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Islamic microfinance and household welfare nexus: empirical investigation from Pakistan

Hafiz ZahidMahmood[1], Kausar Abbas[2*] and Mehreen Fatima[1]

* Correspondence: kausarsial@yahoo.com
[2]Department of Management Sciences, The University of Lahore, Pakpattan Campus, Pakistan
Full list of author information is available at the end of the article

Abstract

Many approaches and tools have been utilized throughout the globe by public and private sector organizations to curtail the deprivations and enhance welfare of the poor. Islamic Microfinance is one of them and is rapidly getting popular in Muslims as well as non-Muslims majority population countries. This study was conducted to gauge the impact of Islamic microfinance on the household welfare of the target clients by observing its impact on health, education, income, expenditures and assets of the poor who took loan from Islamic Microfinance institutions (IMFIs). Study is based on primary data and assessment was made rendering pre and post project approach by employing paired sample *t*-test and Regressionanalysis as statistical tools. Respondents were selected from three microfinance institutions, namely Akhuwat Foundation, Farz Foundation and NAYMET. Results delineate statistically significant differences in Pre and Post borrowing scenarios in the welfare indicators of the target households. It has been observed that borrowing from Islamic Microfinance institutions has not only significantly raised monthly income; expenditures on food, education and health; and incremented households' assetsbut also surprisingly raised borrowed amount of loan which negatively affected income. This requires some further investigation and it is recommended that practitioners and policy makers must keep IMF on its top agenda to enhanceliving standards of the poor in developing countries.

Keywords: Poverty, Microfinance, Impact assessment, Islamic microfinance, Islamic finance, Social welfare, Assets

Background

Poverty is the aftermath of various causes including insufficient access to money, monopolies, unequal distribution of wealth, strong and well-built intermediaries which, usually, capture most of the profit margin, and absence of democracy (Visconti, 2012). Developing countries are the hub of poor sheltering 48% of global deprived living below two dollars a day. The number of hungry people has reached 963 million with significant increment of 142 million in the world poor since 1990, which makes 15% of the world population (Government of Pakistan, 2010; OECD, FAO, 2009, p. 62). Muslim population stretching from Senegal to Philippines belonging to various regions is also victim of this phenomenon with very few exceptions of Southeast Asia and Middle East countries. Bangladesh and Pakistan are custodians of 122 million poor followed by India with 100 million people living below poverty line

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(Obaidullah, 2008). Hossain (2012) suggested that as poverty is a constant phenomenon therefore it requires a continuous or at least a long termpoverty alleviation process. In this regard, Microfinance Institutions are found in many countries in order to take on a continuous course of action for alleviating poverty. Grameen Bank of Bangladesh is Pioneering NGO in this regard while subsequently BRAC, Proshika and ASA International also came into being with the objective of eradicating poverty as their mission (Hossain, 2012). Khandker and Samad (2013) show that in the long term access to microfinance has helped increase income, consumption and assets for MFI members.

Microfinance took roots in Pakistan in 1970s with the establishment of Agriculture development Bank of Pakistan (ADBP) to serve rural farmers by providing them with subsidized credit (Rauf & Mahmood, 2009). Basic objective behind introducing microfinance was the welfare of the poor. With the passage of time, somenon-governmental organizations (NGOs) like Agha khan rural support program, Punjab rural support program, SUNGI Foundation etc. took roots in the field of microfinance to serve theunbankables. Khushali Bank pioneered in the field of microfinance in Pakistan as it was the first microfinance bank founded in year 2000. Microfinance Ordinance and Prudential Regulations were introduced in the countryin 2001 (Shah, 2001, p. 03). Pakistan is among those few countries around the world having legal and regulatory framework for microfinance banks (Allen & Overy LLP, 2009).

In the world of financing, Islamic finance has flourished enormously with a significant trend (Gustina & Ihsan, 2010). This is not majorly because of growing demand of Islamic finance among the Muslims but because it has played its role pretty well at the global level and has contributed extensively in the global GDP (Gustina & Ihsan, 2010). Iqbal & Molyneux (2005) stated that Islamic banking has been found as the rapid growing industry compared to other industries and it has shown double digit growth in past 30 years. The estimated global assets of Islamic finance industry are $500.5 billion.

State Bank of Pakistan is promoting Islamic banking so that it may emerge as strong system which can compete with and work parallel to conventional banking and play its major part in the economic and social development of Pakistan. She has formulated guidelines for providing Islamic microfinance services (SBP, n.d.). These guidelines have specified four types of institutional arrangements that are entitled to offer Islamic microfinance (Allen & Overy LLP, 2009).

It has been observed that 72% people of Muslim majority countries avoid financial services. Islamic microfinance has only half percent of total microfinance global outreach (ADB, 2009). Moreover, 59% women are the beneficiary of IMF. As interest is strictly forbidden in Islam therefore most of the practicing Muslims try to avoid conventional microfinance. According to a study undertaken by ADB (2009), 80% of the respondents interviewed claimed to avoid interest. It, further, demonstrates that most of them borrowed from their friends and relatives in pursuit of Halal method of borrowing.

Jaffari et al. (2011) observed that 80% of the respondents belonging to Lahore, Karachi and Islamabad cities of Pakistan considered loans disbursed by conventional microfinance institutions as un-Islamic. Therefore we have calculated the potential Islamic microfinance market of 20 to 24 million borrowers in Pakistan. Moreover, similar kinds of results were observed by different international organization during the surveys

to know the preferences of the people of different Islamic countries. In this regard, 20–40, 60, 40, 43–46 and 49% respondents of Jordan, Gaza, Yemen, Syria and Indonesia respectively, prefer Islamic Microfinance (ADB, 2009).

Islamic microfinance is the convergence of Islamic finance and microfinance. Both of them are emerging industries in Pakistan. It has immense potential to amalgamate the Islamic principle of caring for the poor and miserable with the microfinance's mission to reach the poor and give them financial access. The total assets of Islamic microfinance industry are estimated at US$500.5 billion. According to a survey by CGAP, Islamic MFIs reach 300,000 clients through 126 institutions operating in 14 countries and an estimated 80,000 clients through a network of Indonesian cooperatives. Provision of Islamic microfinance is concentrated in only few countries. 80% of the total worldwide reach of Islamic microfinance is concentrated in Bangladesh, Indonesiaand Afghanistan.

According to Pakistan Microfinance Network, microfinance activity is performed by 11 Microfinance Banks (MFBs), 11 Microfinance Institutions (MFIs), 5 Rural Support Programs (RSPs) in Pakistan. Despite special focus of nongovernmental organizations and public sector institutions like Benazir Income Support program (BISP) on poverty alleviation and socioeconomic uplift of the deprived there is dearth of literature available on impact assessment of suchinstitutions. Islamic Microfinance is different from the conventional one with respect to its interest free mod of financing. There are variety of Islamic Microfinance products (Qarz e Hassan, Murabaha, Mushrqa, Istisna, Bai Salam etc.) disbursed by different organizations in the market to support unbakables. Our target institutions in this study i.e. Akhuwat foundation is providing QArz e Hassan, Farz. This study has been devised to quantify the impact of three Islamic Microfinance institutions (Akhuwat Foundation, Farz Foundation and NAYMAT) on social welfare of their clients.

Objectives of the study

Following are the major objectives to be achieved in this research work.

1. To determine the impact of IMF services disbursed by target organizations onpoverty levels and socioeconomics of the households in the study area.
2. To observe the association between poverty and other variables of interest.
3. To test the impact of management attributes on poverty alleviation.

Literature review

In the world of financing, Islamic finance has flourished enormously with a significant trend (Gustina and Ihsan, 2010). Iqbal and Molyneux (2005) stated that Islamic banking has been found as the rapid growing industry compared to other industries. Islamic microfinance is embracing predominantly the welfarist approach and has only half percent of total microfinance global outreach (ADB, 2009). Moreover, 59% women are the beneficiary of IMF (ADB, 2009, p. 27). Islamic microfinance is the convergence of Islamic finance and microfinance. Both of them are emerging industries in Pakistan. It has immense potential to amalgamate the Islamic principle of concern for the poor and miserable with the mission of microfinance to reach the poor and give them financial access.

Khan (2008) stated that the foundation on which Islamic financing practices are based is that "money is not an earning asset in itself". Therefore, poor should be provided access to funds on interest free basis. Laila (2010) argued that the purpose behind developing microfinance was to provide access to funds for the poor but these kinds of conventional financial services are not fit for the poorest and the destitute. She reported that there is quite a big number of rural poor who are not likely to be touched by conventional microfinance and therefore no chance of improving their lives. In comparison to conventional microfinance, Islamic microfinance specifically spots the poorest of the poor specially those institutions which make use of Zakat and Sadqa.

Schmidt (2010) reported that motivating factors i.e. social welfare and development of poor have been lost in the midst due to the commercialization of many microfinance institutions. Abdul Rahman (2010) argues that Islamic finance has some ethical characteristics in it which can be successfully used for the well-being of the oppressed people. According to him Islamic finance can offer various ethical instruments and schemes for microfinance which are having ethical and moral features and therefore can be more effective and profitable.

As outreach is considered as one of the goals of microfinance, therefore, the two perspectives of microfinance, i.e. welfarist and institutionalist perspectives (Robinson, 2001; Fisher and Sriram, 2002; Woller et al., 1999; Morduch, 2000), are based on achieving outreach. Providing financial services to the poor along with the financial sustainability of the institution is the key purpose of Institutionalist approach. This approach is market-oriented which excludes the extreme poor and any social impact is taken only as the by-product of the whole process. This approach believes in the notion that poor are not only creditworthy but also profitable. This approach focuses on breadth of outreach (numbers of clients) and financial sustainability where savings mobilization is an important feature. This approach advocates commercialization of the institutions in order to achieve larger outreach for long terms (Robinson, 2001). Institution is the center of attention and success is determined by the financial profits and sustainability.

Instead of 'end', i.e. outreach, institutional approach is centered on 'means', i.e. sustainability, to reach the target and this could also hamper the accomplishment of target itself by being more focused on sustainability then the poor (Robinson, 2001). Institutionalist approach is criticized for overlooking the goal of reaching the poor thus marginalizing the poorest of poor and emphasizing largely on sustainability (Fisher and Sriram, 2002). It is argued thatsocial and profit-making objectives need to be balanced which can be realized when client and market needs are in equilibrium (Wrenn, 2005).

Poverty mitigation and empowering the poor are recognized as the chief aims of Welfarist approach which makes the welfare of the poor its foundation. This approach focuses on the depth of outreach (levels of poverty reached) and its resulting social impact for poor. Credit is considered as a means to an end where 'end', i.e. outreach, is more important than 'means', i.e. sustainability. Their interest is not in banking rather in alleviating poverty among the clients, including the poorest of the poor, by using financial services. They insist that emphasizing upon the depth of outreach is the key to building a sustainable institution. This approach does not take savings mobilization as compulsory feature and is not much excited about money-making and sustainability.

This approach has been criticized by many researchers as microfinance institutions might run into loss without sustainability which could lead to less number of poor to be served and even shutting down (Robinson, 2001; Woller et al, 1999; Rosenberg 1994, p. 2). In Robinson's (2001) point of view "even successful institutions following the poverty lending approach, in aggregate; can meet only a small portion of the demand for microfinance". Taking this into consideration it could be safely said that sustainability is very important as, in Woller's (1999) words, "donors would not offer long-term funding". Savings have been overlooked (Vogel, 1984) which are even more important for poor. Robinson (2001) also stated that welfarist approach offers only credit to its clients for poverty alleviation where savings and insurance are also significant for achieving this goal of poverty eradication.

Although many microfinance institutions around the world are practicing both approaches nonetheless there exists a huge rift between them. Both approaches are needed in today's scenario as welfare is the key goal which cannot be achieved without sustainability. Therefore a possible combination is required where both work together. It is argued in literature that such services are required to be designed that retain high standards of profitability and embarking upon new standards in social impact of this activity (Wrenn, 2005). Institutionalist approach argues that the fundamental aim of microfinance is to build a financial system that is sustainable and that can provide financial services to greater number of poor. The impact, this system brings in the life of borrower, is not their concern. Impact studies are being emphasized upon by welfarist approach to measure the changes in the living condition of borrower after lending. This paper supports welfarist approach and is an impact study of Islamic microfinance institutions working in Pakistan.

Malik (1996) conducted a study in a village of Punjab called Wanda in Pakistan. He picked up landholdig, assets possession, family members per house hold, education, age and gender as the variables in order to find out their role in alleviating poverty in rural areas. He has used FGT poverty measures for analysis in her study. He reported that education level, size of household and landholding affect significantly the per capta income of rural household. A household will be at less risk of falling below poverty line if it has enough opportunity to get and use productive assets like tube well and tractor, less house hold members, higher education level, larger area of land for cultivation and has also been involved in some non-farm activities for earning income.

Chaudhry (2009) cocluded in his study that poverty level in rural parts of Southern Punjab in Pakistan can be reduced by lessening the size of household, getting the education level of poor better, by increasing the number of assets possessed by each household, by increasing the contribution of females in labor force and by improving condition of the access of labor to market. He recommended in his study that government should improve the condition of existing infrastructure and should pay attention to constructing some basic infrastructure for rural areas in Southern Punjab. Moreover, government should develop other facilities that improve the access of rural labor to market.

Malik (1996) hypothesize in his study that the higher the total no. of family members the greater is the chance of the household to fall below poverty line. He stated that it is best to invest in people in terms of education. Moreover, he observed that difference in education level has the characteristic of standing people apart from each other in terms of grabbing employment opportunities. Therefore, the greater the education level the

greater is the chance of getting employed. He alsoa argued that gender and age played significant role in building attitude towards income generating activities. According to him, age play quite important role, as is played by gender, in finding out per capita income in a less developed country like Pakistan. He assumed that age and per capita income are positively related in age group ranging from 25 to 45 years while beyond this range, the positive relationship turns negative.

A study conducted by Achia et al. (2010) used Demographic and health survey to identify the socioeconomic condition of the household which they in turn used to determine the poverty level. It is suggested in their study that taking assets as a measurement of poverty is better then taking income or wealth as a determinent of poverty since assets are long run wealth while income is short run. They also reported that education level has significant impact on poverty as likelihood of remaining poor diminishes with the increase in education level. It is stated in the study that age is an important demographic factor and poverty level increase with the age of the family head. Results of their study showed that poverty level increases with the increases in household members. The greater the household members the higher will be the poverty level. They consider as an important demographic factor which directly proportional to the level of poverty. Poverty level increase with increase in the age of househols head.

Research study conducted in India by Hassan (2014) concluded that the household income of the recipients is improved by islamic microfinance. A research study is condeucted in Malaysia by Samer et al. (2015) regarding finding the impact of microfinance on reducing poverty. This studyreported that household income of the recipients is positively affceted by microfinance.

With the intention of boosting up the socioeconomic conditions of rural areas of Bangladesh through shariah based microfinance, "Islami Bank Bangladesh Limited (IBBL)" initiated a scheme in 1995 named "Rural Development Scheme (RDS)". Rahman (2010) took a sample of 1020 respondents and reported that a significant number of respondents are observing their religion better than they used to do in past. He observed that this behavioral change in clients of IBBL along with access to microfinance has influenced their income, crop productivity, empoyment and expenditure in a positive way. He concluded that Islamic microfinancing program created a kind of behavior that is ethical and economically desirable and is required along with financing to alleviate poverty.

Studies conducted in Sri Lanka on projects regarding islamic microfinace concluded that recipients had been able to upgrade their living standard (Jariya, 2013). Morshid and Abdullah (2013) conducted a study on the effetiveness of islmic microfinance in Brunei Darussalamandstated that the islamic microfinance project of Department of CommunityDevelopment (JAPEM) has strong effect in increasing number of assets for the clients.

Methods

Current study is an effort to evaluate and observe the impacts of various Islamic modes of financing on household welfare of the poor of Pakistan. It is noteworthy here that to evaluate the performance of the target institutions pre and post project evaluation approach is implemented. Respondent having borrowed from the organizations with minimum period of at least two or more than threeyears to better gauge the impact of microfinance due to the stylized fact of developmental project evaluation after 4–5 years

of its intervention in some area. Moreover, Farz Foundation, one of the target institutions started its operations about 2 years prior to execution of current study, therefore, aforesaid minimum timeframe was decided to take up this impact assessment study. Three Islamic microfinance institutions were selected namely, Akhuwat Foundation, NAYMET (NaziranYousaf Memorial Trust), and Farz foundation. Proportionatesampling selection method was adopted from the overall population (i.e.475) of the clients. Moreover, 112 out of 320 from Akhuwat Foundation, 31 out of 85 from Farz Foundation and 25 out of 70 from NAYMET were selected on the basis of size of each particular organization at the time of data collection.

Clients of these institutions are selected with purposive non-probability sampling technique. It is used when respondents are selected through deliberate judgments with respect to particular group or area (Kerlinger, 1986). It is evident form literature that purposive sampling can yield reliable outcomes (Guarte & Barrios, 2006; Tongco, 2007; Karmel & Jain, 1987; Topp et al. 2004). In purposive sampling, sample is confined to certain type of people who either have the required information or they match the criteria laid down by the researcher (Sekaran & Bougie, 2010). Data is collected through face to face interviews. Pre and post project approach was used to quantify the impact of microfinancing through target organizations. In this regard, some selective indicators were adopted from MillenniumDevelopment Goals/Sustainable Development Goals like poverty/Income/expenditure, health and education expenditures along with households' assets (i.e. basic necessities of life). Monthly data were collected about the said income and expenses.

As far as data analysis is concerned, descriptive statistics to study means and percentages of target indicators and paired sample t test to gauge differences in pre and post borrowing scenarios were applied. Moreover, Multiple linear regression were employed to observe relationships between demographic indicators (i.e. age of household head, gender of household head, education of household head, family size) loan amount, management attributes and monthly income of target households. Management attributes was used as a composite variable. It is comprised of various levels of education, training and book keeping rendered by the target respondents. We assigned 0 to illiterates, 5 to primary, 10 to middle and 15 points to matriculate and above levels of education. Moreover, we gave 5 points each separately to the respondents who got training to run their business and exercise book keeping, respectively, otherwise zero. Prior to run the regression analysis in Statistical Package for Social Sciences (SPSS 20), all of the econometric assumptions were tested and fulfilled.

Furthermore, Binary Logit Model was used to gauge the probability of the respondents being poor (yes = 1/no = 0) estimated by head count method of poverty. In addition to the independent variables used in multiple linear regressionmodel, dummy of family members involved in the businessother than household head (yes = 1/no = 0) and dummy of someone from community (yes = 1/no = 0) were also included in this model. Logit model does not need large number of assumptions like multiple linear regression model but following pre-requisites of the model were fulfilled i.e. a) dependent variable was dichotomous b) linear relationship between continuous independent variables and logit transformation of dependent variable was tested c) multi-collinearity was checked between the target indicators. Moreover,maximum likelihood method of estimation was undertaken to gauge the relationships between dependent variable and odd ratios of independent variables.

Results and discussion

This part of the paper exhibits descriptive analysis, paired sample *t* test and regression analysis to highlight the results of the study. Though major target of the study is to observe the impact of Islamic Microfinance lending to its clients but comparisons amongst targeted organizations has also beenmade as per objectives of the study.

Table 1 exclaims the facts regarding literacy levels of the target household heads in the study area. It is evident from the table that 96 clients (57%) out of 168 were found fully illiterate. Comparingdifferent organizations under study it is found that Akhuwat-Foundation targeted overwhelmingly literate clients (52%) followed byNAYMAT (32%) and Farz Foundation (19%), respectively.

Targeting only females can be a big reason of larger percentage of illiterate clients in case of Farz Foundation and NAYMAT. As Akhuwat Foundation is targeting the whole family, therefore, they have more male clients as compare to others. More male clients means high proportion of literate clients.

Table 2 corroborates overall average funds (Rs. 18,830) disbursed by the target institutions to their clients. Comparing mean amount of funds disbursed by different organizations under study, it is obvious that AkhuwatFoundation is lending highest average loan (Rs 21,375) followed by NAYMAT (Rs. 16,120) and Farz Foundation (Rs. 11,823), respectively. The reason behind largest mean lending by AkhuwatFoundation may be her strategy to lendmore than once to the successful entrepreneurs while NAYMAT and Farz Foundation lend only once. The red bars in Table 2 display standard deviation of lending amount of the target organizations.

Table 3 expresses transition in social welfare of the target clients from pre to post borrowing scenarios on the basis of paired sample *t*-test. It is depicted by the (Table 3) that all of the selected social welfare indicators performed very well in postborrowing scenarios. Moreover, monthly households' income was significantly increased from Pre (Rs 11,271) to Post borrowing (Rs 25,587) arena. However, similar trends were also observed in overall monthly expenditures, expenses on food items, investment on children education and outlays on better health facilities, respectively. All of the aforesaid indicators, in this regard, were found statistically significant at 1% levelsshowing that Islamic Microfinance clients areliving in far better socioeconomic conditions after investing borrowed amountson their microenterprises. Thus financially supportedmicroenterprises through micro Islamic loans can be a good option to get rid of deprivations.

These results are in line with work of Coleman (2002) who also reported positive impact of microfinance activities on the income of borrowers. The results are exhibiting a convincing rise in the welfare of the Islamic microfinance clients after taking loan.

Table 1 Literacy rate of respondents

Literacy among respondents	Akhuwat Foundation	Farz Foundation	NAYMET	Total
Literate				
Primary	38	3	6	47
Middle	17	0	1	18
Matriculation & above	3	3	1	7
Total literate	58	6	8	72
Illiterate	54	25	17	96

Table 2 Descriptive statistics of mean loan amount

Sample of 30% respondents.							
Sr. No.	FGT of 30% sample of our sample	National poverty line		Calories based poverty line		International poverty line (1.25$)	
		Before	After	Before	After	Before	After
1.	Head-count Index	24	0	45	25	95	29
2.	Poverty Gap Index	4	0	9	5	39	6
3.	Squared Poverty Gap Index	1	0	3	1	19	2
Sample of 33% respondents.							
Sr. No.	FGT of 33% sample of our sample	National poverty line		Calories based poverty line		International poverty line (1.25$)	
		Before	After	Before	After	Before	After
1.	Head-count Index	24	0	47	24	95	28
2.	Poverty Gap Index	5	0	10	5	40	5
3.	Squared Poverty Gap Index	2	0	3	1	20	2
Sample of 35% respondents.							
Sr. No.	FGT of 35% sample of our sample	National poverty line		Calories based poverty line		International poverty line (1.25$)	
		Before	After	Before	After	Before	After
1.	Head-count Index	26	0	47	26	95	29
2.	Poverty Gap Index	6	0	10	5	41	6
3.	Squared Poverty Gap Index	2	0	3	1	20	2

Poverty assessments of three samples out of actual sample. Source: From Survey Data

However, comparing target organizations understudy in terms of mean changes in pre and post scenarios in the target indicators, it is revealed thatAkhuwat foundation performed better in 4 indicators (i.e. Income, expenditures, assets and health) than other 2 while mixed results were observed from clients of Farz Foundation and NAYMATin other indicators. However, the differences amongst the performance of target institutions may be due to their different lending methodologies and organizational operations and product differences. Akhuwat Foundation is using Qarz E Hassan mod of Islamic Microfinancing while NAYMAT and Farz Foundations used Murabahamode of lending.

Assets

Coleman (2002) reported in his study that microfinance has affected considerably and positively the household assets. Filmer and Pritchett (2001) also used assets in their study as a variable to measure income or wealth. Moreover, in the report of UNCDF (2004), assets are considered as an indicator to judge the impact of micofinance. Therefore, assets are also used in this study as an indicator of household welfare to measure the impact of islamic microfiannce. Table 4 shows the results of assets possessions in pre and post borrowing scenarios from the target institutions. The possession of assets shows that there is quite a huge difference in possession for some assets while for some others there is less or no difference at all.

Table 4 delineatesbiggest positive difference is found in Bicycle, washing machine, sewing machine and gas cylinder. While less change is found in the possession of motor cycle, TV and refrigerator and very less or no change is found in the possession

Table 3 Impact of Islamic microfinance on household's welfare (*t*-test Results)

Variables	Mean before taking loan	Mean after taking loan	Mean difference	*P*-Value
Total				
Monthly income	11,271	25,587	−14,316	.000
Monthly expenditure	14,091	25,062	−10,971	.000
Monthly food expenditure	10,640	17,132	−6492	.000
Assets	1.0298	3.0595	−2.02976	.000
Education	62	389	−327	.000
Health	527	1506	−980	.000
Akhuwat				
Monthly income	9749	24,002	−14,252	.000
Monthly expenditure	11,715	23,370	−11,655	.000
Monthly food expenditure	8509	15,205	−6696	.000
Assets	.8571	2.8839	−2.02679	.000
Education	51	321	−270	.000
Health	474	1551	−1078	.000
Farz Foundation				
Monthly income	14,568	30,540	−15,972	.000
Monthly expenditure	20,204	29,768	−9564	.000
Monthly food expenditure	15,983	22,071	−6089	.000
Assets	1.0968	3.5161	−2.41935	.000
Education	103	526	−423	.000
Health	690	1529	−839	.000
NAYMET				
Monthly income	14,000	26,550	−12,550	.000
Monthly expenditure	17,285	26,881	−9596	.000
Monthly food expenditure	13,563	19,642	−6079	.000
Assets	1.7200	3.2800	−1.56000	.000
Education	60	524	−464	.000
Health	562	1276	−714	.000

of assets like car, PTCL landline, microwave, toaster, sandwich maker and air conditioner. It means borrowing for microenterprise development or strengthening existing ones affects the lives of clients in a positive manner. Table 4 displays that the increase inhouseholds' income after taking loan (Table 3) resulted in an increased percentage of possessions of assets. This shows that poverty also isassociatedwithlackofasset ownership (Etim & Edet, 2014; World Bank, 2002). Poor people get better-off after taking loan with respect to their asset possession. Increased percentage of asset possession after taking loan explains that asset holding, no matter how small or insignificant it is, can bring transformation in the life style of a household and make their life more comfortable.

Regression analysis

Regression analysis is applied in order to find out the impact of different predictors on the two outcome variables i.e. total income and poverty in two different econometric

Table 4 Overall descriptive statistics of assets

Asset/Institutions	%age of possession before taking loan			%age of possession after taking loan		
	Akhuwat Foundation	Farz Foundation	NAYMET	Akhuwat Foundation	Farz Foundation	NAYMET
Car	0	0	0	2	0	0
Motor Cycle	0	0	0	10	26	20
Bicycle	2	10	20	38	52	36
Washing machine	13	13	20	43	58	40
Sewing machine	2	10	24	52	45	72
TV	11	13	16	19	48	36
PTCL	0	0	0	0	0	0
Refrigerator	0	0	8	10	19	16
Gas cylinder	4	13	24	58	42	48
Microwave	1	0	0	0	3	0
Toaster	0	0	0	0	0	0
Sandwich maker	0	0	0	3	7	0
Air conditioner	0	0	0	1	3	0

models. In order to test the impact of independent variables on dependent variable (i.e. total income of the households) multiple linear regression has been used. Moreover, all of its assumptions were tested and fulfilled including multi-collinearity amongst independent variables, normality of the data, homoscedasticityetc.

Table 5 delineates the results of multiple linear regression model. It contains five independent variables namely age of household head, gender of household head, family members of respondent, loan amount borrowed from the Islamic microfinance institution and the management attributes.

Positive and negative values of βin the model show direct and inverse relationships between independent and dependent variables of our study. Three out of five predictors (i.e. age of household head, family size, and management attributes/level) show positive relationships with outcome variable which means increase in the values of these variable rise monthly households' income while gender of household head and loan amount displayed negative relationship with dependent variable in the model. It is worth mentioning that the relationship of gender of household head is interesting, showing significantly different total household income in case of males and females headed households. Results

Table 5 Multi linear regression

Model	B	*P*-value	Collinearity statistics	
			Tolerance	VIF
(Constant)	13,078.81	.000		
Age	74.79	.107	.795	1.258
Gender	−3207.6	.000	.858	1.166
Family Size	215.01	.371	.940	1.064
Loan amount	−.15	.001	.871	1.148
Management attributes/level	153.40	.014	.804	1.243

F = 11.521, *P*-Value = 0.000
R2 = .262
Dependent variable: Total income

in the table depicts that female headed households earn Rs3207 higher income than male headed households. This means women are more likely to spend loan in an effective way. These results match with the results of Pitt et al. (2003), who reported in their study that borrowing by females shown positive impact on the health of children while borrowing by males shown either none or negative impact on their children health. Furthermore, one unit increase in management attributes raise Rs 153.4 per month income which is also statistically significant.

However, regression result of age is statistically insignificant but this insignificance level is extremely meager that it can be used for some valuable policy recommendations. Increase in the age of the borrower increase the per month income earned by the households. This is because the young people normally do not take things seriously but as they get older, things change instantly. As a cultural bindings, when they got married, have children and they have to support their family and parents. This situation makes them increase their income. Apart from this, in a developing country like Pakistan, people usually work till late age especially if he or she belongs to poor family.

As far as the impact of loan amount on total monthly income of the households is concerned, it is evident from the (Table 5) that there is negative relation between them. Total income rises by Rs. 0.151with one rupee reduction in loan amount disbursed by the target Islamic Microfinance institutions. It is already mentioned in the study that the average amount of loan offered by Akhuwat Foundation,NAYMET and Farz Foundation is Rs 21,375, Rs. 16,120 and Rs. 11,823respectively. Table 3 portrays that the average amount of income earned, after taking loan, by a household is 24,002, 26,550 and 30,540 for the clients of Akhuwat Foundation, NAYMET and Farz Foundation respectively. These results indicate that the higher the loan amount the lower is the amount of income generated. Akhuwat Foundation lends highest average amount of loan (Rs. 21,375) which generates lowest average amount of income (Rs. 24,002) while Farz Foundation offers lowest average amount of loan (Rs. 11,823) which generates highest average amount of income (Rs. 30,540). This is the reason that loan amount is in inverse relationship with income (Table 5). The inverse relationship between loan amount and total income seems surprising but it can be better understood and justified by law of diminishing returns (i.e. increase in output is proportionately smaller as compared to input after a certain level). Therefore it will be worth investigating in some future research endeavor to observeand estimate appropriate amount of loans for better socio-economic uplift of the society.

However, F (11.521) and *P* values (less than 1%) of the modelare showing that it is highly fit and statistically significant, respectively. The value of R^2(.262) in the model highlight the overall change in income due to the predictors used in the model. Thisis low due to the fact that, apart from the variables in the model, income is affected by many other factors thereforewe cannot say that few variables affect it completely. Rahman (2010) also stated in his study that income depends on many socioeconomic factors.

Table 6 shows results of probability of being poor (Poor yes = 1, NO = 0) of target households after taking loan from Islamic Microfinance Institutions using Logit Model.

Independent variables has been used in logit model are about same as presented in multiple linear model in this paper with the exception of family and community employment and income. Results exhibit that age and management attributes of the households'

Table 6 Logit analysis

Model	B	*P*-Value
(Constant)	−1.187	.604
Age	−.105	.022
Gender	−.034	.954
Family size	1.514	.000
Management attributes	−.258	.000
Family involved	.359	.533
Employed someone else	−1.289	.132
Loan amount	−.465	.237
Income	−1.313	.000

LR chi2 = 88.06
Prob > chi2 = 0.0000
Pseudo R2 = 0.4608
Dependent variable: Poverty

headand absorption of community and family employment in the microenterprises negatively affect probability of being poor of the target households. This implies that with the increase in the aforesaid indicators probability of being poor decreases. However, impacts of age and management attributes of the households' heads on poverty are quite meaningful due to their statisticallysignificant results. Moreover, dummy of gender in the model corroborates that probability of being poor is less than male headed families in the women headed households, this result is statistically insignificant. Datt and Jolliffe (1999) and Chaudhry (2009) also reported that demographic factors matter while determining the wellbeing of the people.

Probability of being poor significantly increases with the rise in family size of the target households. One unit increase in the family size raises household's odds of being in poverty by 1.514 times with all other predictors constant. The smaller thefamily size, the less are the odds of household being poor. It is consistent with the result of Chaudhry (2009) who stated that chances of an individual or the household to be in poverty increases if the size of household is large. Moreover, one unit increase in the management level/attributes decreases household's odds of being in poverty by 0.258 times with all other predictors constant. On the other hand impact of income on poverty is significant (p = .000) and its negative β value reflects that one unit increase in income level will decrease the odds of poverty to occur by 1.313 time with all other predictors kept constant.

For this model, F is 11.521 which is significant at less than 1%. The likelihood ratio chi-square of 88.06 withp-value of 0.0000 suggests that our model, as a whole, fits significantly. The value of Pseudo R2 is 0.4608 shows that our predictors account for 46.08% of change in our outcome. The results of this model are closely related to UNCDF (2004) who took up four factors to measure the impact of Islamic microfinance on clients and found positive results in terms of poverty reduction.

Conclusions

It is evident that there is no single answer for the impact of Islamic microfinance activities on poverty. Islamic Microfinance activities have, definitely, affected positively the lives of poor. This positive impact is depicted in positive differences in income and the

resultant expenditure before and after taking loan. Though, in few cases this impact is not significant or limited. Differences in assets possession, health and children education expenditure, before and after taking loan have highlighted the positive effect of Islamic microfinance on the livelihood of poor. This study has identified that Islamic micro financing through assets can be very successful. Our collective findings suggest that Islamic microfinance institutions are not gender biased. It could be concluded that loans should be provided in small amounts over the period of time in the form of installments as smaller loans increase the level of income. The more the loan amount, the higher is the chance of spending it somewhere else. Moreover, providing the clients with training and asking them for book keeping bring positive results. Furthermore, Islamic microfinance creates value to promote economic and social development, employment and growth through the support of micro-entrepreneurs and small businesses while creatingrelationship-based depository for all such as, the industry, the government andthesociety. Moreover, research needs to be conducted to find out the impact, outreach, management practices and efficiency of Islamicmicrofinance in different environments. This study has important implications for the Government of Pakistan. Up till now, Government does have taken steps by announcing its policy for Islamic microfinance through SBP. But no initiative has been made in order to provide interest free funding facility for Islamic microfinance institutions. Government should take some initiative in this regard.

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Authors' contributions
HZM laid out the whole pattern of the paper, explained the methodology to be used. MF was the main person who collected, compiled and analyzed the data and KA was responsible for finally editing the main manuscript and completing it. HZM and KA were responsible for finally reviewing the paper, and suggesting improvements. All authors read and approved the final manuscript.

Competing interests
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Author details
[1]COMSATS Institute of Information Technology, Lahore, Pakistan. [2]Department of Management Sciences, The University of Lahore, Pakpattan Campus, Pakistan.

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