



An Economic Analysis of Credit Availment for Grape Cultivation and Value Addition from Different Sources in Vijayapura District of Karnataka, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The present study aims to analyze the extent of credit availment from different sources for grape cultivation and value addition in Vijayapura district, which is having the highest area under grape cultivation in Karnataka state. As the grape requires high maintenance expenses, its economic analysis is of great importance in its present status. The primary data was collected from 90 respondent grape farmers in the study area. The finding of the study revealed that the majority of the sample farmers (40%) have availed of short-term credit from commercial banks, followed by RRBs (36.66%), and cooperative banks/societies (23.34%) for grape cultivation. In contrast, for raisin-making activities, only 35 respondent farmers have availed themselves of additional non-institutional sources of credit, and the other 55 sample farmers were self-funding. Among the non-institutional sources, 57.15 per cent of the sample farmers borrowed loans from friends and relatives, while 42.85 per cent used moneylenders as a source of non-institutional credit for raisin-making purposes. All the sample farmers in the study area borrowed an average of ₹ 1,46,883 per acre from institutional sources for grape cultivation and the overall recovery rate for institutional sources was 83.81 per cent. The average amount of credit borrowed from moneylenders and friends or relatives by the sample farmers in the study area was ₹ 1,67,372 and the recovery rate was 59.32 per cent. The results indicated that the majority of farmers taking a loan from institutional sources for grape cultivation and for the raisin-making again obtained loans from non-institutional sources despite the higher interest rates since the credit quantity obtained from institutional sources was insufficient for both grape production and value addition (raisin making). To encourage this type of small-scale industry in rural areas, the government should devise special programmes that encourage farmers to engage in value-added activities.

Keywords: Institutional sources; non-institutional sources; credit; grape production; raisin making.

1. INTRODUCTION

Agricultural credit is very important instrument in facilitating the process of agricultural development and thereby initiating the growth of the rural economy. The role of agricultural credit and credit institutions in developing countries like India is very important due to the pressing need for increased agricultural production and productivity to meet the need of increasing population.

Agricultural credit plays a crucial role in realizing the full potential of agriculture as a profitable activity. The credit needs of the farming community fall into three categories namely, short-term loans (crop loans), medium-term loans, and long-term loans. Among these three types, the majority of the farmers require short-term loan. Under this short-term loan system, the credit requirement of a farmer is determined based on per acre scale of finance for each crop grown in his/her field. There are several credit agencies that supply agricultural credit to the farmers. These agencies can be broadly classified into two categories viz., institutional agencies and non-institutional agencies. Among them institutional credit agencies are, commercial banks, regional rural banks and co-operatives banks/societies [1,2,3].

In India, Maharashtra is the leading producer of grape followed by Karnataka, Punjab, Andhra Pradesh and Tamil Nadu with regard to area under grape cultivation and grape production. In India, 92.6 percent of grape produced is utilized for table purpose and 5.9 percent for raisin production and 1.5 percent for wine making. Vijayapura district holds first position in grape production in Karnataka state, with an area of 17 thousand hectares and 50 thousand MT of production [4]. There is abundant scope for the processing of grapes in the form of raisins in the Vijayapura district. Vijayapura district is the major grape growing area in Karnataka and the district has been declared as a "Horticulture District" by the State Government.

In recent years, the excessive reliance of borrowers on some or other forms of moneylender and informal/semi-formal sources and exorbitant interest rate charged by those entities have captured the attention of policy makers to downsize the informal sector finance. In recent years, policy interventions have led to doubling of agricultural credit, but the limited access of small and marginal farmers to institutional credit continues to be a matter of concern. The inadequate and untimely credit along with procedural hassles from formal institutions has been added to the problem of

credit access by rural farmers. These facts have motivated to a large extent to the inquiry about the persistence of formal sector finance in rural areas of Vijayapura district for grape cultivation and value addition.

2. MATERIALS AND METHODS

The multistage purposive random sampling technique was adopted in designing the sampling frame for the study. In the first stage, Vijayapura district was selected based on the highest area and production of grapes in Karnataka state. Similarly, in the second stage, three taluks—namely, Tikota, Babaleshwar, and Vijayapura were selected based on the highest area under grapes in Vijayapura district. In the third stage, three villages were selected based on the highest area from each taluk. In the fourth stage, randomly 10 respondents from each village who were cultivating grapes and had also undertaken raisin production in their backyards were interviewed according to the needs of the study.

Farmers needed medium and long-term credit to establish the grape orchard, and the farmers used crop loans to get short-term credit for grape orchard maintenance. The purposively selected farmers were borrowers of institutional short-term credit for grape production, irrespective of institutional sources (scheduled commercial banks, regional rural banks, or cooperative banks/societies). The respondent farmers acquired the additional credit for raisin production from non-institutional sources as the institutional credit facility was unavailable for the same purpose. The analytical techniques used in the study are:

I. Descriptive statistics

The technique of descriptive analysis was used to estimate the percentage share of different sources of credit, amount borrowed, and interest cost. The percentages and averages were computed and compared to obtain meaningful results.

II. Credit recovery rate

To analyse credit risk management, a recovery rate is commonly used. The recovery rate is the amount, expressed as a percentage, recovered from a loan borrower. The recovery rate was calculated and documented as shown below

$$\text{Credit recovery rate} = \frac{\text{Amount of credit repaid}}{\text{Amount of credit borrowed}} \times 100$$

III. Co-efficient of correlation

To test the relationship between independent variable and dependent variable the correlation method was employed by using the Pearson's correlation coefficient. The model included six independent variables such as, area, age, education, annual income, family size, farming experience and a dependent variable that is credit borrowed. The formula used for 'r' given below.

$$r = \frac{(\sum XY) - (\sum X - \sum Y)/N}{\sqrt{\sum X^2 - (\sum X)^2/N * \sum Y^2 - (\sum Y)^2/N}}$$

Where,

- Y= Credit borrowed (Rupees)
- X₁=Area (Acre)
- X₂=Age (Years)
- X₃=Education (Years)
- X₄=Annual income (Rupees)
- X₅=Family size (Numbers)
- X₆=Farming experience (Years)

3. RESULTS AND DISCUSSION

The various sources of credit for grape cultivation and value addition (raisin making) in the study area are detailed in Table 1. The majority of the sample grape farmers (40%) have availed of short-term credit from commercial banks, followed by RRBs (36.66%), and cooperative banks/societies (23.34%) for grape cultivation. This may be because commercial banks were easily accessible, even in distant locations; most farmers have acquired loans from commercial banks because they will advance a larger amount as grapes are a capital-intensive crop. Since there was no special loan accessible just for value addition or processing, the sample farmers diverted the credit amount for value addition in addition to the production purposes for which the institutional sources were providing it.

In contrast, for raisin-making activities, only 35 respondent farmers have availed themselves of additional non-institutional sources of credit, and the other 55 sample farmers were self-funding. Among the non-institutional sources, 57.15 per cent of the sample farmers borrowed loans from friends and relatives, while 42.85 per cent used moneylenders as a source of non-institutional credit for raisin-making purposes. The majority of farmers again obtained loans from moneylenders and friends/relatives despite the higher interest

rates since the credit quantity obtained from institutional sources was insufficient for both grape production and value addition. The institutional sources did not specifically offer loans for grape value addition, especially for small scale raisin making. To encourage this type of small-scale industry in rural areas, the government should devise special programmes that encourage farmers to engage in value-added activities. These results were in accordance with the studies of Jagtap [5], Chikkalakai and Krishnamurthy [6] and Yadav and Rao [7].

Table 2 shows the total amount of credit borrowed, loans repaid, the interest rate, and the recovery rate in the research area. The average loan amount obtained by respondents from the commercial banks was ₹ 1,49,416 per acre, while the amount borrowed from RRBs was ₹ 1,44,091 per acre in the study area. The average credit taken from a cooperative bank/society by grape growers was ₹ 1,47,144. All the sample farmers in the study area borrowed an average of ₹ 1,46,883 per acre from institutional sources at interest rates of 7 percent.

Table 1. Sources of credit for grape cultivation and raisin making

Sl. No	Source of credit	Grape cultivation (n=90)	Raisin making (n=35)
A	Institutional source		
1	Commercial Banks	36 (40.00)	-
2	Regional Rural Banks	33 (36.66)	-
3	Co-operative Banks/Societies	21 (23.34)	-
B	Non-institutional source		
1	Money lenders	-	15 (42.85)
2	Friends/relatives	-	20 (57.15)

Note: Figures in parentheses indicate per cent to the total

Table 2. Details of the credit borrowed by the sample farmers from institutional sources

Sl. No.	Particulars	Commercial Banks (n=36)	Regional Rural Banks (n=33)	Rural Cooperative Banks/ Societies (n=21)	Overall (n=90) (₹/acre)
1	Average amount of credit borrowed	149416	144091	147144	146883
2	Interest rate charged (%)	7.00	7.00	7.00	7.00
3	Average amount of credit repaid	107749	116818	144762	123109
4	Average of balance amount	41667	27273	2382	23774
5	Recovery rate (%)	72.11	81.07	98.38	83.81

Table 3. Details of the credit borrowed by the sample farmers from non-institutional sources

Sl. No.	Particulars	Money lenders (n=15)	Friends and relatives (n=20)	Overall (n=35) (₹/acre)
1	Average amount of credit borrowed	150460	184285	167372
2	Interest rate charged (%)	24.00	18.00	18-24
3	Average amount of credit repaid	100312	98279	99295
4	Average of balance amount	50148	86006	68077
5	Recovery rate (%)	66.67	53.33	59.32

Table 4. Distribution of sample farmers according to the loan amount availed from institutional sources

Sl. No	Loan amount	(₹/farmer)					
		Small and marginal farmers (n=78)		Medium farmers (n=10)		Large farmers (n=2)	
		No.	Amount	No.	Amount	No.	Amount
1	Less than 1 lakh	22 (28.20)	99500 (20.84)	2 (20.00)	92500 (18.71)	-	-
2	1.01 to 2 lakhs	49 (62.83)	157000 (32.88)	5 (50.00)	169000 (34.17)	1 (50.00)	150000 (40.54)
3	2.01 to 3 lakhs	7 (8.97)	221000 (46.28)	3 (30.00)	233000 (47.12)	1 (50.00)	220000 (59.46)

Note: Figures in parentheses indicate percent to the total

Table 5. Distribution of sample farmers according to the loan amount availed from non-institutional sources

Sl. No	Loan amount	(₹/farmer)			
		Small and marginal farmers (n=21)		Medium farmers (n=14)	
		No.	Amount	No.	Amount
1	Less than 1 lakh	3 (14.28)	95000 (19.79)	1 (7.14)	90000 (19.15)
2	1.01 to 2 lakhs	10 (47.61)	139000 (28.95)	11 (78.57)	155000 (32.98)
3	2.01 to 3 lakhs	8 (38.09)	246000 (51.25)	2 (14.28)	225000 (47.87)

Note: Figures in parentheses indicate per cent to the total

Table 6. Relationship between socio-economic traits and credit borrowed by the sample farmers

Sl. No.	Socio-economic traits	Variables	Correlation Coefficient	P-value
1	Credit borrowed (₹)	Y	-	-
2	Area (acre)	X ₁	0.456**	0.000
3	Age (years)	X ₂	-0.210*	0.047
4	Education (years)	X ₃	0.742**	0.000
5	Annual income (₹)	X ₄	0.353**	0.001
6	Family size (numbers)	X ₅	-0.047 ^{NS}	0.659
7	Farming experience (years)	X ₆	-0.034 ^{NS}	0.752

Note: ** Significant at 1% level

* Significant at 5% level

NS= Non-Significant

Farmers repaid loan amounts to various institutions, viz., commercial banks, regional rural banks, and cooperative banks/societies with an average amount of ₹ 1,07,749, ₹ 1,16,818, and ₹ 1,44,762, respectively. Overall, the sample grape farmers in the study area repaid an average amount of ₹ 1,23,109 per acre to institutional sources.

The average amount of credit owed by respondent farmers to various credit providers was computed to be ₹ 41,667 for the commercial bank, ₹ 27,273 for the RRB, and ₹ 2,382 for the

cooperatives. Farmers were required to repay an average amount of ₹ 23,774 to these lenders in the study area.

The recovery rates for all institutional credit sources were also estimated, and the findings revealed that commercial banks, regional rural banks, and cooperative banks recovered at rates of 72.11 percent, 81.07 percent, and 98.38 percent, respectively. The aggregate recovery per cent per acre for all of these institutional credit sources was 83.81 percent.

From the aforesaid findings, it is clear that the average amount of credit borrowed by farmers was highest in commercial banks; as their scale of finance is larger and they disburse amounts in a lump sum as grape cultivation operations spread over the year, the requirement of credit at various stages plays a crucial role. Another main reason for the farmers to borrow loans from commercial banks is their easy accessibility in the local area. Due to repayment flexibility and a high number of installments over time, the average amount repaid and recovery rate was higher in cooperatives, whereas loans from other sources must be repaid in one lump sum. The repayment was difficult for most of the farmers as their farm yield was spread throughout the year and the chances of credit diversion were more for personal purposes. If farmers do not repay within the specified time frame, banks charge an additional rate of interest ranging from 12 to 14 percent. The study revealed that the overall loan recovery scenario was found to be quite satisfactory in the study area. Self-consciousness and the hope of getting a future loan were reported by most of the borrowers as major factors in timely loan repayment. The results were in accordance with the studies of Pagire and Nagane [8] and Yarazari et al [9].

Details of credit borrowed by the farmers for raisin-making in the study area were tabulated in Table 3. As no particular loan is provided for value addition of grapes by the institutional sources, farmers borrowed the additional credit amount from moneylenders and friends or relatives. Hence, the average amount of credit borrowed from moneylenders and friends or relatives by the sample farmers in the study area was ₹ 1,67,372, for which the interest charged was in the range of 18–24 percent, the average amount of credit repaid was ₹ 99,295, the average amount to be repaid was ₹ 68,077, and the recovery rate was 59.32 percent at the aggregate level in the study area. Compared to institutional loans, the recovery rate for non-institutional loans was low. The close relationship between the sample farmers and their relatives or friends may be the cause of this. The payback time was prolonged in cases involving relatives or friends, since the sample farmers took advantage of their leniency. However, in the case of moneylenders, the excessive interest rate completely engulfed the borrowers' repayment resources, and the borrowers were left with a small amount to repay.

Table 4 depicts the distribution of sample farmers in the study area based on loan amounts obtained from institutional sources. The results revealed that, the majority (62.83%) of the small and marginal farmers had availed of the loan amount of ₹ 1.01 to 2 lakhs with an average amount of ₹ 1,57,000, whereas 28.20 percent of the small and marginal farmers had availed of the loan amount of less than one lakh with an average amount of ₹ 99,500, and only 8.97 percent of the small and marginal farmers had availed of the loan amount of ₹ 2.01 to 3 lakhs. Similarly, 50 percent of medium farmers availed of the loan amount of ₹ 1.01 to 2 lakhs with an average amount of ₹ 1,69,000, whereas the amount of ₹ 2.01 to 3 lakhs was borrowed by 30 percent of medium farmers with an average amount of ₹ 2,33,000, and 20 percent of medium farmers availed of the loan amount of less than one lakh with the average amount borrowed being ₹ 92,500. Among two large farmers, 50 percent of the farmers availed themselves of the loan amount of ₹ 2.01 to 3 lakhs, and the amount borrowed was ₹ 2,20,000. The remaining 50 percent of farmers availed themselves of the loan amount of ₹ 1.01 to 2 lakhs, with an amount of ₹ 1,50,000. The majority of the institutions provided loans in the range of ₹ 1 to 2 lakhs for the grape production in the studied district. As a result, most farmers received loans in the ₹ 1 lakh to ₹ 2 lakh range.

Table 5 shows the distribution of farmers based on the loan amount obtained from non-institutional sources. The results revealed that, among all the small and marginal farmers, the majority of the farmers (47.61%) availed of loan amounts of ₹ 1.01 to 2 lakhs, followed by 38.09 percent of farmers who availed of loan amounts of ₹ 2.01 to 3 lakhs, and 14.28 percent of farmers who availed of loan amounts of less than one lakh rupees. Similarly, among all the medium-sized farmers, 78.57 percent of the farmers availed of loan amounts of ₹ 1.01 to 2 lakhs, followed by 14.28 percent of farmers availing of loan amounts of ₹ 2.01 to 3 lakhs, and 7.14 percent of farmers availing of loan amounts of less than ₹ 1 lakh rupees. The majority of the farmers took out loans ranging from ₹ 1.01 to 2 lakhs because the loan amount from institutional sources did not cover both the production and value addition costs of grapes. To avoid such risks, sample farmers obtained an additional amount of ₹ 1-2 lakhs from non-institutional sources, where a loan of less than ₹ 1 lakh was insufficient and more than ₹ 2 lakhs would be an additional burden due to higher interest rates.

The correlation equation that was computed to explore the extent of the relationship between socioeconomic traits and the quantity of credit borrowed by grape farmers in the studied area is shown in Table 6.

At the one percent level, the correlation coefficient between the amount of credit borrowed and socioeconomic variables was found to be positively correlated for the area (0.456), education (0.742), and annual income (0.353) at a one percent significance level. This correlation coefficient was negatively correlated with age (-0.210) at a five percent significance level. The correlation coefficients suggest that there is non-significant relationship between the amount of credit borrowed and either family size (0.047) or farming experience (0.034). The results obtained are at par with those obtained by Prashant [10] and Bhavani [11].

In other words, there was a higher correlation between the amount of credit borrowed and the area, education level, and annual income. Age is negatively correlated with the amount borrowed. The amount of credit that farmers borrow increases along with the size of the land area, as do input needs and the range of operations that need to be performed thereafter. The results illustrate that farmers' capacity to take on risk and borrow credit declines with age. The results also indicated that credit borrowing is directly correlated with education since educated farmers were more aware of the resources offered by institutions and used the credit, they borrowed for profitable endeavour. Farmers with higher annual incomes have larger agricultural inventories, indicating a positive association between the two. Annual income shows a positive relationship, as farmers with high incomes have more surplus and repayment capacity [12].

4. CONCLUSION

Despite grappling with challenges related to climate change and environmental sustainability, Vijayapura district remains a pivotal hub for grape cultivation. Grape crop and raisin serve as a vital source of livelihood for farmers in the region. As grape cultivation requires high maintenance costs, hence farmers go for institutional sources for grape cultivation but for raisin making institutional sources did not specifically offer loans. The majority of farmers obtained loans from moneylenders and friends/relatives despite the higher interest rates since the credit quantity obtained from institutional sources was insufficient for both

grape production and value addition. Due to that diversion of credit is more among grape farmers for raisin making so, the government should put in place a programme where institutional sources grant loans for grape processing to interested farmers to promote small scale cottage industries. Also, credit facilities should be provided at no collateral, low interest rates and with simplification of procedures in obtaining credit. This will encourage farmers to access credit through banks and enhance timely disbursement of loans to needy grape as well as raisin growers in the study area.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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