Impact of Institutional Credit on Income : A Study of Farmers in Haryana

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Abstract

Agriculture has been associated with production of essential food crops. At present, agriculture above and beyond farming includes forestry, dairy, fruit cultivation, poultry, bee keeping, mushroom, arbitrary, etc. Today, processing, marketing, and distribution of crops and livestock products are all acknowledged as part of agriculture. Thus, agriculture can be referred to as production, processing, promotion, and distribution of agricultural products. Agriculture plays a critical role in the life of an economy. Agriculture is the backbone of the economic system of a country. In addition to providing food and raw materials, agriculture also provides employment opportunities to a very large percentage of the population. This study assesses the impact of institutional credit on income of farmers. It is a study based on primary data. An attempt was made to analyze the impact of income of farmers .

Keywords: **Agriculture, economic system, institutional credit**

JEL Classification: Q1 , R3

Paper Submission Date : January 19, 2018 ; Paper sent back for revision : February 10, 2018 ; Paper Acceptance Date : February 25, 2018

Agriculture is the major constituent of primary sector in India. Primary sector of India consists of agriculture, forestry, mining, fishing, and animal husbandry. Indian agriculture is broadly a story of success. It has done remarkably well in terms of output growth, despite weather, and price shocks in the past few years. India is the largest producer of milk, pulses, jute and jute-like fibers. It is ranked second in the production of rice, wheat, sugarcane, groundnut, vegetables, fruits, and cotton production and is a leading producer of spices and plantation crops as well as livestock, fisheries, and poultry. Agriculture contributes 16% to the GDP and sustains the livelihood of about 65% of the country's population. It is the largest and the most important sector of India.

The Eleventh Five Year Plan (2007-12) witnessed an average annual growth of 3.6 % in the gross domestic product (GDP) from agriculture and allied sectors against a target of 4.0 %. India is mainly an agricultural country. Approximately 72.2% of India's population lives in villages and about 65-70% population depends directly or indirectly on agricultural and allied activities. While it may appear that the performance of the agriculture and allied sectors has fallen short of the target, production has improved remarkably, growing twice as fast as the population. India's agricultural exports are booming at a time when many other leading producers are experiencing difficulties. The better agricultural performance is a result of a) farmers' response to better prices; b) continued technology gains; and c) appropriate and timely policies coming together. Yet, India is at a juncture where further reforms are urgently required to achieve greater efficiency and productivity in agriculture for sustaining growth.

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A large number of formal institutional agencies like Cooperative Banks, Regional Rural Banks (RRBs), Scheduled Commercial Banks (SCBs), Non Banking Financial Institutions (NFBIs), and Self Help Groups (SHGs) etc. are involved in meeting the short and long term agricultural credit needs of farmers. Several initiatives have been taken to strengthen the institutional mechanism of rural credit system. The main objectives of these initiatives were to improve farmers' access to institutional credit. The major milestones in improving rural credit are acceptance of Rural Credit Survey Committee Report (1954), Nationalization of Major Commercial Banks (1969 and 1980), establishment of RRBs (1975), establishment of National Bank for Agriculture and Rural Development (NABARD) (1982), and the Financial sector reforms (1991 onwards), Special Agricultural Credit Plan (1994-1995) launching Kisan Credit Cards (KCCs (1998-99), Doubling agricultural credit plan within three years (2004), and agricultural debt waiver, and Debt Relief Scheme (2008). These initiatives have positive impact on the flow of agricultural credit. However, the persistence of moneylenders in the rural credit market is still a major concern.

Being the largest source of employment and income to millions of people, it provides a vast market for industrial products. Agricultural development is a pre-requisite for industrial development and service sector development in developing economies like India as developing economies are primarily agricultural economies. Agriculture is the largest and oldest occupation performed in the world. It is a prominent source of livelihood for third world nations and a developing country like India.

Agriculture and rural sector plays an important role in India's overall development strategy in terms of income and employment generation and poverty alleviation. Therefore, great significance has been placed on developing appropriate institutions and mechanisms for catering to the credit requirements of the sector.

Regional rural banks (RRBs), commercial, and co-operative banks have been catering to the credit requirements of the rural sector. While the commercial banks, with their focus on profitability had certain limitations in accelerating agricultural credit, the efforts of cooperative banks were also hampered by several financial weaknesses. The RRBs are specialized rural financial institutions for developing the rural economy by providing credit to small and marginal farmers, agricultural labourers, artisans, and small entrepreneurs which were set up in mid-seventies. The recent focus of the Government of India on doubling the flow of credit to the agricultural sector has warranted a re-look at the relative roles of co-operative banks, RRBs, and commercial banks.

Although agriculture, including allied activities accounted for only 14.1% of the GDP at constant (2004-2005) prices in 2011-2012, their role in the country's economy is much bigger with their share in total employment continuing to be as high as 58.2%. According to the 2001 census, the declining share of agriculture and allied sectors in the country's GDP is consistent with normal development trajectory of any economy, but fast agricultural growth remains vital for jobs, incomes, and food security. The growth target for agriculture in the Twelfth Five Year Plan remained at 4%, as in the Eleventh Five Year Plan.

Literature Review

Nair (2000) broadly reviewed the major trends in rural financial intermediation in India by public sector commercial banks in the post nationalization period. It then examineds their role in the newly emerging institutional forms with a thrust on micro finance services. A healthy rural financial sector must be developed to meet the needs of agriculture, infrastructure, and the rural poor such as agricultural labourers, artisans, and self employed persons.

Singh and Rawat (2001) studied the impact of farm credit on agriculture in Deoria district, Uttar Pradesh. India has the following specific objectives: to analyze the magnitude of loan disbursement; to assess the costs and returns of borrowers and non-borrowers under different size of farms; and to examine the resource use efficiency on different size of farms. Data were collected through interviews of 66 farmers, classified into borrowers and non-borrowers, with each group further classified into 3 sub-groups on the basis of size of holding. The study was related to the agricultural year 1998-1999. The findings showed that maximum crop loan, livestock loan, and

pumpset/tubewell loan was disbursed by cooperative societies, regional rural banks, and commercial banks, respectively. The highest crop and livestock loan was accorded to the smallest groups of farms. All costs were higher on borrower farms than non-borrower farms because borrower farms were using more input factors as compared to non-borrower farms. Returns were higher on borrower farms than non-borrower farms.

Fan, Zhang, and Zhang (2002) documented the critical role of infrastructure development, particularly roads and telecommunications in reducing rural poverty in China between 1978 and 1997. The authors also showed that poverty fell because of the growth in rural non-farm employment that followed the expansion of infrastructure. Infrastructure investments along with appropriate institutions can reduce rural poverty in a variety of ways. Micro credit schemes have been successful in generating incomes in both small-scale agriculture and, in particular, in small-scale non-agricultural rural enterprises. Similarly, the introduction of fixed and mobile phones to the rural poor has provided new opportunities for income generation and poverty reduction.

Leipziger, Fay, Wodon, and Yepes (2003) examined the effects of safe water supply and improved sanitation on poverty reduction. They examined 43 developing countries and found that differences in access to safe water explained about 25% and 37% of the difference in infant mortality, and in child mortality between the poorest and richest quintiles respectively. These results imply that increasing the level of access to piped water by the poorest quintile to that of the richest quintale (i.e. from 3% to 55%) will eliminate more than 25% (i.e. 30%) of the difference in infant mortality (in child mortality) between the poorest and richest groups. Similarly, the difference in access to sanitation between the poorest and richest quantiles accounted for 20% of the difference in the prevalence of malnutrition between the richest and poorest quantiles.

Fan, Zhang, and Rao (2004) had revealed that for rural Uganda, infrastructure investments do not have to be costly to have a sizeable impact. Indeed, investments in low-grade roads (i.e., feeder roads) reduced the number of poor Ugandans by over three times as much as investments in more costly high-grade roads (i.e. murram or tarmac roads).

Atteri, Kar, and Singh (2005) revealed that the principal source of income of above 50% farmers in most regions in the country was from the cultivation of field crops. 45% of farmers pursuing cultivation activity are indebted. Only a relatively lower number of farmers avail loan for the purpose of animal husbandry related activities and plantation. Above 80% of the farmers having land less than 2 hectare are indebted. The average amount of loan per farm in India was ₹ 12,585 while it was the highest at ₹ 17,000 and ₹ 25,000 in southern and western regions, respectively. The average amount of loan taken by farmers increased by ₹ 7,100 with the increase in farm size by one hectare. Today, farmers take more loans from banks. However, money lenders and traders still remain important sources of borrowing.

Sidhu and Gill (2006) tried to explore issues of growth of institutional credit in India, its distribution in different regions and accessibility of credit to rural poor especially, small and marginal farmers and economic viability of operations of agricultural credit disbursement in terms of recovery performance and margins. The degree of indebtedness and suicides was also studied in Punjab, Andhra Pradesh, Maharashtra, Tamil Nadu, and other states. The growth of agricultural advances has been significant over the years.

Mohanty (2007) observed that agriculture credit is a core component of rural development. Credit norms and scales of finance should be increased and security should be reduced from the present margin of 25% for poor and marginal farmers. Crops can be the security but no other security is to be demanded, defaults need to be reduced. Need for coordination among credit supply institutions is required. Deposit credit ratio should be enhanced. Soft interest rate, etc. concessional and subsidized credit supply should be made to enhance the productivity of low and marginal farmers.

Jongur (2008) examined the roles of the Nigerian Agricultural Co-operative and Rural Development Bank in the Development of Agricultural Extension Services in Nigeria. It was established in this paper that a necessary linkage of activities on loan approval and disbursements in the north east zone of Nigeria had an impact on agricultural productivity, even though it had some constraints including lack of adequate funds for clients/farmers, poor repayments abilities etc, among others. Some remedies were suggested for its improvements including

provision of hybrid seeds, livestock studs, pesticides, and fungicides at affordable prices to farmers.

Prabha, Goswami, and Chatterjee (2009) concluded that there existed sufficient scope for alleviating agricultural productivity by improving infrastructural facilities in the state, particularly in banking, education, communication, and health sectors. The analysis of individual infrastructural indicators has revealed that power and transportation indicators have higher influence in raising agricultural productivity. Since irrigation largely depends on electricity operated tubewells and pumpsets in the state, there is a need of uninterrupted electricity supply. Similarly, considering the higher productivity through investment in rural road connectivity and its maintenance, the centre and state governments should take immediate steps in this direction.

Fletschner, Guirkinger, and Boucher (2010) used a two-stage analysis based on a panel data set to evaluate the effects of access to formal credit on financial efficiency of farms in northern Peru. The first stage uses non-parametric data envelope analysis to estimate farm-specific measures of financial efficiency; 28% of farmers are financially inefficient and credit constraints reduce profits of these farmers by an average of between 17% and 27%. The second stage uses Tobit regression to evaluate the determinants of financial inefficiency; the results point to uninsured risk as a key determinant of financial inefficiency and suggest that policies to strengthen agricultural insurance markets would likely pay large dividends in rural Peru.

Laha and Kuri (2011) studied the impact of credit on land leasing decision by disaggregating the analysis separately for three alternative tenurial arrangements like fixed rent, pure sharecropping without cost sharing, and cost sharecropping tenancy. The empirical findings establish the argument that farmers with access to institutional credit prefer to opt for more lease in land under fixed rent contract vis-à-vis pure sharecropping contract. On the other hand, the availability of informal credit from landlords encourages them to opt for cost sharing form of sharecropping. The provision of institutional credit, thereby, encourages fixed rent form of tenancy that is expected to reduce the extent of exploitation under the informal interlinked tenancy contract. This in turn can bring about efficiency in the allocation of resources and higher agricultural productivity.

Objectives of the Study

The objective of the present study was to assess the impact of institutional credit on income and employment of farmers.

Research Methodology

(1) Rationale of the Study : The strong backward and forward linkages of agriculture with the overall Indian economy and its sheer scale, a strong growth in agriculture (at the rate of 4% - 5% per annum) has the potential to catapult the Indian economy to well past 10% growth trajectory. A stronger growth in agriculture would lead to higher income for farmers, generate more employment opportunities, and sharply reduce poverty. It is our belief that for India, a rapid growth in the rural economy overall and sustainable growth of agriculture is highly feasible. These may hold the key to addressing India's problems of growth and poverty eradication, unlike in the rest of the region, where urbanization and growth in manufacturing have been the principal drivers. However, for this to happen, key ingredients would be an adequate supply of credit, development of required market infrastructure, and the availability of tools for management of considerable risks that agriculture is exposed to. There is wide variation in credit disbursement across different states and regions of the country. Thus, the present study is planned to analyze the disbursement of institutional credit to farmers in various districts and villages, particularly Haryana and its impact on income off the farmers.

(2) Scope of the Study : The study has been conducted to find out the extent of institutional credit and its impact on the income of farmers.

(3) Research Hypotheses : The following hypotheses were formulated to achieve the objectives of the study:

H_{01}: There is no significant difference between income from agriculture before and after institutional credit is availed by farmers in Bhiwani district.

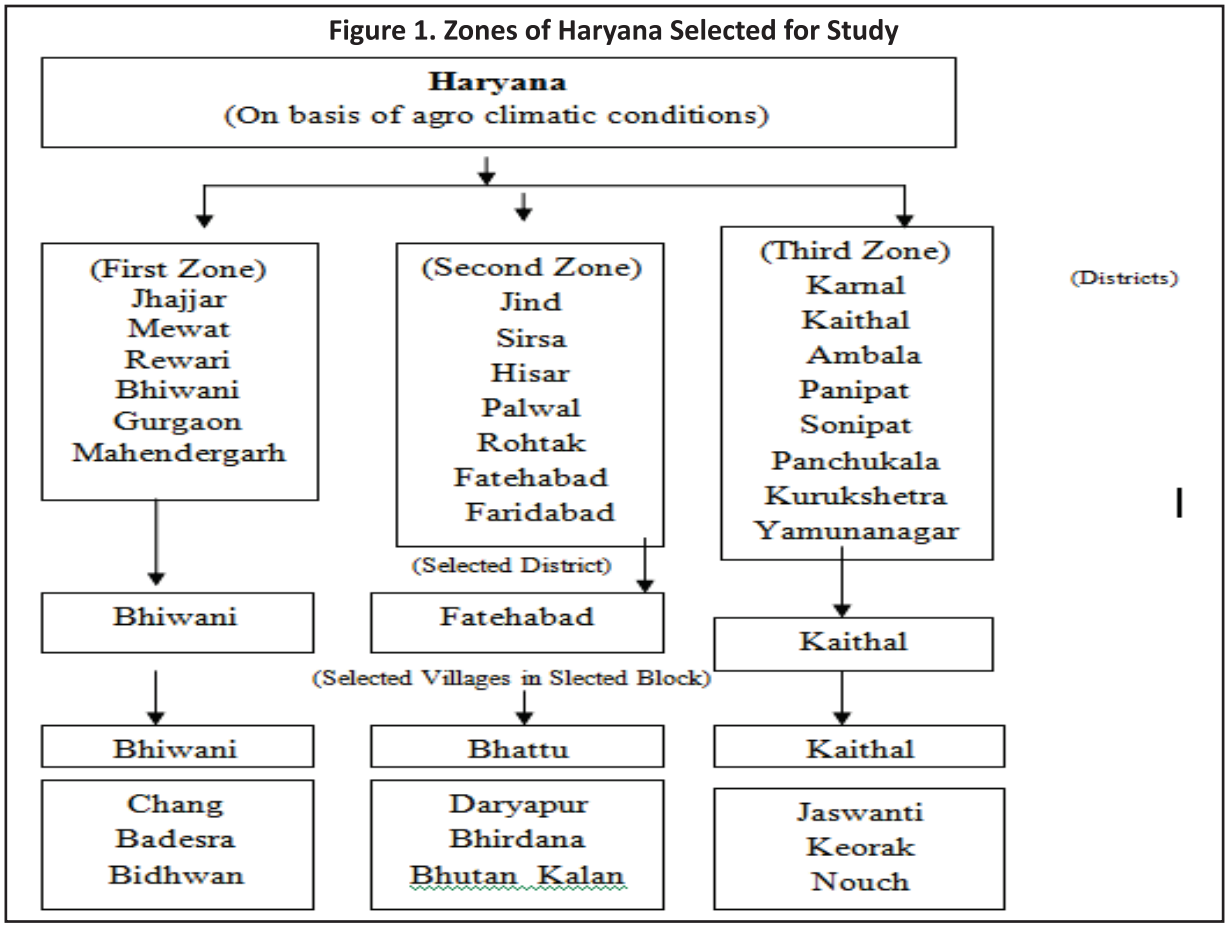
H_{02}: There is no significant difference between income from agriculture before and after institutional credit is availed by the farmers in Fatehabad district.

H_{03}: There is no significant difference between income from agriculture before and after institutional credit is availed by the farmers in Kaithal district.

(4) Nature of Research Design : The research design used for this study was descriptive and analytical as the nature of data which was collected and used for this research study was primary as well as secondary. This study is based on available facts or information collected through primary and secondary sources.

(5) Research Design : For conducting the study, Haryana was divided into three zones on the basis of agro-climatic conditions as shown in Figure 1. From each zone three districts were selected conveniently i.e. Bhiwani, Fatehabad, and Kaithal. Further, from each selected district one block was selected that was convenient for the analysis i.e. Bhiwani block from Bhiwani district, Bhattu block from Fatehabad district, and Kaithal block from Kaithal district. After selection of blocks from the districts, a cluster of three villages were selected, i.e. Chang,

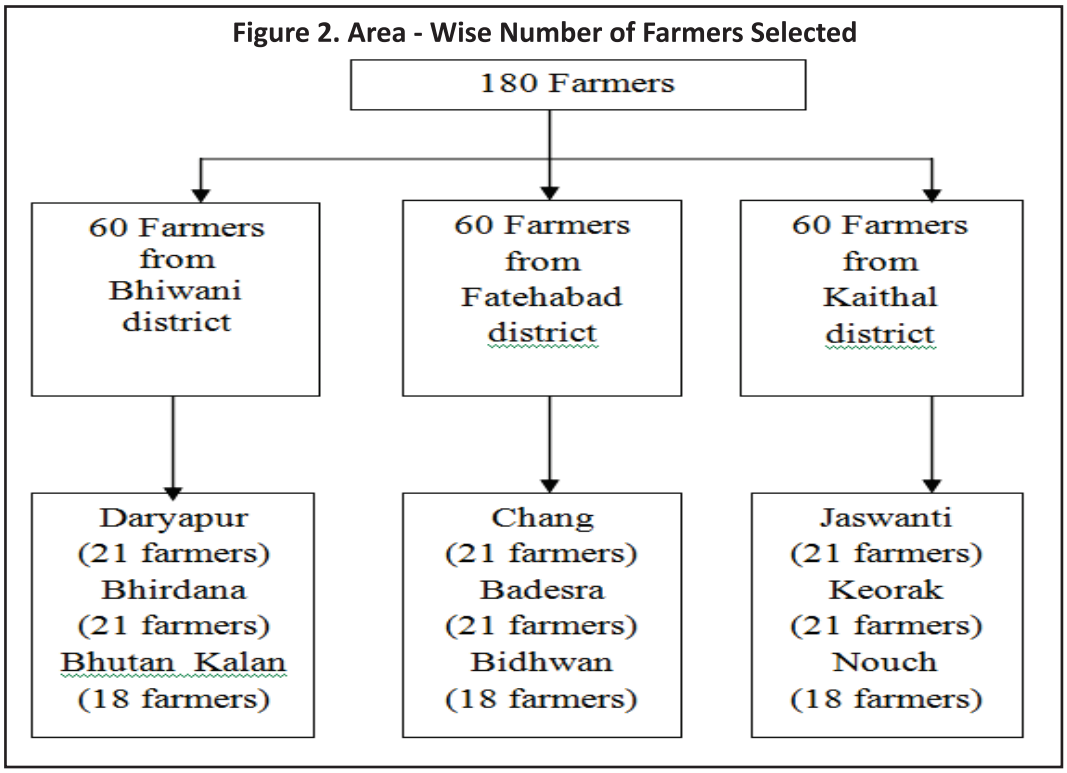
Figure 1. Zones of Haryana Selected for Study



Badesra, and Bidhwan from Bhiwani district. Daryapur, Bhirdana, and Bhutan Kalan from Fatehabad district, and Jaswanti, Keorak, and Nouch from Kaithal district. In all the selected districts and blocks Punjab National Bank (PNB) emerged as the leading bank. Later, a list of borrowers from the lead bank i.e. PNB was taken up.

(6) Sample Profile : Sixty farmers from each cluster of villages (21 farmers, 21 medium farmers, and 18 large farmers) were selected for identification of the factors affecting the disbursement of credit to farmers. In this way, 180 farmers from three blocks and nine villages were finalized for collection of required primary data as shown in Figure 2.

Figure 2. Area - Wise Number of Farmers Selected



(7) Data Collection : The present study is analytical and exploratory in nature. Accordingly, primary as well as secondary data were used. The primary data pertaining to credit disbursement, utilization, repayment, income, and employment generated etc. were collected by conducting personal interviews with the respondents. The schedule-cum-questionnaire was designed for the farmers to analyze the impact of institutional credit on income and employment of the farmers, and to study the extent of institutional credit on different categories of farmers, and also to identify the factors affecting the disbursement of credit to the farmers. A sample of 60 farmers was taken from various villages of Bhiwani district. After filling 60 questionnaires from Bhiwani, 60 questionnaires were filled from villages of Fatehabad district and after that questionnaire was filled from villages of Kaithal. All the filled questionnaires received from respondents were used for further analysis. Besides questionnaire, interview and discussion techniques were also used. Some qualitative questions were also posed to the respondents to get the required information. On the other hand, the required secondary data pertaining to institutional credit given to the farmers were collected from RBI Bulletins, annual reports of RBI, websites of RBI, lead bank offices (Punjab National Bank), and other published and unpublished secondary sources.

(8) Tools Used for Analysis

(i) *t* -Test : *t*-test is used for comparing the means of two samples, even if, they have different numbers of replicates. In simple terms, the *t*-test compares the actual difference between two means in relation to variation in data (expressed as the standard deviation of the difference between the means).

(ii) Mean : The mean is the most popular and commonly used measure of central tendency. It is what we commonly call the average and the arithmetic mean of a set of observations equal to the sum of all the observations divided by the total number of observations.

(iii) Standard Deviation : The standard deviation (SD) [represented by the Greek letter sigma *(σ)*] measures the amount of variation or dispersion from the average. A low standard deviation indicates that the data points tend to be very close to the mean (also called expected value); a high standard deviation indicates that the data points are spread out over a large range of values.

(iv) Percentage : The present study undertakes three objectives and these objectives are fulfilled one by one in this chapter. With this background, an attempt has been made in the present section to achieve the first objective.

Analysis and Results

(1) Research Statement/Hypotheses : The following hypotheses were formulated to achieve the impact of institutional credit on income of the farmers under study:

H_0 : There is no significant effect of institutional credit on the income of farmers.

For studying this hypothesis, three sub hypotheses were framed according to three conveniently selected districts on the basis of division of Haryana on the basis of agro climatic conditions. The sub hypotheses are :

H_{01}: There is no significant difference between income from agriculture before and after institutional credit is availed by farmers in Bhiwani district.

H_{02}: There is no significant difference between income from agriculture before and after institutional credit is availed by farmers in Fatehabad district.

H_{03}: There is no significant difference between income from agriculture before and after institutional credit is availed by the farmers in Kaithal district.

(2) Statistical Tools Used for Data Analysis : Data processing in this research study was done using SPSS package (19.0) using the following statistical tools:

Paired Samples *t*-test where pair comprises –
(Sample1: Income before Institutional Credit)
(Sample2: Income after Institutional Credit)

Descriptive Statistics: Mean and standard deviation.

(3) Analysis and Interpretation : This section covers the analysis and interpretation of the data regarding income of farmers before and after institutional credit provided by financial institutions.

Table 1. Impact of Institutional Credit on the Income of Farmers of Chang, Badesra, and Bidhwan Villages of Bhiwani District

(Income in ₹)

Bidhwan		Badesra		Chang	
Income Before Institutional Credit	**Income After Institutional Credit**	**Income Before Institutional Credit**	**Income After Institutional Credit**	**Income Before Institutional Credit**	**Income After Institutional Credit**
830000	849000	983000	1003000	935000	950000
1370000	1395000	1050000	1065000	680000	700000
1330000	1350000	1230000	1260000	135000	150000
1100000	1125000	980000	990000	1000000	1025000
1005000	1025000	1050000	1080000	1110000	1125000
1160000	1185000	1075000	1100000	655000	675000
590000	615000	777000	800000	750000	760000
143000	178000	880000	900000	486000	501000
385000	405000	520000	535000	521000	541000
391000	406000	693000	728000	436000	457000
529000	550000	694500	714500	491000	506000
580000	600000	645000	660000	728000	748000
690000	708000	594000	620000	449000	474000
168000	178000	302500	317500	260000	270000
250000	275000	292500	307500	240000	255000
270000	300000	277500	292500	325000	340000
390000	405000	310000	340000	280000	300000
305000	325000	155000	165000	165000	180000
85000	100000	362500	382500	254000	270000
195000	210000	322500	337500	254000	270000
Mean	588300.00	609200.00	659700.00	679900.00	507700.00	524850.00
SD	410030.95	411089.7712	331321.73	679900.00	286463.94	287420.15
N	20		20		20	
***t* statistic**	-16.107*		-12.648*		-18.673*	
Significance	0.0000		0.0000		0.000	

Income includes income from agriculture. *Significant at 5%

* Data analyzed using SPSS 19

Table 1 highlights the impact of institutional credit on income of farmers in Badesra, Bidhwan, and Chang villages of Bhiwani district by illustrating the income of farmers before and after taking institutional credit in all the three villages. A comparative outline has been drawn to access the impact of institutional credit by calculating the descriptive statistics of mean and standard deviation for the income of farmers before institutional credit as well as after institutional credit in the three villages. After taking institutional credit as financial assistance from the lead bank i.e. PNB, it has been observed that income of the farmers grew at a considerably higher rate as compared to their income before institutional credit was taken. It may be noticed that the mean signifies superior performance of farmers after institutional credit is taken as their average income is higher after taking credit. On the contrary, the same is comparatively less consistent as is evident from higher standard deviation. *t* value is 16.107 in case of

Bidhwan, -12.648 in case of Badesra, and 18.673 in case of Chang village. In all villages of Bhiwani, the *t*-values are statistically significant at 5 % level.

The *t*-statistics show that there is significant difference at 5% level of significance between income of farmers before and after taking institutional credit. Hence, the hypothesis under test is: There is no significant difference between income from agriculture before and after institutional credit is availed by farmers in Bhiwani district is rejected. Therefore, it is concluded that there is significant difference between income from agriculture before and after institutional credit availed by farmers.

Table 2 shows the comparative results of paired sample *t*-test of three villages (Daryapur, Bhirdana, and Bhutan Kalan) of Fatehabad district by illustrating the income of farmers before and after taking institutional credit. It can be observed from Table 1 that after financial assistance, mean is elevated as average income increased in all the selected villages. However, standard deviation increased only in Bhirdana. On the contrary, it decreased in case of Daryapur and Bhuttan Kalan which showed more consistency. Table 1 also provides information about farmers with the help of *t* statistic and it authenticates that there is significant difference at 5% level of significance between the income of farmers before and after taking institutional credit. Hence, the hypothesis, "There is no significant difference between income from agriculture before and after institutional credit availed by the farmers in Fatehabad district" is rejected. It is concluded that there is significant difference between income from agriculture before and after taking institutional credit for agriculture.

Table 2. Impact of Institutional Credit on the Income of Farmers of Daryapur, Bhirdana, and Bhutan Kalan Villages of Fatehabad District

(Income in ₹)

Daryapur		Bhirdana		Bhutan Kalan	
Income Before Institutional Credit	Income After Institutional Credit	Income Before Institutional Credit	Income After Institutional Credit	Income Before Institutional Credit	Income After Institutional Credit
848000	859000	305000	320000	845000	854000
775000	782000	375000	390000	660000	672000
890000	905000	180000	195000	842000	852000
896000	916000	325000	340000	925000	936000
888000	900000	285000	300000	752000	772000
900000	910000	270000	274000	780000	795000
660000	675000	328000	335000	460000	472000
450000	465000	855000	865000	900000	913000
500000	515000	1025000	1050000	615000	630000
572000	581000	865000	885000	680000	690000
640000	648000	930000	945000	740000	750000
457000	465000	990000	1005000	735000	750000
515000	530000	868000	880000	580000	592000
180000	195000	600000	615000	280000	293000
380000	400000	270000	279000	232500	247500
342000	355000	592000	606000	178000	198000
318000	325000	518000	525000	90500	112500
230000	250000	540000	550000	248000	278000
330500	345000	750000	757000	165000	195000
189000	195000	675000	688000	244000	259000

Mean	548025.00	560800.00	577300.00	590200.00	547600.00	563050.00
SD	251129.89	250950.11	276975.22	278900.58	280774.14	276878.79
N	20		20		20	
***t* statistic**	-12.890*		-11.857*		-11.327*	
Significance	0.0000		0.000		0.000	

Income includes income from agriculture. *Significant at 5% level. Data Calculation from SPSS 19

Table 3. Impact of Institutional Credit on the Income of Farmers of Jaswanti, Keorak, and Nouch Villages of Kaithal District

(Income in ₹)

Jaswanti		Keorak		Nouch	
Income Before Institutional Credit	**Income After Institutional Credit**	**Income Before Institutional Credit**	**Income After Institutional Credit**	**Income Before Institutional Credit**	**Income After Institutional Credit**
2185000	2205000	970000	980000	1750000	1840000
1078000	1103000	965000	980000	1150000	1250000
946000	976000	915000	925000	1250000	1360000
1114000	1144000	940000	955000	1190000	1205000
892000	927000	775000	795000	915000	925000
900000	925000	870000	900000	970000	985000
760000	775000	570000	583000	1175000	1205000
690000	710000	530000	540000	661500	677500
735000	745000	740000	755000	730000	750000
675000	693000	745000	755000	691000	709000
682000	693000	440000	460000	705000	720000
620000	628000	471000	501000	692000	705000
755000	775000	470000	486000	718000	725000
180000	210000	500000	510000	300000	310000
345000	360000	142500	157500	345000	357500
160000	175000	400000	420000	185000	205000
122000	125000	315000	330000	208000	224000
300000	315000	250000	260000	400000	410000
378000	390000	410000	421000	394000	409000
165000	180000	776000	791000	187500	207500
Mean	684100.00	702700.00	609725.00	625225.00	730850.00	758975.00
SD	472348.32	475620.71	253632.22	253752.18	424003.35	445239.19
N	20		20		20	
***t* statistic**	-9.895*		-11.494*		-3.989*	
Significance	0.000		0.000		0.001	

Income includes income from agriculture. *Significant at 5%

Data Calculation from SPSS 19

Table 3 provides the information about the income of farmers before and after institutional credit of three villages (Jaswanti, Keorak, and Nouch) of Kaithal district. The number of farmers is 20 in each village. Descriptive statistics highlight that average income of farmers is high during before and after institutional credit in Jaswanti, Keorak and Nouch but, the same is comparatively less consistent, as apparent from the high value of standard deviation after financial assistance was selected in Jaswanti, Keorak, and Nouch villages. It is also seen from table 3 that the *t* value is negative but significant in Jaswanti, Keorak, and Nouch, respectively. The hypothesis "There is no significant difference between income from agriculture before and after institutional credit availed by the

Table 4. Compiled Results of Income of Farmers Before and After Institutional Credit of Bhiwani, Fatehabad, and Kaithal District

(Income in ₹)

Bhiwani		Fatehabad		Kaithal	
Income Before Institutional Credit	Income After Institutional Credit	Income Before Institutional Credit	Income After Institutional Credit	Income Before Institutional Credit	Income After Institutional Credit
830000	849000	848000	859000	2185000	2205000
1370000	1395000	775000	782000	1078000	1103000
1330000	1350000	890000	905000	946000	976000
1100000	1125000	896000	916000	1114000	1144000
1005000	1025000	888000	900000	892000	927000
1160000	1185000	900000	910000	900000	925000
590000	615000	660000	675000	760000	775000
143000	178000	450000	465000	690000	710000
385000	405000	500000	515000	735000	745000
391000	406000	572000	581000	675000	693000
529000	550000	640000	648000	682000	693000
580000	600000	457000	465000	620000	628000
690000	708000	515000	530000	755000	775000
168000	178000	180000	195000	180000	210000
250000	275000	380000	400000	345000	360000
270000	300000	342000	355000	160000	175000
390000	405000	318000	325000	122000	125000
305000	325000	230000	250000	300000	315000
85000	100000	330500	345000	378000	390000
195000	210000	189000	195000	165000	180000
983000	1003000	305000	320000	970000	980000
1050000	1065000	375000	390000	965000	980000
1230000	1260000	180000	195000	915000	925000
980000	990000	325000	340000	940000	955000
1050000	1080000	285000	300000	775000	795000
1075000	1100000	270000	274000	870000	900000
777000	800000	328000	335000	570000	583000
880000	900000	855000	865000	530000	540000

520000		535000	1025000	1050000	740000	755000
693000		728000	865000	885000	745000	755000
694500		714500	930000	945000	440000	460000
645000		660000	990000	1005000	471000	501000
594000		620000	868000	880000	470000	486000
302500		317500	600000	615000	500000	510000
292500		307500	270000	279000	142500	157500
277500		292500	592000	606000	400000	420000
310000		340000	518000	525000	315000	330000
155000		165000	540000	550000	250000	260000
362500		382500	750000	757000	410000	421000
322500		337500	675000	688000	776000	791000
935000		950000	845000	854000	1750000	1840000
680000		700000	660000	672000	1150000	1250000
135000		150000	842000	852000	1250000	1360000
1000000		1025000	925000	936000	1190000	1205000
1110000		1125000	752000	772000	915000	925000
655000		675000	780000	795000	970000	985000
750000		760000	460000	472000	1175000	1205000
486000		501000	900000	913000	661500	677500
521000		541000	615000	630000	730000	750000
436000		457000	680000	690000	691000	709000
491000		506000	740000	750000	705000	720000
728000		748000	735000	750000	692000	705000
449000		474000	580000	592000	718000	725000
260000		270000	280000	293000	300000	310000
240000		255000	232500	247500	345000	357500
325000		340000	178000	198000	185000	205000
280000		300000	90500	112500	208000	224000
165000		180000	248000	278000	400000	410000
254000		270000	165000	195000	394000	409000
254000		270000	244000	259000	187500	207500
Mean	585233.33	604650.00	557641.67	571350.00	674891.67	695633.33
SD	346179.69	347905.43	265703.16	264951.36	391140.38	400601.43
N	20		20		20	
***t* statistic**	-25.278*		-20.26*		-8.199*	
Significance	0.000		0.000		0.000	

Income includes income from agriculture. *Significant at 5%

Data Calculation suing SPSS 19 version

farmers in Kaithal district" is rejected. This means that there is significant difference between income from agriculture before and after institutional credit availed by farmers in Kaithal district.

This study was designed to examine the impact of institutional credit on income of the farmers. It is observed

from Table 4, that the mean value of income of farmers of all the districts after institutional credit increased which states the positive performance of credit. On the other hand, the standard deviation is also getting higher except in Fatehabad which shows less consistency between income before and after institutional credit. *t* - statistic for the all three districts is statistically significant at 5% level. The result shows that there is significant affect of institutional credit on income of the farmers. Hence, the null hypothesis under the study that there is no significant difference of institutional credit on income of farmers is rejected and the alternate hypothesis that there is significant difference in institutional credit on the income of the farmers is accepted.

Conclusion

The following conclusions were derived from the study regarding the comparative evaluation between the incomes of farmers before and after institutional credit on the basis of data that is provided by farmers under study:

(1) An analysis of impact of institutional credit on income, and the net income is found to be high after institutional credit in case of Chang, Badestra, and Bidhwan villages of Bhiwani district. In the analysis of Fatehabad district it could be seen that the income is higher after taking credit as compared to before institution credit was taken in Daryapur, Bhirdan, and Bhutan Kalan. The income was also increased after institution credit as compared to before credit in Jaswanti, Keorak, and Nouch villages of Kaithal district. A compiled analysis of income carried out showed that there is high variation of net income after institution credit in Kaithal district and the least variation is seen in Fatehabad district.

(2) The mean statistics signify the increasing standard of living of farmers after availing financial assistance as the average income of farmers from agriculture is high after taking institutional credit as compared to income before institutional credit was taken in all the selected districts.

(3) The standard deviation indicates more consistent performance of farmers with less variation in their income from agriculture before availing institutional credit. This is evident from the high standard deviation of the income of farmers in case of after institutional credit with regard to all the three villages of selected districts and also in comparison to districts under study.

(4) The *t* test statistics highlights that there is significant difference between income from agriculture before and after financial assistance availed by farmers. Hence, the null hypothesis formulated for this study is rejected.

Implications, Limitations of the Study, and Future Scope of Research

This study was planned to analyze disbursement of institutional credit to farmers in various districts and villages of Haryana. The findings of the study can be useful for policy planners and executors to make suitable corrective measures to address the discrepancies in the disbursement of credit, and also in overcoming the negative impact caused due to insufficient amount of credit given to farmers that affect income and employment conditions of farmers. As in the current study Haryana had been taken for observations. So, in future studies can be enhanced with some comparative view with other states in this area. The area for comparison can also be taken for those state/states where similar study concepts have been proved to be effective.

The main limitations of the present study are : Primary data collected through the sample survey is not free from biases and inaccuracies on one count to the other. The area selected for the collection of sample information was limited to Haryana. Therefore, the results of the study drawn from sample may not be generalized on the Indian population as a whole. The data used for the analysis are also subject to errors as the respondents lacked

conceptual clarity about the key issues involved due to natural inhibitions in imparting correct information.
As the topic of the study includes too many aspects with regard to financial institution, therefore, it was very difficult to examine each and every aspect in a limited time frame, although efforts were made to cover all the relevant aspects related to the study.

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