

**ASSOCIATION BETWEEN INDEPENDENT VARIABLES WITH EXTENT OF ADOPTION OF IMPROVED ANIMAL HUSBANDRY PRACTICES AND CONSTRAINTS PERCEIVED BY THE FARMERS IN ADOPTION OF IMPROVED ANIMAL HUSBANDRY PRACTICES OF CHHOTAUDEPUR DISTRICT OF GUJARAT**

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**ABSTRACT**

*The present study was conducted in the Chhotaudepur district of Gujarat, India to find out the association between knowledge levels of farmers about improved animal husbandry practices and constraints perceived by the farmers in adoption of improved animal husbandry practices. The findings of the study revealed that significant association was found between age, education, family type, herd size and annual income with knowledge level of respondents. It was also found that location of artificial insemination centre at distance place, poor adaptability of cross bred cow in local climate condition and there is no provision of loan for cattle purchasing by society and bank were perceived most important constraints by both producer members and non member respondents.*

**Keywords:** animal husbandry, knowledge, dairy cooperative societies, adoption, animal husbandry practices, constraint.

**INTRODUCTION**

The population of Gujarat is 6.04 corars (according to 2011 census) out of this about 57.40 per cent Population (Gujarat Population Census data 2011) live in rural areas and their main sources of income are farming and livestock raising.

**Table 1 : The milk production of different states in country during 2014-15**

Sr. No.	State	Total milk production (in 'MT)	Rank
1	U.P.	23.330	I
2	Rajasthan	13.940	II
3	Andhra Pradesh	12.762	III
4	Gujarat	10.315	IV
5	Punjab	09.714	V
Total of all states of country		146.300	-

Source - Dairy year book 2014-15

The per capita availability of milk was 322 gm/day in 2014-15. The total milk production of Gujarat in 2014-15 was 10.315 million tonnes and rank Fourth after U.P. (23.33 MT.), Rajasthan(13.94 MT) and AP(12.762 MT).

At present private and co-operative organization are engaged in the production, procurement, processing and milk marketing in rural areas. The milk producers who sell their milk through private local traders are always exploited. The private traders have been interested in maximizing their own profits and are least concerned in improving the productivity of dairy farming. The burden has therefore, fallen on the co-operative sector. Primary milk co-operative societies have been organized to help dairy farmers in developing dairy as an industry.

**Table 2 : Year wise the milk production and per capita availability of milk in Gujarat is shown here under**

Sr. No.	Year	Milk production (in 000 tonnes)	Per capita availability (gms/day)
1	2010-11	9321	435
2	2011-12	9817	445
3	2012-13	10315	476
4	2013-14	11112	506
5	2014-15	11691	-

Sources - National Dairy Development Board 2014-15

## Dairy Co-operatives in Gujarat

In today's scenario, the Baroda dairy has taken up projects for increasing milk production per animal by progeny testing scheme, artificial insemination scheme and is also furthering efforts in order to reduce the expenditure on milk production. With the idea of development of farmers in mind it conducts various self-leadership programs like VMS, women's leadership programs and also projects for educating farmers about hygienic milk production.

In order to earn it member's trust and to ensure transparency in the system, the Baroda dairy with the help of Modern Techniques has set up automatic milk collection machines as well as milk tester machines and bulk chilling units.

To keep up the health standard of the member's cattle, there are seven veterinary centers established at various places in the Vadodara and Chhotaudepur district. Animals are treated at these centres.

"Baroda Dugdha Utpadak Sahakari Sangh Limited" (Baroda dairy union) was established in 26th April 1965 with 7 village co-operatives to implement the scheme of "operation flood". Baroda dairy covers two districts viz., Vadodara and Chhotaudepur. At present; the Baroda dairy union consists of 1405 functional (registered) dairy co-operative societies (DCSs) with a total membership of 217289. Baroda dairy union has divided the district in 81 milk procurement routes by which the milk is collected from dairy co-operative societies. The milk collection of this union was 5.86 lakh litres per day (Oct., 2016). The union is actively engaged in providing reasonable rates (5.85 Rs./ fat %) of milk and timely payment to the milk producers, to organize the training programmes for members about improved dairy practices to enhance the milk production, providing facilities for disease treatment and animal health care. The union is also providing balanced ration on low cost for the dairy animals and improved seeds for green fodder production. The union officials are doing all efforts to improve the socio-economic status of milk producers through dairy co-operative societies.

## OBJECTIVES

- (a) To know the milk production (2014-15) in different states in country is shown here under
- (b) Year wise the milk production and per capita availability of milk in Gujarat is shown here unde

## METHODOLOGY

The present study was confined with Co-operative Dairy comprised of 16 milk unions in Gujarat State. Out of 16 milk unions of Co-operative Dairy, one milk union i.e. Baroda Cooperative dairy which covers two districts i.e. Vadodara and Chhotaudepur), was purposively selected for the study.

Baroda dairy consists of 86 milk collection and procurement routes by which milk is to be collected from dairy co-operative societies out of this route 27 route in Chhotaudepur District. Twelve routes were randomly selected.

For selection of dairy co-operative societies, a comprehensive list of all the dairy co-operative societies was prepared from the identified milk collection routes. Two dairy co-operative societies were selected randomly from each selected milk collection routes. Thus, total 24 dairy co-operative societies have been taken for the present study.

Three members were selected randomly from each selected dairy co-operative societies, there by making a sample of 72 members as the study group. A control group of 72 non-members (3 cattle owner respondents from each dairy co-operative society's area) were selected randomly for the comparative study.

## RESULTS AND DISCUSSION

### Association of selected independent variables with extent of adoption of improved animal husbandry practices

The Coefficient correlation (r) relationship in between the independent variables and Extent of adoption of improved animal husbandry practices of the Member of DCSs, Non-member of DCSs and Overall member is presented in table 11.

It is evident that out of 9 variables correlation coefficient of Age, Education, Family type, Herd size, Annual income and Knowledge level were found to be positive significant at 1 and 5 percent level, where as remaining variables viz Caste, Size of land holding and Family size were non significant in case of Member of DCSs respondent.

In case of Non member of DCSs respondent Age, Education, Family type, herd size, and annual income were positive significant, where as Caste, Size of land holding, Family Size and Knowledge level were non significant.

The data also reveals that in Overall respondent Age, Education, Family type, Herd size, Annual income and knowledge level were correlated with improved animal

husbandry practices where as Caste, Size of land holding and Family size were no correlated with improved animal husbandry practices.

**Table 1: Association between Independent Variables and Extent of adoption of respondent about improved animal husbandry practices n=144**

Sr. No.	Independent Variables	Member of DCSs (n=72)	Non-member of DCSs (n=72)	Overall Respondent (n=144)
X <sub>1</sub>	Age	0.574**	0.291*	0.225*
X <sub>2</sub>	Education	0.542**	0.307*	0.359*
X <sub>3</sub>	Caste	0.015NS	0.076NS	0.168NS
X <sub>4</sub>	Size of land holding	0.031NS	0.105NS	0.185NS
X <sub>5</sub>	Family type	0.307*	0.389*	0.458*
X <sub>6</sub>	Family size	0.142NS	0.046NS	0.140NS
X <sub>7</sub>	Herd size	0.590**	0.266*	0.315*
X <sub>8</sub>	Annual income	0.795**	0.473*	0.263*
X <sub>9</sub>	Knowledge level	0.896**	0.221NS	0.488*

\*Significant at 0.05 level of probability

NS= Non- significant

\*\*Significant at 0.01 level of probability

**Distribution of respondent according to constraints perceived by them in adoption of improved animal husbandry practices**

All the possible constraints being faced by the Member of DCSs and Non member of DCSs respondents were grouped into three major categories viz., constraints related to infrastructural, technical and economic aspects.

**(A) Distribution of respondents according to constraints perceived by them in adoption of improved animal husbandry practices**

The Table 12 indicates that 18.06 per cent of member and 29.16 per cent of non-member respondents faced high level constraints and 61.11 per cent of DCSs members and 68.06 per cent of non-member faced medium constraints in adoption of improved animal husbandry practices. The table further revealed that 20.83 per cent of DCSs members and only 02.78 per cent of non-member faced less constraint.

**Table 2: Distribution of respondent according to constraints perceived by them in Adoption of improved animal husbandry practices n=144**

Constraints scores	Level of constraints	Member of DCSs (n= 72)		Non-Member of DCSs (n= 72)	
		No.	Percent	No.	Percent
Below 32.23	Low	15	20.83	2	02.78
From 32.23 to 37.92	Medium	44	61.11	49	68.06
Above 37.92	High	13	18.06	21	29.16

Mean = 35.08

$\sigma = 2.85$

**Infrastructural constraints as perceived by the respondents in adoption of improved animal husbandry practices**

The member of DCSs perceived ‘non-availability of green fodder throughout the year’, ‘location of artificial insemination centre at distant place’, ‘dairy co-operative society is far away from home’ were the major constraints in adoption of animal husbandry practices (Table 13). Further, constraints like ‘irregular supply of cattle feed’ and ‘feeding

problem to dairy animals during scarcity condition like drought’ were perceived by the member as constraints and assigned 4th and 5th rank, respectively. The non-member reported problem of ‘non-availability of green fodder throughout the year’ ‘location of artificial insemination centre at distant place’ and ‘ dairy co-operative society is far away from home’. Further, constraints related to ‘irregular supply of cattle feed’, ‘feeding problem to dairy animals during scarcity condition like drought’ was also perceived by the non-member.

**Table 3 : Constraints related to infra structural as perceived by the respondents in adoption of improved animal husbandry practices n=144**

Sr. No.	Constraints	Member of DCSs (n= 72)		Non-member of DCSs (n= 72)	
		MPS	Rank	MPS	Rank
		1	Location of artificial insemination centre at distance place	36.40	II
2	Dairy co-operative society is far away from home	32.74	III	61.32	III
3	Non-availability of green fodder throughout the year	47.28	I	73.29	I
4	Irregular supply of cattle feed	28.96	V	60.63	IV
5	Feeding problem to dairy animals during scarcity condition like drought	31.53	IV	56.21	V
Overall		35.38		63.00	

MPS= mean per cent score ; DCS= Dairy Cooperative Societies

**(A) Technical constraints perceived by the respondents in adoption of improved animal husbandry practices**

A critical analysis of Table 14 reveals that members and non members were facing problems related to poor adaptability of cross bred cow in local climate condition, susceptibility of cross bred cow to disease and 'Milk of cross bred cow has poor consumer acceptability'. lack of knowledge about feeding, breeding and management practice, was

another constraint, Ignorance of farmers about clean milk production and lacks of knowledge about animals' treatment were visible. The non-member also perceived constrainly in adoption of IAHP. Further they also perceived constraints regarding lack of knowledge about animal treatment, milk of cross bred cow having low consumer acceptability and ignorance of farmers about clean milk production.

**Table 4: Constraints related to technical as perceived by the respondents in adoption of improved animal husbandry practices n=144**

Sr. No.	Constraints	Member of DCSs (n= 72)		Non-member of DCSs (n= 72)	
		MPS	Rank	MPS	Rank
		1	Milk of cross bred cow has poor consumer acceptability	37.55	III
2	Susceptibility of cross bred cow to disease	40.65	II	63.45	II
3	Lack of knowledge about feeding, breeding and management practice	26.50	IV	57.20	V
4	Ignorance of farmers about clean milk production	25.35	V	56.65	VI
5	Poor adaptability of cross bred cow in local climate condition	45.50	I	71.75	I
6	Lack of knowledge about animals treatments	25.20	VI	59.40	IV
Overall		33.45		61.68	

MPS= mean per cent score ; DCS= Dairy Cooperative Societies

**(B) Economic constraints perceived by the respondents in adoption of improved animal husbandry practices**

A critical analysis of Table 15 reveals that members perceived 'Less price of cow's/ buffalo's milk offered by society, High charge for emergency service/feed' and 'Lack of guidance for available credit facilities as the major constraints in adoption of IAHP. Further they perceived labour requirement for cross breed animals is more as

compared to *deshi* animals, irregular and inadequate system of bonus distribution, and 'There is no provision of loan for cattle purchasing by society and union. The non-member also perceived that lack of provision of loan for cattle purchasing by society and Bank, lack of guidance for available credit facilities and irregular inadequate system of bonus distribution as the major constraints. They also observed that labour requirement for cross breed animals in higher as compared to *deshi* animals.

**Table 5 : Constraints related economic as perceived by the respondents in adoption of improved animal husbandry practices adopters n=144**

Sr. No.	Constraints	Member of DCSs (n= 72)		Non-member of DCSs (n= 72)	
		MPS	Rank	MPS	Rank
1	High charge for emergency service/feed	34.35	II	52.50	IV
2	There is no provision of loan for cattle purchasing by society and Bank	21.40	VI	67.70	I
3	Irregular and inadequate system of bonus distribution	26.45	V	59.00	III
4	Less price of cow's/buffalo's milk offered by society	57.65	I	52.20	V
5	Labour requirement for cross bred animals is more as compared to deshi animals	30.50	IV	38.75	VI
6	Lack of guidance for available credit facilities	33.15	III	61.25	II
Overall		33.92		55.23	

MPS= mean per cent score ; DCS= Dairy Cooperative Societies

**Overall constraints perceived by the respondents in adoption of improved animals husbandry practices**

Among the three categories of constraints infrastructural constraint was perceived with highest

intensity by non member respondents. This was followed by technical constraints and economic constraints. While Economic constrains was perceived with highest intensity by DCS members and followed by Technical and Infra structural constrains.

**Table 6 : Overall constraints perceived by the members and non-members in adoption of improved animal husbandry practice n= 144**

Constraints	Member of DCSs (n= 72)		Non-member of DCSs (n= 72)	
	MPS	Rank	MPS	Rank
Infrastructural constraints	35.38	III	63.00	I
Technical constraints	33.45	II	61.68	II
Economic constraints	33.92	I	55.23	III
Overall	34.25		59.97	

MPS= mean per cent score ; DCS= Dairy Cooperative Societies

**CONCLUSION**

The extent of adoption of both categories respondents was positively significant associated with their age, education, family type, herd size and annual income (Vinaya et al., 2013), While, caste, size of land holding and family size were positively non significant in case of member and non- member of DCSs. In case of member respondents level of knowledge was significantly associated with their extent of adoption. While, in case of non-member respondents knowledge level was positive non significantly associated with their extent of adoption of improved animal husbandry practices. Results also shows that Location of artificial insemination centre at distance place, Poor adaptability of cross bred cow in local climate condition and

there is no provision of loan for cattle purchasing by society and Bank were perceived most important constraints by both producer members and non member respondents.

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