An assessment of correlation between procurement of milk and membership with Dairy Cooperative Societies

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ABSTRACT

Procurement is one of the vital variable which decides the turnover of the dairy industry. Procurement means collecting milk from the milk suppliers. If the quantity of procurement is higher the higher is the supply of packed and unpacked fluid milk and other dairy products as well. There are various factors which affect procurement of milk such as productivity, number of milch cattle, members in dairy cooperatives, procurement cost and so on. This study took the number of members in dairy cooperatives into consideration and tries to cognize the magnitude, degree and direction of the correlation between procured quantity of milk and number of members in dairy cooperatives and established the positive and high correlation (coefficient of correlation is 0.777) between the two variables that shows higher the members of dairy cooperatives, higher the procured quantity of milk.

Key Words : Procurement, Membership, Correlation, Dairy, Cooperative

INTRODUCTION

Likewise India, Uttarakhand also occupied by the village population hugely. Accordingly agriculture and allied activities also the main occupation people resides here and the major sector of Uttarakhand economy. It becomes necessary to think about the betterment of this sector. This study focuses the dairy sector which is run in cooperative manner and regulated by Uttarakhand Cooperative dairy federation. Procurement is one of the major variable which decides the production and turnover of the dairy industry. Procurement means collecting milk from the milk suppliers. If the quantity of procurement is higher the higher is the supply of packed and unpacked fluid milk and other dairy products as well. There are various factors which affect procurement of milk such as productivity, number of milch cattle, members I dairy cooperatives, procurement cost, milk losses at collection centre and so on. But in the present study the number of members in dairy cooperative societies has been taken into

consideration. In the study the correlation coefficient has been calculated .777 that indicates the positive and high degree of correlation between the quantity of procured milk from the milk collection centres known as dairy cooperative societies and number of members in dairy cooperatives.

Objective :

To know the degree, magnitude and direction of correlation between the procured quantity of milk and membership in dairy cooperative societies.

$H_0 : r = 0$

METHODOLOGY

Study area :

This study talks about the cooperative dairy functioning in Uttarakhand known as "Uttarakhand cooperative dairy federation and its product known as Aanchal in order to fulfil the demand of milk and various milk products. Though the Aanchal cooperative dairy functioning in entire Uttarakhand so this over arching study covers entire Uttarakhand's cooperative dairies.

Type of data :

Secondary data has been collected from the Uttarakhand cooperative dairy federation, Haldwani (Nainital, Uttarakhand)

Tool and technique:

In order to see the degree and direction of relationship between the procured quantity of milk from the dairy cooperative societies and number of members in dairy cooperative societies, correlation analysis has been adopted using Statistical package for social sciences (SPSS).

Review of literature :

Jacob (1971) estimated the relationship of milk yield with different factors of cost and stall size and examined the comparative importance of the resource inputs and the productivities in the urban, suburban and rural areas of Tamil Nadu and West Bengal. Linear and Cobb Douglas type of production functions were tried. Linear equation gave abetter fit except in the case of data on cows and buffaloes from Madras city where the Cobb-Douglas function was better. The feed cost showed a positive and significant effect in all the cases except for cows in Madras city and rural areas of west Bengal. The marginal value product for feed revealed that in the case of buffaloes in Madras city and cows in Calcutta city 1 it is profitable to spend more money on additional feed, while in the remaining cases it would not be advantageous.

Mulmule (1972) conducted research on the topic entitled "Economic problems of production of dairy products development of trade in Nagpur". The investigation was conducted to review the situation of dairying in Marathwada with the objectives to study various trends of milk production and socio-economic status of the dairy farmers. The survey work was

carried out for the milk pocket areas of eight districts of Marathwada region. About 59 per cent of the dairy farmers belong to general (unreserved) category, 25 per cent belonged to backward class and only 8 per cent each were of SC and S.T. The landless dairymen equally contributed with dairymen having (large) land; 13 landless dairymen reported comparable lactation yield with 08 dairymen holding 10 ha land. The significant differences among the means indicated that as the number of milk animals increased, the herd lactation performance decreased. The animals maintained by joint family were not properly cared while they were cared properly by single family.

Gangasagare Pandurang Tukaram (2007) conducted research on the topic entitled "Productivity measures for improvement in dairy industry in Marathwada" the research was based on the data of 109 dairy farmers (out of 144) were collected on the basis of special care adapted by dairy farmers for crossbred animals and the results presented significantly higher proportion of the farmers (109 out of 144) accepted the importance of crossbred cows. When questioned about providing cooling facility to crossbred animals, significantly higher numbers of farmers (65 out of 85) had a positive response. Spain *et al.* (1997) observed economic benefit of cooling lactating dairy cows.

Bhaga *et al.* (2003) also revealed that spray cooling increased the physiological comfort and milk yield in high yielding animals during hot climate condition. Similarly significantly more proportion of dairy farmers (35 out of 50) realized that crossbred animals should be washed during summer.

Koshta *et al.* (1996) revealed higher net returns under specialized dairy farming with better management. It was recorded that there is a significant association between milk production and adaptation of scientific animal husbandry practices. From these milk pocket areas, adaptation of various animal husbandry practices such as special care of crossbred animals, cooling arrangement during summer, washing crossbred animals during summer, vaccination to dairy animals, de-worming for the control of echoparasites, removal of old debris, animal insurance and use of milking machine.

RESULTS AND DISCUSSION

Data analysis and interpretation:

To analyse the data Karl Pearson's correlation technique has been followed but whole data has been converted into standardized data using z-scores (the scores which are comparable) first, to detect degree, magnitude and direction of correlation between the variables. The data of procured quantity of milk and number of members have been collected for last 15 years *i.e.* April 2002 to April 2017. There N represents the number of years that is 15 in the Table 1. Data was taken to see the whether there is any relationship between the same variables or they are free from any kind of correlation. But after analysing data it has

Table 1 : Correlation co-efficient between procured quantity of milk and membership		
Correlation		Zscore(membership)
Z-score (Procurement)	Pearson Correlation	.777[**]
	Sig. (2-tailed)	.001
	N	15

**. Correlation is significant at the 0.01 level (2-tailed).

been found that there is relationship between these two variables.

Table 1 shows N the number of years in which both variables that are number of members and quantity of milk has been studied. Pearson's correlation that is .777 indicates the positive and high degree of correlation between the same variables. As significance level is less than 0.01 which tells that the null hypothesis that there is no correlation between the variables is likely not to be accepted. So the alternative hypothesis is to be accepted that there is correlation between the two variables. As membership increases, quantity of procurement also increases.

Findings:
Low procurement:
Inactive members:

Though magnitude of correlation is .777 that indicates high correlation but not perfect correlation. There are huge number of members who do'not supply milk to the dairy cooperative societies. Which affect the procured quantity of milk per member.

Low productivity:

As model shows that the magnitude of correlation is .777 it indicates high correlation but again it is not perfect. It indicates that there are various. Productivity may be improved by providing health care and healthy fodder to milch cattle. Though it is provided but not in accurate manner. There is a huge inappropriateness, irregularity and evasive attitude towards giving these facilities and services.

Lack of technology :

Dairy cooperative societies (milk collection units) are lacking of technology. Thereby collected milk get sour before it is arrived for processing. It also affect the procured quantity of milk.

Lack of awareness:

It also has been observed that the huge number of dairy farmers do not aware about the dairy cooperative and its benefits thereby the number of membership remains low.

Lack of incentives:

There is lack of incentives to work with dairy cooperatives. One disincentive is that the procurement price is less and the milk collection centres (dairy cooperative societies) are not on adequate distance. So the dairy farmers do not take pain to work with dairy cooperatives. They sale their milk to the local surrounding people.

Languish attitude towards work:

The manager and other auxiliary members are not passionate towards their work and do not bother about the performance and other works. They perform all the works in a languish way.

There are various ambiguities have been discussed above which affect the procured

quantity of milk and performance of dairy cooperative as well. Because the procured milk is the raw material for the dairy industry. If there is an inadequacy found in the raw material, it eventually affect the performance of the industry. So it becomes necessary not just to overcome the hindrances even to eradicate them. There are some suggestion have been given below which may help to improve above mentioned problems.

Suggestions :
Crossbreed:
Uttarakhand is the home of a huge number of local breed which further a cause of low productivity. Breed upgradation will prove an unparalleled solution in order to increase in quantity of procurement and performance of the dairy cooperative society as well.

Productivity improvement:
Productivity improvement is one of the measure to increase the procured quantity of milk by giving various helps, support and training.

Rules and regulation for inactive members:
It is necessary to regulate the inactive membership with dairy cooperative societies. Inactive members is one of the major negative factor which reduces the profit of dairy cooperatives. If members found to be fraud there should be provision to punish them. There should be a threshold to carry on membership without supplying milk to the dairy cooperative society due to any viable reason such as three months or six months as par situation. And if it accedes more than the time limit than they should be charged with penalty.

Financial and social incentives:
Various financial and social incentives should be given by the dairy cooperatives in order to increase the membership. Financial incentives like insurance for cattle, financial support during dry period, pension scheme, buying and purchasing of cattle and social incentives like training programs, awareness programs regarding cattle's health, giving the headship of society one after one, electing the president of society amongst members and so on.

Biometric records:
Biometric records shall be maintained by the dairy cooperative societies in order to tackle with the inactive members of the dairy cooperative societies.

Technological improvement:
Technology and equipment should be provided to the dairy cooperative societies through which they could save procured milk from souring.

Meetings and exposure:
Regular meetings should be kept in dairy cooperative societies to discuss on various issues and matters related to members, procurement, health of cattle and so on. And some kinds of activities, workshops and seminars also be organised by dairy cooperatives in order

to expose the benefits, services, schemes and financial and economical supports given by the dairy cooperative union to the members.

Training to staff running societies:

The volunteers or staff whosoever manage the dairy cooperative societies shall be given training to perform their work adequately. They should be educated and trained thereby they could be able to solve out the minor and immediate problem of dairy farmers on ground level by themselves.

Conclusion :

Procurement is one of the vital function in order to acquire milk for processing in the dairy cooperative union. So it is necessary to take the steps in improving procurement with few incentives and regulations as well which have been discussed. But it is compulsorily taken into consideration that incentives should be more and powerful than regulation and norms. Otherwise this step may work backward direction.

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