

**Research Article**

# Impact of information technology in improving the management of dairy co-operative societies in Jaipur district of Rajasthan

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**SUMMARY :** The information technologies helps in providing improved services to rural population and empowers them through access to information as well as in generation, acquisition and dissemination of knowledge. The present study was conducted in Jaipur district of Rajasthan. From the Jaipur dairy two chilling centres were selected and from each selected chilling center three milk collection routes were selected randomly. From the 6 computerised and 6 non-computerised DCSs, a total sample of 120 milk producers was selected for the present investigation. There was a significant difference between the non-computerised and computerised DCSs in provision of timely information. The highest difference was found in availability of computer training (60.07%), print out of the detailed information on transaction along with grand total obtained daily (62.68 %), elimination of manual register for data and information storage (63.54%). whereas the lowest difference was found in Information of inoculation day with farmers payment slip (28.30%) and production of information with maximum economy (45.45%).

**KEY WORDS :**

 IT, DCSs,  
Management

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## BACKGROUND AND OBJECTIVES

Majority of Indian masses are still dependent on agriculture and a large proportion of them are categorized as marginal (58.1%) farmers (Bansil, 1990). The Indian dairy industry has performed well during the last two decades. India's milk output during the year 2007-08 reached the level of 102 million tonnes, providing per capita availability of 246 g per day (Bhasin, 2009). Milk production contributes a major share of livestock production and is only next to rice with regard to contribution to agriculture production (Das and Pankaj, 2004). India's livestock census (Dairy India, 2002) denotes it's first rank in bovine population with 209.489 million cattle and 91.784 million buffalo, contributing 19 per cent of the world.

Information and communication technologies (ICTs) are a driving force in development. Exclusion of developing countries from the global information society will have severe implementations for their societies and economies. These technologies have the main objective of narrowing the knowledge gap between developed and developing countries. IT has the potential to help rural producers and development functionaries to collect, process, disseminate and share very quickly business information among the individual members. Information relating to various rural development programmes could be widely disseminated through the use of information technology. The prime reason for the growth of milk production in India is attributed to the efficient collection of milk and remunerative prices to the

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producers. Both of these to some extent have been influenced by the innovative use of IT at the milk collection centers. Apart from prompt payment, the computerization of milk co-operative societies also help in reducing the number of employees and prompt availability of daily accounts such as up-to-date balance sheet and account of profit and loss. The Indian dairy sector is organized as a producer-owned and professionally-managed cooperative system. In Rajasthan state there are two major dairies in Jaipur district namely Jaipur dairy and Lotus dairy. Jaipur dairy has more number of computerised and non-computerised DCSs as compared to Lotus dairy. The Lotus dairy is a private dairy whereas, the Jaipur dairy is under the administrative control of Government of Rajasthan through Rajasthan co-operative dairy federation (RCDF), The Jaipur dairy covers highest number of dairy co-operative societies in Rajasthan State. Presently a total of 1236 dairy cooperatives are running in Jaipur districts. Out of these 981 are computerised and 255 are non-computerised dairy co-operative societies. The milk producers' cooperative societies at Jaipur introduced electronic milk tester (EMT) and installed it in most of the co-operatives in phased manner from 1984-85 onwards. This enabled a prompt payment to the milk suppliers, but the problem of management record system (MRS) became more acute as the success resulted in more members, more milk collection and, therefore, more accounting activities. This initiated the bold step of providing a paradigm shift in technology by introduction of Smart Automatic Milk Collection Station (SAMCS) at village level and introduction of smart cards for its members. To meet the present day

challenges faced by dairy industry, the co-operative dairy sector has to further improve the production, collection, processing and marketing of milk and milk products. However, systematic studies assessing the impact on introduction of IT in dairy co-operatives in its functioning especially in management were lacking in Rajasthan. It was felt that there is an urgent need to sensitive the policy makers and the managers of co-operative dairy sectors the significance of information technology in efficient functioning of dairy co-operatives. Keeping all these facts in mind, the present investigation impact of information technology in improving the management of dairy cooperative societies in Jaipur district of Rajasthan was under taken.

## RESOURCES AND METHODS

The present study was conducted in Jaipur district of Rajasthan due to the reason that Jaipur dairy is the largest computerized dairy cooperative societies, which covers five chilling centers. Out of them two chilling centers namely Jaipur and Bindayaka were selected randomly by using simple random sampling technique. From each selected chilling centre three milk collection routes were selected randomly by using simple random sampling technique. From each of the milk collection routes, one computerised and one non-computerised DCSs were selected randomly. Hence, 6 computerised and 6 non-computerised DCSs were selected. From the selected DCSs, 60 milk producers from computerised dairy cooperative societies and 60 milk

**Table 1: Provision of timely information in computerised and non-computerised DCSs** (n = 120)

Sr. No.	Indicators	Mean score		Mean diff. score	Per cent diff. score	Z value
		Non computerised DCSs (n = 60)	Computerised DCSs (n = 60)			
1.	Availability of timely web based information	1.32	2.90	1.58	54.48	22.29**
2.	Chairperson of managing committee give timely information	1.50	2.50	1.00	40.00	10.63**
3.	Timely provision of data regarding milk production	1.48	2.58	1.10	42.63	11.05**
4.	Timely provision of data regarding total milk price	1.63	2.63	1.00	38.02	10.03**
5.	Timely provision of information regarding subsidy of feeds	1.52	2.67	1.15	43.07	12.72**
6.	Timely provision of information regarding loan for purchasing animals	1.73	2.57	0.84	32.68	8.06**
7.	Timely provision of information regarding new scheme for dairy development	1.38	2.22	0.84	37.83	8.57**
8.	Timely provision of information regarding veterinary service	1.53	2.60	1.07	41.15	11.49**
9.	Information of inoculation day with farmers payment slip	1.90	2.65	0.75	28.30	6.71**
10.	Efficient management of information produced at the most appropriate intervals	1.23	2.65	1.42	53.58	17.25**
11.	Prompt information management	1.47	2.57	1.00	38.91	11.69**
12.	Management of information based upon upto-date-data	1.33	2.68	1.35	50.37	15.90**
13.	Better information accessibility to farmers	1.55	2.73	1.18	43.22	13.72**
14.	Accessibility to information on meetings organized by DCS	1.43	2.70	1.27	47.03	14.20**
15.	Availability of computer training	1.02	2.60	1.58	60.07	21.66**
16.	Training provided by using computer based teaching aids	1.03	1.53	0.50	32.67	7.29**
	Overall	1.44	2.55	1.11	43.47	12.70**

\*\* indicate significance of value at P=0.01

producers from non-computerised dairy cooperative societies were selected proportionately by using simple random sampling. Thus, a total sample of 120 milk producers was selected for the study purpose. An interview schedule was prepared and data so collected were classified, tabulated and analyzed. The interpretations were drawn after subjecting the data to statistical analysis which led to the following major findings.

### OBSERVATIONS AND ANALYSIS

The impact of information technology in management of dairy co-operative societies was measured with respect to following parameters.

#### Provision of timely information in computerised and non-computerised DCSs:

The data in Table 1 indicated that among the different

indicators difference between the computerised and non-computerised DCSs. The highest per cent difference (60.07%) was found in availability of computer training, whereas the lowest per cent difference (28.30%) was found in information of inoculation day with farmers payment slip. The table also indicated that the calculated overall Z-value (12.70\*\*) between the computerised and non-computerised DCSs is greater than the tabulated value (2.58) which as positively significant at 1 per cent level of significance, it means there was a significant difference between the non-computerised and computerised DCSs in provision of timely information. Similarly the Z-values of all the indicators of provision of timely information in computerised and non-computerised DCSs were positively significant at 1per cent level of significance. Thus, the hypothesis formulated in from ( $H_0$ ) was rejected and alterative hypothesis was accepted. It means there was a significant difference in all these indicators

**Table 2 : Accuracy, speed and transparency in computerised and non - computerised DCSs (n=120)**

Sr. No.	Indicators	Mean score		Mean diff. score	Per cent diff. score	Z value
		Non computerised DCSs (n = 60)	Computerised DCSs (n = 60)			
1.	Very accurate and prompt payment for milk to farmers	1.50	2.85	1.35	47.36	14.07**
2.	Weighing of milk is very accurate	1.52	2.73	1.22	44.68	13.02**
3.	Balance of payment is credited to farmer's account in the next day	1.02	1.56	0.54	34.61	8.25**
4.	Print out of the detailed information on transactions along with the grand total obtained daily	1.00	2.68	1.68	62.68	27.69**
5.	Management information based upon adequately reliable data	1.50	2.63	1.13	42.96	12.63**
6.	Status of ambiguous reports	1.47	2.70	1.23	45.55	14.02**
7.	Daily accounts are readily available for verification about milk collection	1.35	2.73	1.38	50.54	16.42**
8.	Quick release of the bonus by DCS	1.48	2.68	1.20	44.77	13.15**
9.	Immediate testing of the quality of milk	1.23	2.73	1.50	54.94	19.10**
10.	Error free entry of identification number of the farmer	1.55	2.68	1.13	42.16	11.34**
11.	Increase in the efficiency and reliability of the overall operation	1.42	2.70	1.29	47.77	14.31**
	Overall	1.37	2.60	1.23	47.30	14.91**

\*\* indicate significance of value at P=0.01

**Table 3 : Production and services in computerised and non- computerised DCSs (n=120)**

Sr. No.	Indicators	Mean score		Mean diff. score	Per cent diff. score	Z value
		Non-computerised DCSs (n = 60)	Computerised DCSs (n = 60)			
1.	Increase in milk production in areas under DCS	1.48	2.83	1.35	47.70	16.81**
2.	Increase in total quantity of milk production of individual farmer	1.42	2.75	1.33	48.36	15.64**
3.	Control over information management	1.37	2.71	1.34	49.44	15.13**
4.	Elimination of manual register for data and information storage	1.05	2.88	1.83	63.54	19.06**
5.	Computerization of financial accounting of the DCS	1.07	2.96	1.89	63.38	21.52**
6.	Production of information with maximum economy	1.50	2.75	1.25	45.45	14.68**
7.	Efficient control of staff handling information	1.38	2.66	1.28	48.12	13.60**
	Overall	1.32	2.79	1.47	52.68	16.64**

\*\* indicate significance of value at P=0.01

of provision of timely information in computerised and non-computerised DCSs and the computerised DCSs were highly significantly superior as compared to non-computerised DCSs in these indicators.

#### **Accuracy, speed and transparency in computerised and non-computerised DCSs:**

The Table 2 indicated that among the different indicators of accuracy, speed and transparency in computerised and non-computerised DCSs. The highest per cent difference (62.68%) between the computerised and non-computerised DCSs was found in print out of the detailed information on transaction along with grand total obtained daily, whereas the lowest per cent difference (34.61%) was found in balance of payment is credited to farmers account in the next day. The data also indicated that the calculated overall Z-value (14.91\*\*) of all the indicator of accuracy, speed and transparency in computerised and non-computerised DCSs were positively significant at 1 per cent level of significance. Thus, the hypothesis formulated in from ( $H_0$ ) was rejected and alternative hypothesis was accepted. It means there was a significant difference in all these indicators of accuracy, speed and transparency in computerised and non-computerised DCSs. The finding revealed that there were considerable alteration in accuracy, speed and transparency that played a vital role in improving the management of computerised dairy cooperative societies.

#### **Production and services in computerised and non-computerised DCSs:**

The data in Table 3 revealed that the highest per cent difference (63.54%) between the computerised and non-computerised DCSs was found in case of elimination of manual register for data and information storage, whereas the lowest per cent difference (45.45%) was found in production of information with maximum economy. Similarly, the Z-values of all the indicators of production and services in computerised and non-computerised DCSs were positively significant at 1 per cent level of significance. Thus, the hypothesis formulated in from ( $H_0$ ) was rejected and alternative hypothesis was accepted. It means there was a significant difference in all these indicators of production and services in computerised and non-computerised DCSs and the computerised DCSs were highly significantly superior as compared to non-computerized DCSs in these indicators. The present study revealed that there was perceptible improvement in increasing the production and services in computerised DCSs. The results of the present study have similarity with the findings of Bhatnagar (2000), Prasad (2002), Meena (2005) and Singh (2005).

#### **Conclusion:**

Above findings can be concluded that the significant difference between computerized and non-computerized DCSs in all the indicators provision of timely information and the computerized DCSs were significantly superior in all these indicators as compared to non-computerized DCSs. The highest difference in availability of timely information and availability of computer training, whereas the lowest difference between the computerized and non-computerized DCSs was found in case of training provided by using computer based teaching aids and information of inoculation day with farmers payment slip. Like wise significant difference between non-computerised and computerised DCSs in accuracy, speed and transparency. And also concluded a significant difference between the non-computerised and computerised DCSs in production and services, the computerised DCSs were significantly superior as compared to non-computerised dairy co-operative societies.

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