An Analysis of Producers' Attitude towards Dairy Cooperatives in Dharmapuri District

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Abstract

Today, if India has emerged as the largest producer of milk in the world, it is due to the untiring efforts of millions of rural milk producers across the country. India is the world's single largest milk country accenting for around 15 percent of the world milk production. In this proposed milk production, Dharmapuri has a major contribution. This work's primary data is collected from 5 Milk Producers Co-operative Societies in Dharmapuri district. Secondary data is collected from Milk Producers Co-operative Societies and Milk Producers Co-operative Union. Apart from the official sources from different sections and audited annual reports, the extensive utilization of libraries, journals, Books, Magazines, Reports and Economic Survey and Web sites were made. Finally evaluated for percentage analysis, descriptive statistics, Mean Standard Deviation and coefficient variation, inferential statistics such as t- test, chi-square test and Factor analysis were used tools for this work. It is used for Computer Application in the Dairy Cooperatives through the Social Science Statistical Package Version 20.

Keyword: Gender wise Distribution, Age wise classification, Educational Qualification, Occupation of the respondents, Reliability Analysis

1. Introduction

The dairy co-operatives have been playing a distinct and significant role in the process of socio-economic development of the state with special focus on dairy farmers and livelihood. The dairy co-operatives in Tamil Nadu are to provide sound infrastructure facility to the dairy farmers. The Tamil Nadu dairy co-operative has a wide network and engaged in the various promotional activities public health, education, marketing, agro processing, consumer activities, insurance and infrastructure development in the dairy farmers. These infrastructure facilities enhanced the economic life of the dairy farmers or provided facility to dairy farmers sufficiently. In this backdrop an attempt is made to study the economic development of the dairy farmers in Dharmapuri district.

The All India Rural Credit Review Committee has also emphasized the need for providing subsidiary occupation like dairy farming to the peasants. Further about 35 percent of the nation's food still comes from 67 percent of total arable area of about 143mha. The food production, which depends on erratic monsoon, has become extremely unstable leading to low price and weak marketing value of food grains. Thus agriculture enterprises create problems of

unemployment and under employment, seasonal employment and disguised unemployment to crawl people constituting 70 percent of total population. Young people from rural areas migrate to towns or cities for work as rural economy is in shambles due to the vagaries of climate in India. Dairy enterprise is a solution to overcome such problems and besides being an effective tool to improve socioeconomic conditions of farmers in India.

2. Literature Review

Selvaraj, V. M.and M. Muthu Deivakani (2005) in their study, "Human Resource Development in Cooperative Milk Supply Society, Tirunelveli", suggested that i) the management must take responsibility to aim and equip officers and clerks, salaries of the employees must be periodically revised, iii) The superiors should grant due recognition on the basis of a fair performance appraisal, iv) Job sharing and temporarily altered assignments would be helpful, and v) Job satisfaction is an important factor related to aspects like job involvement, area, organization, commitment, etc. Further they added that the management of any institutions should conduct job satisfaction surveys at least once in two years.

Bhow (2006) has concluded that the cost and returns from milk production were estimated separately for local and crossbred cattle. The gross cost of maintenance was worked out as the sum of fixed and variable costs items. The net cost was arrived at by deducing the value of dung from gross cost per milch cattle per day was divided by the average milk yield per day of the respective breed. It was found that net return was calculated by deducting gross cost from gross return.

Sulaiman, E and Vijaya Chandran Pillai (2006) in their article, "An Assessment of Quality of Services of Dairy Cooperatives in Kerala with Special Reference to Tiruvananthapuram District" found that even though the dairy cooperatives are rendering services they are not upto expectations. Majority of the farmers are not satisfied with the various efforts of the societies for improving the efficiency in the marketing of milk produced by the farmers. The farmers are still facing problems in the area related to low procurement price of the milk.

Kannan (2007) in his Ph.D. thesis, "A Study on Performance of Dairy Farming and it's Correlates in Madurai District", he concluded that the increase in level of education, family income and their personality traits has a cumulative impact on the performance of dairying and he suggested that the level of education among the owners can be enriched with the help of some basic education programmes. The importance of family income should be taught among the owners of the farms.

Rhone, Ward, Vries, Koonawootrittriron & Elzo (2007) conducted a study to compare milk pricing systems and their effect on milk price and milk revenue of dairy farms in the central region of Thailand and by applying fixed linear model, they analyzed milk price of different sizes of farms. (small, medium, and large). Their findings showed that small farms had higher (P<0.05) milk prices than medium and large farms.

Bhagyashree S. Kunte and Prof. Sanjay Patankar (2015)86 in their research work titled "A Literature review of Indian Dairy Industry", tried to understand the current scenario of dairy industry in India and various issues of the stakeholders of the industry. The research was based on primary data collected from dairy farmers (members / non member of cooperative societies).

The major issues identified were lack of fodder and concentrates, scarcity of veterinary and diagnostic services, lack of information and technological awareness.

3. Socio Economic Profile of the Dairy Farmers in the Dairy Co-operatives

The socio economic profile of the dairy farmers is analyzed in terms of the variables such as gender, age, marital status, education, occupation, income, size of the family, capital, resident of the dairy farmers, experience and size of the dairy farms of the respondents in the dairy Co-operatives in the Dharmapuri district. These variables are considered to be important as these contribute substantially to the dairying aspects of the dairy farmers. The respondents for the study are the dairy farmers who are supplying milk to the milk Co-operatives.

3.1 Gender wise Distribution of the Dairy Respondents

The dairy activity is important for the economic development of the respondents. The gender lead to more knowledge and efficiency in the economics of dairy activities and it is included as one of the important profile variables of the respondents. The distribution of respondents on the basis of their gender is given in Table 1.

S. No.	Gender	No. of Respondents	Percentage
1	Male	159	62.11
2	Female	97	37.89
	Total	**256**	**100.00**

Table 1: Gender Wise Classification of the Dairy Respondents

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Table 1 depicts the gender wise distribution of the dairy farmers (62.11) is male   and 37.89 percent of the   respondents   are female.   It is inferred   that   the proportion of male dairy farmers is higher than the female dairy farmers. The gender of the dairy respondents has been presented in the Fig 1.
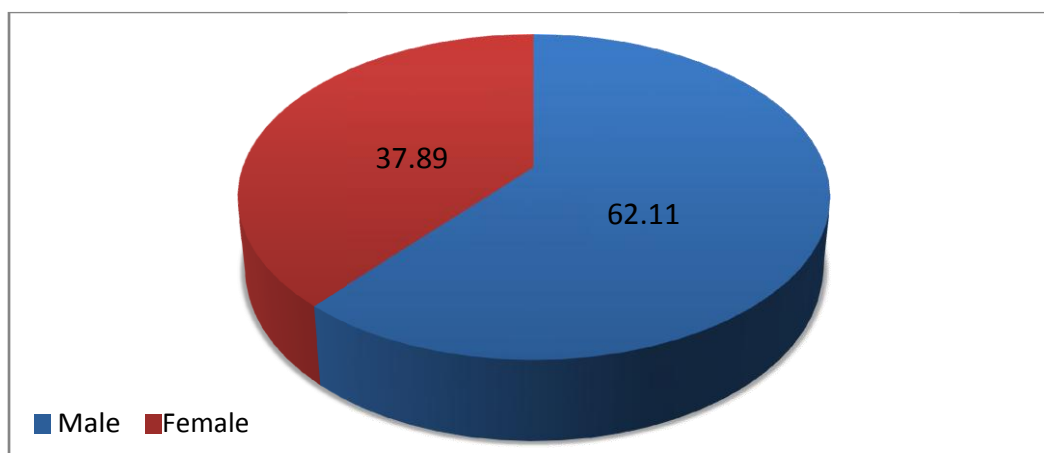

Fig 1: Gender Wise Classification of the Dairy Respondents

3.2 Age wise classification of the Dairy Respondents

The age wise distribution is one of the important demographic variables for distinguishing segment. The dairy respondents from the different age groups are requested to state their level of perception towards economics of dairy co-operatives and an attempt was made to find out the significant between age and economics of dairy co-operatives. The age of the policy holders are grouped into four categories up to 25 years, 26 to 40 years, 41 to 55 years, and above 55 years and are selected for the study. Table 2 gives the age wise distribution of the dairy respondents towards economics of dairy co-operatives.

S. No.	Age	No. of Respondents	Percentage
1	Up to 25 years	37	14.45
2	26 to 40 years	91	35.55
3	41 to 55 years	114	44.53
4	Above 55 years	14	5.47
	Total	**256**	**100.00**

Table 2: Age Wise Classification of the Dairy Respondents

Table 2 depicts the age wise distribution of the respondents .Shows that the majority of the dairy farmers (44.53 percent) are in the age group of 41 to 55 years, followed by 35.55 per cent of the dairy respondents are in the age group of 26 to 40 years, 14.45 per cent of the dairy respondents are in the age group of up to 25 years   and 5.47 percent of the respondents are in age group of above 55 years. The analysis reveals that the important age group among the respondents belongs to the age category of 41 years to 55 years. However, dairy respondents belonging to age category of above 55 years constitute only 5.47 percent of the total towards the economics of dairy of co-operatives in Dharmapuri district. The age of the dairy respondents are presented in the Fig 2.
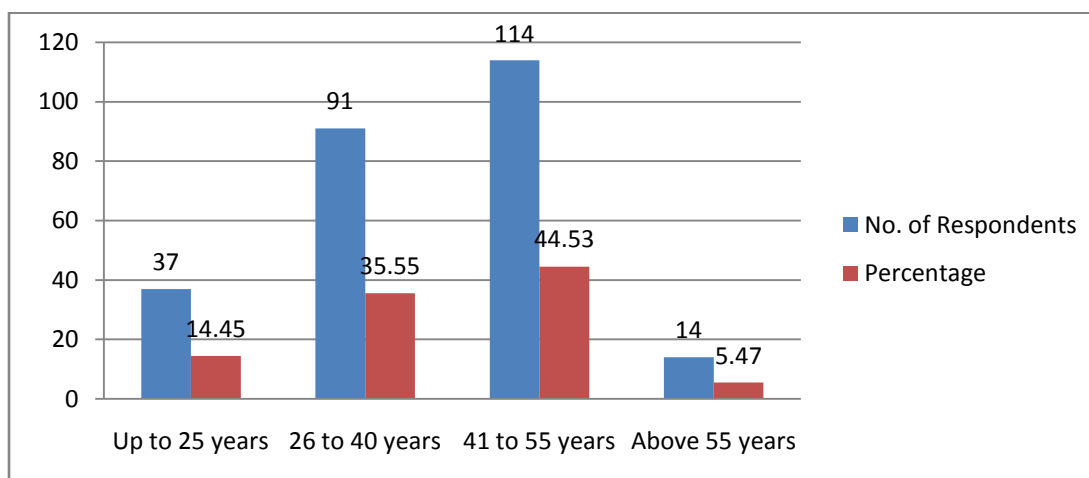

Fig 2: Age Wise Classification of the Respondents

3.3 Educational Qualification of the dairy respondents

The level of education among the respondents influences more economic activity and awareness in the dairy farming. The educated people have more awareness of the dairy activities where as uneducated have less awareness of the dairy activities. The respondents from different educational status are requested to state their level of economics towards the dairy activities and an attempt was made to find out the significant between education and economy of dairy co-operatives. The educational qualification of the respondents has been confined into up to school level, higher secondary level, graduates and post graduates. The educational qualification of the respondents in economics of dairy co-operatives   in Dharmapuri district is distributed in the Table 3.

S. No.	Educational Qualification	No. of Respondents	Percentage
1	Up to School level	41	16.02
2	Higher Secondary	89	34.77
3	Graduate	75	29.30
4	Postgraduate	51	19.92
	Total	**256**	**100.00**

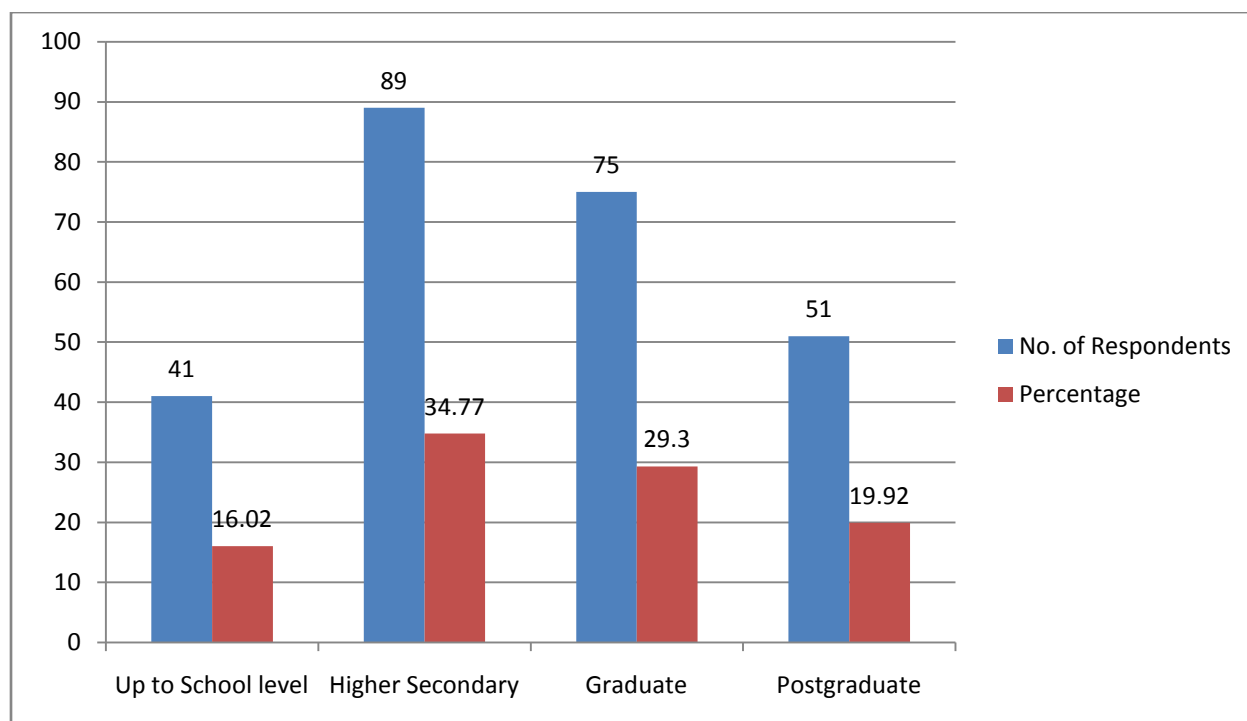**Table 3: Educational Qualification Wise Classification of the Respondents**

Fig 3: Educational Qualification Wise Classification of the Respondents

Table 3 depicts the education of the respondents. In total 34.77 percent of the respondents are having higher secondary level of education, followed by 29.30 percent of the respondents are having graduate level of education, 19.92 percent of the respondents are having postgraduate of education and 16.02 percent of the respondents are having up to school level of education. It concludes that the majority of the respondents are having higher secondary as their educational qualification towards the respondents in the economics of dairy co-operatives in Dharmapuri district. The educational qualification of the dairy respondents has been presented in the Fig 3.

3.4 Occupation of the respondents

Occupation of the respondents in the present study is classified into agriculture, businessman, employed, house wife and others. The distribution of occupation of the respondents is presented in Table 4.

S. No.	Occupation	No. of Respondents	Percentage
1	Agriculture	104	40.63
2	Businessmen	27	10.55
3	Employed	38	14.84
4	House wife and Others	87	33.98
	Total	**256**	**100.00**

Table 4: Occupation Wise Classification of the Respondents
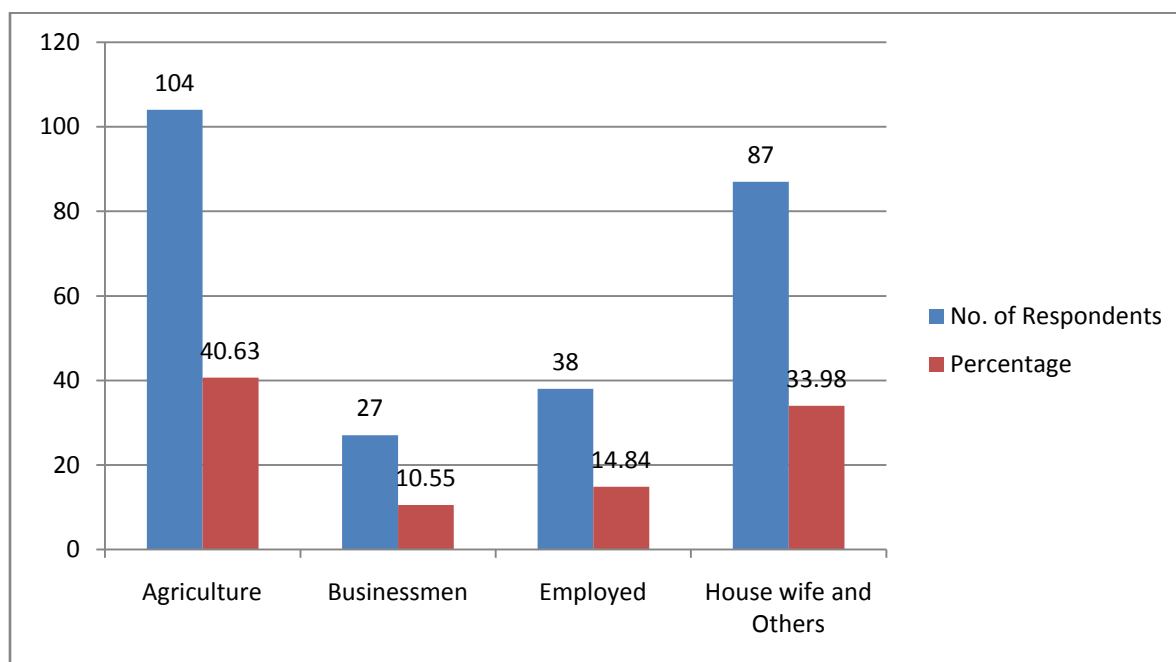

Fig 4: Occupation Wise Classification of the Respondents

Table 4 shows that the 40.63 percent of the respondents are engaged in the agriculture activity, followed by 33.98 percent of the respondents are in the category of house wife and others, 14.84 percent of the respondents are employed, and 10.55 per cent of the respondents are

in the category of businessmen towards the economics of dairy co-operatives in Dharmapuri sector. It is inferred that the most of the dairy farmers are in the category agriculture sector. The occupation of the respondents has been presented in the Fig 4.

Multivariate Tests[a]								
Effect		**Value**	**F**	**Hypothesis df**	**Error df**	**Sig.**	**Partial Eta Squared**	**Noncent. Parameter**	**Observed Power**[d]
Intercept	Pillai's Trace	.921	483.688[b]	6.000	248.000	0.001	0.921	2902.131	1.000
	Wilks' Lambda	.079	483.688[b]	6.000	248.000	0.001	0.921	2902.131	1.000
	Hotelling's Trace	11.702	483.688[b]	6.000	248.000	0.001	0.921	2902.131	1.000
	Roy's Largest Root	11.702	483.688[b]	6.000	248.000	0.001	0.921	2902.131	1.000
location	Pillai's Trace	.123	2.708	12.000	498.000	0.001	0.061	32.496	.984
	Wilks' Lambda	.880	2.719[b]	12.000	496.000	0.001	0.062	32.623	.984
	Hotelling's Trace	.133	2.729	12.000	494.000	0.001	0.062	32.748	.985
	Roy's Largest Root	.100	4.131[c]	6.000	249.000	0.001	0.091	24.788	.976
a. Design: Intercept + location									
b. Exact statistic									
c. The statistic is an upper bound on F that yields a lower bound on the significance level.									
d. Computed using alpha = .05									

Table 6: Multivariate Tests

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[g]
Corrected Model	Lack of capital	0.782[a]	2	0.391	0.228	0.796	0.002	0.457	0.086
	Non availability of credit	3.219[b]	2	1.610	0.894	0.410	0.007	1.788	0.203
	Money lenders and private finance	4.694[c]	2	2.347	2.195	0.113	0.017	4.391	0.446
	High investment	4.913[d]	2	2.457	1.782	0.170	0.014	3.563	0.371
	Poor financial support	5.308[e]	2	2.654	2.260	0.106	0.018	4.520	0.457
	Assistance from government	11.868[f]	2	5.934	3.773	0.024	0.029	7.546	0.685
Intercept	Lack of capital	1559.600	1	1559.600	911.146	0.000	0.783	911.146	1.000
	Non availability of credit	688.804	1	688.804	382.467	0.000	0.602	382.467	1.000
	Money lenders and private finance	413.900	1	413.900	387.138	0.000	0.605	387.138	1.000
	High investment	1036.856	1	1036.856	751.939	0.000	0.748	751.939	1.000
	Poor financial support	691.638	1	691.638	588.863	0.000	0.699	588.863	1.000
	Assistance from government	1741.421	1	1741.421	1107.311	0.000	0.814	1107.311	1.000
Location	Lack of capital	.782	2	0.391	0.228	0.796	0.002	0.457	0.086
	Non availability of credit	3.219	2	1.610	0.894	0.410	0.007	1.788	0.203
	Money lenders and private finance	4.694	2	2.347	2.195	0.113	0.017	4.391	0.446
	High investment	4.913	2	2.457	1.782	0.170	0.014	3.563	0.371
	Poor financial support	5.308	2	2.654	2.260	0.106	0.018	4.520	0.457
	Assistance from government	11.868	2	5.934	3.773	0.024	0.029	7.546	0.685
Error	Lack of capital	433.058	253	1.712					
	Non availability of credit	455.640	253	1.801					
	Money lenders and private finance	270.489	253	1.069					
	High investment	348.864	253	1.379					
	Poor financial support	297.156	253	1.175					
	Assistance from government	397.882	253	1.573					
Total	Lack of capital	3223.000	256						
	Non availability of credit	1728.000	256						
	Money lenders and private finance	1091.000	256						
	High investment	2407.000	256						
	Poor financial support	1585.000	256						
	Assistance from government	3272.000	256						
Corrected Total	Lack of capital	433.840	255						
	Non availability of credit	458.859	255						
	Money lenders and private finance	275.184	255						
	High investment	353.777	255						
	Poor financial support	302.465	255						
	Assistance from government	409.750	255						

a. R Squared = .018 (Adjusted R Squared = .011), b. R Squared = .015 (Adjusted R Squared = .007)
c. R Squared = .009 (Adjusted R Squared = .001), d. R Squared = .021 (Adjusted R Squared = .014)
e. R Squared = .042 (Adjusted R Squared = .034), f. R Squared = .039 (Adjusted R Squared = .032) and
g. Computed using alpha = .05

The descriptive statistics, estimated marginal mean and MANOVA Tables 4.58, 4.59 4.60, and 4.61, indicates that the mean scores of six variables of financial problems in the dairy farms are to be taken together to vary over the problems in the area location of the dairy farms. The problems of lack of capital (3.440), non availability of credit (2.400), assistance from the government (3.920) are high in the urban area than the semi urban and rural areas. The money lenders and private finance (1.860), high investments (2.922) are the highest problems in the rural areas whereas poor financial support (3.505) are the highest problems in the semi urban areas.

The statistical significance of the variation of the mean confirms this moreover, the MANOVA characterized by powerful Pillai's Trace test is significant at five per cent level *(F 2.708 with p=0.005<005).*Similarly, the Wilks' Lambda *(F 2.719 with p=0.005<005),* Hotelling's Trace *(F 2.729 with p=0.005<005),* and Roy's Largest Root *(F4.131 with p=0.005<005)* test is significant at five percent level

However, the six variables for the three geographic location of rural, semi urban and urban are taken independently, five variables in the problems of finance in the dairy farms variation is not found statistically significant in the test of between- subjects effects (p>0.05).

It is concluded that, the area wise problems of the financing of the dairy farmers are taken independently, the problems of money lenders and private finance and high investment are the problems of the rural areas. The problem of lack of capital and poor financial support are the highest problems in the urban areas where as poor financial support is the highest problems in the semi urban area dairy farms.

Descriptive Statistics				
Location		N	Mean	Std. Deviation
Poor family support	Rural	179	3.341	1.636
	Semi urban	52	3.942	1.406
	Urban	25	4.240	0.879
	Total	**256**	**3.551**	**1.563**
Lack of children care	Rural	179	2.782	1.474
	Semi urban	52	2.885	1.517
	Urban	25	2.960	1.744
	Total	**256**	**2.820**	**1.505**
Lack of recognition	Rural	179	2.832	1.202
	Semi urban	52	2.962	1.236
	Urban	25	3.640	1.114
	Total	**256**	**2.938**	**1.219**
Lack of social	Rural	179	2.385	1.337
	Semi urban	52	2.269	1.190

contacts	Urban	25	2.480	1.229
	Total	**256**	**2.371**	**1.295**
Non-cooperation of others	Rural	179	3.464	1.544
	Semi urban	52	3.596	1.459
	Urban	25	3.560	1.474
	Total	**256**	**3.500**	**1.516**

Table 9:Social Problems of the Dairy Farms and Location

	Multivariate Tests[a]								
	Effect	**Value**	**F**	**Hypothesis df**	**Error df**	**Sig.**	**Partial Eta Squared**	**Noncent. Parameter**	**Observed Power**[d]
Intercept	Pillai's Trace	0.898	440.333[b]	5.000	249.000	0.001	0.898	2201.663	1.000
	Wilks' Lambda	0.102	440.333[b]	5.000	249.000	0.001	0.898	2201.663	1.000
	Hotelling's Trace	8.842	440.333[b]	5.000	249.000	0.001	0.898	2201.663	1.000
	Roy's Largest Root	8.842	440.333[b]	5.000	249.000	0.001	0.898	2201.663	1.000
Location	Pillai's Trace	0.080	2.097	10.000	500.000	0.023	0.040	20.969	0.901
	Wilks' Lambda	0.920	2.107[b]	10.000	498.000	0.023	0.041	21.066	0.903
	Hotelling's Trace	0.085	2.116	10.000	496.000	0.022	0.041	21.162	0.904
	Roy's Largest Root	0.070	3.511[c]	5.000	250.000	0.004	0.066	17.556	0.913
a. Design: Intercept + location									
b. Exact statistic									
c. The statistic is an upper bound on F that yields a lower bound on the significance level.									
d. Computed using alpha = .05									

4. RELIABILITY ANALYSIS

Cranach's alpha is the most common measure of internal consistency ("reliability"). It is most commonly used when the research has multiple Likerts' questions in a survey/ interview schedule that forms a scale and useful to determine if the scale is reliable. In order to understand whether the questions in this interview schedule are reliably measure the same latent variable.

Following is the formula for Cronbach's alpha to check the reliability of questionnaires:

$$\alpha = (n / (n-1))_T \times (1- (\Sigma s_i^2 / s^2))$$

Where n is the number of items, S_i^2 is the variance of the ith item, and S_T^2 is the total score variance (Cronbach, 1951).

In order to run a Cronbach's alpha test, the important table is the Reliability test that provides the actual value for Cronbach's alpha, as shown below Table 5.

Variables	No. of Items	Cronbach's Alpha	Variances
How do you evaluate your dairy activity today	4	0.667	10.709
Please specify the dairy farm is to increase the Economic condition of your family	6	0.639	25.418
Infrastructural constraints	6	0.622	13.509
Infrastructural constraints	5	0.623	17.481
Economic constraints	7	0.635	23.101
Financial problems	10	0.732	59.623
Social problems	9	0.965	117.471
Price and Selling Problems	5	0.659	13.245
Maintenance problems	10	0.903	63.190

Table 5: Reliability Analysis

The Table 5 shows that the Cronbach's alpha value, which indicates the maximum level of internal consistency for the scale with this specific sample namely factors for the growth of retail industry, Problems faced by the Customers towards mobile phone services, Communication Problems, Communication Problems, Problems in Price/Tariff Structure, Problems in Customer Care, Problems Faced in Value Added Service Problems and Level of Frustration with Call Center Personnel.

Conclusion

The Chi-square test, multivariate test, reliability reveals that there is significant difference in yield of milk from three different types of milch animals i.e. cow, buffalo and crossbred cow. Cobb-Douglas production function reveals that six variables – labour cost per animal per day, value of green fodder, value of dry fodder, value of concentrates fed, period and miscellaneous expenditure significantly influence the milk yield. Of the six variables, greatest influence is made by value of green fodder followed by length of lactation period. The cost-return analysis of milk

per liter reveals that the return given by crossbred milch animal is the highest followed by the return given by the buffalo.

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