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Loan borrowing pattern and factors influencing agricultural loan borrowing among soybean farmers in Washim district

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Abstract
The present paper entitled "Loan Borrowing Pattern and Factors Influencing Agricultural Credit among Soybean Farmers in Washim District" was undertaken to study the loan borrowing pattern and utilization of agricultural credit and to identify the factors encouraging soybean farmers to borrow loans. The study was conducted during the agricultural year 2024-25 in Washim district of Maharashtra. Primary data were collected from 90 selected soybean farmers through personal interviews using a pre-tested and structured schedule. The respondents were selected from nine villages of Washim, Risod and Malegaon talukas. The data were analysed using simple tabular analysis, frequency and percentage analysis, while multiple regression analysis was used to examine the factors influencing the amount of loan borrowed.
The results revealed that institutional sources were the major providers of agricultural credit. Co-operative banks were the dominant source, serving 61.11 per cent of the respondents, followed by commercial banks (18.89%) and co-operative societies (12.22%). The crop production schedule showed a continuous requirement of financial resources from land preparation to marketing. The overall expenditure on soybean cultivation was ₹45137.90 per ha, with harvesting, manures and fertilizers, seed and land preparation constituting the major expenditure components. The overall soybean yield was 18.61 q/ha, the average price received was ₹4622.91 per quintal and the value of produce was ₹86110.40 per ha. The regression results showed that age, education and total net cultivated area had positive and significant influence on the amount of loan borrowed, whereas family size, annual income, rate of interest and purpose of loan were non-significant in the reported model. The study concludes that institutional credit remains essential for meeting seasonal production requirements and that farmers' socio-economic and farm-resource characteristics play an important role in determining borrowing behavior.

Keywords: Agricultural credit, loan borrowing, soybean farmers, credit utilization, institutional finance, Washim district

Introduction
Agricultural production requires timely investment in seed, fertilizers, plant protection, labour, machinery and other farm operations. Soybean, being one of the important Kharif crops of Maharashtra, involves a sequence of expenditure from land preparation to harvesting and marketing. Since many farmers cannot meet these seasonal financial requirements entirely from their own resources, agricultural credit becomes an important instrument for maintaining continuity in crop production.
Farmers obtain agricultural loans from institutional and non-institutional sources depending upon accessibility, credit requirements and the terms of lending. The pattern of borrowing and the productive utilization of loans are important because timely credit can support the purchase of essential inputs and completion of farm operations. At the same time, the amount of credit borrowed may be influenced by farmers' age, education, family characteristics, income, farm size, interest rate and the purpose for which credit is required.
Washim district is an important soybean-growing area of Maharashtra, where farmers depend substantially on seasonal agricultural finance. Therefore, understanding the sources from which farmers borrow, the production operations for which funds are required, and the factors associated with loan borrowing is useful for improving the effectiveness of rural credit delivery. The present paper focuses specifically on the second and third objectives of the original study.

Objectives of the Study

1. To study the loan borrowing pattern and its utilization.
2. To identify the factors encouraging soybean farmers to borrow agricultural loans.

Methodology

The present study was undertaken to examine the loan borrowing pattern and utilization of agricultural credit among soybean farmers in Washim district. The methodology was designed to collect primary information on sources of credit, crop-wise financial requirements and factors influencing the amount of agricultural loan borrowed. The study followed a systematic sampling and analytical procedure to achieve the stated objectives.

Area and period of study

The study was conducted in Washim district of Maharashtra during the agricultural year 2024-25. Washim district was selected purposively because soybean is a major Kharif crop and farmers depend on agricultural credit for meeting crop production requirements.

Sample and source of data

Primary data were collected from 90 selected soybean farmers through personal interviews using a pre-tested and structured schedule. The respondents were selected from nine villages of Washim, Risod and Malegaon talukas.

Analytical tools: Simple tabular analysis, frequency and percentage analysis were used to study the source-wise borrowing pattern, operational requirements and expenditure pattern of soybean cultivation. Multiple regression analysis was used to identify the factors associated with the amount of loan borrowed.

Regression model

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7$$

Where,

- Y = amount of loan borrowed
- X_1 = age
- X_2 = education
- X_3 = family members
- X_4 = annual income
- X_5 = total net cultivated area
- X_6 = rate of interest
- X_7 = purpose of loan.

Results and Discussion

The results are presented according to the two selected objectives, namely the loan borrowing pattern and utilization of agricultural credit and the factors encouraging soybean farmers to borrow loans.

1. Loan borrowing pattern and its utilization

Table 1: Source-wise borrowing of loan by selected soybean farmers

S. N.	Source	Small (N=50)	Medium (N=22)	Large (N=18)	Total (N=90)	Avg.	Min.	Max.
1	Commercial bank	10 (20.00)	5 (22.73)	2 (11.11)	17 (18.89)	5.18	3.00	7.00
2	Co-operative bank	29 (58.00)	13 (59.09)	13 (72.22)	55 (61.11)	4.05	3.00	6.00
3	Co-operative society	7 (14.00)	3 (13.64)	1 (5.56)	11 (12.22)	0.00	0.00	0.00
4	Regional Rural Bank	0 (0.00)	1 (4.55)	2 (11.11)	3 (3.33)	5.67	3.00	7.00
5	Village Money lender	2 (4.00)	0 (0.00)	0 (0.00)	2 (2.22)	3.00	3.00	3.00
6	Relatives/Friends	2 (4.00)	0 (0.00)	0 (0.00)	2 (2.22)	0.00	0.00	0.00
	Total	50 (100.00)	22 (100.00)	18 (100.00)	90 (100.00)			

The results presented in Table 1 show that co-operative banks were the dominant source of agricultural credit, serving 55 out of 90 farmers (61.11%). Commercial banks ranked second with 18.89 per cent, followed by co-operative societies with 12.22 per cent. Regional Rural Banks, village money lenders and relatives or friends accounted for only small proportions. The findings indicate a clear dependence on institutional sources, particularly co-operative banks, for meeting the credit requirements of soybean cultivation. The comparatively wider use of formal credit suggests that institutional agencies play an important role in financing seasonal agricultural operations.

Table 2: Operating-wise schedule of soybean crop

Sr. No.	Operation	Period
1	Land preparation	March to May
2	Manuring	March
3	Sowing	June
4	Fertilizer application	July
5	Intercultural operations	July to September
6	Plant protection measures	August and September
7	Harvesting and threshing	October
8	Marketing	October to February

Table 2 indicates that soybean cultivation requires financial resources throughout the production cycle. Expenditure begins with land preparation and manuring before sowing, followed by the purchase and application of inputs during the crop growth period. Intercultural and plant protection operations require funds during July to September, while harvesting, threshing and marketing take place later in the season. The schedule therefore highlights the importance of timely loan availability and proper utilization of borrowed funds so that essential operations are not delayed.

The results presented in Table 3 show that the overall expenditure on soybean cultivation was ₹45137.90 per ha. Harvesting was the largest expenditure component, accounting for 16.85 per cent of total cost, followed by manures and fertilizers (15.09%), seed (14.15%) and land preparation (13.55%). Plant protection and intercultural operations also accounted for important shares of expenditure. The overall yield was 18.61 q/ha and the value of produce was ₹86110.40 per ha. These findings show that agricultural credit is required primarily to finance recurring crop production expenses and timely availability of funds can support the efficient completion of farm operations.

Table 3: Overall expenditure and returns from soybean cultivation

Sr. No.	Expenditure	Small	Medium	Large	Overall
1	Land preparation	6121.22 (13.57)	6096.95 (13.48)	6127.50 (13.59)	6116.54 (13.55)
2	Seed	6362.24 (14.10)	6453.36 (14.27)	6368.11 (14.12)	6385.69 (14.15)
3	Sowing	1845.08 (4.09)	1836.73 (4.06)	1847.72 (4.10)	1843.57 (4.08)
4	Manures and fertilizers	6780.60 (15.03)	6882.68 (15.21)	6812.00 (15.10)	6811.83 (15.09)
5	Application of manures and fertilizers	1001.06 (2.22)	982.09 (2.17)	994.72 (2.21)	995.16 (2.20)
6	Intercultural operation	4825.78 (10.70)	4819.23 (10.65)	4812.39 (10.67)	4821.50 (10.68)
7	Plant protection	5003.12 (11.09)	4993.68 (11.04)	4978.06 (11.04)	4995.80 (11.07)
8	Harvesting	7598.04 (16.84)	7637.14 (16.88)	7582.00 (16.81)	7604.39 (16.85)
9	Threshing and packaging	4820.86 (10.69)	4784.68 (10.58)	4841.56 (10.73)	4816.16 (10.67)
10	Transporting and marketing	748.24 (1.66)	750.50 (1.66)	740.11 (1.64)	747.17 (1.66)
11	Total expenditure of soybean cultivation	45106.36 (100.00)	45237.18 (100.00)	45104.17 (100.00)	45137.90 (100.00)
12	Yield (qtl per ha)	17.86	18.91	20.33	18.61
13	Average price received (Rs. per qtl)	4567.60	4635.14	4761.61	4622.91
14	Value of produce (Rs.)	81572.50	87660.55	96821.06	86110.40

2. Factors encouraging soybean farmers to borrow agricultural loans

Table 4: Factors encouraging soybean farmers to borrow agricultural loans

Particular	Coefficient
Intercept	-40.88
Age	0.41***
Education	0.19***
Family Member	0.11 NS
Annual Income	0.16 NS
Total Net Area (ha)	0.41***
Rate of Interest	0.04 NS
Purpose of Loan	0.09 NS
R Square	0.60
Multiple R	0.77

Note: *** Significant at 1 per cent level; NS = Non-significant.

The multiple regression analysis presented in Table 4 indicates that age, education and total net cultivated area had positive and statistically significant coefficients at the 1 per cent level. This suggests that these factors were important determinants of the amount of agricultural loan borrowed by the selected soybean farmers. Farmers with greater experience associated with age, higher educational attainment and larger cultivated holdings were more likely to have greater credit requirements and borrowing capacity.
Family members, annual income, rate of interest and purpose of loan recorded positive but non-significant coefficients in the reported model, indicating that their independent influence on the amount borrowed was not statistically significant. The R Square value of 0.60 shows that the variables included in the model explained 60 per cent of the variation in loan borrowing, while the Multiple R value of 0.77 indicates a reasonably strong overall relationship between the dependent variable and the selected explanatory variables.

Conclusion

The study concludes that co-operative banks were the major source of agricultural credit for soybean farmers, accounting for 61.11 per cent of borrowers, followed by commercial banks and co-operative societies, highlighting the importance of institutional finance in meeting seasonal farm requirements. Soybean cultivation required financial resources throughout the production cycle, with harvesting, manures and fertilizers, seed and land preparation being the major expenditure components. The overall expenditure on soybean cultivation was ₹45137.90 per ha, while the overall yield was 18.61 q/ha and the value of produce was ₹86110.40 per ha, indicating the importance of timely and productive utilization of agricultural credit. Regression analysis showed that age, education and total net cultivated area had a positive and significant influence on the amount of loan borrowed, whereas family size, annual income, rate of interest and purpose of loan were non-significant in the reported model. Thus, strengthening the accessibility and timely delivery of institutional credit, while considering farmers' educational and farm-resource characteristics, can improve the effectiveness of agricultural finance for soybean cultivation.

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