

STRENGTHENING CREDIT SERVICES TO LIVESTOCK SECTOR FOR INCLUSIVE RURAL GROWTH

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ABSTRACT

The present study was carried out to analyse the members' valuation of different attributes associated with credit delivery through dairy SHGs. The study was carried out on a sample of 60 women members of dairy SHGs formed under SGSY programme of Government of India. Conjoint analysis was carried out to have a quantitative estimate of members' valuation of different credit attributes. The findings revealed that poor respondents had obtained credit for maximum number of times during the last three years as compared to their richer counterparts and they also had high debt balance yet to be repaid. 'Interest rate' emerged as the most important credit related attribute valued by member respondents, followed by 'timeliness', 'credit amount' and 'purpose' of loan. Overall members preferred 'lower interest rate in comparison to market rate', 'shorter time-to-loan decision', 'full loan amount', and 'loan for production purpose'. Some policy suggestions are given towards strengthening credit services delivery through SHGs.

Introduction

Credit plays a crucial role in agriculture and rural economy and is an integral part of the process of modernisation of agriculture and commercialisation of the rural economy (Sidhu *et al*, 2008). In this context, access to financial services becomes a pre-condition for agricultural development. Appropriate savings and credit systems that address the particular needs and constraints of the poor are important tools for increasing production among the rural poor (IFAD, 2004). The negative impact of lack of access to credit services on agricultural and non-agricultural productivity, income generation, farm profit, farm investment and household welfare in developing countries has been reported extensively in earlier studies (Diagne and Zeller, 2001; Okoruwa and Oni, 2002; Carter and Olinto, 2003; Foltz, 2004; Balogun and Yusuf, 2011; Bogale and Genene, 2012).

In India, a multi-agency approach to agricultural credit is in place since several decades comprising cooperatives, commercial banks and regional rural banks (RRB's). Several initiatives over time have been undertaken to improve farmers' access to institutional credit by strengthening the institutional mechanism of rural credit system. However, in spite of considerable efforts to streamline, reinforce, expand and institutionalise the agricultural credit system, achievements fall short of proclamations, policies and programmes. Ailing cooperatives, backtracked Regional Rural Banks (RRB's) and commercial banks with waning interest in rural credit have contributed to the ineffectiveness of the multi-agency system, hampering credit delivery (Kumar *et al*, 2010). There are evidences that suggest that the poor and marginal sections of the rural community still remain excluded from the formal credit delivery mechanism

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(Satyasai, 2008). The NSSO's household survey to ascertain the status of farming and farmers in India in 2003 estimated that about 51 per cent of total farm households have been financially excluded. Only about 28 per cent of the total farm households in the country access credit from institutional sources with wide regional variations. The persistence of moneylenders in the rural credit market is still a major concern.

The post-liberalisation period saw a paradigm shift in the banking sector which coincided with the growth of a silent micro-finance revolution in rural India. The genesis of this was a National Bank of Agriculture and Rural Development (NABARD) - initiated pilot, the Self-Help Group (SHG)-Bank linkage project in 1991, which focused on Self-Help Groups (SHGs) as a channel for delivery of micro-finance (Satish and Mehrotra, 2009). Micro-finance provides credit support in small doses along with training and other related services to people who are resource-poor but are unable to undertake economic activities. The main objective is to bring about socio-economic upliftment of rural poor by providing them income-generating assets through a mix of bank credit and governmental subsidy.

The livestock sector is emerging as one of the fastest growing agricultural sub-sectors in India and the expectations are that this growth could further accelerate due to growing urbanisation, rising incomes and the high income elasticity of demand for livestock products. This offers significant opportunities for the reduction of poverty among poor households on account of relatively equitable distribution of livestock. However, flow of institutional credit to livestock sector in the country has not been commensurate with its share in agricultural gross domestic product (AgGDP). While the share of the livestock sector to AgGDP has increased from around 14 per cent in 1981-82 to 24 per cent in 2010-11 (Gol, 2012a), the average share of the sector in total term loans advanced to the agricultural sector was only about 10 per cent in

2009-10. After 2005-06, there has been very slow growth in credit flow to this sector. Its share in total agricultural credit (short-term and long-term) has hardly ever exceeded 5 per cent (Gol, 2012b).

Livestock in India not only holds promise for a more balanced development of the rural economy but also emancipation of rural women through their social and economic empowerment as 71 per cent of workforce engaged in livestock farming are women as against a share of only 33 per cent in crop husbandry. As many as 75 million women are engaged in the livestock sector as against 15 million men (Gol, 2010). Successful capitalisation of opportunities in this sector requires a policy regime that facilitates growth in productivity at the farm level. Access to quality credit services to the women workforce engaged in livestock activity will be one of the most critical avenues in this regard.

The potential of SHG movement in the socio-economic development of rural women had been recognised since its inception and positive correlation of women empowerment and SHG membership has been reported in several earlier studies (Tankha *et al.*, 2005; Venkatarao, 2009 and Vimala, 2009). Livestock activity, especially, dairying has all along been promoted as a key economic activity in the SHG movement. However, the performance of SHGs, with dairying as a key activity, has been skewed in favour of only a few States and the beneficial impact of them in terms of social, economic, political and cultural empowerment of women has not been seen uniformly across the country.

There is a pressing need to address the problem in credit provision from demand side as such analyses would provide information pertaining to ways of overcoming challenges in credit accessibility. Most of the existing literature on provision of rural credit has focussed largely on the supply side of credit with little attempts to explore household demand for credit (Mpuga,

2008). Understanding exactly what the borrowers require or desire from their credit providers is a challenge for the institutional lenders. Little research has been done on the importance borrowers place on various attributes involved in the provision of financial services (Bard *et al*, 2002), more so in the case of livestock sector. Knowing the relative importance of credit product attributes, in addition to what credit attributes are important to a borrower, can help lenders provide the desired services. Few studies have been carried out with primary data from farm households in order to document the nature of demand for agricultural credit (Pandit *et al*, 2007; Anjugam and Ramasamy, 2007), but as such the findings of these studies cannot be generalised to the livestock sector.

The present study intends to fill this gap in the literature and to provide empirical estimates of borrowers' valuation of different attributes associated with credit services.

Materials and Methods

The study was carried out in Uttarakhand State of India. Livestock activity specially, dairy husbandry, forms a source of livelihood for almost all the households in the State, with each household possessing 1-2 animals. Over 80 per cent of all livestock species are owned by small holders (landless agricultural labourers, marginal and small farmers). Livestock is thus considered to have high prospect to enhance the level of living of the poorest of the poor in the State.

Sampling : The State has two administrative divisions, viz. Kumaon and Garhwal. Kumaon division was selected for the study on account of higher livestock density (Bardhan *et al*, 2010). Nainital district was then selected from Kumaon division purposively as the district has the highest number of SHGs in Kumaon region of the State. In Nainital district, SHGs generally come under Swarnajayanti Gram Swarozgar Yojana (SGSY) and National Bank of Agriculture and Rural Development (NABARD) models II (SHGs formed by NGO and financed through bank) and III (SHGs

financed by banks using NGOs as financial intermediaries). The SGSY model - promoted by Ministry of Rural Development, Government of India - has subsidy component and has a mandate of including at least 70-80 per cent of its members from people living below poverty line. The NABARD model does not have such specifications. The SGSY model was selected for the study so as to emphasise more on the role of SHGs in livelihoods of poor people. Out of total eight blocks in Nainital district, Haldwani block was selected on account of having the highest number of women dairy SHGs, which are linked to the banks and are in existence for at least three years.

A list of all women dairy SHGs of Haldwani block of Nainital district was prepared and the SHGs were then stratified into low, medium and high performing groups on the basis of savings made by the groups in one year using Cumulative Square root of Frequency method. A total of 15 women dairy SHGs were selected for the study having representation from each stratum on proportionate basis.

A complete enumeration of all members of selected SHGs was conducted for the purpose of developing a sampling frame. All the members were classified according to their wealth status into rich, medium and poor categories on the basis of annual household income by using cumulative square root of frequency method. Four members were selected randomly from each SHG having representation from different wealth categories on proportionate basis, thus making a sample size of 60 members.

The data for the study were collected through personal interview method with the help of a well-structured, comprehensive and pretested interview schedule. Respondent in this study pertains to the female member of sample household who was also the member of SHGs. Descriptive and tabular analysis were carried out to derive meaningful inferences

about socio-economic profile, institutional support structure, and credit seeking and repayment behaviour of members.

Valuation of Different Attributes of Credit Services by Members of SHGs : The analytical procedure of Conjoint Analysis was used to analyse members' preferences for various attribute combination of credit provisions through SHGs. Conjoint analysis is a statistical technique with a long history in marketing research and environmental economics (Sayadi *et al*, 2005).

Conjoint analysis is based on the decompositional approach where respondents react to a set of "total" profile descriptions, and the part-worths for the individual attributes, given some type of composition rule (e.g., an additive one) are estimated. In other words, an individual's utility for a product or service is decomposed into some combination of part-

worth utilities defined for the relevant characteristics, or attributes, of the product.

The number of attributes and attribute levels used for the analysis has significant implications for the data collection part of conjoint analysis. The attributes need to address the appropriate dimensions of the product or service, and the attribute levels need to be varied enough to generate differentiation in responses. However, if too many attributes and attribute levels are considered, the number of possible product profiles becomes very large and infeasible for a participant to answer.

In this study, each respondent was presented with a limited set of full-attribute profiles. The key attributes in credit services and their associated levels was identified by referencing experts and presenting a pre-survey to respondents. The key attributes and their levels are presented in Table 1.

Table 1: Attributes and Their Levels Associated with Credit Services

S.No.	Attributes of credit services	Levels of attributes
1.	Time it takes for the bank to make a decision about the loan	i) Approval for a loan in <15 days ii) Approval for a loan in >15 days
2.	Interest rate charged on the loan	i) Interest rate equal to market rate, ii) Interest rate <1-2 per cent of market rate iii) Interest rate >1-2 per cent of market rate
3.	Getting the needed loan amount	i) Getting 50 per cent of the needed loan amount ii) Getting 100 per cent of the needed loan amount
4.	Purpose of the borrower to spend loan	i) Production purpose ii) Consumption purpose

A total of 24 combinations of attributes of credit services and their levels were presented to the members of SHG and they were asked to rank them as per their choice of preference to various combinations. In the next step conjoint analysis was carried out with the help of regression function.

The part-worth utilities, and thus the overall utility, can be estimated with numerous

econometric methods. Ordinary least squares (OLS) technique was employed for the analysis in order to estimate the part-worth utilities.

In the multiple regression analysis the dependent variable was the rank from 1 to 24 as given by the respondents. The levels of the attributes were the independent variables expressed in a dummy form (0, 1); 0 meaning the absence of the level and 1 its presence. In

this study, the reference credit service concept is represented by the following combination: 'Interest rate equal to market rate', 'Amount of credit equal to 50 per cent', 'Time to have loan <15 days' and 'purpose of credit consumption'. The part utilities of other levels of attributes using the regression analysis are relative to these reference attribute levels which are assumed to have a part utilities of '0'. The resulting OLS regression was as follows:

$$Y = b_0 + b_1 \text{ IRLT} + b_2 \text{ IRMT} + b_3 \text{ AMT} + b_4 \text{ MT15} + b_5 \text{ PP}$$

Where, Y is the respondent's preference for the attribute combination

b_0 is the constant or intercept term

b_1 through b_5 are beta weights (part-worth utilities) for the individual attribute level

MT15 represents the "fifteen days or more to make loan decision",

IRLT represents the "interest rate 1-2 per cent less than market rate",

IRMT represents the "interest rate 1-2 per cent less than competition",

AMT represents the "100 per cent of loan amount",

PP represents the "Production Purpose".

In this formulation of the model, coefficients for the reference levels are equal to zero and hence these reference levels are not shown in the model.

The usual statistical tests (R^2 and F-test) were used to assess the reliability of the statistical results and to test the null hypothesis of no association between the dependent

variable and the different explanatory variables. Student t-test was used to test the statistical significance of the regression coefficients.

Results and Discussion

Table 2 elicits the socio-economic profile of member respondents across different wealth status categories. The average age of member respondents across all wealth categories was 40 years. There were no significant differences in age of member respondents across different wealth status category households. Members had studied on an average up to high school level. No significant differences were observed across different wealth status category households in regard to level of education. Highest proportion of households (67 per cent) for overall category belonged to scheduled caste category, followed by general category (31 per cent) and scheduled tribe category (2.5 per cent). Significantly higher proportion of poor households belonged to scheduled caste category than their richer counterparts. On the other hand, significantly higher proportion of rich and medium households belonged to general category than poor households. Main occupation of member respondents was significantly dependent upon wealth status. The proportion of respondents who pursued agriculture as main occupation was significantly higher for rich households than their medium and poor counterparts. Overall, 43 per cent of member households had agriculture as their main occupation. On the other hand, about 22 per cent of households belonging to overall category pursued animal husbandry as their main occupation. However, animal husbandry was a source of subsidiary income for highest

Table 2: Socio-economic Profile of Member Respondents

S.No.	Particulars	Members			
		Rich	Medium	Poor	Overall
A.	Respondent - specific Characteristics				
1.	Age	38.46±1.88	39.92±1.70	38.67±1.24	39.82±0.94
2.	Education*	4.23±0.32	4.04±0.29	3.76±0.21	4.00±0.16

* Education: Illiterate-0; Read & Write-1; Primary School-2; Middle School-3; High School-4; Intermediate-5; Graduate and above-6;

Table 2: (Contd...)

3.	Caste (% of respondents)				
	General	38.46	34.62	19.05	30.71
	SC	53.85	65.38	80.95	66.73
	ST	7.69	-	-	2.56
	OBC	-	-	-	-
4.	Main Occupation (% of respondents)				
a.	Agri.	61.54 ^{ab}	38.46 ^a	38.10 ^b	43.33
b.	Agri.+ AH	-	23.08 ^a	9.52 ^a	13.33
c.	Agri.+ Other	7.69	3.85	-	3.33
d.	Agri.Labour	7.69	11.54	19.05	13.33
e.	Govt. Service	-	3.85	-	1.67
f.	AH	23.08	19.23	23.81	21.67
g.	AH + other	-	-	9.52	3.33
h.	Pensioner	-	-	-	-
5.	Subsidiary Occupation (% of respondents)				
a.	Agri.	7.69	15.38	-	7.69
b.	Agri.+ AH	-	-	-	-
c.	Agri.+ Other	7.69	-	14.29	7.33
d.	Agri.Labour	7.69	-	19.05	8.91
f.	AH	23.08	15.38	33.33	23.93
g.	AH + other	-	3.85	-	1.28
h.	Pensioner	15.38	3.85	-	6.41
B.	Household-specific Characteristics				
1.	Family size (Adult Equivalent)**	3.91±0.47	3.21±0.20	3.55±0.38	3.56±0.35
2.	Family type (% of respondents)				
a.	Joint	30.77	23.08	28.57	27.47
b.	Nuclear	69.23	76.92	71.43	72.53
3.	% of respondent HH's having at least one member with NFI	76.92 ^a	69.23	57.14 ^a	67.76
4.	Annual HH Income (₹)	1, 86, 069± 7461.45 ^a	1, 34, 663± 2779.06 ^a	94, 086± 4825.87	1, 31, 598.83±
C.	Farm Characteristics				
1.	Operational land(acres)	0.39±0.26	0.41±0.16	0.28±0.17	0.36±0.11
2.	Land used for dairying (acres)	0.03±0.02	0.05±0.02	0.05±0.02	0.04±0.01
	(% of operational land)	(7.69)	(12.20)	(17.86)	(11.11)
3.	Herd size(SAU)	4.88±0.44	4.65±0.48	4.52±0.26	4.68±0.23

** 4 children=3 adult women=2 adult men , Given: Average±S.E.Figures having same superscripts across rows are significantly different up to 5% level of significance.

proportion (24 per cent) of overall category of households as compared to any other source of livelihood. Average family size across all wealth status categories was 3.5 adult equivalents. Family type among member households was mostly nuclear (72.5 per cent). About 68 per cent of all member households had at least one non-farm income source. Significantly higher proportion (77 per cent) of richer households had at least one non-farm income source than poor households (57 per cent). Annual income of overall category of member households was ₹ 1, 31, 598. Rich households had significantly higher income (₹ 1, 86, 069) as compared to poor households (₹ 94,086). Average landholding size for member households was 0.36 acres. Average herd size for member households was 4.68 SAU¹. There were no significant differences in size of landholding and herd size across different wealth categories.

Credit Seeking and Repayment Behaviour :

Table 3 elicits the credit seeking and repayment behaviour of member respondents. Regarding frequency of taking loans, highest proportion (62 per cent) of member respondents had obtained credit twice in the last three years from the time of the survey. Twenty three per cent of respondents had obtained credit thrice during the last three years, while lowest proportions (15 per cent) of respondents had accessed credit only once during the same reference period. Wealth category analysis revealed that significantly higher proportion (29 per cent) of poor farmers had obtained credit three times during the last three years than their rich counterparts (15 per cent). The above findings thus provide some indications that frequency of obtaining credit increased with decline in wealth status.

Table 3: Credit Seeking and Repayment Behaviour of Members

S.No.	Particulars	Rich	Medium	Poor	Pooled
1.	No. of loans taken in last three years				
	One	3 (23.08)	3 (11.54)	3 (14.29)	9 (15.00)
	Two	8 (61.54)	17 (65.38)	12 (57.14)	37 (61.67)
	Three	2 (15.38) ^a	6 (23.08)	6 (28.57) ^a	14 (23.33)
2.a.	Credit amount (INR)				
	15,000-30,000	2 (15.38)	12 (46.15) ^a	2 (9.52) ^a	16 (26.67)
	30,000-40,000	7 (53.85)	9 (34.62) ^a	15 (71.43) ^a	31 (51.67)
	40,000-65,000	4 (30.77)	5 (19.23)	4 (19.05)	13 (61.90)

Table 3: (Contd...)

b. Amount repaid so far (INR)				
20,000-40,000	3	12	2	17
	(23.08)	(46.15) ^a	(9.52) ^a	(28.33)
40,000-50,000	5	9	15	29
	(38.46)	(34.62) ^a	(71.43) ^a	(48.33)
50,000-85,000	5	5	4	14
	(38.46)	(19.23)	(19.05)	(23.33)
c. Balance if any (INR)				
1,000-5,000	1	3	2	6
	(7.69)	(11.54)	(9.52)	(10.00)
5,000-11,000	1	1	4	6
	(7.69) ^a	(3.85) ^b	(19.05) ^{ab}	(10.00)
3. Time taken for Repayment				
Early	2	0	0	2
	(15.38)	(0.00)	(0.00)	(3.33)
Timely	9	21	13	43
	(69.23)	(80.77)	(61.90)	(71.67)
Delayed	0	1	2	3
	(0.00)	(3.85)	(9.52)	(5.00)
Still has to repay	2	(15.38)	4	(15.38)
(28.57)	12	(20.00)		

Figures in parentheses indicate percentage.

Figures having same superscripts across rows are significantly different up to 5% level of significance.

Regarding amount of credit obtained by the respondents, 62 and 52 per cent of respondents belonged to the categories of high volume (₹ 40, 000- 65, 000) and medium volume (₹ 30, 000-40, 000) credit takers, respectively. Only 27 per cent of respondents had taken low volume (₹ 15, 000-30, 000) of credit. Puhazhendi (2002) had reported a smaller volume of loan taken by SHG members, the average loan being ₹ 3, 976. Significantly higher proportion (46 per cent) of medium members had taken low volume of credit than their poor counterparts (10 per cent). On the other hand, significantly higher proportion (71 per cent) of poor respondents had taken medium volume of loan than medium category respondents (35 per cent). It can be inferred

from the above analyses, that to some extent, not only the frequency of obtaining credit but the volume of credit obtained also increased with decline in wealth status.

Highest proportion (48 per cent) of all respondents had repaid medium amount of their debt (₹ 40, 000-₹ 50, 000) followed by 28 and 23 per cent, who had repaid low (₹ 20, 000-₹ 40, 000) and high (₹ 50, 000- ₹ 85, 000) amount of their debt, respectively. Significantly higher proportion (71 per cent) of poor respondents had repaid their medium amount of debt than their medium category counterparts (35 per cent). On the other hand, significantly higher proportion (46 per cent) of medium category respondents had repaid their low volume debt than that of poor category (10 per cent).

Ten per cent of respondents for overall category, each, had low (₹ 1,000- ₹ 5,000) and high (₹ 5,000- ₹ 11,000) debt balance yet to be repaid. Significantly higher proportion (19 per cent) of poor respondents had high debt balance yet to be repaid than their rich (8 per cent) and medium (4 per cent) category counterparts. This might be because of higher resource endowments and income level of richer farmers which enable them to repay their debts fully.

Seventy two per cent of members had repaid their loan timely while 20 per cent of members had still to repay it. Fifteen per cent of rich respondents had repaid their loan earlier than the date of repayment while no respondent from medium and poor categories had repaid earlier. Higher proportion of poor farmers (29 per cent) had yet to repay their loans than their richer counterparts (15 per cent), although the difference in proportions was not statistically significant.

Purpose for which Credits were Obtained : Table 4 elicits the distribution of respondents according to different purposes for which they obtained credit. Cent per cent of the respondents reported that they had obtained loan for animal husbandry activities. Substantially lesser proportion of respondents had borrowed money for other activities. Thus, while 15 per cent of the SHG members reported that they borrowed money for household expenditures, 13 per cent of them, each, reported that they had obtained credit for expenditures related to house construction/repair, social functions and small business activities. Twelve per cent of them, each, borrowed money for meeting expenditures pertaining to education and agricultural activities. Only 8 per cent of the respondents had taken loan for meeting health related expenditures. The findings are in contrast to those of Batra (2012), who reported from Haryana State of India that higher proportion (43 per cent) of SHG members had used their credit

Table 4 : Distribution of Respondents According to Different Purposes for which Credits were Obtained

S. No.	Utilisation by members in	% of respondents			
		Rich	Medium	Poor	Pooled
1.	Health	15.38	7.69	4.76	8.33
2.	Education	30.77 ^{ab}	7.69 ^a	4.76 ^b	11.67
3.	House construction/repair	7.69 ^a	11.54	19.05 ^a	13.33
4.	Agricultural activities	23.08 ^{ab}	7.69 ^a	9.52 ^b	11.67
5.	Social functions	7.69	11.54	19.05	13.33
6.	Livestock (in AH)	100.00	100.00	100.00	100.00
7.	Small business	15.38	11.54	14.29	13.33
8.	Household expenditure	15.38	11.54	19.05	15.00

Figures having same superscripts across rows are significantly different up to 5% level of significance.

for marriage and social events, than investment in livestock (27.8 per cent).

Significant differences were observed among different wealth categories of respondents in regard to specific purposes for which they had borrowed money viz. meeting expenditures related to education, house construction/repair and agricultural activities. Significantly higher proportions (31 and 23 per cent) of rich farmers had borrowed money for expenditures pertaining to education and agricultural activities than their medium (8 per cent each) and poor (5 and 10 per cent) category counterparts, respectively. On the other hand, significantly higher proportion (19 per cent) of poor respondents had borrowed credit for home construction/repair than rich respondents (8 per

cent). The findings show that while the poor respondents needed credit for basic needs like shelter, their richer counterparts mostly met higher order needs with the credit they borrowed, like educating their children and augmenting their scale of agricultural activities.

Valuation of Different Attributes of Credit by Members of SHGs : The results of the conjoint analysis run as regression analysis to ascertain the respondents' valuation of different attributes associated with credit services are presented in Table 5. The regression coefficients for all variables of different regression models run for various wealth categories were all statistically significant.

Table 5: Results of Conjoint Analysis Run as Regression Function

Source	Rich	Medium	Poor	Overall
	Values			
Intercept	16.583*** (0.773)	15.833*** (0.937)	17.333*** (0.789)	16.333*** (0.899)
Less than market rate interest rate	2.000*** (0.546)	2.375*** (0.662)	2.875*** (0.558)	2.875*** (0.636)
More than market rate interest rate	- 6.500*** (0.546)	-7.625*** (0.662)	-7.375*** (0.558)	-7.375*** (0.636)
100 per cent credit amount	3.833*** (0.446)	3.333*** (0.541)	4.667*** (0.456)	4.000*** (0.519)
More than 15 days time to loan decision	-10.167*** (0.446)	-8.500*** (0.541)	-9.500*** (0.456)	-9.167*** (0.519)
Production purpose	4.167*** (0.446)	5.500*** (0.541)	1.167*** (0.456)	3.500*** (0.519)
R ² (Coefficient of determination)	0.975	0.981	0.973	0.981
F- values	138.750	188.958	127.482	181.084

Significant at ***1% level of significance.

Figures in parentheses indicate S.E.

It can be observed from Table 5 that the explanatory variables included in the models explained 97.5, 98.1, 97.3 and 98.1 per cent of variations in the valuation of credit attributes for rich, medium, poor and overall categories, respectively. Thus the above R² values indicate

that all the four regression models are good fit. The estimated F-values were statistically significant (P<0.05) for all the four regression models implying that the null hypothesis of no association between dependent variable and different explanatory variables can be rejected.

The probability that we would find a relationship among the variables due to chance is less than or equal to 5 per cent, which is an acceptable level of error.

The regression coefficients associated with the individual variables represent the part utility of each level of attribute. For example, for overall category 'interest rate of less than that of market rate' has a part utility equal to 2.875. Similarly, the utility for variable 'interest rate more than that of market rate' is equal to -7.375. The utility values of these two levels of the attribute 'interest rate' are relative to the utility of zero for the third level of interest rate, i.e. 'interest rate equal to that of market rate' (reference level). Similarly, the utility of the variable '100 per cent of credit amount needed' is 4.000, which is relative to the utility value of zero for the second level of the attribute, 'credit amount', i.e. '50 per

cent of credit amount needed' (reference level). For the attribute, 'time required to take a decision to provide loan', 'time of more than 15 days' has a utility of -9.167 relative to zero utility value to the 'less than 15 days for loan decision' level (reference level). Finally, for 'purpose for which loan is required', the attribute 'production purpose' has utility of 3.500 relative to zero utility of 'consumption purpose' attribute (reference level).

The utility values of different levels of various attributes associated with credit services are compiled in Table 6. As indicated by different utilities, the members of dairy SHGs preferred 'shorter time-to-loan decision', 'full loan amount', 'lower interest rate in comparison to market rate' and 'loan for production purpose'. Rich, medium and poor category members also preferred the similar levels of different credit attributes.

Table 6: Part Utilities of Different Levels of Various Attributes

S. No.	Attributes	Rich	Medium	Poor	Overall
1.	Interest Rate				
	Equal to market rate	0	0	0	0
	Less than market rate	2.000	2.375	2.875	2.875
	More than market rate	-6.500	-7.625	-7.375	-7.375
2.	Credit Amount				
	50 per cent of needed amount	0	0	0	0
	100 per cent of needed amount	3.833	3.333	4.667	4.000
3.	Timeliness				
	In <15 days	0	0	0	0
	In >15 days	-10.167	-8.500	-9.500	-9.167
4.	Purpose				
	Consumption	0	0	0	0
	Production	4.167	5.500	1.167	3.500

Among the four attributes, 'interest rate' emerged as the most important attribute for overall category of respondents as indicated by the range of utility values (Table 7). The relative importance of this attribute was 38 per cent. 'Interest rate' was closely followed by 'timeliness' attribute with relative importance of 34 per cent. 'Credit amount' and 'purpose' were attributes with relatively lower importance rates (15 and 13 per cent, respectively). Disaggregated analysis revealed same order of importance ascribed to

different attributes for all wealth categories. The only major difference in relative valuation of different credit attributes across various wealth categories was observed in case of 'purpose of credit'. 'Purpose of loan' was given more importance by richer respondents than their poor counterparts. On the other hand, the poor respondents gave more importance to 'interest rate' and 'credit amount' than richer respondents.

Table 7: Importance of Different Attributes

S. No.	Attributes	Rich		Medium		Poor		Overall	
		Abso-lute	Rela-tive (%)	Abso-lute	Rela-tive (%)	Abso-lute	Rela-tive (%)	Abso-lute	Rela-tive (%)
1.	Interest Rate	8.500	31.87	10.000	36.59	10.250	40.06	10.250	38.08
2.	Credit Amount	3.833	14.37	3.333	12.19	4.667	18.24	4.000	14.86
3.	Timeliness	10.167	38.13	8.500	31.10	9.500	37.13	9.167	34.06
4.	Purpose	4.167	15.63	5.500	20.12	1.167	4.56	3.500	13.00

Table 8 shows the difference in part utilities with change of one level in each attribute. Change from 'equal' to 'less than' market rate, induced an increase of 2.9 units in utility. On the other hand, 'less' to 'more than' market rate of interest led to decrease of 10.25 units of utility. Change from '50 per cent' to '100 per cent credit amount' increased utility by 4 units. 'Time to loan decision' caused a drastic

drop of 9.2 units of utility from 'less than 15 days' to 'more than 15 days time period'. Finally change of 'purpose of loan' from 'consumption' to 'production' led to an increase in utility by 3.5 units. All the results of this Table correspond to what we have observed in Table 5.11 showing part utilities of different levels of attributes of credit through SHGs.

Table 8: Change in Part Utilities while Moving to Next Level of Different Attributes

S.No.	Particulars	Rich	Medium	Poor	Overall
1.	Interest Rate				
	Equal to less than market rate	2.000	2.375	2.875	2.875
	Less to more than market rate	-8.500	-10.000	-10.250	-10.250
2.	Credit Amount				
	50 to 100% amount	3.833	3.333	4.667	4.000
3.	Timeliness				
	<15 days to >15 days	-10.167	-8.500	-9.500	-9.167
4.	Purpose				
	Consumption to Production	4.167	5.500	1.167	3.500

Conclusion

The present study aimed at better understanding of the preferences of the women members of dairy SHGs formed under SGSY programme implemented by Government of India so as to provide crucial insights for policy decisions regarding effective ways of designing and delivering credit services that are appropriate for poor livestock keepers. The study provided the first quantitative estimates of borrowers' relative valuation of different attributes associated with credit services.

Most of the respondents belonged to the categories of high volume and medium volume credit takers. The findings of the study revealed that not only the frequency of obtaining credit but the volume of credit obtained also increased with decline in wealth status. Evidence also emerged that the poor respondents require more time for repaying their debts than their richer counterparts.

The members of dairy SHGs preferred 'shorter time-to-loan decision', 'full loan amount', 'lower interest rate in comparison to market rate' and 'loan for production purpose'. Among the four attributes, 'interest rate' emerged as the most important attribute for overall category of respondents followed by 'timeliness', 'credit amount' and 'purpose'. 'Purpose of loan' was given more importance by richer respondents while

the poor respondents gave more importance to 'interest rate' and 'credit amount'.

Policy Implications

For better adaptation to the needs and requirements of the SHG members, Government agencies, banks and other financial institutions should consider developing a credit package incorporating the components of 'nominal interest rate', 'shortened duration of credit delivery' and providing cent per cent of the required amount. Also, the banks should reorient their micro-credit programmes to the production needs of the members rather than their consumption needs. These measures would ensure greater acceptability and spontaneous uptake on the part of members of the micro-finance services and ultimately help in scaling up of the micro-finance movement.

There are differences in credit seeking and repayment behaviour across different wealth status categories. Poor members need loans more frequently and also they need more time in meeting their debt obligation. Hence, the Government agencies rather than developing a uniform credit package for all sections of the rural community, may consider designing separate packages keeping in mind the requirements and repayment capacity of the specific classes of borrowers.

End Notes

1. The following standards were used to standardise herd size of the farm households (Kumbhare *et al*, 1983):

Milch buffalo	1.30
Milch Crossbred cow	1.40
Milch Indigenous cow	1.00

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