of panel data available for their

study. More importantly, probable future researches can be done beyond the experience of Bangladesh and Malaysia in a particular given time-frame and that can be generalized for long time and across parts of the globe.

5.8 Summary of the Chapter

This chapter concluded the research findings and gave pertinent recommendation. It summarized research findings for selected microfinance institutes. Almost all cases, the participant borrowers were better off than non-participant borrowers. Therefore, Microfinance showed the positive impact on borrowers' poverty for all selected variables with little exceptions. Both social and financial objectives could be achieved simultaneously by microfinance institutes. This research finding argued in favor of microfinance for further support and continuation of it as a development tool. Policymakers might inject further fund to microfinance with customized loan products effective for the specific categories of poor people. Microfinance could be seen in broad horizon incorporating more aspects in the socio-economic lives of the borrowers.

The logo of Universiti Malaysia Pahang (UMP) is a large, downward-pointing triangle. The top part is a yellow circle with a blue outline. The triangle is divided into four quadrants: top-left is light blue, top-right is dark blue, bottom-left is light blue, and bottom-right is dark blue. The letters 'UMP' are written in white, bold, sans-serif font across the center of the triangle.

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REFERENCES

- Adair, P., & Berguiga, I. (2014). How do social and financial performance of microfinance institutions interact? A panel data study upon the MENA region (1998-2011). *Savings and Development*, 38(1), 7.
- Adhikary, S., & Papachristou, G. (2014). Is there a trade-off between financial performance and outreach in South Asian microfinance institutions? *The Journal of Developing Areas*, 381-402.
- Adongo, J., & Stork, C. (2006). *Factors influencing the financial sustainability of selected microfinance institutions in Namibia (No. 39)*: Namibian Economic Policy Research Unit.
- Afrane, S. (2002). Impact assessment of microfinance interventions in Ghana and South Africa: A synthesis of major impacts and lessons. *Journal of Microfinance/ESR Review*, 4(1), 4.
- Ahlin, C., & Townsend, R. M. (2007). Using repayment data to test across models of joint liability lending. *The Economic Journal*, 117(517), F11-F51.
- Ahmed, F., & Haque, M. (2011). Constraints of Manufacture based Small and Medium Enterprise (SME) Development in Bangladesh. *Journal of Social and Development Sciences*, 1(3), 91-100.
- Akerlof, G. A. (1978). The market for "Lemons": Quality uncertainty and the market mechanism. *Uncertainty in economics*, 235-251, Academic Press.
- Akhter, R., & Sumi, F. R. (2014). Socio-cultural factors influencing entrepreneurial activities: A study on Bangladesh. *IOSR Journal of Business and Management*, 16(9), 1-10.
- Al-Mamun, A., Malarvizhi, C., Hossain, S., & Tan, S.-H. (2012). Examining the effect of microcredit on poverty in Malaysia. *ASEAN Economic Bulletin*, 15-28.
- Al-Mamun, A., & Mazumder, M. N. H. (2015). Impact of microcredit on income, poverty, and economic vulnerability in Peninsular Malaysia. *Development in practice*, 25(3), 333-346.
- Al-Mamun, A., Mazumder, M. N. H., & Malarvizhi, C. (2014). Measuring the effect of Amanah Ikhtiar Malaysia's microcredit programme on economic vulnerability among hardcore poor households. *Progress in development studies*, 14(1), 49-59.
- Al-Mamun, A., Wahab, S. A., Mazumder, M. N. H., & Su, Z. (2014). Empirical investigation on the impact of microcredit on women empowerment in urban Peninsular Malaysia. *The Journal of Developing Areas*, 287-306.
- Al Mamun, A., Abdul Wahab, S., & Malarvizhi, C. (2011). Empirical investigation on repayment performance of Amanah Ikhtiar Malaysia's hardcore poor clients. *International Journal of Business and Management*, 6(7), 125-133.

- Al Mamun, A., Abdul Wahab, S., Malarvizhi, C., & Mariapun, S. (2011). Examining the critical factors affecting the repayment of microcredit provided by Amanah Ikhtiar Malaysia. *International Business Research*, 4(2), 93-102.
- Al Mamun, A., Abdul Wahab, S., & Malarvizhi, C. A. (2010). Impact of Amanah Ikhtiar Malaysia's microcredit schemes on microenterprise assets in Malaysia. *International Research Journal of Finance and Economics*(60), 144-154.
- Al Mamun, A., Adaikalam, J., & Abdul Wahab, S. (2012). Investigating the Effect of Amanah Ikhtiar Malaysia's Microcredit Program on Their Clients Quality of Life in Rural Malaysia. *International Journal of Economics and Finance*, 4(1), 192-203.
- Aleem, I. (1990). Imperfect information, screening, and the costs of informal lending: a study of a rural credit market in Pakistan. *The World Bank Economic Review*, 4(3), 329-349.
- Alia, H., Ashta, A., & Ratsimalahelo, Z. (2017). A modified household economic portfolio model for assessing impact of microfinance using diaries. *Qualitative Market Research: An International Journal*, 20(1), 2-27.
- Alkire, S., Kanagaratnam, U., & Suppa, N. (2018). The Global Multidimensional Poverty Index (MPI): 2018 revision. *OPHI MPI Methodological Notes*, 46.
- Ani, A., Mohamed, N., & Rahman, N. A. (2012). Socio-cultural influences in the composition of traditional Malay house compounds in rural Melaka. *ALAM CIPTA, International Journal of Sustainable Tropical Design Research and Practice*, 5(1).
- Arene, C. (1992). Loan repayment and technical assistance among small-holder maize farmers in Nigeria. *African Review of Money Finance and Banking*, 63-74.
- Armendáriz, B., & Morduch, J. (2010). *The economics of microfinance*: MIT press.
- Arrow, K. J. (2001). Uncertainty and the welfare economics of medical care (American economic review, 1963). *Journal of Health Politics, Policy and Law*, 26(5), 851-883.
- Baklouti, I. (2013). Determinants of microcredit repayment: The case of Tunisian Microfinance Bank. *African Development Review*, 25(3), 370-382.
- Balcha, F. L., & Tamara, S. A. (2017). Evaluation of Microfinance Institutions in Ethiopia from the Perspective of Sustainability and Outreach.
- Balestra, P. (1990). Dummy variables. In *Econometrics* (pp. 70-74): Springer.
- Balogun, E., & Alimi, A. (1988). Loan delinquency among small farmers in developing countries: a case study of the small-farmer credit programme in Lagos State of Nigeria.

- Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22-53.
- Banerjee, A. V., Besley, T., & Guinnane, T. W. (1994). Thy neighbor's keeper: The design of a credit cooperative with theory and a test. *The quarterly journal of Economics*, 109(2), 491-515.
- BangladeshBank. (2012). Mobile financial services in Bangladesh: An overview of market development. *Bangladesh Bank Policy Paper*, 1-28.
- Bardasi, E., & Wodon, Q. (2009). *Working long hours and having no choice: Time poverty in Guinea*: The World Bank.
- Bardasi, E., & Wodon, Q. (2010). Working long hours and having no choice: Time poverty in Guinea. *Feminist Economics*, 16(3), 45-78.
- Bardhan, P., & Rudra, A. (1978). Interlinkage of land, labour and credit relations: An analysis of village survey data in East India. *Economic and Political Weekly*, 367-384.
- Bassem, B. S. (2012). Social and financial performance of microfinance institutions: Is there a trade-off? *Journal of Economics and International Finance*, 4(4), 92-100.
- Bateman, M. (2010). Why microfinance doesn't work? The destructive rise of local neoliberalism. *London, New York, Zed*.
- Bateman, M., & Chang, H. J. (2012). Microfinance and the illusion of development: From hubris to nemesis in thirty years. *World Economic Review*(1).
- Bayulgen, O. (2008). Muhammad Yunus, Grameen Bank and the Nobel Peace Prize: What political science can contribute to and learn from the study of microcredit. *International Studies Review*, 10(3), 525-547.
- BBS. (2017). Preliminary Report on Household Income and Expenditure Survey 2016. *BANGLADESH BUREAU OF STATISTICS (BBS)*. Retrieved from http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/b343a8b4_956b_45ca_872f_4cf9b2f1a6e0/HIES%20Preliminary%20Report%202016.pdf
- BBS. (2019). Report on Agriculture and Rural Statistics. *Agricultural and Rural Statistical Survey Project 2017*. Retrieved from http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/b343a8b4_956b_45ca_872f_4cf9b2f1a6e0/ARSSReport-FinalSayeedaWeb.pdf
- Beatriz, A., & Morduch, J. (2005). The Economics of microfinance. In: MIT press.
- BeritaHarian. (2009). TEKUN non-performing loan. In Mokhtar, S. H. (2011). Microfinance performance in Malaysia (Doctoral dissertation, Lincoln University).

- Bernamea. (2018). Tekun Nasional's NPL hits 37.82 pct of total debts. Retrieved from <https://www.bernama.com/en/news.php?id=1621393>
- Bhaduri, A. (1980). On the formation of usurious interest rates in backward agriculture. In *Money and Monetary Policy in Less Developed Countries* (pp. 465-477): Elsevier.
- Bhatt, N., & Tang, S. Y. (2001). Delivering microfinance in developing countries: Controversies and policy perspectives. *Policy Studies Journal*, 29(2), 319-333.
- Bhatt, N., & Tang, S. Y. (2002). Determinants of repayment in microcredit: Evidence from programs in the United States. *International Journal of Urban and Regional Research*, 26(2), 360-376.
- Bhuiya, M. M. M., Khanam, R., Rahman, M. M., & Nghiem, H. S. (2016). Impact of microfinance on household income and consumption in Bangladesh: empirical evidence from a quasi-experimental survey. *The Journal of Developing Areas*, 50(3), 305-318.
- BNP-PARIBAS. (2017). Microfinance Barometer 2017: Global trends of the sector. *The bank for a changing world*. Retrieved from <https://group.bnpparibas/en/news/microfinance-barometer-2017-global-trends-sector>
- Bos, J. W., & Millone, M. (2015). Practice what you preach: Microfinance business models and operational efficiency. *World Development*, 70, 28-42.
- Bottomley, A. (1975). Interest rate determination in underdeveloped rural areas. *American Journal of Agricultural Economics*, 57(2), 279-291.
- Bourguignon, F., & Morrisson, C. (2002). Inequality among world citizens: 1820-1992. *American economic review*, 92(4), 727-744.
- BRAC. (2019). Microfinance: Enabling access to secure financial services for over 5 million families. Retrieved from <http://www.brac.net/program/wp-content/uploads/2018/08/BRAC-Microfinance-Factsheet-29.08.2018.pdf>
- Brau, J. C., & Woller, G. M. (2004). Microfinance: A comprehensive review of the existing literature. *The Journal of Entrepreneurial Finance*, 9(1), 1-28.
- Brehanu, A., & Fufa, B. (2008). Repayment rate of loans from semi-formal financial institutions among small-scale farmers in Ethiopia: Two-limit Tobit analysis. *The Journal of Socio-Economics*, 37(6), 2221-2230.
- Burchardt, T. (2008). Time and income poverty. *Centre for Analysis of Social Exclusion, London School of Economics*(CASEreport 57).
- Burgess, R., & Pande, R. (2005). Do rural banks matter? Evidence from the Indian social banking experiment. *American economic review*, 95(3), 780-795.

- Cautero, R. M. (2019). What is Microfinance and Why Is It Important? *The Balance - Banking and Loans*. Retrieved from <https://www.thebalance.com/what-is-microfinance-and-how-does-it-work-4165939>
- Chaia, A., Dalal, A., Goland, T., Gonzalez, M. J., Morduch, J., & Schiff, R. (2009). Half the World is Unbanked: Financial Access Initiative Framing Note. *New York: Financial Access Initiative*.
- Chamhuri, S., & Quinones, B. (2000). Microfinance in Malaysia: aiming at success. In R. M Aunty, R. B. Potter & J. Remenyi (Eds). *Microfinance and poverty alleviation* (pp. 180-199). New York: Routledge.
- Chaudhary, M. A., & Ishfaq, M. (2003). Credit worthiness of rural borrowers of Pakistan. *The Journal of Socio-Economics*, 32(6), 675-684.
- Chen, J. (2019). Poverty. *Investopedia*. Retrieved from <https://www.investopedia.com/terms/p/poverty.asp>
- Chen, M., & Dunn, E. (1996). Household economic portfolios, assessing the impact of microenterprise services (AIMS). *Office of Microenterprise, USAID*.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, 2, 295-336.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, 14(2), 189-217.
- Chowdhury, P. R. (2005). Group-lending: Sequential financing, lender monitoring and joint liability. *Journal of development Economics*, 77(2), 415-439.
- Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research*, 16(1), 64-73.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd Edition)*. Hillsdale, NJ: Lawrence Erlbaum Associates.: Academic press.
- Coleman, B. E. (1999). The impact of group lending in Northeast Thailand. *Journal of development Economics*, 60(1), 105-141.
- Coleman, B. E. (2002). Microfinance in Northeast Thailand: Who benefits and how much? *World Development*, 34(9), 1612-1638.
- Collins, D. (2008). Debt and household finance: evidence from the Financial Diaries. *Development Southern Africa*, 25(4), 469-479.
- Compassion. (2019). Famous Quotes about Poverty. *Compassion International, Incorporated (US)*. Retrieved from <https://www.compassion.com/poverty/famous-quotes-about-poverty.htm>

- Creswell, J. W. (2014). *Educational research: Planning, Conducting and Evaluating Quantitative and Qualitative Research* (Fourth Edition ed.): Pearson Education Limited, Edinburgh Gate, Harlow, Essex CM 20 2JE, England.
- Cull, R., Demirgu, K. A., & Morduch, J. (2007). Financial performance and outreach: A global analysis of leading microbanks. *The Economic Journal*, 117(517), F107-F133.
- De Aghion, B. A. (1999). On the design of a credit agreement with peer monitoring. *Journal of development economics*, 60(1), 79-104.
- De Briey, V. (2005). Plein feu sur la microfinance en 2005. *Regards économiques*, 28(1), 1-14.
- De Haan, L., & Lakwo, A. (2010). Rethinking the impact of microfinance in Africa: 'Business Change' or social emancipation. *The European Journal of Development Research*, 22(4), 529-545.
- De Mel, S., McKenzie, D., & Woodruff, C. (2008). Returns to capital in microenterprises: evidence from a field experiment. *The quarterly journal of Economics*, 123(4), 1329-1372.
- Deininger, K., & Liu, Y. (2009). *Determinants of repayment performance in Indian micro-credit groups*: The World Bank.
- Derban, W. K., Binner, J. M., & Mullineux, A. (2005). Loan repayment performance in community development finance institutions in the UK. *Small Business Economics*, 25(4), 319-332.
- DhakaTribune. (2018). ILO: More than half of employed Bangladeshis in vulnerable jobs. Retrieved from <https://www.dhakatribune.com/bangladesh/2018/01/23/ilo-half-employed-people-vulnerable-jobs>
- Dhungana, B. R., Singh, J. K., Acharya, D., Gautam, S., & Paudyal, P. (2016). Perceived Usefulness of a Microfinance intervention on health awareness and Practices in nepal. *Frontiers in public health*, 3, 289.
- DoSomething.org. (2019). 11 Facts about Global Poverty. Retrieved from <https://www.dosomething.org/us/facts/11-facts-about-global-poverty>
- Dunn, & Arbuckle. (2001a). The impacts of microcredit: a case study from Peru AIMS, USAID. *Empowerment of Women (Eds.)*. H. AMM. Dhaka, BRAC.
- Dunn, & Arbuckle. (2001b). Microcredit and microenterprise performance: impact evidence from Peru. *Small Enterprise Development*, 12(4), 22-33.
- Dunn, E. (2002). Research strategy for the AIMS core impact assessments. *Washington, DC: AIMS*.
- Duvendack, M., Palmer-Jones, R., Copestake, J. G., Hooper, L., Loke, Y., & Rao, N. (2011). What is the evidence of the impact of microfinance on the well-being

of poor people? In: EPPI-Centre, Social Science Research Unit, Institute of Education.

EconomicPlanningUnit. (2019). Socio Economics Statistics. *Prime Minister's Department*. Retrieved from <https://www.epu.gov.my>

Epstein, M. J., & Crane, C. A. (2005). *Alleviating global poverty through microfinance: factors and measures of financial, economic, and social performance*. Paper presented at the Documento presentado en la conferencia sobre pobreza mundial organizada por la Harvard Business School, Boston, MA.

Evaristus, M., Schuyler, R. H., Aprajita, K., & Qiulin, Z. (2004). Grameen Bank: Taking Capitalism to the Poor. *CHAZEN WEB JOURNAL OF INTERNATIONAL BUSINESS, SPRING 2004*. Retrieved from https://www0.gsb.columbia.edu/mygsb/faculty/research/pubfiles/848/Grameen_Bank_v04.pdf

Farahani, H. A., Rahiminezhad, A., & Same, L. (2010). A Comparison of Partial Least Squares (PLS) and Ordinary Least Squares (OLS) regressions in predicting of couples mental health based on their communicational patterns. *Procedia-Social and Behavioral Sciences*, 5, 1459-1463.

Faruqee, R., & Khalily, M. (2011). Interest rates in Bangladesh microcredit market (policy brief). *Institute of Microfinance, Policy Brief* (<http://www.inm.org.bd/publication/briefs/Interest%20Rate.pdf>).

Fernando, N. A. (2006). Understanding and dealing with high interest rates on microcredit: A note to policy makers in the Asia and Pacific region. *East Asia Department, Asian Development Bank*. Retrieved from <http://hdl.handle.net/11540/5491>

Field, E., & Pande, R. (2008). Repayment frequency and default in microfinance: evidence from India. *Journal of the European Economic Association*, 6(2-3), 501-509.

Fitchett, D. (1999). Bank for Agriculture and Agricultural Cooperatives (BAAC), Thailand (Case study). *Washington DC: Consultative Group to Assist the Poorest (CGAP) Working Group on Savings Mobilization*.

FocusEconomic. (2019). Economic Forecasts from the World's Leading Economists. The Poorest Countries in the World. Retrieved from <https://www.focus-economics.com/blog/the-poorest-countries-in-the-world>

Fox, N. J. (2008). Postpositivism. *The SAGE encyclopedia of qualitative research methods*, 2, 659-664.

Freeman, R. E., & Gilbert, D. R. (1989). Corporate strategy and the search for ethics (Vol 1). *Englewood Cliffs, NJ: Prentice Hall*.

- Gaillard, J. C., Texier, P., & Gehlich-Shillabeer, M. (2008). Poverty alleviation or poverty traps? Microcredits and vulnerability in Bangladesh. *Disaster Prevention and Management: An International Journal*.
- Gammage, S. (2010). Time pressed and time poor: unpaid household work in Guatemala. *Feminist Economics*, 16(3), 79-112.
- Garikipati, S. (2008). The impact of lending to women on household vulnerability and women's empowerment: evidence from India. *World development*, 36(12), 2620-2642.
- Ghalib, A. K., Malki, I., & Imai, K. S. (2015). Microfinance and household poverty reduction: Empirical evidence from rural Pakistan. *Oxford Development Studies*, 43(1), 84-104.
- Ghosh, P., Mookherjee, D., & Ray, D. (2000). Credit rationing in developing countries: an overview of the theory. *Readings in the theory of economic development*, 383-401.
- Gobezie, G., & Garber, C. (2007). *Impact assessment of microfinance in Amhara region of northern Ethiopia*. Paper presented at the International Conference on Rural Finance Research: Moving Results into Policies, FAO, Rome, Italy.
- Godquin, M. (2004). Microfinance repayment performance in Bangladesh: How to improve the allocation of loans by MFIs. *World Development*, 32(11), 1909-1926.
- Goetz, A. M., & Gupta, R. S. (1996). Who takes the credit? Gender, power, and control over loan use in rural credit programs in Bangladesh. *World Development*, 24(1), 45-63.
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18(1), 185-214.
- Goldstein, J. (2011). Did the father of microfinance just get fired? Retrieved from <https://www.npr.org/sections/money/2011/03/03/134204052/did-the-father-of-microfinance-just-get-fired>
- Goodin, R. E., Rice, J. M., Bittman, M., & Saunders, P. (2005). The time-pressure illusion: Discretionary time vs. free time. *Social Indicators Research*, 73(1), 43-70.
- GrameenBank. (2017). Annual Report. Retrieved from <http://www.grameen.com/wp-content/uploads/bsk-pdf-manager/GB-2017.pdf>
- Gujarati, D. N. (1988). *Basic Econometrics*: McGraw-Hill.
- Gutierrez-Nieto, B., Serrano-Cinca, C., & Molinero, C. M. (2007). Microfinance institutions and efficiency. *Omega*, 35(2), 131-142.

- Hagenaars, A., & De Vos, K. (1988). The definition and measurement of poverty. *Journal of human resources*, 211-221.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*: SAGE Publications.
- Hamed, Y. (2004). Microcrédit et financement de la microentreprise au Maghreb. (Doctoral dissertation, ANRT).
- Hartarska, V. (2005). Governance and performance of microfinance institutions in Central and Eastern Europe and the newly independent states. *World Development*, 33(10), 1627-1643.
- Hashemi, S. M., Schuler, S. R., & Riley, A. P. (1996). Rural credit programs and women's empowerment in Bangladesh. *World Development*, 24(4), 635-653.
- Hering, I., & Musshoff, O. (2017). Forewarned is forearmed—repayment delays in microfinance relationships. *Agricultural Finance Review*, 77(2), 218-238.
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development*, 39(6), 938-948.
- Hickel, J. (2015). The microfinance delusion: who really wins? *The Guardian*, 10. Retrieved from <https://www.theguardian.com/global-development-professionals-network/2015/jun/10/the-microfinance-delusion-who-really-wins>
- Hietalahti, J., & Linden, M. (2006). Socio-economic impacts of microfinance and repayment performance: a case study of the Small Enterprise Foundation, South Africa. *Progress in development studies*, 6(3), 201-210.
- Hoff, K., & Stiglitz, J. E. (1990). Introduction: Imperfect information and rural credit markets: Puzzles and policy perspectives. *The World Bank Economic Review*, 4(3), 235-250.
- Holden, M. T., & Lynch, P. (2004). Choosing the appropriate methodology: Understanding research philosophy. *The marketing review*, 4(4), 397-409.
- Hollis, A., & Sweetman, A. (1998). Microcredit: What can we learn from the past? *World Development*, 26(10), 1875-1891.
- Hossain, M., & Diaz, C. P. (1997). Reaching the poor with effective microcredit: evaluation of a Grameen Bank replication in the Philippines. *Philippine Sociological Review*, 45(1/4), 89-121.
- Hsu, B. (2016). The 'Impossible' Default: Qualitative Data on Borrower Responses to Two Types of Social-Collateral Microfinance Structures in Rural China. *The Journal of Development Studies*, 52(1), 147-159.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2), 195-204.

- Hulme, D. (1997). Impact assessment methodologies for microfinance: A review. *Institute for Development Policy and Management, University of Manchester.*
- Hulme, D. (2000a). Impact assessment methodologies for microfinance: theory, experience and better practice. *World Development*, 28(1), 79-98.
- Hulme, D. (2000b). Is microdebt good for poor people? A note on the dark side of microfinance. *Small Enterprise Development*, 11(1), 26-28.
- Hulme, D. (2008). The Story of the Grameen Bank: From Subsidised Microcredit to Market-based Microfinance. *Brooks World Poverty Institute Working Paper 60.*
- Hulme, D., & Mosley, P. (1996). Finance against poverty (Vol. 1). London: Routledge.
- Husain, A. M. (1998). *Poverty alleviation and empowerment: the second impact assessment study of BRAC's rural development programme*: BRAC, Research and Evaluation Division.
- Ilias, A. (2019). Current Situation of Microfinance in Malaysia and its issues. *Agricultural Bank of Malaysia, Kuala Lumpur*. Retrieved from <http://banktani.tripod.com/microfinance.htm>
- Imai, K. S., Arun, T., & Annim, S. K. (2010). Microfinance and household poverty reduction: New evidence from India. *World Development*, 38(12), 1760-1774.
- Imai, K. S., Gaiha, R., Thapa, G., & Annim, S. K. (2012). Microfinance and Poverty - A Macro Perspective. *World Development*, 40(8), 1675-1689.
- Insteram. (2018). An Expat's Guide To The Cost Of Living In Malaysia. Retrieved from <https://www.instarem.com/blog/an-expats-guide-to-the-cost-of-living-in-malaysia/>
- Islam, S. (2009). Start-up and growth constraints on small-scale trading in Bangladesh. *Journal of Chinese entrepreneurship*, Vol.1(No. 3), pp. 227-239.
- Islam, T. (2007). Poverty alleviation impact on Grameen microcredit. *Microcredit and poverty alleviation*, Ashgate Publishing, 165-167.
- Ismail, R. (2001). Economic and social impact of Amanah Ikhtiar Malaysia (AIM) scheme: A case study in Kedah and Terengganu. *Humanomics*, 17(1), 141-155.
- Jacobsen, K., Marshak, A., Ofori-Adjei, A., & Kembabazi, J. (2006). IDP LIVELIHOODS: Using Microenterprise Interventions to Support the Livelihoods of Forcibly Displaced People: The Impact of a Microcredit Program in Idp Camps in Lira, Northern Uganda. *Refugee Survey Quarterly*, 25(2), 23-39.
- Jaffee, D. M., & Russell, T. (1976). Imperfect information, uncertainty, and credit rationing. *The quarterly journal of Economics*, 90(4), 651-666.

- Jain, S., & Mansuri, G. (2003). A little at a time: the use of regularly scheduled repayments in microfinance programs. *Journal of development Economics*, 72(1), 253-279.
- Jomo, K. S., & Sundaram, J. K. (2004). *The new economic policy and interethnic relations in Malaysia*: UNRISD Geneva.
- Kabeer, N. (2005). Is microfinance a 'magic bullet' for women's empowerment? Analysis of findings from South Asia. *Economic and Political Weekly*, 4709-4718.
- Kasarjyan, M., Fritzsich, J., Buchenrieder, G., & Korff, R. (2007). *Repayment Performance under Joint Liability Borrowing. Does Social Capital Matter?: Evidence from Armenia*. Retrieved from
- Kassim, S. H., & Rahman, M. (2018). Handling default risks in microfinance: the case of Bangladesh. *Qualitative Research in Financial Markets*, 10(4), 363-380.
- Kaur, P., & Dey, S. (2013). Andhra Pradesh Microfinance Crisis and its Repercussions on Microfinancing Activities in India. *Global Journal of Management and Business Studies*, 3(7), 695-702.
- Kevane, M., & Wydick, B. (2001). Microenterprise lending to female entrepreneurs: sacrificing economic growth for poverty alleviation? *World Development*, 29(7), 1225-1236.
- Khalily, B. M. A., P. Miah, M. Hasan, N. Akthar and F. Muneer. (2011). Access to Financial Services in Bangladesh. *Institute of Microfinance (InM)*.
- Khalily, M. B. (2004). Quantitative approach to impact analysis of microfinance programmes in Bangladesh—what have we learned? *Journal of International Development*, 16(3), 331-353.
- Khandker, S. R. (1998a). *Fighting poverty with microcredit: experience in Bangladesh*: Oxford University Press.
- Khandker, S. R. (1998b). Micro-Credit Programme Evaluation: A Critical Review 1. *IDS bulletin*, 29(4), 11-20.
- Khandker, S. R. (2005). Microfinance and poverty: Evidence using panel data from Bangladesh. *The World Bank Economic Review*, 19(2), 263-286.
- Khandker, S. R., Khalily, M. B., & Khan, Z. H. (1995). *Grameen Bank: performance and sustainability* (Vol. 306): World Bank Publications.
- Khandker, S. R., Samad, H. A., & Khan, Z. H. (1998). Income and employment effects of micro-credit programmes: Village-level evidence from Bangladesh. *The Journal of Development Studies*, 35(2), 96-124.
- Kipasha, E. F., & Zhang, X. (2013). Sustainability, profitability and outreach tradeoffs: evidences from microfinance institutions in East Africa. *European Journal of Business and Management*, 5(8).

- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Lascalles, D., & Mendelson, S. (2012). Microfinance banana skins 2012: the CSFI survey of microfinance risk—staying relevant. *Report for the Centre for the Study of Financial Innovation (CSFI), Printed by Heron, Dawson, & Sawyer, London, UK.*
- Lau, R. (2018). Gauging Malaysia's microfinancing industry. *Borneo Post Online*. Retrieved from <https://www.theborneopost.com/2018/04/01/gauging-malaysias-microfinancing-industry/>
- Laureti, C. (2012). Flexibility and payment discipline in microfinance. *Manuscript, Belgium: Université de Mons and Université Libre de Bruxelles*, 1-14.
- Likert, R. (1974). A method of constructing an attitude scale. *Scaling: A sourcebook for behavioral scientists*, 233-243.
- Liton, M., Sadekin, M. N., & Muzib, M. M. (2014). Microcredit as a Tool for Poverty Reduction in Bangladesh. *Journal of Economics and Sustainable Development*, 5(25), 30-38.
- Littlefield, E., Morduch, J., & Hashemi, S. (2003). Is microfinance an effective strategy to reach the millennium development goals? *Focus note*, 24(2003), 1-11.
- LoanStreet. (2018). Microfinance / Microcredit in Malaysia. Retrieved from [https://loanstreet.com.my/learning-centre/microfinance-microcredit-in-malaysia#:~:text=Microcredit%20is%20often%20used%20interchangeably,\(E.g.%20Micro%2Dinsurance\)](https://loanstreet.com.my/learning-centre/microfinance-microcredit-in-malaysia#:~:text=Microcredit%20is%20often%20used%20interchangeably,(E.g.%20Micro%2Dinsurance))
- MacIsaac, N. (1997). The role of microcredit in poverty reduction and promoting gender equity: A discussion paper. *report to CIDA, macisaac@ mos. com. np.*
- Mahjabeen, R. (2008). Microfinancing in Bangladesh: Impact on households, consumption and welfare. *Journal of Policy modeling*, 30(6), 1083-1092.
- Mair, J., & Marti, I. (2007). Entrepreneurship for social impact: encouraging market access in rural Bangladesh. *Corporate Governance: The international journal of business in society*, 7(4), 493-501.
- MalayMail. (2015). 53,782 Tekun Nasional borrowers fail to pay outstanding loans. Retrieved from <https://www.malaymail.com/news/malaysia/2015/11/24/53782-tekun-nasional-borrowers-fail-to-pay-outstanding-loans-says-ministry/1011009>
- MalayMail. (2018). Minimum wage raised to RM1,100 in 2019. Retrieved from <https://www.malaymail.com/news/malaysia/2018/11/02/minimum-wage-raised-to-rm1100-in-2019/1689342>
- MalayMail. (2019). How Malaysia is measuring poverty levels and how it can do better. Retrieved from

<https://www.malaymail.com/news/malaysia/2019/09/06/how-malaysia-is-measuring-poverty-levels-and-how-it-can-do-better/1787753>

- Maloney, C. (1985a). Why does Bangladesh remain so poor? Part I: the situation and efforts to change it. *UFSI reports*(29), 1-7.
- Maloney, C. (1985b). Why does Bangladesh remain so poor? Part II: eight answers. *UFSI reports*(34), 1-10.
- Mannan, M. (2009). BRAC: Anatomy of a “poverty enterprise”. *Nonprofit Management and Leadership*, 20(2), 219-233.
- Mannan, M. (2010). *Enslaving development: an anthropological enquiry into the world of NGO*. Durham University,
- Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, 50(4), 370.
- Masood, T. (2013). Trade-Off between Financial Performance and Poverty Outreach- Evidences from Panel of Indian Microfinance Institutions. Available at SSRN 2884162. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2884162
- Matin, I. (1997). REPAYMENT PERFORMANCE OF GRAMEEN BANK BORROWERS: THE 'UNZIPPED' STATE/LA PERFORMANCE DE REMBOURSEMENT DES EMPRUNTEURS CHEZ LES GRAMEEN BANKS. *Savings and Development*, 451-473.
- Matthew, C. (2018). Top 10 Facts About Poverty in Bangladesh. Retrieved from <https://borgenproject.org/top-10-facts-about-poverty-in-bangladesh/>
- Maverick, J. B. (2016). 5 Biggest Microfinance Companies. *Investopedia*. Retrieved from <https://www.investopedia.com/articles/insurance/090116/5-biggest-microfinance-companies-bbrijk.asp>
- McFalls Jr, J. A. (2003). "What' sa household? What' s family?". *Population Reference bureau*.
- McGuire, J. B., Schneeweis, T., & Branch, B. (1990). Perceptions of firm quality: A cause or result of firm performance. *Journal of management*, 16(1), 167-180.
- McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academy of management Journal*, 31(4), 854-872.
- McGuire, P. B., Conroy, J. D., & Thapa, G. B. (1998). Getting the framework right: policy and regulation for microfinance in Asia. *Foundation for Development Corporation*.
- McIntosh, C., Villaran, G., & Wydick, B. (2011). Microfinance and home improvement: using retrospective panel data to measure program effects on fundamental events. *World Development*, 39(6), 922-937.

- McKenzie, D. J., & Woodruff, C. (2006). Do entry costs provide an empirical basis for poverty traps? Evidence from Mexican microenterprises. *Economic Development and Cultural Change*, 55(1), 3-42.
- Menon, J. (2009). Macroeconomic management amid ethnic diversity: Fifty years of Malaysian experience. *Journal of Asian Economics*, 20(1), 25-33.
- Mensah, C., Raphael, G., Dorcas, O., & Kwadwo, B. Y. (2013). The relationship between loan default and repayment schedule in microfinance institutions in Ghana: A case study of Sinapi Aba Trust. *Research Journal of Finance and Accounting*, 4(19), 165-175.
- Mermod, A. Y. (2013). Microfinance. In S. O. Idowu, N. Capaldi, L. Zu, & A. D. Gupta (Eds.), *Encyclopedia of Corporate Social Responsibility* (pp. 1674-1682). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Mia, M. A. (2017). An overview of the microfinance sector in Bangladesh. *The Journal of Business, Economics, and Environmental Studies (JBEEES)*, 7(2), 31-38.
- MicrocreditRegulatoryAuthority. (2017). NGO-MFIs in Bangladesh. *A Statistical Publication*. Retrieved from <http://www.mra.gov.bd/>
- Milana, C., & Ashta, A. (2012). Developing microfinance: A survey of the literature. *Strategic Change*, 21(7-8), 299-330.
- Ministry of Finance, G. (2018). Bangladesh Economic Review 2017. Retrieved from <https://mof.gov.bd/site/page/44e399b3-d378-41aa-86ff-8c4277eb0990/BangladeshEconomicReview>
- Ministry of Finance. (2019). Macro Economic Situation. *Bangladesh Economic Review 2019*. Retrieved from <https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review>
- Mokhtar, S. H. (2011). *Microfinance performance in Malaysia*. Lincoln University,
- Mokhtar, S. H., Nartea, G., & Gan, C. (2012). The Malaysian microfinance system and a comparison with the Grameen Bank (Bangladesh) and Bank Perkreditan Rakyat (BPR-Indonesia). *Journal of Arts and Humanities*, 1(3), 60-71.
- Morduch, J. (1999). The microfinance promise. *Journal of economic literature*, 37(4), 1569-1614.
- Morduch, J. (2000). The microfinance schism. *World Development*, 28(4), 617-629.
- Morduch, J. (2006). Smart subsidies. *Journal of Microfinance/ESR Review*, 8(1), 4.
- Morris, G., & Barnes, C. (2005). An assessment of the impact of microfinance: a case study from Uganda. *Journal of Microfinance/ESR Review*, 7(1), 4.
- Mosley, P. (1997). The use of control groups in impact assessment for microfinance. *Enterprise and Cooperative Development-Social Financial Unit, Working Paper N/ 19*.

- Mosley, P. (2001). Microfinance and poverty in Bolivia. *Journal of Development Studies*, 37(4), 101-132.
- Mukherjee, A. K. (2015). Empowerment through government subsidized microfinance program: Do caste and religion matter? *International Journal of Social Economics*, 42(1), 2-18.
- Mushtaq, R., & A Rauf, S. (2011). Economic impact of micro finance on borrowers: Evidence from punjab, Pakistan. *Economic Impact of Micro Finance on Borrowers: Evidence from Punjab, Pakistan (July 28, 2011)*.
- Mustafa, S., Ara, I., Banu, D., Kabir, A., Mohsin, M., Yusuf, A., & Jahan, S. (1996). Beacon of hope: an impact assessment study of BRAC's RDP. *Research and Evaluation Division, BRAC, Dhaka*.
- Nader, Y. F. (2008). Microcredit and the socio-economic wellbeing of women and their families in Cairo. *The Journal of Socio-Economics*, 37(2), 644-656.
- Navajas, S., Schreiner, M., Meyer, R. L., Gonzalez-Vega, C., & Rodriguez-Meza, J. (2000). Microcredit and the Poorest of the Poor: Theory and Evidence from Bolivia. *World Development*, 28(2), 333-346.
- Nawai, N., & Shariff, M. N. M. (2012). Factors affecting repayment performance in microfinance programs in Malaysia. *Procedia-Social and Behavioral Sciences*, 62, 806-811.
- Okorie, A. (1986). Major determinants of agricultural smallholder loan repayment in a developing economy: Empirical evidence from Ondo State, Nigeria. *Agricultural Administration*, 21(4), 223-234.
- OPHI. (2019). Global MPI Country Briefing 2019: Bangladesh (South Asia). *Country Briefing September 2019*. Retrieved from https://ophi.org.uk/wp-content/uploads/CB_BGD_2019_2.pdf
- Osmani, S. R., & Mahmud, W. (2015). *How Does Microcredit Work?: A Review of the Theories of Microcredit*: Institute of Microfinance.
- Painter, J., & MKNelly, B. (1999). Village banking dynamics study: Evidence from seven programs. *Journal of Microfinance/ESR Review*, 1(1), 6.
- Pallant, J. (2013). *SPSS survival manual*: McGraw-Hill Education (UK).
- Park, A., & Ren, C. (2001). Microfinance with Chinese characteristics. *World Development*, 29(1), 39-62.
- Peng, J.-g., Li, Z.-f., Lv, Z.-h., & Zhou, H.-w. (2009). Non-linear proportional default model with time-dependent variable for retail loan. *Systems Engineering-Theory & Practice*, 29(11), 60-66.
- Pitt, M. M., & Khandker, S. R. (1998). The impact of group-based credit programs on poor households in Bangladesh: Does the gender of participants matter? *Journal of political economy*, 106(5), 958-996.

- Pitt, M. M., Khandker, S. R., & Cartwright, J. (2006). Empowering women with micro finance: Evidence from Bangladesh. *Economic Development and Cultural Change*, 54(4), 791-831.
- Prahalad, C. K., & Hamel, G. (1994). Strategy as a field of study: Why search for a new paradigm? *Strategic management journal*, 15(S2), 5-16.
- Rahman, M. W., Luo, J., & Minjuan, Z. (2015). Welfare Impacts of Microcredit Programmes: An Empirical Investigation in the State-Designated Poor Counties of Shaanxi, China. *Journal of International Development*, 27(7), 1012-1026.
- Rajdev, A., & Bhatt, K. (2013). An Analysis of Sustainability of Microfinance Institutions & its Determinants: Using Institutional Approach. *Conference: Value Creation for Sustainable Growth in 21st Century At: Ganpat University, Mehsana, Gujarat.* Retrieved from <https://www.researchgate.net/publication/299512526>
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. (2018). Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0. In *An Updated Guide and Practical Guide to Statistical Analysis*: Pearson.
- Reddy, C., & Manak, S. (2005). Self-help groups: A keystone of microfinance in India-women empowerment and social security. *Andhra Pradesh Mahila Abhivruddhi Society (APMAS). India: Hyderabad.*
- Revindo, M. D., & Gan, C. (2017). Microfinance Institutions in Malaysia. *World Scientific Book Chapters*, 47-91.
- Rhyne, E. (2009). *Microfinance for bankers and investors*: McGraw-Hill Professional Publishing.
- Robinson, M. (2001). Shifting the microfinance paradigm: from subsidized credit delivery to commercial financial services. *The Microfinance Revolution: Sustainable Finance for the Poor*, 71-73.
- Robinson, M. S. (2001). *The microfinance revolution: Sustainable finance for the poor*: The World Bank.
- Roodman, D. (2012). *Due diligence: An impertinent inquiry into microfinance*: CGD Books.
- Roodman, D., & Morduch, J. (2014). The impact of microcredit on the poor in Bangladesh: Revisiting the evidence. *Journal of Development Studies*, 50(4), 583-604.
- Rosenberg, R. (2009). *Measuring results of microfinance institutions: Minimum indicators that donors and investors should track-A technical guide*: The World Bank.

- Rosengard, J. K., Patten, R. H., Johnston Jr, D. E., & Koesoemo, W. (2007). The promise and the peril of microfinance institutions in Indonesia. *Bulletin of Indonesian Economical Studies*, 43(1), 87-112.
- Roser, M., & Ortiz-Ospina, E. (2017). Global Extreme Poverty. Retrieved from <https://ourworldindata.org/extreme-poverty>
- Roslan, & Karim, M. A. (2009). Determinants of microcredit repayment in Malaysia: The case of Agrobank. *Humanity & Social Sciences Journal*, 4(1), 45-52.
- Roslan, Noor, S., Majid, R., & Abidin, F. Z. (2006). *Microfinance and poverty: The Malaysian experience*. Paper presented at the 2nd International Development Conference of the GRES-which financing for which development.
- Rutherford, S. (2003). Money talks: Conversations with poor households in Bangladesh about managing money. *Journal of Microfinance/ESR Review*, 5(2), 4.
- Santandreu, E. M., López Pascual, J., & Cruz Rambaud, S. (2020). Determinants of Repayment among Male and Female Microcredit Clients in the USA. An Approach Based on Managers' Perceptions. *Sustainability*, 12(5), 1701.
- Saxena, S. (2014). The 2010 Microfinance Crisis in Andhra Pradesh, India and its Implications for Microfinance in India. *Reconsidering Development*, 3(1).
- Schreiner, M. (1996). Thinking about the performance and sustainability of microfinance organizations. *Unpublished paper, The Ohio State University*.
- Schreiner, M. (2003). *The Performance of Subsidized Microfinance Organizations: BancoSol of Bolivia and the Grameen Bank of Bangladesh*: Edwin Mellen Press.
- Schreiner, M., & Yaron, J. (1999). The subsidy dependence index and recent attempts to adjust it. *Savings and Development*, 375-405.
- Seibel, H. D. (2005). Does history matter? The old and the new world of microfinance in Europe and Asia (No. 2005, 10). *Working paper*. Retrieved from <https://www.econstor.eu/handle/10419/23654>
- Sen, B. (2015). *Size and growth of middle class in Bangladesh: Trends, drivers and policy implications*. Paper presented at the Presentation made at the National Bangladesh Institute of Development Studies (BIDS) Seminar.
- Sexton, D. E. (1977). Determining good and bad credit risks among high-and low-income families. *The Journal of Business*, 50(2), 236-239.
- Sharma, & Zeller, M. (1997). Repayment performance in group-based credit programs in Bangladesh: An empirical analysis. *World Development*, 25(10), 1731-1742.
- Sidel, M. (2003). States, markets, and the nonprofit sector in South Asia: Judiciaries and the struggle for capital in comparative perspective. *Tul. L. Rev.*, 78, 1611.

- Sinclair, H. (2012). *Confessions of a microfinance heretic: How microlending lost its way and betrayed the poor*: Berrett-Koehler Publishers.
- Singh, A., & Mehta, S. K. (2012). Impact of Self Help Groups in Jammu, India. *Romanian Economic Journal*, 15(46).
- Smith, P., & Thurman, E. (2007a). A billion strap: Microcredit, Barefoot banking and the business solution for ending poverty. *New York: McGraw Hill*.
- Smith, P., & Thurman, E. (2007b). A billion strap: Microcredit, Barefoot banking and the business solution for ending poverty. *New York: McGraw Hill*.
- StarOnline. (2018). Young and jobless in Malaysia. Retrieved from <https://www.thestar.com.my/business/business-news/2018/08/06/young-and-jobless-in-malaysia/>
- Steinwand, D. (2001). *The Alchemy of Microfinance: the Evolution of the Indonesian People's Credit Banks (BPR) from 1895 to 1999 and a Contemporary Analysis*: VWF.
- Stiglitz, J. E. (1990). Peer monitoring and credit markets. *The World Bank Economic Review*, 4(3), 351-366.
- Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American economic review*, 71(3), 393-410.
- Taylor, M. (2011). 'Freedom from poverty is not for free': rural development and the microfinance crisis in Andhra Pradesh, India. *Journal of Agrarian Change*, 11(4), 484-504.
- TEKUN. (2019a). TEMANNITA FINANCING SCHEME. Retrieved from <https://www.tekun.gov.my/en/tekun-entrepreneur/temannita-financing-scheme/faq/>
- TEKUN. (2019b). Yearly Performance Report. Kuala Lumpur: TEKUN.
- Thornton, P. H., Ribeiro-Soriano, D., & Urbano, D. (2011). Socio-cultural factors and entrepreneurial activity: An overview. *International small business journal*, 29(2), 105-118.
- Timberg, T. A., & Aiyar, C. (1984). Informal credit markets in India. *Economic Development and Cultural Change*, 33(1), 43-59.
- Trebucq, S., & d'Arcimoles, C.-H. (2002). The corporate social performance-financial performance link: evidence from France. *Univ. of Bordeaux Dept. of Int'l Acc'tg Working Paper*(02-01).
- TRT.World. (2017). Roundtable: Does Microfinance empower or impoverish. Retrieved from https://www.youtube.com/watch?v=U_lgCLmvRQo&t=946s

- Tucker, M. (2001). Financial performance of selected microfinance institutions: Benchmarking progress to sustainability. *Journal of Microfinance/ESR Review*, 3(2), 7.
- Tzi, L. B., & Othman, M. H. B. (2016). A Comparison of Microcredit Delivery Systems in Two Nations AmanahIkhtiar Malaysia and the Grameen Bank in Bangladesh. *Australian Journal of Basic and Applied Sciences*, 10 (11 Special), 346 - 351.
- Van den Berg, M., Lensink, R., & Servin, R. (2015). Loan officers' gender and microfinance repayment rates. *The Journal of Development Studies*, 51(9), 1241-1254.
- Van Rooyen, C., Stewart, R., & De Wet, T. (2012). The impact of microfinance in sub-Saharan Africa: a systematic review of the evidence. *World Development*, 40(11), 2249-2262.
- Van Tassel, E. (1999). Group lending under asymmetric information. *Journal of development economics*, 60(1), 3-25.
- Varian, H. R. (1990). Monitoring agents with other agents. *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift Für Die Gesamte Staatswissenschaft*, 153-174.
- Von Pischke, J. D., Adams, D., & Donald, G. (1983). Rural financial markets in developing countries; their use and abuse.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic management journal*, 18(4), 303-319.
- Waller, G. M., & Woodworth, W. (2001). Microcredit as a grass-roots policy for international development. *Policy studies journal*, 29(2), 267-282.
- White, H. (2009). *Some reflections on current debates in impact evaluation*: International Initiative for Impact Evaluation New Delhi, India.
- Wikipedia. (2009). FINCA International. Retrieved from https://en.wikipedia.org/wiki/FINCA_International
- Wikipedia. (2019a). Gettysburg Address. Retrieved from https://en.wikipedia.org/wiki/Gettysburg_Address
- Wikipedia. (2019b). Multidimensional Poverty Index. Retrieved from https://en.wikipedia.org/wiki/Multidimensional_Poverty_Index
- Woiceshyn, J., & Daellenbach, U. (2018). Evaluating inductive vs deductive research in management studies. *Qualitative Research in Organizations and Management: An International Journal*.
- Woller, Dunford, C., & Woodworth, W. (1999). Where to microfinance? *International Journal of Economic Development*, 1(1), 29-65.

- Woller, & Parsons, R. (2002). Assessing the community economic impact of microfinance institutions. *Journal of Developmental Entrepreneurship*, 7(2), 133.
- WorldBank. (2015). *The Little Data Book on Financial Inclusion 2015*: World Bank Publications.
- WorldBank. (2017). Bangladesh Continues to Reduce Poverty But at Slower Pace. Retrieved from <https://www.worldbank.org/en/news/feature/2017/10/24/bangladesh-continues-to-reduce-poverty-but-at-slower-pace>
- WorldBank. (2018). Poverty & Equity Brief, East Asia and Pacific, Malaysia. Retrieved from https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_MYS.pdf
- WorldBank. (2019a). Indicators. Retrieved from <https://data.worldbank.org/indicator>
- WorldBank. (2019b). Poverty & Equity Brief, Bangladesh. Retrieved from https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_BGD.pdf
- WorldBank. (2019c). The World Bank In Bangladesh: Bangladesh has an impressive track record for growth and development. Retrieved from <http://www.worldbank.org/en/country/bangladesh/overview>
- WorldBank. (2019b). Poverty and Equity. Gini Index (World Bank Estimate). Retrieved from <https://databank.worldbank.org/data/reports.aspx?source=2&series=SI.POV.GINI#>
- Wydick, B. (1999). Can social cohesion be harnessed to repair market failures? Evidence from group lending in Guatemala. *The Economic Journal*, 109(457), 463-475.
- Xu, B., Chaudhry, S. S., & Li, Y. (2009). Factors of production: Historical theories and new developments. *Systems Research and Behavioral Science: The Official Journal of the International Malaysia Federation for Systems Research*, 26(2), 219-224.
- Yali, C. (2013). Microfinance program in BRAC—the largest NGO in the world. Retrieved from https://static1.squarespace.com/static/56645cece4b0957c43a61e07/t/5696623ad8af10829fdb431/1452696125594/3110+term+paper_final.pdf
- Yaron, J. (1992). Successful Rural Finance Institutions Discussion. *Washington DC: World Bank Paper*.
- Yaron, J. (1994). What makes rural finance institutions successful? *The World Bank Research Observer*, 9(1), 49-70.

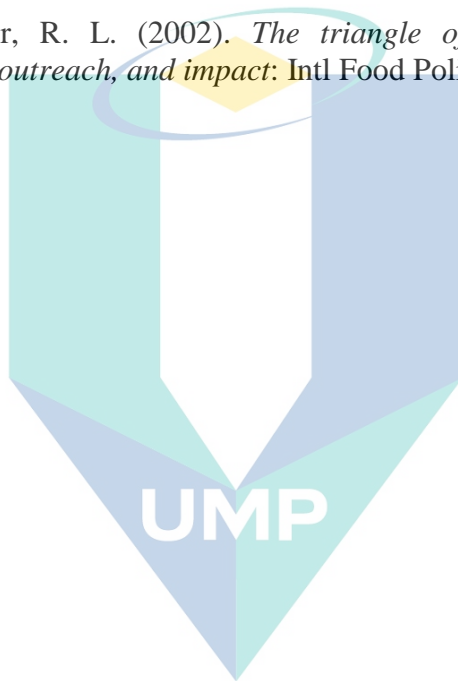
Yunus, M. (1987). *Credit for self-employment: A fundamental human right*: Grameen Bank.

Yunus, M. (2007). *Banker to the poor: Micro-lending and the battle against world poverty*: PublicAffairs.

Zaman, H. (1999). *Assessing the poverty and vulnerability impact of micro-credit in Bangladesh: A case study of BRAC*: World Bank, Development Economics.

Zeller, M. (1998). Determinants of repayment performance in credit groups: The role of program design, intragroup risk pooling, and social cohesion. *Economic development and cultural change*, 46(3), 599-620.

Zeller, M., & Meyer, R. L. (2002). *The triangle of microfinance: Financial sustainability, outreach, and impact*: Intl Food Policy Res Inst.



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LIST OF PUBLICATIONS

Serial Number	Title	Author	Journal / Conference	Status
1.	Impact of Microfinance on Poverty: Qualitative Analysis for Grameen Bank Borrowers	Mohammad Aslam, Senthil Kumar, Shahryar Sorooshian	International Journal of Financial Research ISSN:1923-4023 Vol. 11, No. 1, 2020. pp 49-59.	Publisher: SCIEDU PRESS (Scopus Indexed)
2.	Computation of Multidimensional Poverty Index: A Case Study	Mohammad Aslam, Senthil Kumar, Shahryar Sorooshian	International Journal of Emerging Trends in Engineering Research ISSN:2347 – 3983 Volume 7, No, 9, September 2019. Pp 262-267.	Publisher: WARSE (Scopus Indexed)
3.	Predicting Likelihood for Loan Default Among Bank Borrowers	Mohammad Aslam, Senthil Kumar, Shahryar Sorooshian	International Journal of Financial Research ISSN: 1923-4023 Vol. 11, No.1, 2020. Pp 318-328	Publisher: SCIEDU PRESS (Scopus Indexed)
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5.	Microfinance: A Review on Institutional and Welfarist Approach	Mohammad Aslam, Senthil Kumar	Research Journal of Social Science & Management Volume 08, Number 08, December 2018. Pp-25-31.	Publisher: TIJRP (Peer Reviewed)

Impact of Microfinance on Poverty: Qualitative Analysis for Grameen Bank Borrowers

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Abstract

Poverty is economic, social, political and even moral issue all over the world. Microfinance has been designed to eliminate poverty and may help marginal people to materialize their dreams. Microfinance has been formalized primarily in Bangladesh with this concept. Grameen Bank (GB) has been serving large number of people below poverty level here. Initially, microfinance institutions have been supported by the Government or Donor assuming its positive impact on borrowers. However, ambiguous impacts have been reported in several studies that make microfinance questionable. Therefore, this study intent to measure the impact of microfinance on GB borrowers through the process of qualitative changes in borrowers lives. The process has been measured by some case studies for participant and non-participant borrowers using Modified Household Economic Portfolio Model (M - HEPM). Our qualitative analysis shows that microfinance makes positive changes in the process of borrowers lives observed through financial and activity diaries of the borrowers.

Keywords: microfinance impact, poverty alleviation, qualitative analysis, modified household economic portfolio model

1. Introduction

The welfare impact on borrowers will be shaping the success story of microfinance. The borrowers might be benefited economically or socially or both. The fund providers require identifying the exact performance of microfinance through welfare impact on borrowers as they have invested money. They want an acceptable or good return from their investment. Khalily (2004) pointed out that there were two recognizable impact on the borrowers for microfinance. One is intermediate outcome and the other one is end outcome. The positive intermediate impact could happen through borrowers' consumption, nutrition intake, income, expenditure, wealth accumulation, kid education, savings, employment etc. The final impact could happen when borrowers got rid of poverty. As a whole, the impact will address the borrowers in three aspects such as impact on their businesses, households and individual lives. The more the microfinance brings positive changes or impacts, the more successful is the microfinance program with good performance. However, these positive changes have to done through getting involved in small businesses or some other activities that generate incomes for them. Islam (2007) identified that with the small amount of loan, the borrowers can buy small merchandise or raw materials or high yielding crops that increase their production and ultimately increase their income.

Microfinance impact can be evaluated in both quantitative and qualitative ways. Both types can answer the research questions asked in a specific study. However, mixed method combining qualitative with quantitative could be significant complement to impact assessments based on rather quantitative analysis only. Many qualitative ways are available with their respective own research domains. Alternative ways producing qualitative data usually engage open-ended styles that do not rely on prearranged answers from respondents being questioned. In qualitative studies, series of ways like focus group discussion, interviews with respondents, observing histories etc. can be used for gathering required data and information. Different ethnographic and observational assessments can be included as well. The derived results from qualitative studies may not be statistically representative like the case of quantitative studies. Therefore, they may not representable or generalizable but useful to understand outcome very clearly (Gardler, Martínez, Prouzet, Rawlings and Vermeersch, 2016). In this study, we intent to use qualitative aspect of the



Computation of Multidimensional Poverty Index: A Case Study

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ABSTRACT

Microfinance can play important role in alleviating poverty. Most marginal people have intention and capability to start small revenue generating activities. However, they are lack of finance to materialize their dreams. Microfinance may be one of the way for potential small entrepreneurs to acquire necessary inputs to start their activities. Government and international agencies are trying to eliminate poverty through microfinance programs, services and guidelines. This effort may be able to generate revenue and new jobs that can eradicate poverty. With this concept, Microfinance had been hosted primarily in Bangladesh and later replicated in other part of the world. Grameen Bank (GB) has been serving large number of people below poverty level in Bangladesh. However, both positive and negative impacts of microfinance on poverty have been visible in several studies that make microfinance still questionable. Therefore, this study intent to construct Multidimensional Poverty Index (MPI) measuring the incidence and intensity of the poverty among GB borrowers. It compares MPI of participant borrowers with non-participant borrowers of GB for observing the effect of microfinance. The results show that microfinance has positive impacts for participant borrowers as their index is relatively lower compared to non-participant borrowers. Hence, microfinance appears as an effective instrument for poverty alleviation.

Key words: Microfinance Impact, Poverty Alleviation, Multidimensional Poverty Index, Bank.

1. INTRODUCTION

There has been major debate for impact of microfinance on borrowers in the recent years [1, 2]. Some researchers like Ebuiya, Khanam [3], Pitt, Khandker [4], Rahman, Luo [5] and Woller and Parsons [6] find microfinance positive impacts whereas some researchers like Boteman [7], Hulme [8], Roodman and Morduch [9] and [10] do not find any significant positive impact on borrowers. Furthermore, many

works conclude that there has been positive impact in case of few development indicators but not for others indicators [11-17] whereas other researchers do not agree the same rather put positive impact for some else indicators [18]. Microfinance has been losing its grounds because of inadequate proofs for positive impact [19]. Therefore, finding out its impact with simple assessment method like poverty index is very much important, especially when it is used as a development tool. It is also required to observe contribution and viability of the microfinance institute. It further helps to make corrective action after measuring the magnitude of the poverty based on latest index.

The rest portion of the work will be presented as follows. It gives the overview about microfinance for poverty alleviation, poverty incidence and intensity measurement. Thereafter, it presents the methodology, analysis & interpretation followed by conclusion.

2. MICROFINANCE FOR POVERTY ALLEVIATION

Microfinance has been intended to break cycle of poverty, increase employment, enhance earning capacity and ultimately help financially marginalized people in the society. Alternatively, these borrowers need to take loan from family, friends or even from loan sharks at infernal level with extremely high interest rate. However, some studies found that microfinance is not working as has been intended and it has lost its mission [1, 20]. They argued that microfinance merely creates poverty worse. Because many clients divert microcredit to pay for basic amenities rather than invest in business. This makes their businesses either stop or fail that consequently drops them into further more debt. For instance, ninety four percent of all microfinance credits have been used for consumption in case of South Africa [21]. This ultimately means that borrowers are not producing further revenue with the original credit. Consequently, they need to receive alternative credit to settle down existing credit and so forth. This plunge them into deep down more debt in spiral form. Even in some cases, they have found themselves caught up in a dangerous cycle of death like committing suicide [22]. However, microfinance may serve as a useful instrument for

Predicting Likelihood for Loan Default Among Bank Borrowers

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Abstract

Poverty is a threat to the world. In its extreme form at any part of the world, it will make endanger rest of the world. In fact, it is the source of crime and the worst form of violence. The poor people do not commit any crime but they get punishment out of being born as a poor that is not controllable in their hand. Microfinance has been designed to eliminate poverty and help marginal and poor people through small income generating activities. The borrowers need capital to materialize their dream, may be in a small amount and microfinance can play important role in this scenario. Through microfinance, small entrepreneurs may acquire necessary inputs to start their business. Both local governments and international agencies are trying to eliminate poverty through microfinance programs, services and guidelines. With this concept, Microfinance has been hosted primarily in Bangladesh. Grameen Bank (GB) has been serving large number of people below poverty level in Bangladesh. However, impact of microfinance is still questionable in several studies. Microfinance used properly and returned back to the lender with stipulated amount and time shows its working effectively for poverty alleviation. Otherwise, there must be loan default and the whole system may be in question. We survey with questionnaire to find out factors contributing to loan default among GB borrowers using binomial logistic regression. The results showed that some factors were crucial for loan default and should be treated properly at the start of lending.

Keywords: microfinance, poverty alleviation, loan default factors, logistic regression

1. Introduction

The introduction of microfinance has been regarded to point out a new milestone in development policy. Microfinance has been considered as a probable solution to alleviate poverty when the concept is emerged during the period of eighties. The attractiveness is even more as a development model when it gives attention to the women for betterment of their lives. The government together with development agencies wishes to adopt microfinance model across the countries after formal recognition of the concept during mid-seventies. Mohammad Yunus has been addressed as the 'Father of microfinance' for his brilliant contribution to this field of development strategy (Goldstein, 2011). On the other hand, Milford Bateman argued that other strategies like provision of basic services and logistics are more effective than microfinance for poverty alleviation. Giving focus only on microfinance undermines all the other strategies of the spectrum (Bateman & Chang, 2012). There are well-documented criticisms of microfinance for poverty alleviation (Druvandeck et al., 2011). However, Donor and government have been supporting it for last few decades as social obligation and sometimes political as well. The effectiveness of the microfinance system has been documented with different outcomes in different time and place across the globe. Microfinance used properly and returned back to the lender with stipulated amount and time shows its working for poverty alleviation. Otherwise, there must be loan default and the whole system may be in question.

It has been prevailed over centuries for microfinance assumptions and hearsay evidences. However, systematic experiential researches, which are comparatively current derivation, validate these aforesaid assumptions and evidences. Still phenomena such as high interest rate and high credit risk have remained debatable. The utmost argumentative topic is the clarification about high interest rate charged by informal moneylenders to make them definer. High interest rate and default risk have been elegantly formalized at the theoretical level by Bhaduri (1973); (Bhaduri, 1980) and by Bottomley (1975) respectively. However, both these theories have been under growing criticism despite their elegance and early appeal. In case of Bhaduri Model, Bardham and Rudra (1978) found that it

Social Versus Financial Performance of Microfinance: Bangladesh Perspective

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Abstract

Microfinance is a tool designed for poverty alleviation by providing financial services more specifically small credit to the poor household for income generating activities. One of the better ways to help poor people for poverty alleviation is through giving them financial services that cannot be done in traditional banking system. However, there is a big question whether it is possible to provide these services for a financial institution without being sustainable financially. How far it can go with free hand that is depending on donors' fund. These two patterns place microfinance at the intersection. One may wonder whether the microfinance compromises a trade-off between serving the poor as social objective and attaining financial sustainability as financial objective. If microfinance institute wishes to get financial sustainability through profit maximization rather ignoring intended social objective of alleviating poverty, then it loses its momentum and becomes like other traditional financial institute. Fulfilling social objective with financial sustainability will be the optimum outcome of microfinance. Microfinance has been pioneered primarily in Bangladesh and later replicated in rest of the world. By this time, over 33 million of clients are being served with various financial and non-financial services by over 700 registered microfinance institute in Bangladesh. This study intent to measure the social outreach versus financial sustainability of microfinance institute in Bangladesh through panel data analysis. To do this, we have analyzed the relationship between financial performance and depth of outreach of top 20 microfinance institutes of Bangladesh from 2015 to 2017. Our results show that the relationship is positive or neutral in some cases. Therefore, microfinance in Bangladesh has been attaining both social and financial objectives and there appears no mission drift.

Keywords: microfinance, social outreach, financial sustainability, Panel Data Analysis

1. Introduction

Direct Credit Approach (Welfarist Approach) emphasizes on social performance. It recognizes microfinance as an effective instrument to fight against poverty and vulnerability. Ultimately, it progresses the welfare of the people living behind poverty. Besides micro credit and related services, microfinance provides non-financial services like education & training together with technical assistance to borrower for running their income generating activities. This welfare vision prevailed all through the 1980 decades. It emphasizes on forming commonality organizations like Non-Governmental Organization or Cooperative Societies which treat microfinance as a major instrument to reduce poverty of poorest (Hamed, 2004). The well-known instance of this approach is famous Grameen Bank. The other instance is the village banking system formulated by FINCA (Foundation of International Community Assistance) in Latin America and more lately in Asia and Africa. However, this welfare approach directed to high default with high transaction costs. It resulted in many microcredit program failures on the basis of subsidization meaning interest rates were even lower than market rates (Von Pischke, Adams, & Donald, 1983; Yaron, 1994).

Financial Market Approach (Institutionalist Approach) emphasizing on financial performance put the microfinance within ambit of the market. It intends to set up financially sustainable microfinance institution being aware of resource constraints from donors and also wants to outreach the majority poor people (De Briey, 2005). Microfinance institute should reach financial sustainability through efficiency and productivity. As a result, they need to charge higher interest rate to make up all operational cost. Here, they compromise with serving the welfare of very poor to get them out of poverty. Rather, they start serving the clients close to poverty level with geographical concentration but involved in highly profitable and short cycled activities. For example, countries such as Bolivia,



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Abstract

This paper is a comparison of two opposite schools of thoughts on Microfinance viz., Institutional view and Welfarist view. The Institutional approach claims that without financial self-sufficiency, it is not possible for microfinance institutions to sustain their operations by relying mainly on government and donor aids. The Welfarist approach propounds that the ultimate goal is to reach maximum number of poor beneficiaries for their wellbeing irrespective of who bears the cost for this service. There has been a mix reactions in several studies in different time period and different parts of the world with different methodology with respect to profitability and outreach of microfinance institutions. Some literature say that outreach and profitability can be achieved together, some say they are negatively correlated where there is a need for balancing between them. Therefore, the net consolidation between institutionalist and welfarist stands for ambiguous position. Microfinance must be extended as a social and economic obligation of the fund provider to eliminate, or at least reduce poverty, to ensure a just and equitable society. Yet, it is essential that microfinance institutions serve the poverty and also attain self-sufficiency concurrently.

Keywords: Microfinance, Institutionalist approach, Welfarist approach Sustainability, Outreach.

Introduction

Poverty, a curse on humankind, leads to economic, social, political and moral problems across the globe. Microfinance was devised to eliminate poverty by helping marginal and poor entrepreneurs to create self-employment through lower level income generating activities. The borrowers desperately need education and training to materialize their dream that requires capital, albeit a small quantum. Microfinance plays a pivotal role in such a scenario by providing capital or seed money required to start a small business. Governments and international agencies try to eradicate poverty through various programs, services and policies. Among these initiatives, microfinance has immense potential to create new job opportunities and generate income thereby resulting in improving social and economic standards.

Institutionalist And Welfarist Approach

Institutionalists hold the view that the sustainability of microfinance institutions depends on profit maximization and welfarists emphasize on reaching out to maximum number of poor people and bring them out of poverty. Welfarists theorize that taxpayers' money could be used to meet political and social obligations. However, it can be argued that benefitting a section of the society with the money provided by another section of the society is mere transfer of wealth and no real development is being made. Studies have supported both the schools of thought viewpoints in the following paragraphs:

Haan and Lakwo (2010) observed that poverty eradication could be devised as a first-stage objective of microfinance that would lead to creation of a just and equitable society emphasizing on freedom, empowerment and wealth distribution. Microfinance lead to women beneficiaries attaining a higher level of freedom in Uganda. This is despite their finding that microfinance had not resulted in

APPENDICES

Appendix A: Sample Size Calculation

The Sample Size has been calculated in compliance with following Table – 5.1 formulated by (Krejcie & Morgan, 1970).

Table 5.1 Table for Determining Sample Size of Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

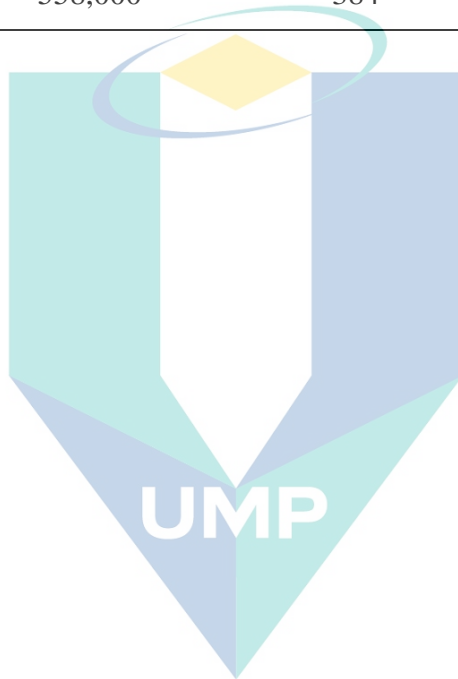
Note: N is Population Size, S is Sample Size

Source: (Krejcie & Morgan, 1970).

The Sample Size determination of this research is shown in the following Table
– 5.2

Table 5.2 Table for Determined Sample Size

Microfinance Institute	Population Size (Approximately)	Sample Size (Estimated)	Sample Size (Rounded Off)
GB	8,930,000	384	400
BRAC	4,190,000	384	400
TEKUN	558,000	384	400



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Appendix B: Survey Questionnaire

IMPACT OF MICROFINANCE ON POVERTY

This survey is designed to find out microfinance impact on borrowers' poverty in Bangladesh and Malaysia. The information provided will be completely confidential and will be used exclusively for research purpose. This will not be associated with your normal activity of life or create problem in any way. This survey will ask several questions about yourself and your family together with microfinance impact on your business, household, individual and security level at different perspectives. It will take about few minutes of your time to complete. For each information, please tick on it or follow the instruction.

1. Identification _____

2. Microfinance Institute a. GB b. BRAC c. TEKUN

3. Borrower Category a. Participant Borrower b. Non-Participant Borrower

Section-1: Demographic Characteristic

4. Gender: a. Female b. Male

5. Age Group: a. Up to 25 b. 26 to 35 c. 36 to 45 d. 46 to 55 e. Above 55 year

6. Ethnic Group: a. Muslim b. Hindu c. Christian d. Buddhist e. Others

7. Living Style: a. Conjugal b. Single

8. Education: a. Non-Educated b. Educated (Higher than primary education)

9. Household Member: a. Up to 2 b. 3 to 4 c. 5 to 6 d. 7 to 8 e. Above 8

10. Income Earner: a. Up to 2 b. 3 to 4 c. 5 to 6 d. 7 to 8 e. Above 8

11. Dependant: a. Up to 2 b. 3 to 4 c. 5 to 6 d. 7 to 8 e. Above 8

12. Total Children: a. Up to 2 b. 3 to 4 c. 5 to 6 d. 7 to 8 e. Above 8

13. Educated Children: a. Up to 2 b. 3 to 4 c. 5 to 6 d. 7 to 8 e. Above 8

Section-2: Business Characteristic

14. Business Type: a. Agricultural b. Non – Agricultural (Service Providing, Small Trading, Animal husbandry, etc.)

15. Business Ownership: a. Borrower b. Spouse c. Business Partner d. Participatory e. Others

16. Decision Maker: a. Borrower b. Spouse c. Business Partner d. Participatory e. Others

17. Monthly Revenue: a. Up to \$100 b. \$101 to \$200 c. \$201 to \$300 d. \$301 to \$400 e. Above \$400

18. Alternative Income: a. No Alternative b. Yes Alternative

Section-3: Loan Characteristics

19. Borrowing Times: a. One Time b. Two Times c. Three Times d. Four Times e. Above 4 Times

20. Borrowing Amount: a. Up to \$ 500 b. \$ 501 to \$ 1,000 c. \$ 1,001 to \$ 1,500 d. \$ 1,501 to \$ 2,000 e. Above \$ 2,000

21. Loan Adequacy: a. Not Adequate b. Yes Adequate

22. Alternative Loan: a. No Alternative b. Yes Alternative

23. Repayment Mode: a. Weekly b. Otherwise

24. Repayment Period a. Longer (More than one year) b. Shorter (Up to one year)

25. Repayment Amount:

a. Up to \$ 25 b. \$ 26 to \$ 50 c. \$ 51 to \$ 75 d. \$ 76 to \$ 100 e. Above \$ 100

26. Interest Rate/Management Fee:

a. Up to 5% b. 6% to 10% c. 11% to 15% d. 16% to 20% e. Above 20%

27. Loan default: a. No Default b. Yes Default

28. Default Cause:

a. Business Problem b. Family Problem c. Health Issue d. Natural Disaster e. Others

Section-4: Business Impact

29. Your business revenue has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

30. Your business fixed asset has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

31. Your business current asset has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

32. Your business has created employment. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Section-5: Household Impact

33. Your household income has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

34. Your household immovable property has been increased. How much do you agree?

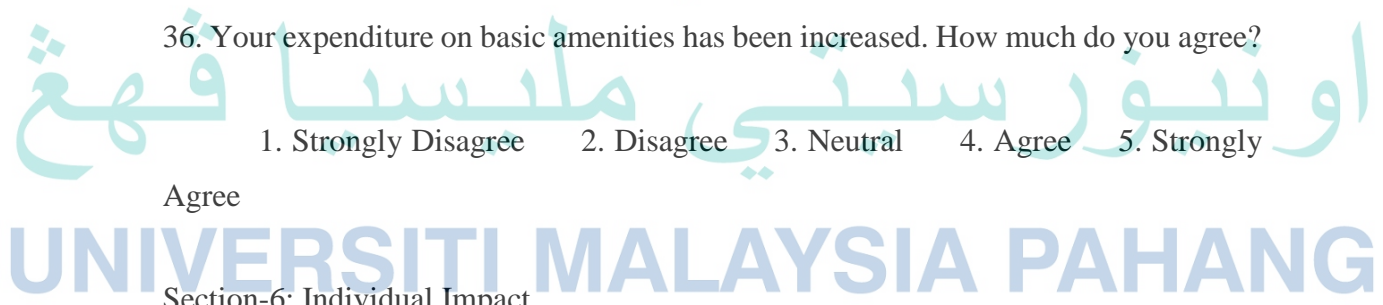
1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

35. Your household movable property has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

36. Your expenditure on basic amenities has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree



Section-6: Individual Impact

37. Your control has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

38. Your honor has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

39. Your capacity has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

40. Your confidence has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Section-7: Security Impact

41. Your social security has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

42. Your financial security has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

43. Your food security has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

44. Your health security has been increased. How much do you agree?

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Section-8: Multi-Dimensional Poverty Index

45. Please put 0 for "No Deprivation" and 1 for "Deprivation" for each attribute (Poverty Indicator):

Multidimensional Poverty Index (MPI)		
Indicator	Weight	0 for "No deprivation" 1 for "Deprivation"
Years of Schooling	3/18	
School Attendance	3/18	
Child Mortality	3/18	
Nutrition	3/18	
Electricity	1/18	
Sanitation	1/18	
Drinking Water	1/18	
Housing	1/18	
Cooking Fuel	1/18	
Assets Ownership	1/18	

YOUR IDENTITY WILL BE STRICTLY CONFIDENTIAL. THANKS FOR YOUR TIME AND COOPERATION.

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Appendix C: Important Statistical Output from Software Used

Grameen Bank

1. Impact Measurement: Within the Group (For Table 4.4 to 4.7)

Test Statistics

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Chi-Square	70.400 ^a	8.900 ^a	20.675 ^a	117.400 ^a	41.225 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.064	.000	.000	.000

Test Statistics

	Immovable Property	Movable Property	Expenditure	Control	Honor	Capacity
Chi-Square	5.750 ^a	118.475 ^a	159.025 ^a	104.850 ^a	49.775 ^a	194.525 ^a
df	4	4	4	4	4	4
Asymp. Sig.	.219	.000	.000	.000	.000	.000

Test Statistics

	Confidence	Social Security	Financial Security	Food Security	Health Security
Chi-Square	159.050 ^a	169.550 ^a	153.675 ^a	202.450 ^a	9.750 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.045

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 80.0.

2. Impact Measurement: Between the Group (For Table 4.8 to 4.11)

Mann-Whitney Test

Test Statistics^a

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Mann-Whitney U	43385.500	54442.500	49372.000	36315.500	63560.000
Wilcoxon W	123585.500	134642.500	129572.000	116515.500	143760.000
Z	-11.444	-8.000	-9.580	-13.705	-5.153
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Immovable Property	Movable Property	Expenditure	Control	Honor
Mann-Whitney U	69849.000	41249.500	52639.500	56203.500	72259.500
Wilcoxon W	150049.000	121449.500	132839.500	136403.500	152469.500
Z	-3.180	-12.283	-8.606	-7.494	-2.439
Asymp. Sig. (2-tailed)	.001	.000	.000	.000	.015

Test Statistics^a

	Capacity	Confidence	Social Security	Financial Security	Food Security
Mann-Whitney U	60710.500	64271.000	47536.000	42545.000	27626.500
Wilcoxon W	140910.500	144471.000	127736.000	122745.000	107826.500
Z	-6.164	-5.026	-10.237	-11.779	-16.420
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Health Security
Mann-Whitney U	52014.000
Wilcoxon W	132214.000
Z	-8.776
Asymp. Sig. (2-tailed)	.000

3. Casual Impact: (For Figure 4.1 and Table – 4.12 to 4.13)

Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted ...
	Cronbach's Alp...	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Business Level	0.684	0.711	0.825	0.613
Household Level	0.708	0.802	0.806	0.515
Individual Level	0.871	0.682	0.883	0.660
Microfinance	1.000	1.000	1.000	1.000
Security Level	0.542	0.582	0.763	0.522

Discriminant Validity

	Business Level	Household Level	Individual Level	Microfinance	Security Level
Business Level	0.783				
Household Level	0.705	0.718			
Individual Level	0.617	0.684	0.812		
Microfinance	0.530	0.421	0.305	1.000	
Security Level	0.332	0.271	0.272	0.649	0.722

Path Coefficients

	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (O/...	P Values
Microfinance -> Business Level	0.530	0.530	0.024	21.820	0.000
Microfinance -> Household Level	0.421	0.424	0.022	18.761	0.000
Microfinance -> Individual Level	0.305	0.309	0.021	14.675	0.000
Microfinance -> Security Level	0.649	0.649	0.019	33.325	0.000

4. Loan Default: (For Table – 4.14)

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
age1(1)	.021	1.484	.000	1	.989	1.021
age2(1)	2.228	1.453	2.353	1	.125	9.285
age3(1)	1.723	1.339	1.656	1	.198	5.603
age4(1)	1.251	1.321	.897	1	.344	3.495
livingstyle(1)	-1.082	.660	2.690	1	.100	.339
education(1)	-.309	.519	.355	1	.552	.734
dependant1(1)	.103	1.007	.011	1	.918	1.109
dependent2(1)	.013	.962	.000	1	.990	1.013
dependent3(1)	-.543	1.010	.289	1	.591	.581
dependent4(1)	.694	1.060	.429	1	.513	2.002
businesstype(1)	-.340	.530	.411	1	.522	.712
monthlyrevenue2(1)	-.502	.945	.283	1	.595	.605
monthlyrevenue3(1)	-1.150	.991	1.347	1	.246	.317
monthlyrevenue4(1)	-.756	.961	.620	1	.431	.469
monthlyrevenue5(1)	-.625	.974	.412	1	.521	.535
alternativeincome(1)	.990	.763	1.682	1	.195	2.691

alternativeloan(1)	.138	.518	.071	1	.790	1.148
repaymentperiod(1)	-.618	.514	1.446	1	.229	.539
repaymentamount1(1)	-2.183	1.595	1.874	1	.171	.113
repaymentamount2(1)	-5.357	1.701	9.918	1	.002	.005
repaymentamount3(1)	-1.796	1.501	1.432	1	.231	.166
repaymentamount4(1)	-3.376	1.768	3.645	1	.056	.034
interestrate2(1)	-.893	1.231	.527	1	.468	.409
interestrate3(1)	-2.070	1.042	3.946	1	.047	.126
interestrate4(1)	-2.143	.930	5.304	1	.021	.117
interestrate5(1)	-3.596	1.202	8.951	1	.003	.027
Constant	2.785	2.130	1.710	1	.191	16.202

BRAC

1. Impact Measurement: Within the Group (For Table 4.4 to 4.7)

Test Statistics

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Chi-Square	105.125 ^a	80.425 ^a	18.075 ^a	149.125 ^a	44.125 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.001	.000	.000

Test Statistics

	Immovable Property	Movable Property	Expenditure	Control	Honor	Capacity
Chi-Square	77.450 ^a	82.525 ^a	113.500 ^a	102.775 ^a	75.900 ^a	61.350 ^a
df	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000

Test Statistics

	Confidence	Social Security	Financial Security	Food Security	Health Security
Chi-Square	70.900 ^a	78.925 ^a	109.525 ^a	146.175 ^a	87.075 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 80.0.

2. Impact Measurement: Between the Group (For Table 4.8 to 4.11)

Mann-Whitney Test

Test Statistics^a

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Mann-Whitney U	50962.000	71992.500	52311.000	32652.500	55892.500
Wilcoxon W	131162.000	152192.500	132511.000	112852.500	136092.500
Z	-9.088	-2.521	-8.667	-14.847	-7.547
Asymp. Sig. (2-tailed)	.000	.012	.000	.000	.000

Test Statistics^a

	Immovable Property	Movable Property	Expenditure	Control	Honor
Mann-Whitney U	72022.000	53166.000	56394.000	67940.500	72031.000
Wilcoxon W	152222.000	133366.000	136594.000	148140.500	152231.000
Z	-2.511	-8.525	-7.415	-3.810	-2.508
Asymp. Sig. (2-tailed)	.012	.000	.000	.000	.012

Test Statistics^a

	Capacity	Confidence	Social Security	Financial Security	Food Security
Mann-Whitney U	49391.000	53141.500	47351.500	45601.500	28111.000
Wilcoxon W	129591.000	133341.500	127551.500	125801.500	108311.000
Z	-9.575	-8.396	-10.211	-10.754	-16.231
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Health Security
Mann-Whitney U	28987.500
Wilcoxon W	109187.500
Z	-15.969
Asymp. Sig. (2-tailed)	.000

3. Casual Impact: (For Figure 4.1 and Table – 4.12 to 4.13)

Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted
Business Level	0.423	0.500	0.764	0.624
Household Level	0.299	0.300	0.740	0.588
Individual Level	0.350	0.352	0.754	0.606
Microfinance	1.000	1.000	1.000	1.000
Security Level	0.514	0.527	0.752	0.504

Discriminant Validity

	Business Level	Household Level	Individual Level	Microfinance	Security Level
Business Level	0.790				
Household Level	0.361	0.767			
Individual Level	0.313	0.279	0.778		
Microfinance	0.551	0.376	0.409	1.000	
Security Level	0.423	0.241	0.266	0.726	0.710

Path Coefficients

	Original Sampl...	Sample Mean (...	Standard Devia...	T Statistics (O/...	P Values
Microfinance - ...	0.551	0.551	0.024	22.844	0.000
Microfinance - ...	0.376	0.376	0.030	12.664	0.000
Microfinance - ...	0.409	0.412	0.030	13.795	0.000
Microfinance - ...	0.726	0.728	0.015	48.047	0.000

4. Loan Default: (For Table – 4.14)

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
gender(1)	.996	.383	6.757	1	.009	2.707
age1(1)	1.190	.654	3.316	1	.069	3.288
age2(1)	-.157	.672	.054	1	.816	.855
age3(1)	.552	.631	.765	1	.382	1.736
age4(1)	-.630	.702	.805	1	.370	.533
livingstyle(1)	-.243	.334	.531	1	.466	.784
education(1)	-.653	.345	3.586	1	.058	.520
dependant1(1)	1.088	.995	1.195	1	.274	2.967
dependent2(1)	.578	.963	.360	1	.548	1.782
dependent3(1)	1.053	.971	1.177	1	.278	2.866
dependent4(1)	1.191	.993	1.438	1	.231	3.289
type(1)	.176	.315	.314	1	.575	1.193
monthlyrevenue2(1)	-.872	.472	3.407	1	.065	.418
monthlyrevenue3(1)	-.738	.518	2.029	1	.154	.478

monthlyrevenue4(1)	-.647	.542	1.422	1	.233	.524
monthlyrevenue5(1)	-.992	.561	3.122	1	.077	.371
alternativeincome(1)	.072	.381	.035	1	.851	1.074
alternativeloan(1)	-.200	.313	.406	1	.524	.819
repaymentmode(1)	.210	.722	.085	1	.771	1.234
repaymentperiod(1)	.475	.410	1.342	1	.247	1.608
repaymentamount1(1)	-1.456	.535	7.411	1	.006	.233
repaymentamount2(1)	-1.048	.492	4.545	1	.033	.351
repaymentamount3(1)	-1.416	.547	6.712	1	.010	.243
repaymentamount4(1)	-.574	.526	1.192	1	.275	.563
interestrate2(1)	1.260	1.149	1.202	1	.273	3.524
interestrate3(1)	.510	1.152	.196	1	.658	1.666
interestrate4(1)	1.889	1.113	2.877	1	.090	6.610
interestrate5(1)	1.365	1.138	1.438	1	.230	3.916
Constant	-2.824	1.860	2.306	1	.129	.059

TEKUN

1. Impact Measurement: Within the Group (For Table 4.4 to 4.7)

Test Statistics

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Chi-Square	138.525 ^a	144.050 ^a	22.650 ^a	99.625 ^a	129.875 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000

Test Statistics

	Immovable Property	Movable Property	Expenditure	Control	Honor	Capacity
Chi-Square	146.375 ^a	44.825 ^a	74.325 ^a	108.725 ^a	64.100 ^a	65.875 ^a
df	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000

Test Statistics

	Confidence	Social Security	Financial Security	Food Security	Health Security
Chi-Square	99.950 ^a	87.925 ^a	84.875 ^a	168.425 ^a	160.725 ^a
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 80.0.

2. Impact Measurement: Between the Group (For Table 4.8 to 4.11)

Mann-Whitney Test

Test Statistics^a

	Business Revenue	Fixed Asset	Current Asset	Employment	Household Income
Mann-Whitney U	40078.500	65733.000	59553.000	39058.000	43390.000
Wilcoxon W	120278.500	145933.000	139753.000	119258.000	123590.000
Z	-12.542	-4.559	-6.426	-12.862	-11.491
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Immovable Property	Movable Property	Expenditure	Control	Honor
Mann-Whitney U	54599.000	54554.000	51603.000	54962.500	56374.000
Wilcoxon W	134799.000	134754.000	131803.000	135162.500	136574.000
Z	-8.063	-8.041	-8.938	-7.933	-7.455
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Capacity	Confidence	Social Security	Financial Security	Food Security
Mann-Whitney U	51080.000	47255.000	48077.000	48166.000	36489.000
Wilcoxon W	131280.000	127455.000	128277.000	128366.000	116689.000
Z	-9.099	-10.339	-10.111	-10.056	-13.781
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Test Statistics^a

	Health Security
Mann-Whitney U	39224.500
Wilcoxon W	119424.500
Z	-12.938
Asymp. Sig. (2-tailed)	.000

3. Casual Impact: (For Figure 4.1 and Table – 4.12 to 4.13)

Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted
	Cronbach's Al...	rho_A	Composite Rel...	Average Varian...
Business Level	0.574	0.610	0.771	0.533
Household Level	0.610	0.631	0.791	0.558
Individual Level	0.538	0.540	0.763	0.518
Microfinance	1.000	1.000	1.000	1.000
Security Level	0.536	0.543	0.762	0.517

Discriminant Validity

	Business Level	Household Level	Individual Level	Microfinance	Security Level
Business Level	0.730				
Household Level	0.643	0.747			
Individual Level	0.515	0.452	0.719		
Microfinance	0.547	0.449	0.460	1.000	
Security Level	0.528	0.516	0.507	0.617	0.719

Path Coefficients

	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (O/...	P Values
Microfinance -> Business Le...	0.547	0.548	0.023	24.177	0.000
Microfinance -> Household...	0.449	0.451	0.029	15.395	0.000
Microfinance -> Individual ...	0.460	0.460	0.028	16.563	0.000
Microfinance -> Security Le...	0.617	0.618	0.022	28.249	0.000

4. Loan Default: (For Table – 4.14)

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
gender(1)	.089	.299	.088	1	.767	1.093
age1(1)	.990	.776	1.626	1	.202	2.691
age2(1)	.368	.792	.216	1	.642	1.445
age3(1)	.732	.783	.873	1	.350	2.079
age4(1)	.948	.824	1.322	1	.250	2.580
livingstyle(1)	1.031	.295	12.221	1	.000	2.804
education(1)	-.364	.386	.893	1	.345	.695
dependant1(1)	.199	.837	.057	1	.812	1.221
dependent2(1)	.160	.831	.037	1	.847	1.174
dependent3(1)	-.055	.856	.004	1	.948	.946
type(1)	.267	.308	.751	1	.386	1.306
monthlyrevenue4(1)	1.407	.833	2.852	1	.091	4.083
monthlyrevenue5(1)	.863	.806	1.147	1	.284	2.371
alternativeincome(1)	-.925	.325	8.121	1	.004	.396
alternativeloan(1)	-.248	.321	.595	1	.440	.780

repaymentmode(1)	-.562	.588	.914	1	.339	.570
repaymentperiod(1)	-.154	.345	.200	1	.654	.857
repaymentamount1(1)	.872	.758	1.324	1	.250	2.392
repaymentamount2(1)	.700	.686	1.042	1	.307	2.013
repaymentamount3(1)	-.077	.640	.014	1	.905	.926
repaymentamount4(1)	-.129	.710	.033	1	.856	.879
Constant	-3.290	1.417	5.388	1	.020	.037

Social and Financial Performance

1. Regression with outreach indicator NOB as dependent variable (For Table 4.52)

```
. xtreg Numberofborrower ReturnonAsset OpeationSelfSufficiency OperatingMargin, re

Random-effects GLS regression              Number of obs   =    120
Group variable: ID                        Number of groups =    40

R-sq:  within = 0.1778                    Obs per group:  min =    3
        between = 0.0301                    avg           =    3.0
        overall = 0.0181                    max           =    3

Wald chi2(3) =    16.24
corr(u_i, X) = 0 (assumed)                Prob > chi2     =    0.0010
```

Numberofborrower	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ReturnonAsset	-.0639094	.0177253	-3.61	0.000	-.0986502	-.0291685
OpeationSelfSufficiency	.2621874	.0850105	3.08	0.002	.09557	.4288049
OperatingMargin	.0275693	.0184192	1.50	0.134	-.0085317	.0636703
_cons	10.82762	.4247673	25.49	0.000	9.995088	11.66015
sigma_u	1.0021122					
sigma_e	.13583597					
rho	.98195779	(fraction of variance due to u_i)				

2. Regression with outreach indicator LO as dependent variable (For Table 4.54)

```
. xtreg Loanoutstanding ReturnonAsset OpeationSelfSufficiency OperatingMargin, re

Random-effects GLS regression           Number of obs   =       120
Group variable: ID                     Number of groups =        40

R-sq:  within = 0.5260                  Obs per group:  min =         3
      between = 0.0270                  avg =           3.0
      overall  = 0.0316                  max =           3

Wald chi2(3) =       78.70
corr(u_i, X) = 0 (assumed)             Prob > chi2     =       0.0000
```

Loanoutstanding	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ReturnonAsset	-.2444324	.027714	-8.82	0.000	-.2987508	-.1901139
OpeationSelfSufficiency	.5092638	.1327984	3.83	0.000	.2489836	.7695439
OperatingMargin	.090103	.0287928	3.13	0.002	.0336702	.1465359
_cons	19.4608	.6463648	30.11	0.000	18.19395	20.72765
sigma_u	1.2382043					
sigma_e	.20827395					
rho	.97248508	(fraction of variance due to u_i)				

3. Regression with financial performance indicator ROA as dependent Variable (For Table 4.56)

```
. xtreg ReturnonAsset Numberofborrower Loanoutstanding, fe

Fixed-effects (within) regression       Number of obs   =       120
Group variable: ID                     Number of groups =        40

R-sq:  within = 0.3488                  Obs per group:  min =         3
      between = 0.0527                  avg =           3.0
      overall  = 0.0284                  max =           3

F(2, 78) =       20.89
corr(u_i, Xb) = -0.9772                 Prob > F        =       0.0000
```

ReturnonAsset	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numberofborrower	.6390075	.8038876	0.79	0.429	-.9614098	2.239425
Loanoutstanding	-2.428285	.3979825	-6.10	0.000	-3.220607	-1.635962
_cons	46.95078	9.695659	4.84	0.000	27.6482	66.25335
sigma_u	2.8179297					
sigma_e	.94721614					
rho	.89848112	(fraction of variance due to u_i)				

F test that all u_i=0: F(39, 78) = 1.08 Prob > F = 0.3776

4. Regression with financial performance indicator OSS as dependent Variable (For Table 4.58)

```
. regress OpeationSelfSufficiency Numberofborrower Loanoutstanding
```

Source	SS	df	MS			
Model	.20426681	2	.102133405	Number of obs =	120	
Residual	5.60656463	117	.047919356	F(2, 117) =	2.13	
Total	5.81083144	119	.048830516	Prob > F =	0.1233	
				R-squared =	0.0352	
				Adj R-squared =	0.0187	
				Root MSE =	.2189	

OpeationSelfSu-y	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numberofborrower	.0400683	.0363899	1.10	0.273	-.0320001	.1121367
Loanoutstanding	-.0016772	.0276178	-0.06	0.952	-.0563727	.0530184
_cons	4.38069	.3144967	13.93	0.000	3.757846	5.003534

5. Regression with financial performance indicator OM as dependent Variable (For Table 4.60)

```
. xtreg OperatingMargin Numberofborrower Loanoutstanding, re
```

```
Random-effects GLS regression           Number of obs   =       120
Group variable: ID                     Number of groups =        40

R-sq:  within = 0.0085                  Obs per group:  min =         3
      between = 0.2276                      avg   =         3.0
      overall  = 0.0528                      max   =         3

Wald chi2(2)          =         6.53
Prob > chi2           =         0.0383

corr(u_i, X)  = 0 (assumed)
```

OperatingMargin	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Numberofborrower	.1309631	.1525254	0.86	0.391	-.1679811	.4299073
Loanoutstanding	-.2271292	.1157575	-1.96	0.050	-.4540097	-.0002486
_cons	6.083103	1.318186	4.61	0.000	3.499505	8.6667

sigma_u	0	
sigma_e	1.0208194	
rho	0	(fraction of variance due to u_i)

