

**EXPLORING CAUSAL LINKAGE BETWEEN HOUSEHOLD  
INCOME AND MICROFINANCE LENDING:  
A CASE STUDY OF MIRPURKHAS, SINDH**

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**ABSTRACT**

*The paper intends to correlate changes in household income due to micro lending in the shape of microfinance services provided by Microfinance Providers (MFPs) to rural people. The study is conducted in the selected villages to assess the performance of microfinance lending in Mirpurkhas, Sindh. For this study the villages were purposively selected where microfinance interventions in the shape of micro loans by Microfinance Banks (MFBs), Rural Support Programmes (RSPs) and Non Government Organizations (NGOs) took place in the past. The study explores and attempts to confirm a positive relationship between the rises in household income and microfinance lending availed by those households. The supposition has been made that the micro lending provided the ample opportunities including expansion of businesses and played significant part in raising household incomes.*

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**INTRODUCTION**

Microfinance lending provides initial capital for investment and plays important role in income generation for rural poor in Pakistan. In Sindh province the micro loans were introduced by NGOs and RSPs in the early 1990s on participatory development approach. Those smaller loans increased the household incomes and provided the base of household welfare (Khan, 2009).

Microfinance is the provision of financial services to low income and poor people who are self-employed. The financial services in microfinance generally consist on savings and credit. Some organizations also provide insurance and payment services and in addition, the social intermediation services, like group formations and trainings are also provided to clients of microfinance in world (Ledgerwood, 1999). Microfinance provides

financial services for poor and low income clients offered by different types of service providers. In practice the term is often used more narrowly to refer to loans and other services from providers that identify themselves as microfinance institutions. These institutions commonly tend to use new methods to deliver small loans without or little collateral (CGAP, 2013).

One group of studies argue that microfinance is positive and effective measure of income generation and poverty reduction but other group of studies argued that microfinance has not played significant role in poverty reduction and income generation of poor households (Kandker, 2005 & Bateman, 2008). There are also some studies that accept the positive role of microfinance in income generation and improvement of socioeconomic conditions of poor up to some extent (Ghalib *et.al.*, 2012, Montgomery, 2006). There is also criticism on microfinance at international level that it is not reaching the poorest of poor and its all loan are not used for only investment purpose as argued by larger microfinance institutions and their leaders (Hulme & Arun, 2011).

This paper intends to test the supposition that there is significant relationship of microfinance lending with income stability and rise at household level.

## LITERATURE REVIEW

In conventional banking system the low income and poor people had no access to credit and other financial services. The concept of microfinance and banking for poor flourished in world after the successful operation and performance of Grameen Bank in Bangladesh. After that many stake holders appeared on screen in developing countries. Microfinance services in Asia are provided at larger basis and microfinance institutions are managing the huge portfolio since 1990 with well outreach (Weiss & Montgomery 2003).

In one of the study conducted in Ghana found that the income of microfinance participants was increased due to the provision of microcredit. The study noted an increase of \$ 36 in monthly net income of microfinance participants as compared to \$18 for non participants. The provision of micro loans enabled poor people to

secure their livelihoods against shocks and helped in building capital (MkNelly *et.al.* 1998). The provision of microfinance has positive effect in the household income of participants. The provision of microloans enhances the income of households and paves the way of higher economic returns. Microfinance plays significant role in the raise of household income as it is observed that in short period of time, the income of participant households increased and stabilized. In one of the study conducted in Thailand revealed that 68 microfinance clients who remained for one year in the concerned microfinance program had higher incomes as compared to 60 randomly selected non participants (Morduch 2002).

In another study conducted on the borrowers of two oldest microfinance banks of Thailand it was noted that 97% of the members of program believed that their income was raised between \$ 40 and \$ 200 annually due to participation in the micro lending program of banks (Nelson, *et.al.* 1996). The poor and low income people in Pakistan generally relied on informal sources of credit, like landlords, money lenders, commission agents and family or friends. The microfinance is proved to be an alternate for poor households to get financial services in this situation. The provision of microfinance in poor and low income households of Pakistan has raised their income and created employment opportunities (Hussein, 2009). In Pakistan, Microfinance Industry growth is remarkable after 2005 when the national and international Microfinance Providers (MFPs) emerged in this sector. In Pakistan there are three different types of MFPs working in the industry, like Rural Support Programs, Microfinance Banks and Microfinance Institutions. There were more than 1,970 branches of different MFPs were working in Pakistan. There were more than 2.5 million active borrowers including 57% female borrowers and the gross loan portfolio was 43,485 rupees. In which Khushhali Bank Limited (KBL) and National Rural Support Program (NRSP) were major contributors in the microfinance portfolio (PMN, 2013).

Microfinance plays significant role in rising of household income of poor because it provides the capital for required inputs

for agriculture, livestock and micro enterprises. Agriculture is the main and primary source of livelihood for rural households of Pakistan. The 40 percent of the rural households get their income from agriculture. The average income of household from agriculture mostly generated from crops and their by products. The livestock sector is also main contributor and in current situation the income is generated from the fattening of animals for commercial purpose and selling of milk and other poultry products in livestock sector. The micro and small enterprises are also source of earning for rural households in the shape of small shops of confectionary, fruits and vegetables (PMN, 2006).

In Pakistan MFPs are providing micro loans and other financial service to low income and poor households with an approach for enhancing income generating opportunities and sustainable business growth. The larger and increasing microcredit portfolio of MFIs in Pakistan provide the basis of empirical research and explores the relationship between microfinance lending and household income. In Pakistan there are few studies to assess the role of microfinance provision for low income households. Most of the research studies about microfinance provision and the intended benefits of microcredit have been in the shape of ad hoc studies conducted through some NGOs and donor agencies.

#### **METHODOLOGY**

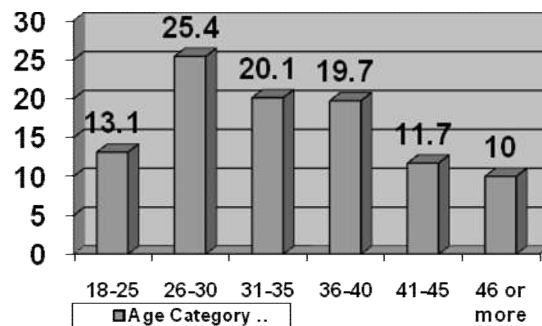
This study has taken 350 participants from randomly selected villages of Mirpurkhas district in Sindh province of Pakistan where microfinance services were available to participants. Two groups of participants included in analysis. The one group consisted on 250 sample clients of microfinance taken as treatment group and 100 samples of non microfinance clients as a control group from same villages. A structured questionnaire was developed and used to collect information of participants for the planned study. To describe data, mean and standard deviations for continuous variables and frequency and percentages for categorical variables were computed. In order to analyze the relationship of

microfinance lending with household income we have utilized multiple linear regression model in analysis.

## RESULTS AND DISCUSSIONS

There were 350 participants included in the analysis and from the total respondents 80.6% were males and 19.4% were females. Figure 1 shows the age categories in study participants.

**FIGURE-1**  
**AGE CATEGORIES IN STUDY PARTICIPANTS, N=350**



**Source:** Survey Data 2011/12

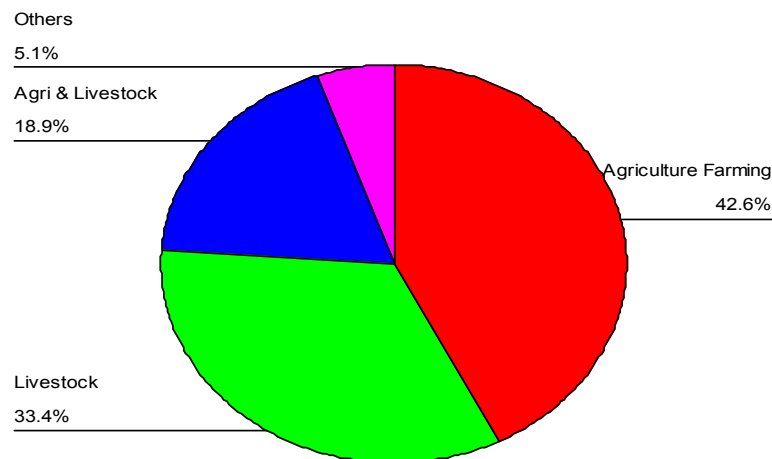
The largest group of participants consisted of aged group 26-30 (25.4 %) followed by the age groups 31-35 (20.1 %) and 36-40 (19.7 %) respectively. The three age groups 18-25 (13.1 %), 41-45 (11.7 %) and aged 46 or more (10 %) were showing approximately same proportion in study sample. The study sample showing the target group of microfinance market falls between 18 years to 45 years of age.

### ***Sources of Incomes in Rural Household***

In study area the majority of the population is dependent upon agriculture and related activities. The agriculture farming was main business and the majority was earning income from livestock and crops. The enterprise business was not popular in the rural areas and only minor portion of participants is observed to get

income from shops or selling vegetable and fruits in the area. It was also noted that most of the households in rural environment get their income from both sources of farming and livestock as some participants reported to get their income from mixed sources but dominated by both agriculture farming and livestock.

**FIGURE-2**  
**SOURCE OF INCOME IN STUDY PARTICIPANTS, N=350**



**Source:** Survey Data 2011/12

Figure 2 presents the analysis results of main sources of income in the study sample. It is noted that 149 participants (42.6 %) have got income from agriculture farming, 117 participants (33.4 %) from livestock businesses and 66 participants (18.9 %) had got income from both sources of livestock and agriculture. There were five percent participants got incomes from other sources and mainly were small and medium enterprises and services.

***Business Sales, Expenditure and Net Income of Household***

The majority of the population had engaged in the businesses of agriculture farming, livestock and micro or small enterprises in the rural areas of Mirpurkhas Sindh. These are major rural household businesses and low income people require microfinance lending for purchasing inputs and capital required for growth of these businesses.

**TABLE-1**  
**ANNUAL SALES, EXPENDITURE AND NET INCOME OF**  
**STUDY PARTICIPANTS (N=350)**

<b>Sales/Expenditure</b>	<b>Minimum (Rs.)</b>	<b>Maximum (Rs.)</b>	<b>Mean (Rs.)</b>	<b>Standard deviation</b>
Agriculture Sales	20,000	850,000	116662.86	130459.451
Livestock Sales	10,000	450,000	151071.43	215668.264
Enterprise Sales	36,000	360,000	11265.71	45940.796
Total Sales	38,000	1,200,000	139850.00	90106.692
Agriculture expenses	10,000	560,000	58837.14	75348.050
Livestock expenses	5,000	250,000	61142.86	49527.882
Enterprise expenses	5,000	288,000	5677.14	27815.629
Total expenses	10,000	650,000	127454.29	81490.182
Total Net Income	5,000	550,000	155881	99126.56

**Source:** Survey Data 2011 – 12

Table-1 shows the details of sales, expenditures of business and net income of households. The mean annual agriculture sale in a year was Rs.116662.86. The mean sales of livestock business in a year was noted Rs.151071.43 and for enterprise businesses it was Rs.11265.71. The overall minimum annual sale of participants was Rs.38,000 and maximum was Rs.1,200,000 with average mean of 139850.00. The minimum expenses from Rs.10,000 to Rs.560,000 was reported by study participants in agriculture incurred on land preparation and purchasing agriculture inputs of seeds, fertilizers and pesticides for crops with mean average of Rs.58837.14. In livestock businesses of participants minimum expense from Rs.5000 to Rs.250,000 was reported with mean average of

Rs.61142.86. The enterprise business expenditure was reported with mean average of Rs.5677.14 as minor portion of households were engaged with rural enterprises consisted on small shops. The minimum net income of household was noted at Rs.5000 and maximum of Rs.550,000 with mean average of Rs.155,881.

### ***Microfinance Lending***

Majority of people in the rural areas take loan for agriculture and livestock farming purposes, while a few take loan for small enterprises like retails shops or small house based shops of confectionary in the area.

**TABLE-2**  
**LOAN CHARACTERISTICS IN STUDY PARTICIPANTS**

<b>Variables</b>	<b>Number</b>	<b>Percentage</b>
Loan taken for purpose (loan type)		
Agriculture	120	48
Livestock	112	44.8
Enterprises	18	7.2
Repayment Mode		
Bullet	232	92.8
Installment	18	7.2
*Loan amount in Rupees	13534.18.	10821.834

\*mean with standard deviation

**Source:** Survey Data 2011 – 12

Table 2 shows the loan characteristics of study population. Generally three types of loans are offered in the area by microfinance providers like agriculture loans, livestock loans and enterprises loans. There were 120 borrowers (48%) took loan for agriculture purpose, 112 households (44.8%) took loans for livestock purpose and small number of people (18) took loans for enterprise in the study sample. The majority of borrowers prefer to take loan on bullet mode of repayment and pay dues in one installment after the harvesting of crops or in other cash flow seasons. The enterprises loans are repaid in monthly installments. The average loan amount was noted at Rs.13534.18.

### RELATIONSHIP OF MICROFINANCE LENDING WITH HOUSEHOLD INCOME

In order to assess the role of microfinance lending in household income the multiple linear regression models was applied in the analysis. The model was prepared to show the relation of household net income and treatment variables of Microfinance Lending, loan amount and other variables of agriculture, livestock and enterprises sales in a year by households.

Following Regression equation was used to validate the supposition:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + e$$

Whereas:

Y = Annual Net Income in Rupees,  $\beta_0$  = intercept,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$  are coefficients  $X_1$  = Microfinance Lending (Dummy 1 for Yes, 0 for otherwise),  $X_2$  = Loan Amount in Rupees,  $X_3$  = Agriculture Sales in a Year in PKR,  $X_4$  = Livestock Sales in a year in Rupees,  $X_5$  = Enterprise Sales in a year in Rupees, e = Residual error (unexplained variations).

**TABLE-3**  
**ANALYSIS RESULTS OF MULTIPLE LINEAR REGRESSION MODEL**  
**N=350**

Model-I	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-26056.884	6281.042		-4.148	.000
Micro-finance Lending	46674.550	9777.059	.213	4.774	.000
Loan Amount	1.713	.416	.187	4.120	.000
Agriculture sales in a year	.410	.023	.551	17.534	.000
Livestock sales in a year	.453	.028	.493	16.009	.000
Enterprise sales in a year	.453	.058	.214	7.840	.000
R <sup>2</sup> =0.767, F Value=227.052					

Source: Survey Data 2011 – 12

### ***Finding and Interpretations***

Table-3 shows multiple linear regression analysis results. The analysis confirms that there is a significant positive relationship between microfinance lending and household income of recipients of micro loans. The results revealed that the annual net income of household is dependent upon the annual sales from agriculture, livestock and enterprise but expenditure which is part of working capital and microfinance is major source accumulating with consistence the much expenses in the shape of input cost for generating income from agriculture farming , livestock and/or else enterprise. Results show positive relationship of household net income with treatment variables of loan amount and microfinance lending in regression analysis (P-value: <0.000).

### **CONCLUSION AND RECOMMENDATION**

The analysis of this study demonstrated that microfinance lending has positive significant relationship with household income of study participants of Mirpurkhas Sindh. The microfinance lending is accessible to low income and poor people in the form of microloans by MFPs. Those microloans loan were found highly significant with the annual net income of households, had higher income as compared to non-microfinance clients. MFPs working in rural Sindh have introduced few loan product and services with lower loan ceiling. There is need to diversify loan products with maximum loan size and link it with other saving and insurance products.

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