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An analysis of producers' attitude towards dairy cooperatives in Dharmapuri district

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Abstract---Due to the tireless efforts of millions of rural milk producers throughout the nation, India has become the world's largest producer of milk today. India is the greatest milk-producing nation in the world, accounting for 15% of global milk output. Dharmapuri has a key role in the anticipated milk production. The five Milk Producers Co-operative Societies in the Dharmapuri district provided the majority of the data for this study. Milk Producers Co-operative Societies and Milk Producers Co-operative Union are used to gather secondary data. A lot of libraries, journals, books, magazines, papers, economic surveys, and websites were used in addition to official materials from various divisions and audited yearly reports. Finally employed for percentage analysis, inferential statistics like t-test, chi-square test, and factor analysis were used along with descriptive statistics like mean standard deviation and coefficient variation. Through the Social Science Statistical Package Version 20, it is used for computer applications in the dairy cooperatives.

Keywords---gender wise distribution, age wise classification, educational qualification, occupation of the respondents, reliability analysis.

Introduction

The socio-economic growth of the state, with a particular focus on the livelihood of dairy farmers, has been aided by the dairy co-operatives in a unique and substantial way. The Tamil Nadu dairy cooperatives are responsible for giving the dairy farmers sound infrastructure facilities. The Tamil Nadu dairy cooperative has a large network and is actively involved in a variety of marketing, consumer, public health, education, agro-processing, insurance, and infrastructure

development initiatives for dairy farmers. These infrastructure improvements improved the dairy farmers' financial situation or sufficiently provided for dairy farmers. In this context, an effort is made to examine the economic growth of the dairy producers in the district of Dharmapuri. The All-India Rural Credit Review Committee has also stressed the importance of giving peasants access to auxiliary occupations like dairy farming. Additionally, 67 percent of the nation's total arable land—or roughly 143 million hectares—provides about 35 percent of the food. Because of the irregular monsoon's dependence on food production, food grains are now very cheap and have a low commercial value. Therefore, agricultural businesses cause issues with underemployment, unemployment, seasonal employment, and hidden unemployment for the 70 percent of the population that are considered crawlers. Young people from rural areas move to towns or cities in search of employment as India's unpredictable weather has destroyed the rural economy. The dairy industry offers a solution to these issues in addition to being a powerful tool for enhancing the socioeconomic circumstances of Indian farmers.

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 and satisfaction. They also stated that each institution's administration should conduct work satisfaction surveys at least twice every two years. Bhow (2006) has concluded that for local and crossbred cattle, the costs and profits of milk production were assessed separately. The total of the fixed and variable cost elements was calculated as the gross cost of maintenance. The net cost was calculated by subtracting the value of manure from the gross cost per milking cow per day and dividing it by the breed's typical daily milk output. It was discovered that gross cost was subtracted from gross return to determine net return.

Sulaiman, E and Vijaya Chandran Pillai (2006) in their article, Even though the dairy cooperatives are providing services, according to the study "An Assessment of Quality of Services of Dairy Cooperatives in Kerala with Special Reference to Tiruvananthapuram District," they fall short of expectations. The majority of farmers are dissatisfied with the efforts made by various organisations to increase the effectiveness of marketing farm-produced milk. Due to the low price of milk purchased, farmers in the area are still having issues. Kannan (2007) in his Ph.D. thesis, according to his study, "A Study on Performance of Dairy Farming and Its Correlates in Madurai District," the level of education, family income, and personality traits of the owners all have an impact on the performance of dairy farming. He recommended that the owners' education levels be raised with the aid of some basic education programmes. Farm owners need to learn the value of providing for their families. Rhone, Ward, Vries, Koonawootrittriron & Elzo (2007) conducted the central region of Thailand underwent a study to assess milk pricing systems and their impact on milk prices and milk revenue of dairy farms.

Using a fixed linear model, they examined milk prices of various farm sizes. (Smaller, Medium, Large). Their findings demonstrated that milk prices on small farms were higher (P0.05) than those on medium and big farms. Bhagyashree S. Kunte and Prof. Sanjay Patankar (2015) in their research work titled "A Literature Review of Indian Dairy Business" attempted to comprehend the current state of the dairy sector in India as well as the numerous concerns of the industry's stakeholders. The study was based on primary information gathered from dairy farmers who were either members of cooperative groups or weren't. The main problems were recognised as being a shortage of concentrates and fodder, a lack of veterinarian and diagnostic facilities, a lack of knowledge, and a lack of technical awareness.

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

The socioeconomic profile of the dairy farmers in the Dharmapuri district is examined in terms of factors like gender, age, marital status, education, occupation, income, family size, capital, place of residence, experience, and the size of the dairy farms of the respondents. These factors are regarded as crucial since they have a significant impact on the dairy farming activities of dairy producers. The dairy farmers that provide milk to the milk cooperatives are the study's responders.

Analysis and interpretation

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.

Table 1
Gender Wise Classification of the Dairy Respondents

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

Table 1 shows the gender breakdown of the dairy producers. 62.11% of the respondents are men, and 37.89% are women. It can be assumed that there are more male dairy producers than female dairy farmers. In Fig. 1, the gender of the dairy respondents is displayed.

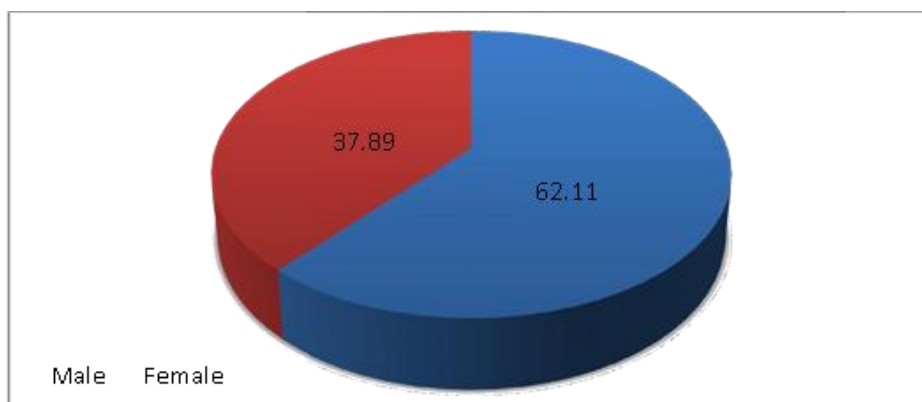


Fig 1. Gender Wise Classification of the Dairy Respondents

Age wise classification of the Dairy Respondents

One of the key demographic factors for segmentation is the distribution of ages. A study was conducted to determine the relationship between age and the economics of dairy cooperatives and asked dairy respondents from a variety of age groups how they felt about those economics. The policyholders chosen for the study are divided into four age groups according on their age: under 25, between 26 and 40, between 41 and 55, and above 55. The age distribution of the dairy respondents about the economics of dairy cooperatives is shown in Table 2.

Table 2
Age Wise Classification of the Dairy Respondents

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 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.

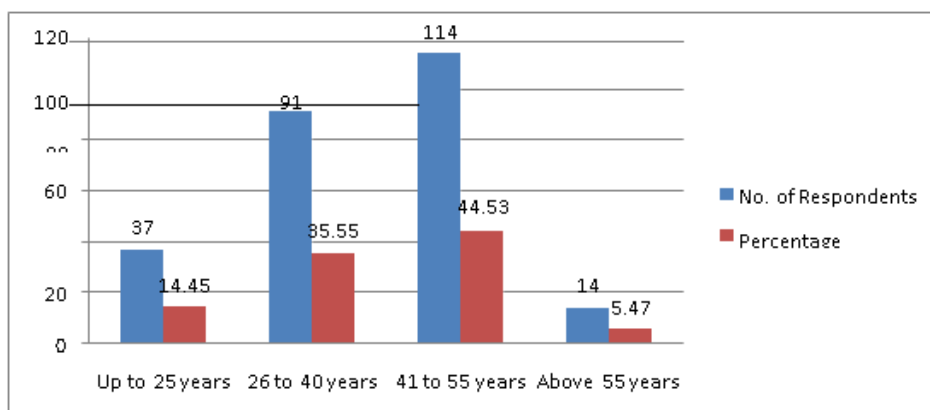


Fig 2. Age Wise Classification of the Respondents

Educational Qualification of the dairy respondents

The respondents' level of education has an impact on how much economic activity and awareness there is in the dairy farming industry. People with higher levels of education are more aware of dairy activities than those with lower levels of education. In order to determine the relationship between education and the economy of dairy cooperatives, respondents with various educational backgrounds were asked to rate their level of economic commitment to dairy activities. The respondents' levels of education were restricted to elementary school, higher secondary school, graduates, and postgraduates. Table 3 lists the respondents' educational backgrounds in the economics of dairy cooperatives in the Dharmapuri district.

Table 3
Educational Qualification Wise Classification of the Respondents

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

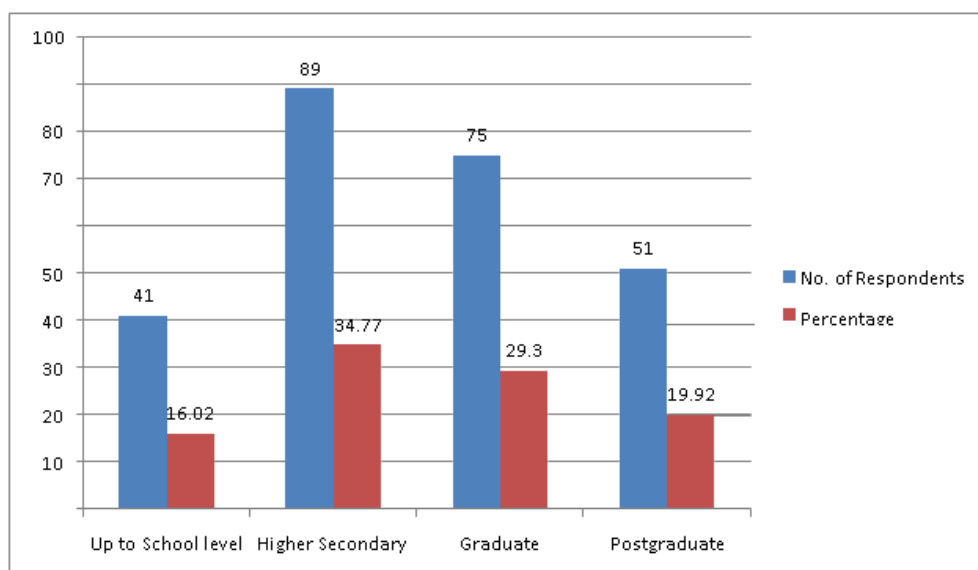


Fig 3. Educational Qualification Wise Classification of the Respondents

The respondents' levels of schooling are shown in Table 3. A total of 34.77 percent of respondents have completed higher secondary education, followed by 29.30 percent who have completed graduate-level education, 19.92 percent who have completed postgraduate-level education, and 16.02 percent who have only completed elementary school. It is concluded that the majority of respondents in the Dharmapuri district study on the economics of dairy cooperatives had a higher secondary degree as their educational background. In Fig. 3, the dairy responders' educational background is displayed.

Occupation of the respondents

The respondents' occupations in the current study are divided into agricultural, business, employment, housewife, and others. Table 4 lists the respondents' occupations in descending order.

Table 4
Occupation Wise Classification of the Respondents

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

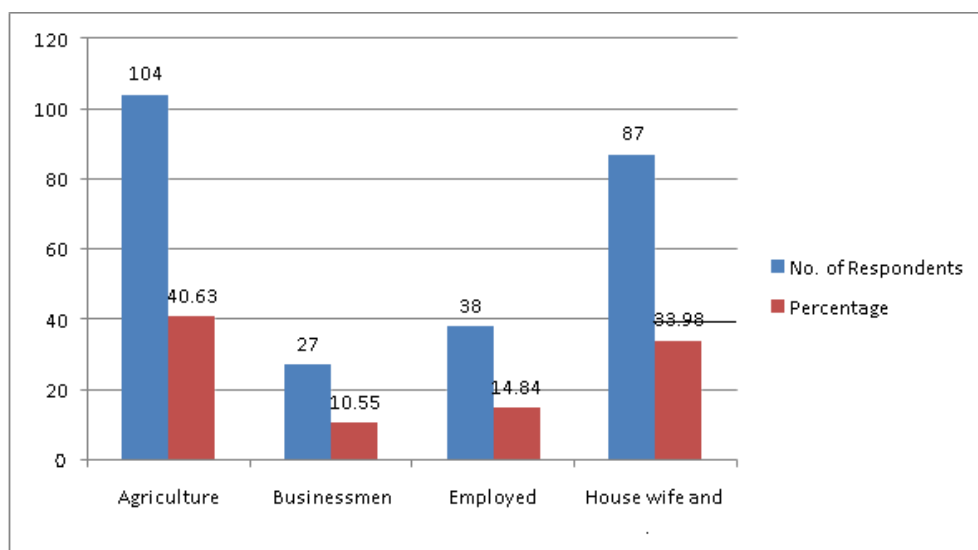


Fig 4. Occupation Wise Classification of the Respondents

According to Table 4, 10.55 percent of respondents are businessmen who are interested in the economics of dairy cooperatives in the Dharmapuri sector, followed by 33.98 percent of respondents who are housewives and others, 14.84 percent of respondents who are employed, and 40.63 percent of respondents who are involved in agriculture. It might be assumed that the majority of dairy producers fall under the agricultural sector. In Fig. 4, the respondents' occupations are displayed.

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									

Multivariate Tests

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Powers
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 mean scores of six factors related to financial problems in dairy farms are to be taken together to vary over the issues in the region where the dairy farms are located, according to descriptive statistics, estimated marginal means, and MANOVA Tables. The urban area has more issues with capital shortage (3.440), loan availability (2.400), and government aid (3.920) than semi-urban and rural locations. The biggest issues in rural areas include payday lenders and private lending (1.860), high investments (2.922), and high investments, while the biggest issues in semi-urban areas are low financial support (3.505). This is supported by the statistical significance of the mean variation. Additionally, the MANOVA indicated by a strong Pillai's Trace test is significant at the 5% level (F 2.708 with $p=0.005005$). The Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root tests are also significant at the five percent level (F 2.719, $p=0.005-005$, F 2.729, $p=0.005-005$, and F 4.131, respectively).

However, when the six factors for each of the three geographic locations—rural, semi-urban, and urban—are examined independently, only five of the variables related to the financial issues faced by dairy farms are shown to be statistically significant ($p>0.05$). When the regional issues with dairy farmer financing are considered separately, the issues with payday lenders, private financing, and high investment are those that affect rural areas. Lack of capital and inadequate financial support are the biggest issues in urban regions, whereas inadequate financial support is the biggest issue in dairy farms in semi-urban areas.

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 contacts	Rural	179	2.385	1.337
	Semi urban	52	2.269	1.190
Non-cooperation of others	Urban	25	2.480	1.229
	Total	256	2.371	1.295
	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

Social Problems of the Dairy Farms and Location

Multivariate Tests ^a									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Squared Eta	Noncent. Parameter	Observed Power ^d
Location 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								

Reliability Analysis

The most widely used indicator of internal consistency is Cronach's alpha ("reliability"). It is most frequently used when a survey or interview schedule contains several Likert items that together constitute a scale and is useful to assess the reliability of the scale. To determine whether the interview schedule's questions accurately measure the same hidden variable. The Cronbach's alpha formula to evaluate the validity of surveys is as follows:

$$\alpha = (n / (n-1)) \times (1 - (\sum S_i^2 / S_T^2))$$

Where n is the number of items, S_i^2 is the variance of the i^{th} 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.

Table 5
Reliability Analysis

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

The Cronbach's alpha value, which represents the highest level of internal consistency for the scale with this particular sample, is displayed in Table 5 and includes factors for the expansion of the retail sector, problems customers have with mobile phone services, communication issues, issues with price/tariff structures, issues with customer care, issues with value-added service issues, and the level of frustration with call centre staff.

Conclusion

Three various species of milk-producing animals, including cows, buffalo, and crossbred cows, exhibit significantly varied milk yields, according to the Chi-square test, multivariate test, and dependability. According to the Cobb-Douglas production function, the milk yield is greatly influenced by six factors: the cost of labour per animal per day, the cost of green feed, the cost of dry feed, the cost of concentrates fed, the time of year, and other expenses. Value of green fodder has the biggest impact out of the six variables, followed by lactation period length. The return provided by crossbred milk animals is the highest, followed by the return provided by the buffalo, according to the cost-return study of milk per litre.

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