
MICROFINANCE AND AGRICULTURE FARMING IN RURAL SINDH

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ABSTRACT

This paper intends to analyze the role of microfinance in the development of agriculture farming in rural areas of Sindh, Pakistan. The attempt has been made to correlate the extent of microfinance lending in the process of development of agriculture business in rural economy. Microfinance lending has been provided by Microfinance institutions (MFIs) to rural people in the shape of small loans of different features for seasonal crops in the rural areas. In order to analyze this effect of microfinance on agriculture farming in rural Sindh. This study has randomly selected small farmers in the villages of Mirpurkhas district in Sindh province of Pakistan. These selected farmers were the clients of different microfinance providers working in the area and had got loans for the agriculture purposes and utilized credit amount for the purchase of required inputs in their seasonal crops. Mostly these small loans were disbursed to small land owners, poor tenants and landless laborers through the community groups in the selected villages. The aim of study was to explore the benefits of microfinance lending to rural farmers and to analyze a relationship between microfinance and agriculture farming. The study was conducted to test the hypothesis that microfinance lending had a significant relationship in the development of agriculture farming in the rural areas. The results of study show the positive role of small loans on crop production and enhancement in agricultural income of rural people.

Keywords: Agriculture lending, Microfinance, Small farmers, Rural Sindh, Poverty.

INTRODUCTION

In developing countries the agriculture is back bone of economy and there is a great potential in this sector for economic growth of a country and it can also play a major role in reducing poverty and inequality (Zeller, 2003). As majority of the poor in developing Asia lives in rural areas and dependent on agriculture so the higher agricultural growth will lead to food security and income rise in poor farm households (ADB, 2008). Previously the small farmers and tenants had no access to agriculture credit due to unavailability of physical collateral and other factors in remote areas of Pakistan. Majority of the financial institutions

were focusing big landlords for the provision of credit and a huge portion of small farmers and peasants were excluded in the formal financial system. In this situation, microfinance appeared as panacea for the small farmers and tenants in the rural areas and provided a valuable and alternate channel to get credit facility for the betterment of their crops and livelihood. Microfinance is assumed as one of the important strategy for upgrading agriculture production and sales of small farmers in rural areas. The beneficiary of microcredit are proved to be more productive in the prospective of using productive inputs like pesticides, fertilizers and capital than those who had no access to the same facilities in remote areas (Omobolanle, 2010). Since 2001 the microfinance industry has been flourished in the Pakistan and many banks and other microfinance institutions have supplied a huge amount of agriculture credit to the farmer community of Pakistan. This research paper intends to test the hypothesis that there is a significant relationship of microfinance with agricultural income and production of rural small farmers of Sindh province of Pakistan. This paper will discuss the role of microfinance in the improvement of agriculture production and sales of poor small farmers and discuss the results of the study in accordance with study objective and hypothesis. In the end conclusions and recommendations of the study are provided.

RESEARCH METHODOLOGY

The primary data gathered by survey questionnaire from the selected farmers in the study area who were the beneficiary of microfinance lending. In order to test the hypothesis and check the significant association of agriculture farming with small loans multiple logistic regressions was used. Multiple linear regression analysis was run to study the independent association of loan variables with dependent variable of agricultural production of the farmers. The level of significance of ≤ 0.05 was set for multivariable analysis. Significance of each individual independent variable was assessed by its confidence interval. The overall significance of the model was assessed by the overall R-square.

LITERATURE REVIEW

In 1980, due to failure of government led credit supply strategy in rural areas in developing countries, a new phenomenon of liberalized finance institutions and microfinance was developed which paved the way to establish microfinance banks and other institutions for supply of rural finance to farmers but formal commercial banks also could not play

such role and microfinance has more potential to provide services in those areas (Zeller, 2003).

MFIs are doing agriculture lending successfully in Asia since a long time and three larger Asian institutions are pioneers to introduce the new paradigm of lending and have shown how successfully that to supply small loans and other financial services to poor people in an efficient manner. These MFIs are Bank Rakyat Indonesia (BRI), Grameen Bank of Bangladesh (GB) and Bank for Agriculture and Agricultural Cooperatives (BAAC) in Thailand. Microfinance can play a role in a market access for poor farmers by creating partnership between microfinance institutions and agro industrial firms. Microfinance institutions have developed a range of financial products and established a useful link between peasants and firms for better market access and risk minimization in this century. It has been observed that the multi-party markets can be beneficial in this situation when the stake of many actors is linked with each other in agriculture industry. These contacts can be established among microfinance providers, producers, input suppliers and buyers. But this is also a fact that few microfinance institution adopted an appropriate strategy where borrowers had no direct access to credit but any input or service provided by the partners billed to microfinance institutions and reimbursed when the harvest was sold (Morvant-Roux, 2008).

Credit is an important factor in the development of agriculture in Pakistan. The transformation of agriculture into commercialization and modernity depends upon easy access of credit to farmers and landlords (Irfan, *et.al.*, 1999). The Agriculture Development Bank (ADB) was a major financial institution established for rural and agriculture development in Pakistan but its performance could not get desired results due to lack of competitive services, low recovery rates and inadequate outreach (Imaduddin, 2002). Majority of the farmer community in Pakistan do the cultivation for subsistence and due to lack of finance they are not in a position to cultivate for more economic purposes. They cannot get quality seeds, fertilizers and pesticides in the absence of required finance. Mostly these small farmers are low income people with fewer saving and are unable to enhance their production. They have no choice to get loan from local money lenders on usurious interest rates of 350 percent per annum in rural area (PMN, 2002).

The participation in microfinance programs leads to higher growth of agriculture production and sales as observed in the study of microfinance client of Khushhali Bank in rural areas of Pakistan. The largest impact on income generating activities was found in agriculture

business of rural households where participated clients have higher revenue and profit from the agriculture. The older clients in program had reported higher value of farm assets, higher inputs in the shape of farm labor employed by households and effective use of pesticides and fertilizers (Montgomery, 2005). Agriculture sector play major role in development and economic growth of Pakistan. It has been observed that in Pakistan the contribution of agriculture in GDP is 21.4 percent and it employs 45 percent of labor force (GoP 2013). Agriculture sector play major role in development and economic growth of Pakistan. In rural areas of Sindh most of the rural people are engaged with agriculture related activities. The rural poor are mostly dependent upon agriculture. It is the main source of production in rural areas and the main source of livelihood for poor people. Before the emergence of microfinance the agriculture sector was provided loan facility by main commercial banks and some specialized bank like Agriculture Development Bank of Pakistan (ADBP) in Pakistan (GoP 2013).

In this situation, the small land holders and farmers were not benefited due to lengthy procedure and other requirement of loans like physical collateral, land pass books etc. Microfinance sector in rural Sindh fulfilled this gap by providing small loans to small farmers and tenants on group lending basis without physical collateral. Group lending philosophy provided a community platform for farmers to sit together and think for the betterment of their business and life. Previously there was no concept of community gatherings for their economic benefit and group or community organizations were early bodies of people in rural areas where they got many credit and other facilities from different institutions. In Pakistan, group lending was started by rural support programs to extend micro loans for farmer community on without collateral and the same was continued by microfinance banks later. Microfinance banks and other institutions disbursed loans for different purposes but the major portion of disbursement was done in agriculture farming. The agriculture loan was provided for land preparation, agriculture inputs like seed, fertilizers, pesticides and agriculture equipment, transportation etc. to rural farmers in order to improve their income and other assets (PMN, 2014). As main commercial banks targeted big clients of larger land lords and farmers so the poor small farmers and tenant were generally getting loan facility from local money lenders on usurious rates. In addition other agriculture inputs of seeds, fertilizers and pesticides were provided on higher markets rates on credit by money lenders to poor farmers and forcing those farmers for selling their production on cheaper rates (Nenova *et.al.*,

2009). The microfinance in this scenario emerged as an alternate option for poor farmers to inject money in this situation and providing an opportunity for getting inputs on cheaper rates and selling production on their own wishes. This paper has analyzed this potential role of small loans on agriculture farming business of study participants and assessed the benefits of microfinance in agriculture through applying statistical technique of multiple linear regression models in the analysis.

RESULTS AND DISCUSSIONS

The success of microfinance can be traced in its easy access to farmers and collateral free lending. We observed in our study that 36% of the total participants in our study preferred microfinance loans because of easy access to microfinance banks and staff while 35% of the clients responded that microfinance was appropriate mode of finance because of a scheme of without collateral loans for small farmers and tenants. Although different microfinance banks and institutions charge averagely 30-35% interest rates on yearly basis but growers assumed these rates cheaper as compared to local money lenders in the area.

Table 5.1 presents the analysis results of access of credit to small farmers and landless participants in study area of Mirpurkhas district. Microfinance target clients are small farmers, landless farmers or tenants dependent upon agriculture and related activities. In study sample, about 60 percent of the participants had land, 47 percent microfinance clients had below 5 acre land, and 11 percent had up to 12.5 acres land and only 1 percent had up to 34 acres of land in study sample. It shows microfinance access in small farmers and tenants in study area. The results revealed that microfinance is an attractive for small farmers in the rural areas of Sindh who have below 12.5 acres of land as defined by the criterion of small farmers in Pakistan. This is the segment of farming community which is ignored by commercial financial industry and approached by microfinance institutions due to their favorable lending policies for small farmers and tenants.

TABLE 5.1
ACCESS OF MICROFINANCE TO SMALL FARMERS IN STUDY AREA

Non Clients	Number of Participants	Percentage
Landless	142	40.6
Below 5 Acres	165	47.1
Up to 12.5 Acres	40	11.4
Up to 34 Acres	3	0.9
Total	350	100

Source: Survey Data 2011/12

Table 5.2 revealed the income and expenditure analysis of study participants for agriculture farming. The majority of the population had businesses of agriculture farming and livestock farming activities in the rural villages of study area. The mean sales from agriculture farming were PKR 116,662 with standard deviation of 130,459. The minimum expenses from PKR 10,000 to 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 PKR 58,837. The total net income was reported PKR 5,000 to 550,000 from all sources of income.

TABLE 5.2
ANNUAL INCOME AND EXPENDITURE OF STUDY PARTICIPANTS

Income/Expenditure in PKR	Minimum	Maximum	Mean	Standard deviation
Agriculture Income	20,000	850,000	116662.86	130459.451
Agriculture expenses	10,000	560,000	58837.14	75348.050
Total Net Income	5,000	550,000	155881	99126.56

Source: Survey Data 2011/12

The participation in microfinance programs leads to higher growth of agriculture production and sales as observed in the study of microfinance client in rural areas of Pakistan. The largest impact on income generating activities was found in agriculture business of rural households where participated clients had higher revenue and profit from the agriculture. The older clients in program had reported higher value of farm assets, higher inputs in the shape of farm labor employed by households and effective use of pesticides and fertilizers (Montgomery, 2005). In rural areas of Sindh most of the rural people are engaged with

agriculture related activities as observed in the study of Montgomery and others. The livelihoods of rural poor are dependent upon agriculture in Pakistan and can be observed frequently in different previous studies. In our study we have analyzed this relationship through regression analysis.

Specification of Multiple Linear Regression Model

Multiple linear regression models were used to know the relationship between one dependent (quantitative continuous variables) and two or more independent variables. Multiple linear regression models was applied on outcome variable of interest and independent variables of loan, individual or household characteristics.

The equation for model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where Y is annual crop production in rupees, β_0 is the intercept, X_1 is a dummy variable of agriculture loan, X_2 is number of land acres, X_3 is number of persons in business and e is the Residual error (unexplained variation).

TABLE 5.3
SUMMARY OF MULTIPLE LINEAR REGRESSION MODEL

R	R-Square	Adjusted R-Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.782	.611	.607	83393.889	.611	181.056	3	346	.000

Source: Survey Data 2011/12

Predictors: (Constant), Number of Persons in Business, Agriculture loan, Nos. of land acres.

Table 5.4 shows the model summary of multiple regression models. The R Square is 0.611 which is showing the 61 percent variance in dependent variable of annual crop production explained by other independent variables in the model. The ANOVA is analysis of variance and it has advantage of comparing two or more treatment conditions. It is used to determine if mean difference exist for two or more treatments or samples (Burns, 2000). The table 4.4 of ANOVA is showing F value 181.056 which is significant in the model.

TABLE 5.4
ANOVA-MULTIPLE LINEAR REGRESSION MODEL

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3777477055538.014	3	1259159018512.672	181.056	.000
Residual	2406271118747.703	346	6954540805.629		
Total	6183748174285.710	349			

Source: Survey Data 2011/12

Predictors: (Constant), Number of persons in Business, Agriculture loan, Nos. of land in acres.

Dependent Variable: Crop Production in a Year.

The table 5.5 shows analysis results of coefficients in regression model. The results revealed that the loan taken for agriculture has significant relationship with annual crop production of participants. The crop production is increased due to availability of loans by rural households as revealed in results. There is a significant positive relationship of crop production and ownership of land in acres and number of persons engaged in farming business in the analysis as p value is p-value: <0.001.

TABLE 5.5
COEFFICIENTS IN MULTIPLE LINEAR REGRESSION MODEL

Model-I	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	8696.910	9571.724		.909	.364
Agriculture loan	115375.023	10064.294	.412	11.464	.000
Nos. of land acres	21951.093	1692.948	.487	12.966	.000
Number of persons in Business	11300.070	3995.498	.103	2.828	.005

Source: Survey Data 2011/12

Dependent Variable: Crop Production in a year.

CONCLUSION AND RECOMMENDATIONS

The analysis of this study demonstrated that access to finance is main problem in the rural areas for the promotion of agriculture. The gap of access between poor farmers and tenants in the rural areas has been filled by microfinance institutions and microfinance has significant relationship with the increase of agricultural production of rural farmers. This study has revealed that microfinance services are easily accessible to low income poor farmers and tenants in the remote areas of Sindh

province. It has been observed that small farmers purchase the required inputs for their crops from these loans and enhance the agriculture production in every crop season. This study confirms the positive relationship of small loans with the development of agriculture by observing positive impacts of microfinance on agriculture production and employment opportunities in the area. In the light of findings, this study suggests to enhance the current loan size and introduce the more agriculture loan products favorable with existing market conditions. In addition to this study also suggest microfinance stakeholders to play a role for making effective value chain of agricultural products in the rural areas for the betterment of small farmers.

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