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RESEARCH ARTICLE

A STUDY ON DAIRY FARMING IN COIMBATORE

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ABSTRACT

Dairy farming occupies a notable place in the agricultural economy of India and milk and milk products are the second largest contributor to Gross National Product (GNP) and income from dairy farming contributes nearly a third of the rural household's gross income. Tamil Nadu is one of the leading milk producing state in the country, the other states being Uttar Pradesh, Madhya Pradesh, Punjab, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh and Haryana. Paradoxically, however, the milk production in Tamil Nadu is witnessing a declining trend in recent years due to low productivity of the milch animals, which have been attributed to poor genetic status, non-availability of proper nutrition, poor quality of management and so forth. The rural producers are not only ignorant of the qualitative aspects of the enterprises but even unmindful of the production capabilities of their animals. The knowledge of the economics of milk production in the rural areas would be of immense help for planning for improving of dairy animals and in formulating policies for improving the profitability of the enterprise. The present study is, therefore an attempt to measure the relative importance of socio-economic characteristics in discriminating low profit from high profit dairy units. The study was based on primary data which was compiled by administering a pretested interview schedule to 150 randomly selected dairy owners residing in Mayilampatty village in Coimbatore District. The questionnaire adopted helped the researcher to collect information on social economic and many other related variables of dairy farming. The collected materials and data were organized arranged and tabulated and suitable tools were applied to arrive at results. The data collected relate to the period January to December of 2010. To fulfil the objective of the steady the tool Discriminant Analysis was applied on the collected data.

INTRODUCTION

Dairy farming occupies a notable place in the agricultural economy of India and milk and milk products are the second largest contributor to Gross National Product (GNP) (Gaddi *et al.,* 1996) and income from dairy farming contributes nearly a third of the rural household's gross income (Pankay *et al.,* 2005). Tamil Nadu is one of the leading milk producing state in the country, the other states being Uttar Pradesh, Madhya Pradesh, Punjab, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh and Hariyana. Paradoxically, however, the milk production in Tamil Nadu is witnessing a declining trend in recent years due to low productivity of the milch animals, which have been attributed to poor genetic status, non-availability of proper nutrition, poor quality of management and so forth. The rural producers are not only ignorant of the qualitative aspects of the enterprises but even unmindful of the production capabilities of their animals. The knowledge of the economics of milk production in the rural areas would be of immense help for planning for improving of dairy animals and in formulating policies for improving the profitability of the enterprise. The present study is, therefore an attempt to measure the relative importance of socio-economic characteristics in discriminating low profit from high profit dairy units.

MATERIALS AND METHODS

The study was based on primary data which was compiled by administering a pretested interview schedule to 150 randomly selected dairy owners residing in Mayilampatty village in Coimbatore District. . The questionnaire adopted helped the researcher to collect informations on social economic and many other related variables of dairy farming. The collected materials and data were organized arranged and tabulated and suitable tools were applied to arrive at results. The data collected relate to the period January to December of 2010. To fulfil the objective of the steady the tool Discriminant Analysis was applied on the collected data.

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RESULTS AND DISCUSSION

Discriminant Analysis

To identify the factors that distinguished the low profit dairy units from high profit units, a discriminant function was fitted to the data. The net profit from dairy unit was hypothesized to be a function of number of milch animals (X_1), milk yield per milch animals (X_2), average price received per litre of milk (X_3), percapita expenditure on milk (X_4) and literacy index (X_5). The means of the independent variables are shown in Table 1.

Table 1. Means of the independent variables in two groups

S.No.	Variables	Group I Mean (Low profit dairy units)	Group II Mean (High profit dairy units)	Grand Mean
1	Number of milch animals (X_1)	1.7000	2.7667	2.3400
2	Milk yield per milch animals (X_2)	7.6625	10.0308	9.0835
3	Average price received per litre of milk (X3)	7.0183	5.8393	6.3109
4	Per capita expenditure on milk	2.4305	2.2080	2.2970
5	Literacy index (X5)	2.4305	2.2080	2.2970

The comparison of means of the selected variables with the grand means reveals that the two groups were much more widely separated on number of milch animals, milk yield per milch animals and per capita expenditure on milk than they were on the average price received per litre of milk and literacy index. The above findings were also substantiated by the test of equality of group means as shown in table 2.

Table 2. Tests of equality of group means

S. No.	Variables	Wilk's Lamda	F- ratio
1	Number o milch animals (X_1)	0.902	10.656 *
2	Milk yield per milch animals (X_2)	0.866	15.203* *
3	Average price received per litre of milk (X_3)	0.965	3.515
4	Per capita expenditure on milk (X_4)	0.912	9.492*
5	Literacy index (X_5)	0.989	1.135

Note : *Significant at 1 percent level.

The significance of univariate F ratios indicate that, when the predictors were considered individually, all the predictors excepting average price received per litre of milk and literacy index differentiated the low profit diary units from high profit dairy units. The F values are calculated from one-way ANOVA, with the grouping variable serving as the categorical independent variable. Each predictor in turn serves as the metric dependent variable in the ANOVA. Based on the group means, the standardized canonical discriminant function which represents a linear composite of the original data variability to within group variability was estimated as follows.

$Z = 0.370X_1 + 0.662X_2 - 0.275\ X_3 + 0.315\ X_4 - .275\ X_5$

Wilk's Lamda = 0.760

Chi – Square =26.256*

Eigen value = 0.316

Canonical correlation = 0.49

(*significant at 1% level)

In the above function, all the variables excepting average price received variables had higher discriminating power between the groups. In short, it was these variables which distinguish low profit dairy units from high profit dairy units. The variables average price received per litre of milk per day and literacy index had a negative sign indicating that these variables acted as suppressor variables. The value of Wilks' Lamda and Chi-square value indicated that the estimated function was significant at 1% level. The canonical correlation associated with the discriminant function was 0.49 indicating that 49 percent of the variance of the dependent variables was accounted for by this model. The relative discriminating powers of the variables were estimated and are shown in Table 3.

Table 3. Relative discriminating power of the predictors

S. No.	Variables	Relative contribution
1	Number of milch animals (X_1)	21.67
2	Milk yield per milch animals (X_2)	46.45
3	Average price received per litre of milk (X_3)	9.22
4	Per capita expenditure on milk (X_4)	17.40
5	Literacy index (X_5)	5.26
6	Total	100

The relative importance of the different predicators further indicated that the percentage contribution of individual predictor to the total distance measured was highest for milk yield per milch animal (46.45%), followed by number of milch animals (21.67), per capita consumption expenditure on milk per day in rupees 17.4 % and was lowest in the case of literacy index (5.26 %). Thus, a high profit dairy units was characterized by a higher number of milch animals, increasing milk yield and increased percapita expenditure on milk. In other words, increase in the number of milch animals accompanied by an increase in percapital expenditure on milk and milk yield per milch animal would increase the profitability of the dairy units. The validity of the above discriminant function was evaluated and the results are shown in Table 4.

Table 4. Classification of sample cases

Actual Group		Predicted group membership 1	2	Total
Original count	1	28	12	40
	2	14	46	50
Percentages	1	70	30	100
	2	23.3	76.7	100

In the above table, the classification accuracy percentage of the discriminant function confirmed that the discriminant function was efficient in classifying the sample dairy units into low profit and high profit dairy units.

CONCLUSION

The above analysis exhibits that number of milch animals accompanied by an increase in per capita expenditure on milk and milk yield per milch animals would increase the profitability of the dairy units. The oral discussion with the dairy unit owners recorded that lower prices for milk, prevalence of diseases, high cost of feed and fodder and non-availability of grazing land were their major problems in running a dairy unit. Here, it could be suggested that arrangements should be made to provide green fodder and dry

fodder in adequate quantity at reasonable price to the milk producers, particularly during off season, and to overcome fodder deficits, the farmers should be encouraged to take up fodder cultivation.

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