



Effect of Credit Advances on Farm Productivity and Farmer's Economic Development (A Case Study of Tehsil Adenzai District Dir Lower)

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Abstract: This study investigated the effect of credit advances by ZariTaraqiyati Bank Limited (ZTBL) on farm productivity, farmer's income; saving and standard of life in tehsil Adenzai in district Dir Lower. Using Proportional Allocation method, 70 respondents were selected as a sample size. Data was gathered through structured questionnaires by face to face interaction. Paired t-test was used to explain the effect of credit provision on total yield of maize crop, farmer's income and saving. It was found that the credit had properly utilized for the purpose of farm productivity. Results showed a positive significant relationship between credit advances and farm productivity. Result also showed significant increase in farmer's income, saving and increase in life standard due to credit advances. Lengthy process, high interest rate on loan and lack of branches of ZTBL were recorded as potential issues. The beneficiaries suggested for simple procedure of loaning, easy terms and conditions decrease of interest rate and increase of branches to make the process more easy and effective.

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INTRODUCTION

Background of the study: Pakistan is an agricultural economy. Agriculture sector provided employment to 45% of the total labors force and contributes 22% to Gross Domestic Product (GDP)^[1]. About 65% of total population of the country lives in the rural areas where agriculture is the main source of their livelihood. It has a vital role in ensuring food security, generating overall economic growth, poverty alleviation and the transforming towards industrialization. Therefore, the current government gives high priority to improve the quality of life of the people, to increase crop production

in the country and to banish hunger and malnutrition from the country by making agriculture profitable, productive and an efficient sector of the economy^[1]. Most of the farmers are poor and need financial support for agricultural activities. For this purpose, Finance Corporation for Agricultural Development was established in the year 1951. Later on in September 1957, Agriculture Development Bank of Pakistan (ADBP) was also setup to provide credit facility along with warehouse and storage facilities to farmer's communities and cooperative societies. The aim and target of the Corporation and Agricultural Development Bank (ADB) were alike, therefore, they were operated by means of the

recourses provided by the concerned department and as a result in 1961 both of them were combined and called as ADBP.

Development and growth of agriculture sector is closely linked with credit availability. Agricultural field shall be made more productive and meaningful by providing credit facility to the farmer's community as it has a direct effect on the yield, growth and economic development. The major obstacles in the way of farmers community to adopt latest technology, modern farming methods like sowing, harvesting and pesticides application is the deficiency of credit facility that leads poor growth and less production in that sector. The only hope and opportunity to increase the production can only be possible by providing credit facility as well as the resources allocation to farming community which will lead to prosperity and nation's development^[2]. Adoption of modern technologies and taking steps towards new investment can diversify the sector of agriculture if there is an easy access to credit for the farmers and entrepreneurs. Credit facilities in village level have extraordinary effects on the living standard of rural population by higher productivity in agricultural sector^[3].

District Dir Lower is spread over on 1582 km² area with a total population of 1.436 million^[1]. 95% people are living in rural areas where they are mostly engaged with farming and livestock rearing. Framing is the main source of income for about 43% of rural families in district Dir Lower. Due to prevailing poverty in the area, the people are mostly using the traditional practices of agriculture with limited access to hybrid seeds, pesticide, synthetic fertilizers and sophisticated machinery. Looking to the above situation, Zarai Taraqiyati Bank Limited (ZTBL) started providing credit to farmers for agricultural development in the area. In 2002 ZTBL is one of the best agricultural credits providing institution in Pakistan that are helping the farmers in a multidimensional way by uplifting the sector of agricultural and prospects of cottage industries in the rural areas of the country. This specialized agricultural and financial institution have 27 zonal offices, 360 branches and 1370 Mobile Credit Officers (MCO's) and about 5498 employees^[4].

The study was therefore conducted as a case study in three villages of Tehsil Adenzai of district Dir Lower to evaluate the outcome and impact of credit provided in terms of increase in farm productivity, income and prosperity of the farming community.

Literature review: Mallick^[5] investigated the effect of credit advances on socio-economic condition of people in the rural areas of Bangladesh. It was concluded that credit had promoted the socio-economic condition of the people in the area concerned on micro level. Alam^[6] investigated the effect of credit provided by ZTBL on agricultural production. Majority of the farmers achieved the highest level of production and income. He also suggested that the level of interest on credit provision may be reduced in

order to motivate and encourage the farming communities for sustainability in their profession. Khan *et al.*^[7] studied the role of credit facility provided by Sarhad Rural Support Program (SRSP) for livestock development in six villages of Abbottabad district. Increase in income, saving and consumption level of the household was observed. A significant positive effect was also observed on children education in the same study. The study identified certain issues and suggested proper training and monitoring of credit advancement for proper utilization. Shah *et al.*^[8] conducted a study in Chitral District to investigate the effect of agricultural credit on farm productivity and farmer's income. They observed a positive significant effect of credit on farm productivity and income of the farmers. Certain issues were identified hence the study suggested a review of interest rate and simplification of the process. Nader^[9] studied the effect of credit provision on social and economic betterment of female in Egypt. A significant positive relationship between credit and improvement in socio-economic conditions, i.e., improvement in children's education, income level and assets of the beneficiaries was observed. A similar study was undertaken by Nepal Rastra Bank to evaluate the benefits of agricultural credit to local farmers. The study summarized that agricultural credit has enhanced the farm productivity by ensuring better access to irrigation facility, purchase of fertilizers, pesticides, hybrid and improved seeds, etc. The study also finds out that farmers using the credit facility had achieved a better technical efficiency level (82%) than those who were not using the credit facility (63%). Ekwere *et al.*^[10] studied the effect of agricultural credit on farm production and rural development using regression analysis method. The results showed a high dependency of farm productivity on age, gender, education, family size, farm size and duration of farming experience. The results showed a significant F-test value in terms of size of loan.

The existing literature shows a positive role of credit facility in agricultural and rural development. This study adds to the existing literature in the sense that the same study has not been conducted before in the area concerned. The study also focused issue and shortcomings of the program by collected the response of the beneficiaries on credit provided. This study also put forward some suggestions for better utilization of the program of credit facilitation in the field of agriculture.

Hypothesis of the study:

- H₁: Credit advances enhance farm productivity if properly utilized
- H₂: Credit advances improve economic conditions of farmers through increasing farm productivity

MATERIALS AND METHODS

Study area and sample size: This study was conducted in Tehsil Adenzai of district Dir lower. The reason for selecting Tehsil Adenzai was being rural area most of the

Table 1: List of selected beneficiaries

Union council	Total beneficiaries	Selected beneficiaries
Tazagram	50	35
Khanpur	27	19
Asbanr	23	16
Total	100	70

ZTBL (2018)

people in Tehsil Adenzai are engaged in agriculture and livestock rearing. In Tehsil Adenzai three villages, i.e., Asbanr, Khanpur and Tazagram were selected for data collection where collectively 100 farmers were facilitated through credit advances^[4]. About 70 beneficiaries from all the three villages were selected for the purpose of data collection. Proportional selection of sample size was conducted through the following Proportional Allocation Sampling Technique. Table 1 summarized the detail:

$$n_i = \frac{N_i}{N} \times n \quad (1)$$

Where:

n_i = Number of samples respondents in a village

N_i = T. number of respondents in a village

N = T. sample size

N = T. number of respondents in focus area

$n_1 = 50/100 \times 70 = 35$

$n_2 = 27/100 \times 70 = 19$

$n_3 = 23/100 \times 70 = 16$

Data collection and analysis: Data was collected through well-structured self-administered questioners. For data analysis MS-Excel and SPSS were used. For qualitative characteristics, the results were expressed in terms of counts and percentage by using descriptive statistics and frequency distribution. Paired t-test was applied for configuration and measurement. Formula used:

$$t = \frac{d}{sd} / \sqrt{n}$$

Where:

d = Deference between two sample observations

n = Number of pairs

SD = Standard Deviation

$d = \sum di/n$

and

$$SD = \sqrt{\frac{\sum (di-d)^2}{n-1}}$$

RESULTS AND DISCUSSION

Age of the respondents: Table 2 summarizes the ages of the respondents. The 34.3% respondents fall in the age group 30 and below, 47.1% in age group 31-50 and 18.6% in age group above 50 years. Majority of the respondents

(47.1%) fell in age group 31-50 years. Arif^[11] also found in their study that most of the people engaged in farming were in the same age group.

Educational level: During study 44.3% of the respondents were found illiterate, 28.6% literate up to primary level, 11.4% up to middle level, 8.6% up to matric level and 7.1% up to intermediate. In village Tazagram the educational level of the respondents were higher than village Asbanrand Khanpur.

Family size: Credit utilization has a direct relationship with the size of the family. It was observed during survey that 18.6% of the families were having 1-4 members, 50% were having 5-8 members and 31.4% were having family members above 8 (Table 3-6).

Credit obtained by respondents from other sources: The data analysis reveals that majority of the people, i.e., 82.9% had obtained their credit from ZTBL only. The 17.1% of the respondents obtained credit from other sources, i.e. from shopkeepers, relatives and friends, etc. as well along with ZTBL. Ashfaq and Khan^[12] also found that majority of the farmers taken their credit from ZTBL and few from other institutions.

Credit utilization by the respondents: The analysis shows that majority (75.7%) of the beneficiaries used their credit in farming activities like purchasing of agricultural machinery, hybrid seeds and fertilizer, etc. While 24.3% of the respondents used it in non-farming activities like marriages, children education, health expenditures, foreign visa and repayment of debt, etc. Khan^[13] also concluded in their study that 80% of the respondents used credit for farming activities while 20% for non-farming activities.

Other source of income of the respondents: The results indicate that respondents in study area have other sources of income as well. Besides farming, 47.1% of the respondents earning source was from livestock rearing, 35.7% were engaged in small size own businesses/enterprises while 17.1% worked on daily wages. Khan *et al.*^[7] also identifies other sources like livestock rearing, daily wages, services and other businesses of income of the people in rural areas. Khan^[13] found in his study that majority of the borrowers were also engaged in livestock and small businesses besides farming (Table 7).

Change in standard of life after taking credit: Credit improves the social and economic life of the beneficiaries by increasing their income from farming. About 75.5% of the beneficiaries responded that their life standard has improved with credit facility while 24.3% of the respondents were of the opinion that credit had not improved their life standard. These findings are in line

Table 2: Age of the respondents (Years)

Village	30 and below	31-50	Above 50	Total
Tazagram	12(17.1%)	17(24.3%)	06(8.6%)	35(50.0%)
Asbanr	5(7.1%)	07(10.0%)	04(5.7%)	16(22.9%)
Khanpur	7(10.0%)	09(12.9%)	03(4.3%)	19(27.1%)
Total	24(34.3%)	33(47.1%)	13(18.6%)	70(100%)

Table 3: Educational level of the respondents

Villages	Illiterate	Primary	Middle	Matric	Intermediate	Total
Tazagram	15(21.4%)	12(17.1%)	3(4.3%)	3(4.3%)	2(2.9%)	35(50.0%)
Asbanr	6(8.6%)	4(5.7%)	2(2.9%)	1(1.4%)	3(4.3%)	16(22.9%)
Khanpur	10(14.3%)	4(5.7%)	3(4.3%)	2(2.9%)	0(0.0%)	19(27.1%)
Total	31(44.3%)	20(28.6%)	8(11.4%)	6(8.6%)	5(7.1%)	70(100%)

Table 4: Family size of beneficiaries

Village	1-4	5-8	Above 8	Total
Tazagram	6(8.6%)	15(21.4%)	14(20%)	35(50%)
Asbanr	3(4.3%)	9(12.9%)	4(5.7%)	16(22.9%)
Khanpur	4(5.7%)	11(15.7%)	4(5.7%)	19(27.1%)
Total	13(18.6%)	35(50.0%)	22(31.4%)	70(100%)

Table 5: Credit obtained by respondents from other sources

Village	Yes	No	Total
Tazagram	5(7.1%)	30(42.9%)	35(50.0%)
Asbanr	3(4.3%)	13(18.6%)	16(20.9%)
Khanpur	4(5.7%)	15(21.4%)	19(27.1%)
Total	12(17.1%)	58(82.9%)	70(100%)

Table 6: Credit utilization by the respondents

Village	Non farming activities	Farming activities	Total
Tazagram	7(10.0%)	28(40%)	35(50%)
Asbanr	4(5.7%)	12(7.1%)	16(22.9%)
Khanpur	6(8.6%)	13(18.6%)	19(27.1%)
Total	17(24.3%)	53(75.7%)	70(100%)

Table 7: Other source of income of the respondents

Village	Business/		Daily wagers	Total
	Livestock	Enterprises		
Tazagram	17(24.3%)	11(15.7%)	07(10%)	35(50%)
Asbanr	09(12.9%)	06(8.6%)	01(1.4%)	16(22.9%)
Khanpur	07(10.0%)	08(11.4%)	04(5.7%)	19(27.1%)
Total	33(47.1%)	25(35.7%)	12(17.1%)	70(100%)

Table 8: Credit improve standard of life

Villages	No	Yes	Total
Tazagram	7(10.0%)	28(40.0%)	35(50.0%)
Asbanr	4(5.7%)	12(7.1%)	16(22.9%)
Khanpur	6(8.6%)	13(18.6%)	19(27.1%)
Total	17(24.3%)	53(75.7%)	70(100%)

Effects of credit on yield: Table 8 shows the effect of ZTBL credit on yield performance of cereals and a significant increase was observed during survey. Maximum increase was noted in Tazagram among the three villages. The findings are in line with previous similar studies. Ashfaq and Khan^[12], Mbata^[15], Iqbal *et al.*^[2] claimed that credit has positive effect on yield performance along with increase in income with the findings by Akram *et al.*^[14] where they observed improvement in the lives of beneficiaries after credit utilization (Table 9).

Table 9: Effect of credit on yield performance

Village	Yield (kg) before credit		Yield (kg) after credit		t-ratio	p-values
	Mean	SD	Mean	SD		
Tazagram	934.28	147.41	1245.71	201.96	9.314	0.000
Asbanr	945.31	146.12	1223.43	165.69	5.30	0.000
Khanpur	957.89	145.54	1221.05	185.82	5.77	0.000
Total	943.21	144.83	1233.92	187.66	12.22	0.000

Field Survey in 2018

Effects of credit on income: Increase in income is a key indicator of socio-economic development of the farmers. Table 10 shows a significant increase in income of the farmers across the three villages. Monthly income of farmers in Khanpur village increased more than others. These findings are in line with Arif^[11], Muhammad^[16], Alam^[6] and Javed^[17] who concluded in their studies that credit has increased the income level of the farming community. Naushad *et al.*^[18] noted 73% increase in the monthly income of farmers, i.e., income increased from Rs. 29210 to Rs. 52600.

Effects of credit on saving: Provision of credit by ZTBL has positive effect on saving behavior of the farmers. With increase in income, the saving of the farmers increased. Table 11 shows that total savings of the respondents in all the three villages has increased after credit provision. There is a marked difference between before and after credit. Greater increase in saving was noticed in village Asbanr. These findings are similar to the findings of Alam^[6], Naushad *et al.*^[18] and Saboor *et al.*^[19].

Problem faced by farmers in getting credit: The farmers also faced certain problems while taking credit from ZTBL. About 91.2% of the respondents were of the view that they faced problem while getting credit. Among them 28.5% complained about the longer distance of ZTBL branches from their villages 37.7% objected the lengthy procedure and 25.7% complained high interest rate. Similar findings were observed by Khan^[19] in their study where they reported high interest rate,

Table 10: Effects of ZTBL credit on income of the farmers

Village	Income (Rs) before		Income (Rs) after		t-ratio	p-values
	Mean	SD	Mean	SD		
Tazagram	30360.80	3917.92	37895.14	3961.10	14.86	0.000
Asbanr	28404.75	4683.23	37385.37	3836.27	28.14	0.000
Khanpur	31962.15	5252.73	40444.15	6177.35	26.85	0.000
Total	30348.35	4595.94	38470.50	4927.92	28.56	0.000

Table 11: Effect of credit on saving

Village	Saving (Rs) before		Saving (Rs) after		t-ratio	p-values
	Mean	SD	Mean	SD		
Tazagram	10063.71	3727.46	12957.37	4438.18	16.52	0.000
Asbanr	16306.25	2303.78	18688.75	2161.90	40.21	0.000
Khanpur	12649.05	3175.05	15874.26	2985.42	58.14	0.000
Total	11338.72	4112.19	14623.50	4438.18	29.83	0.000

Table 12: Problems faced by farmers during taking Loan

Village	No problem	Lengthy procedure	Longer distance	High interest rate	Total
	No.	No.	No.	No.	No.
Tazagram	4	12	10	9	35
Asbanr	1	5	6	4	16
Khanpur	2	8	4	5	19
Total	07 (8.7%)	25(35.7%)	20(28.5%)	18(25.7%)	70(100%)

Table 13: Suggestions for healthy loaning by the beneficiaries

Village	Decrease interest rate	Simple terms and conditions	More Branches of ZTBL should be established	Total
Tazagram	14(20%)	15(21.4%)	6(8.6%)	35(50%)
Asbanr	6(8.6%)	7(10.0%)	3(4.3%)	16(22.9%)
Khanpur	7(10%)	7(10.0%)	5(7.1%)	19(27.1%)
Total	27(38.6%)	29(41.4%)	14(20%)	70(100%)

Field survey

longer distance and absence of monitoring cell as the main issues. These findings also in line with the study of Khan^[13] (Table 12).

Suggestions by beneficiaries for healthy loaning:

During field survey different suggestions were recorded from beneficiaries for healthy loaning in future. Table 13 shows that 38.6% of the beneficiaries suggested decreasing the interest rate. The 41.4% suggested for simple terms and conditions and the remaining 20% suggested the establishment of more branches for consumer ease. The same suggestions were also recorded by Alam^[6] and Khan^[20].

CONCLUSION

The current study concluded that the credit facility resulted in increased farm productivity and brought desirable changes in farmer's life through increased income and saving, etc. ZTBL credit obtained by the farmers was used for purchase of agricultural inputs like purchasing hybrid seeds, modern equipment, fertilizers and utilizing more labors, etc. A positive significant effect was observed for yield performance, income and saving. Grains as well as the stalk quantity were also increased. Socioeconomic conditions of the beneficiaries were also improved considerably. Majority of the respondents

complained about lengthy and tiresome process, maximum interest rate and shortage of ZTBL branches and suggested simple terms and conditions of loaning and decrease in the interest rate.

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