

# **DOES NGO MICROFINANCE ALLEVIATE POVERTY IN PAKISTAN? A QUASI-EXPERIMENTAL APPROACH**

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## **ABSTRACT**

Poverty is a global problem and Pakistan is not an exception wherein 37.9 % of the population lives in poverty. It is interesting to highlight due to the lack of government resources in Pakistan, non-governmental organizations (NGOs) microfinance institutions are playing main role in poverty alleviation of the rural areas of Pakistan. This paper aims to investigate the role of NGO microfinance in breaking the vicious cycle of poverty of the poor in Pakistan. Statistical Package for Social Sciences (SPSS) is used to analyse the data obtained from 465 respondents using quasi- experimental approach. The results reveal positive impact on the borrower's income and consumption while negative impact for saving and assets. Overall, microfinance has improved the well-being of the borrowers.

**Keywords:** NGOs; Microfinance; Poverty alleviation; Quasi-Experimental Approach; Pakistan.

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## **1. INTRODUCTION**

The concept of poverty has become not only complicated but also multifaceted. Poverty does not only mean physical scarcity, but it is also about the lack of opportunity. Poverty is defined as the deprivation of income or consumption; poverty is the lack of basic requirements such as food, shelter, education, clothing, pure drinking water, sanitation, pure drinking facilities, financial institutions, information, and equal opportunity (Kalemba, 2017). Poverty also refers to the deficiency of the overall wellbeing at an individual or household level (Brady & Burton, 2016). Apart from that, poverty is deprivation of basic needs and capacities, vulnerability, humiliation, social exclusion, and absence of support from community groups and networks in times of need (Savadogo, Souares, Sie, Parmar, Bibeau & Sauerborn, 2015). Poverty can be classified into static or dynamic poverty; the former refers to the measurement of poverty at a point in time, while the later refers to changes in poverty over time (Pantazis, Gordon & Levitas, 2006).

It is interesting to highlight that South Asia is the second largest home to more than 23 per cent (%) of the world's population; ironically, it is also considered to be one of the poorest regions in the world despite the large population and abundance of natural resources (Kakwani & Son, 2016; Kaur & Kaur, 2016). On this note, the South Asia region occupies a special position in the form of economic, social and political importance (Ali, 2014). The region consists of several major countries surrounded by the Indian Ocean, namely Pakistan, Bhutan, Bangladesh, India,

Afghanistan, Maldives, Sri Lanka and Nepal, and the region is a home to 1.6 billion people which is equal to a fifth of the world's population (United Nations, 2009). It is noteworthy that poverty is considered as the main obstacle for Pakistan development since its independence in 1947 (Salik et al., 2015). The causes of poverty in the country are corruption, lack of clearness in the government sector, low sense of responsibility, budgeting and misallocation of resources, inadequate access to justice, high inflation, unemployment, low literacy, and limited healthcare available (Noor, 2009). Moreover, non-clearness in the management of public accounts has distorted development priorities and the propensity to maintain the interests of groups at the cost of the larger public interest has resulted in rampant hoarding and speculation (Fahad & Rehmat, 2013; Tariq et al., 2014). The level of poverty in Pakistan has substantially increased and recent estimates in 2016 showed that 37.9 % of the country's population live below the poverty line (Social Policy & Development Centre, 2017). On this note, 51 % of the population are classified as vulnerable and there is a probability of falling into poverty or into deeper poverty in the future if their income is not increased. In 2015, every fourth out of ten lived below the multidimensional poverty in Pakistan, i.e. approximately 81 million out of a total population of 207.774 million (United Nations Development Program, 2016).

Poverty is relatively higher in the rural areas of Pakistan at 41.2 % as compare to 31.9 % of their urban counterparts; the rural and urban poverty ratios are shown in Table 1.

**Table 1: Poverty Head Count Ratio in Pakistan**

Year	National %	Urban %	Rural %
1998-99	57.9	44.5	63.4
2001-02	64.3	50.0	70.2
2004-05	51.7	37.3	58.4
2005-06	50.4	36.6	57.4
2007-08	44.1	32.7	49.7
2010-11	36.8	26.2	42.1
2011-12	36.3	22.8	43.1
2013-14	29.5	18.2	35.6
2015-16*	37.9	31.9	41.2

*Source:* Social Policy and Development Centre (2017)

Muhammed Yunus has placed a milestone on poverty alleviation through the establishment of the Grameen Bank, the bank that lends micro loans to marginalised people in a village near Dhaka (Roodman, 2012). The Noble Peace Prize winner, Muhammed Yunus had started the concept of microfinance in the mid-70s and later in 1982 had established the Grameen Bank based on the view that credit is a fundamental human right. The development scheme of the Grameen Bank is so popular that today, that the Grameen Bank has been replicated in many developed and underdeveloped countries (Develtere & Huybrechts, 2002).

Microfinance programme facilitated by NGOs have proven to be a successful strategy in decreasing poverty, sustaining economic development and improving the livelihoods of marginalised people (Nduwarugira & Woldemariam, 2015; Waller & Woodworth 2001). The main motive of microfinance is to increase or improve the welfare and self-sufficiency of the poor who

are deprived of necessities (Khatun & Hasan, 2015; Savitha & Jyothi, 2012). Microfinance is basically small loans given to impoverished people who use the funds for self-employment (Korir, 2015). Over the last few years, microfinance has gained great importance as a powerful strategy to reduce poverty, distribute income, and for economic and social development (Quinones & Remeny, 2014; Visconti, 2016). Its operations are successful not only in developing countries (Roy & Goswami, 2013; Banerjee, Duflo, Glennerster & Kinnan, 2015) but also in other nations such as Latin-America, Europe and North America (Taiwo, 2012).

Over the past five years, Pakistan has witnessed many major crises affecting up to 18 million people in both its rural and urban areas. These crises include a vast range of natural disasters such as earthquakes, floods, cyclones, draughts, landslides, and some human induced disasters like terrorism, fires, epidemics, transport and industrial accidents, and the refugee crisis (Akhtar, 2011; Saleem, 2013). For instance, the Muzaffarabad earthquake in the year 2005 had affected 3.5 million people. The floods which hit many provinces including the Khyber Pakhtunkhwa, Sindh, Punjab and Balochistan regions of Northern Pakistan in 2010 have resulted in 9000 people losing their lives and an additional 27 million people displaced (Swathi, 2015).

Khyber Pakhtunkhwa (KPK) is one of the provinces in Northern Pakistan that is prone to natural disasters such as floods, droughts and storms (Saqib, Ahmad, Panezai & Rana, 2016; Shabir, 2013) and the region was most affected by the flood in the year 2010. The province of KPK has 25 districts, 69 Tehsils and 7335 villages (Pakistan's Provincial Disaster Management Authority, 2012). Fundamental facilities, infrastructure, human lives, standing crops such as sugar cane, cotton, sorghum, rice, vegetables pulses, and livestock were destroyed on a large scale (Saqib et al., 2016). Prior to the flood and earthquake, Pakistan had to deal with approximately 4.2 million people who were internally displaced due to conflict between the Talibans, civilians and the army which affected millions (Looney, 2012; Pechayre, 2011). Due to the various climatic and human induced crises, poverty has increased in Pakistan, specifically in Khyber Pukhtun Khawa, Northern Pakistan (Social Policy and Development Centre, 2017).

In order to bring the people out from such crisis and poverty, the non-governmental organizations (NGOs) play an important role in reducing poverty (Roy, Albores & Brewster, 2012; Shabir, 2013) since the government has limited resources to reach all the people. Programmes run by NGOs are often more useful in reaching the poor in far flung areas than those managed by the government sector (Bhattacharya, 2014; Rasmussen, Piracha, Bajwa, Malik & Mansoor, 2004). Moreover, NGOs have proliferated in developing countries including in Pakistan and are closer to the communities as they have improved the quality of people's life through projects and by representing the interest of the poor (Shirazi & Khan, 2009; Davenport, 2012). Despite the acceptance of the role of NGOs microfinance in poverty reduction, empirical evidence on the impact of microfinance on poverty showed mixed evidence. A stream of studies such as Al-Mamun and Mazumder (2015), Aroui and Nguyen (2016), Beg (2016), Drasarova and Srnc (2016), Habib and Jubb (2015) and Mathur and Mathur (2016) suggested microfinance bring positive benefits to poverty alleviation. The opponent such as Banerjee et al. (2015), Bateman (2011), De Haan and Lakwo (2010), Khandker and Samad (2016), Kundu (2013), Muneer (2016), Paprocki (2016), Shirazi (2012), and Rosenberg, Gonzalez and Narain (2009) recommended microfinance has no significant impact on poverty reduction. In addition, empirical studies on NGOs microfinance in SAARC countries especially in Pakistan appear to be limited. This could be due to the concept of NGOs microfinance is relatively new in Pakistan (Ali & Alam, 2010; Badruddoza, 2011). The first

Local Support Organizations were established with the support of Aga Khan Rural Support Programme in 2004 and the basic motive of establishing such institutions was to unite all the civil society groups at the union council level for the welfare of the common man (Dad, 2016).

Hence, it is interesting to investigate the impacts of NGOs microfinance on poverty alleviation in Northern Pakistan by employing quasi-experimental approach. The technique offers few advantages; firstly, they can control endogeneity without having large research costs associated with randomised control trials (RCTs). Secondly, the use of structural models can explain how microfinance affects the livelihoods of clients. Thirdly, by applying econometric methods such as fixed effects to control any residual endogeneity. Lastly, a quasi-experimental survey could address spill over effects, even in cross-section setting. The remainder of this study proceeds as follows. Next section offers the theoretical studies as well as a review of empirical studies on the microfinance and poverty follows by the data and methodology section. The subsequent section presents the empirical results while the last section concludes the paper and presents the future research directions.

## **2. LITERATURE REVIEW**

A series of debate by different scholars has been continuing from decades about the impact of microfinance on poverty alleviation. Interestingly, Maitrot and Nino-Zarazua (2017) carried out a review of empirical studies on microfinance and poverty; the authors suggest the results of several studies indicate NGOs microfinance induces short-term dynamism in the financial life of the poor whereby there is a short term increases in income, consumption, human capital and assets of the borrowers. On the other hand, there is a scepticism view about the microfinance role towards the uprising of the poor. Some of the studies suggest there is a positive impact of NGOs microfinance on the livelihoods of the poor (Karlan, Savonitto, Thuysbaert & Udry, 2017; Kaseva, 2017; Makunyi, 2017; Gascon & McIntyre-Mills, 2018; Quach, 2017; and Ullah, Ullah, Khan & Khan, 2017). For instance, Gascon and McIntyre-Mills (2018) suggested microfinance program has a positive and significant impact on indicators such as income, savings, and asset accumulation in Kenya. Nevertheless, Crepon, Devoto, Duflo and Pariente (2015) stated the rural NGO microfinance yields a negative impact on the household income and consumption in Morocco while Augsburg, De Haas, Harmgart and Meghir (2015) found there is an indifference impact of microfinance on the poverty and the household income in Bosnia. Similar negative results are also observed in another stream of studies such as Attanasio, Augsburg, De Haas, Fitzsimons and Harmgart (2014); Crepon, Devoto, Duflo and Pariente (2011); Duong and Thanh (2015); Karlan and Zinman (2011); Mukherjee and Kundu (2012); and Ullah et al. (2017).

It is noteworthy that past studies conducted in South Asian Association for Regional Cooperation (SAARC) countries present inconclusive evidence of the impacts of NGO microfinance. In the context of Pakistan, Siddiqi (2008) suggested there is a mixed of evidence on the nexus between NGOs microfinance and poverty. Zaidi (2017) showed an improvement in the wellbeing of the borrowers in terms of monthly expenditures, access to better health and education facilities and household assets. Similar results are depicted by Ayuub (2013); Ghalib, Malki and Imai (2015); Mahmood et al. (2014); Shirazi and Khan (2009); and Muhammad (2010). Nevertheless, Noreen (2011) found microfinance has no effect on the living condition and consumption patterns of the borrowers. Zaidi (2001) added the NGO microfinance project fails to bring changes in the life of

the poor and destitute. Other studies such as Durrani, Usman, Malik and Ahmad (2011) and Qureshi, Saleem, Shah, Abbas, Qasuria and Saadat (2012) reveal a negative impact of microfinance on the living standard of the poor.

Likewise in Bangladesh context, several studies suggest that the access to credit has the potential to reduce poverty significantly (Akmam & Islam, 2017; Chowdhury & Bhuiya, 2004; Khandker, 2003; Khandker & Samad, 2018; and Roodman & Morduch, 2009;) and another stream of studies argue microfinance has a minimal impact on poverty alleviation (Banerjee & Jackson, 2017; Khandker & Samad, 2018; Weiss & Montgomery, 2005; Gehlich-Shillabeer, 2008;). In the similar vein, past studies also show ambiguous results in microfinance sector in India region. Rajasekhar, Manjula and Suchitra (2017) claimed the borrowers are unable to improve livelihood and vulnerability in Karnataka and Tamil Nadu states of India. However, the results of Kapila et al. (2017) discovered income and self-employed among borrowers increased significantly after getting the loan in Ludhiana, India. Other studies confirmed the gain of the microfinance whereby the standard of living of the borrowers has improved (Chen & Snodgrass, 2001; Imai, Arun & Annim, 2010; Rajendran & Rajam 2010). It is interesting to point out that past studies depict a mixed result on the effectiveness of NGOs microfinance on the poor wellbeing. Based on the above discussed, this study focuses on the impact of NGO microfinance on poverty in Northern Pakistan.

### 3. METHODOLOGY

The survey is carried out over the period of April to July 2017 in the Northern Pakistan using stratified sampling method. The data is collected from two microfinance NGOs namely Biyar Local Support Organization (BLSO) and Karimabad Area Development Organization (KADO). The NGOs in Pakistan are playing important role in reducing poverty by launching various development projects including education improvement, health, women empowerment, rising voice for security rites, human rights of the people and easy access to justice (Sadrudin, 2012). On this note, Northern Pakistan has the highest number of NGOs as compared to the other provinces (Siddique & Ahmad, 2012).

The questionnaire is distributed to 465 respondents consists of 288 beneficiaries while the remaining are the non-beneficiaries. Moreover, out of 288 beneficiaries 156 respondents belong to Biyar Local Support Organization while 132 to the Karimabad Area Development Organization. Likewise, 97 non beneficiaries were from Biyar Local Support Organization and 80 from Karimabad Area Development Organization making a total of 177.

#### 3.1. *Specification of Model*

The general hypothesis of the research is the impact of microfinance on the poverty alleviation. To evaluate the impact, the following model has been adopted from Nghiem et al. (2012).

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_{ij} + \beta_3 T_{ij} + \beta_4 M_{ij} + \beta_5 DIJ + \mu_i \quad (1)$$

where:

$Y_i$  = Income, Saving, Consumption, Assets

$\beta_0$  = Constant term

$\beta_1 - \beta_5$	= Regression coefficients
$X_{ij}$	= Household Characteristics
$T_{ij}$	= Household Facilities
$M_{ij}$	= Village Characteristics
$D_i$	= Loan duration
$\mu$	= Error term
$i$	= 1, 2, ..., 465

### 3.2. *Description of Variables*

Selection of variables such as the demographic variables male, age, marital, education level and household size and village characteristics are adopted from the previous literature of microfinance and poverty (Boateng, Boateng & Bampoe, 2015; Ifelunini & Wosowei, 2012; Joseph & Imhanlahimi, 2011; Kasali, Ahmad & Lim, 2015) while the household characteristics are adopted from Ghalib et al. (2015) and Khandker and Koolwal (2016) while irrigation water and metal roads from Habte (2016). The poverty alleviation is measured in terms of income, consumption, saving and assets and the justification of the variables employed in this paper as below:

#### *Income*

Income plays significant role in mitigating poverty. Most of the past conducted studies (Crepon, Devoto, Duflo & Pariente, 2011; Islam, 2011; Khandker & Samad, 2013; Nudamatiya, Giroh & Shehu, 2010; Rahman, Rafiq & Momen, 2009) used income as an indicator to measure the impact of microfinance on poverty. Similarly, Goldberg (2005) is of the view when income rises due to the microfinance, it means that microfinance becomes an effective tool for anti-poverty. Moreover, microfinance helps the poor masses to be involved in income generating activities that improve their standard of living ultimately (Littlefield, Morduch & Hashemi, 2003). Microfinance loans facilities the borrowers to invest in high-yielding varieties that generate more income for them and due to this increased income, their poverty can be reduced (Islam, 2007). Similar studies on the impact of microfinance by Mahjabeen (2008) and Nader (2008) found a positive impact of microfinance on the recipient's income and standard of living. Similarly, Mosley and Hulme (1998) conducted study on 13 microfinance organizations in seven countries and concluded that most beneficiaries were able to generate income from their microfinance activities. Likewise, Mosley (2001) conducted a survey in Bolivia for assessing the impact of microfinance on poverty and concluded that microfinance impact on the borrower's income was positive. In addition, Hulme and David (1996) conducted microfinance impact studies in many countries including Sri Lanka, Bangladesh, Bolivia and Indonesia and found that the recipients' income has increased significantly. Copestake (2002) used the indicator of income to measure the impact of microfinance on poverty and revealed that the borrower's income has increased as compared to the non-borrowers.

#### *Saving*

Saving is considered as vital instrument of microfinance as it benefits both the organization and the borrower (Armendariz & Morduch, 2005; Rutherford, 1999; Wright, 2000). Saving is defined as a source for future consumption either in kind or in cash (Robinson, 2004). It acts as catalyst in the freedom from the vicious cycle of poverty (Rutherford, 2000). Savings could support the poor

in accumulating assets and cope with emergencies and risks (Odell, 2010). Moreover, saving is considered as a best tool to reduce vulnerabilities (Rutherford, 1999; 2003). In the Words of Armendariz and Morduch (2007, pp. 16), “with savings, households can build up assets to use as collateral, smooth seasonal consumption needs, self-insure against major shocks, and self-finance investments”. Studies conducted by (Adjei, Arun & Hossain, 2009; Armendariz & Morduch, 2005; Dupas & Robinson, 2008; Ssewamala, Ismayilova, McKay, Sperber, Bannon & Alicea, 2010) have shown saving as an indicator to measure the microfinance effect on poverty. Microfinance facilitates the poor in developing the habit of saving through providing the services of saving and other services like micro insurance, credit and employment opportunities (Jegatheesan. Ganesh & Kumar, 2011). According to Asian Development Bank (2000), microfinance is an effective tool in reducing poverty by providing its access to poor and efficient provision of loan, savings and insurance facilities that enable the borrowers to enhance their standard of living and reduce their vulnerabilities.

### ***Consumption***

Consumption expenditures is a stable instrument as compared to income to measure the welfare (Boucher et al., 2014). Borrowers provide information easily on what they consume as compared to their earning sources (Zeller, Sharma, Henry & Lapenu, 2006). Zeller (1999) is of the view that microfinance not only assists the poor in generating income but also helps them in smoothing their consumption needs. Micro finance facilitates the poor in times of crises and negative shocks by fulfilling their consumption needs and managing their losses (Puhazhendi & Badatya, 2002). As far as the impact of microfinance is concerned most of the past studies conducted by Berhane and Gardebroke (2011); Imai and Azam (2012); Kaboski and Townsend (2012); Khandker (2005) and Pitt and Khandker (1998) confirmed the view that micro finance has significant impact on consumption needs of poor. Similarly, most of the evidences of the previous studies show a positive impact of microfinance on consumption needs of the respondents (Chemin, 2008; Gertler, Levine & Moretti, 2009; Kaboski & Townsend, 2002; Khandker, 2005; Nghiem, Coelli & Rao, 2012). In short, the studies that have used consumption expenditure as a proxy to measure poverty including Banerjee, Chandrasekhar, Duflo and Jackson (2013); Deloach and Lamanna (2011); Duong and Nghiem (2014); Imai and Azam (2012); Khandker and Samad (2014); Leatherman and Dunford (2010); and Nghiem et al. (2012).

### ***Assets***

Assets are also one of the four dimensions of poverty measurement. Assets are considered to be one of the stable and reliable indicators of economic well-beings and play an important role during the loan periods in times of emergencies (Ghalib et al., 2011). In addition, microfinance facilitates the borrower in building assets that further helps to reduce vulnerability (Barnes, Keogh & Namarundwe, 2001; Hulme & Mosley, 1996; Mosley, 2001; Pitt & Khandker, 1998). In recent time assets are considered as an indicator of welfare (Paxton, 2003). Stock of assets shows positive impact on the condition of a person and it is considered important for economic development and social protection in the society (Zhan & Sherraden, 2003). The findings of researchers such as Adjei et al. (2009); Brannen (2010); Kaboski and Townsend (2002); and Mazumder and Lu (2013) revealed a positive impact of microfinance in reducing poverty by increasing the assets of borrowers.

#### 4. RESULTS AND DISCUSSION

Table 2 shows that out of 465 respondents, 288 are beneficiaries from NGOs microfinance while the remaining 177 are non-beneficiaries. There is not much difference in the case of the mean age of the respondents which is 33.63 for beneficiaries and 35.6 for non-beneficiaries. Most of the beneficiaries and non-beneficiaries are literate i.e. 81 % beneficiaries and 78 % for non-beneficiaries. It is interesting to highlight that descriptively, members of NGOs microfinance are better-off in terms of all aspects of socioeconomics namely income, consumption, saving and assets owned by the respondents. For instance, the average income of the borrowers is recorded at Rupee 14,671 as compared to Rupee 11,002 for the case of non-borrowers. The same pattern is also found in other indicators such as consumption whereby Rupee 13,958 is recorded for borrowers and Rupee 9,849 for non-borrowers.

**Table 2: Background of Members and Non-members of NGOs Microfinance**

Profile of Respondents	Members n=288		Non-Member n=177	
	Mean	Std.	Mean	Std.
Mean age	33.5	10.9	35.6	8.3
Households size	8.7	2.2	9.03	2.1
Illiterate	56 (19 %)	n.a.	39 (22%)	n.a.
Literate	232 (81 %)	n.a.	138 (78%)	n.a.
Average income (Rupees)	14,671	4849	11,002	3743
Average consumption (Rupees)	13,958	4052	9,849	2,487
Average saving (Rupees)	757	905	677	659
Average assets (Rupees)	2,474,571	715,570	2,236,210	400,235

**Table 3: Impact of NGOs Microfinance on Household Monthly Income of Respondents**

Variables	Dependent Variable: Monthly Income			
	Std. Error	Beta	T	VIF
(Constant)	460.390		6.019	
Membership	725.192	0.155	2.366	4.586
Loan duration	13.424	0.617	12.182	3.261
Age	14.061	0.205	6.976	1.101
Education	21.334	0.015	0.533	1.101
Family size	13.280	0.037	1.589	1.386
Fixed telephone	372.230	0.162	5.153	1.388
Mobile	331.386	0.311	9.827	1.063
Gas	384.008	0.093	3.360	1.056



Dependent Variable: Monthly Income				
Variables	Std. Error	Beta	T	VIF
Irrigated water	786.882	0.032	1.145	3.904
Metal road	574.954	0.051	0.954	1.190
Sewerage	53.524	0.003	0.115	1.261
F= 101.620 (0.000)				
Adjusted R Square = 0.733				

Next, Table 3 shows the empirical results of microfinance on income, estimated through multiple regression model. The dummy variable membership shows the income of the borrowers is higher as compared to the non-borrowers. The adjusted R-square shows that the 73.3 % of variation in the dependent variable is due to the independent variable. The loan duration is also significant which also confirms that with the successive loan period the income has increased. The results are in line with the past studies Ayuub (2013); Ghalib et al. (2015) and Khalily (2004).

**Table 4:** Impact of NGOs Microfinance on Household Monthly Consumption of Respondents

Dependent Variable: Monthly Consumption				
Variables	Std. Error	Beta	t	VIF
(Constant)	1156.726		3.087	
Membership	321.485	0.157	3.220	5.820
Loan duration	7.362	0.098	2.139	5.198
Age	6.742	0.075	3.178	1.374
Education	9.596	0.019	0.912	1.099
Family size	31.340	0.088	3.967	1.201
Fixed telephone	172.226	0.030	1.229	1.470
Mobile	166.345	0.120	4.496	1.743
Gas	174.700	0.032	1.520	1.099
Irrigated water	352.525	0.051	2.441	1.058
Metal road	257.591	0.001	0.034	3.915
Sewerage	140.739	0.005	0.212	1.188
Monthly Income	0.025	0.635	15.272	4.255
F= 172.144 (0.000)				
Adjusted R Square = 0.836				

**Table 5:** Impact of NGOs Microfinance on Household Monthly Saving of Respondents

Dependent Variable: Monthly Saving				
Variables	Std. Error	Beta	t	VIF
(Constant)	1291.992		.383	
Membership	6.011	0.131	1.146	4.586
Loan duration	4.984	0.197	1.890	3.261
Age	1.366	0.114	2.090	1.101
Education	1.101	0.051	1.042	1.101
Family size	1.205	0.044	0.861	1.386
Fixed telephone	1.468	0.020	0.353	1.388

Dependent Variable: Monthly Saving				
Variables	Std. Error	Beta	t	VIF
Mobile	1.738	0.048	0.784	1.063
Gas	1.100	0.041	0.829	1.056
Irrigated water	1.061	0.068	1.419	3.904
Metal road	3.915	0.138	1.499	1.190
Sewerage	1.191	0.035	0.679	1.261
Monthly Income	3.844	0.458	5.009	1.101
F= 5.649 (0.000)				
Adjusted R Square = 0.121				

Table 4 shows that impact of microfinance on food consumption. The results reveal that the consumption of the borrowers has increased as compared to the non-borrowers. The Adjusted r-square shows that 83.6 % variation in the dependent variable is due to the independent variable. The results are in line with Setboonsarng and Parpiev (2008) and Shane (2004). Additionally, Table 5 shows the impact of microfinance on saving of the respondents. Both the membership and loan duration show non-significant relation, which means there is no difference between the saving of the borrowers and non-borrowers and the loan duration has no impact on the saving. The results are consistent with past literature such as Coleman (1999) and Khalily (2004).

**Table 6:** Impact of NGOs Microfinance on Household Monthly Assets of Respondents

Dependent Variable: Assets of Households				
Variables	Std. Error	Beta	T	VIF
(Constant)	342327.825		0.264	
Membership	94958.681	0.015	0.668	5.821
Loan duration	2188.248	0.065	2.999	5.265
Age	2007.195	0.007	0.628	1.396
Education	2848.900	0.013	1.329	1.110
Family size	9258.750	0.009	0.877	1.201
Fixed telephone	51119.592	0.006	0.500	1.485
Mobile	49392.669	0.009	0.688	1.762
Gas	51620.719	0.010	1.022	1.100
Irrigated water	105760.284	0.012	1.261	1.092
Metal road	76222.186	0.001	0.033	3.930
Sewerage	41722.128	0.014	1.365	1.197
Monthly Income	8.225	0.014	0.626	5.361
Value of House	0.020	0.698	49.165	2.256
Value of land	0.026	0.409	34.528	1.572
F= 172.144 (0.000)				
Adjusted R Square = 0.836				

Table 6 shows the impact of microfinance on the respondent's assets. The results show significant results i.e. there is no improvements in the assets of the borrowers as compared to the non-borrowers. The findings are similar to Coleman (1999) and Kondo et al. (2008). Quasi experimental approach was used to identify the true impact of microfinance on poverty. Under the

Quasi experiment approach two groups were formed control and treatment groups. The treatment group compromise of the beneficiaries while the control consists of the non-beneficiaries. To know the impact, dummy variables membership and loan duration was used. Table 2 and 3 shows that member ship and the loan duration are significant. Which means that impact of microfinance on the beneficiaries' income is significant as compared to the non-beneficiaries whereas the loan duration also confirms that as the loan duration has increased the income of the beneficiaries also increased the beneficiaries were able to increase their income and consumption as compared to the non-beneficiaries. Most of the beneficiaries were able to invest the loan in income generating activities but due to the lack of proper entrepreneurial skills and as well as lack of access markets in cities the beneficiaries were unable to sold their product in large quantity, as a result the income was just enough for carrying out the daily household expenses. The impact of income and consumption is in line with the exiting literature (Ding, 2018; Ghalib, et al., 2015; Kaboski & Townsend, 2012; Mahmud et al., 2017; Shamim, 2018; Stephen & Sibert, 2014;).

However, the findings in Table 5 and 6 show the non-significance of the beneficiaries as compared to the no beneficiaries in terms of assets and saving. Due the small loan size and limited business activities the beneficiaries were unable to accumulate assets and nether were able to save for future activities. The results on the assets are consistent with the previous studies (Coleman, 1999; Kaboski & Townsend 2012) while the studies by Coleman (1999); Stewart et al. (2012) and Augsburg et al. (2015) confirmed the negative impact of microfinance on savings. In short, although the borrowers were able to generate income and were likely to improve their food consumption, but the loan size or the income generated was not enough to buy assets or make any savings for the future.

## **5. CONCLUSION**

This study analysis the economic impact of microfinance on poverty in Northern Pakistan. The data was collected from two local NGOs Biyar Local Support Organization (BLSO) and Karimabad Area Development Organization with a sample comprising of 465. To evaluate the true impact, quasi experimental design was used in which two groups were formed, control and treatment group. The control group consist of the microfinance beneficiaries while the control group were the pipeline beneficiaries which have not received the loan yet. Multiple Regression model was used to find the impact of microfinance on poverty. Based on the finding, the microfinance respondents were able to increase their income and consumption as compared to the non- beneficiaries but fail to increase their saving and assets. The study suggests that loan size should be increased so that the beneficiaries can able to save enough money. Furthermore, the research suggest that a details study should be conducted on the spill over effects that might also contribute the effectiveness of microfinance.

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