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Correlation Analysis of Socio-Demographic Profile of Dairy Farmers with Knowledge and Adoption of Animal Husbandry Practices

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A B S T R A C T

Dairy farming in India plays a vital role in livelihood security of the dairy farmers. The factors which are major hurdles in increasing farmers income are low productivity of indigenous breeds, inadequate knowledge about balanced feeding and low conception rate through artificial insemination. The present study was conducted in Solapur district of Maharashtra state with the objective of correlational analysis of socio-demographic profile of dairy farmers with knowledge and adoption of animal husbandry practices. Data were randomly collected from a total of 200 dairy farmers from 10 villages. The ex-post facto research design of social science was used for the present investigation. The findings of the study revealed that 72.00 % and 67.50% respondents had medium knowledge and adoption level of dairy animal husbandry practices. On correlation analysis of socio-demographic profile of dairy farmers with knowledge level, it was found that education, herd size, sources of information were found to be positive and highly significant relationship (P<0.01) and social participation was found positive significant (p<0.05) with knowledge. Findings regarding relationship between adoption of dairy animals management practices shown that, social participation exerted highest positive correlation coefficient (P<0.01) with extent of adoption of dairy animals management practices. Characteristics like education, herd size and source of information had positive significant relationship (P<0.05) with extent of adoption.

Introduction

Dairy industry in India has made a significant progress in the last three decades with unprecedented growth in milk production and per capita milk availability. Cattle and buffalo produce milk which is the largest agricultural commodity, plays a major role in Indian economy. India is one of the countries which has modernized its dairying and has achieved higher production through the introduction of scientific technologies into dairy farming system (Khayali *et al.,* 2015). It is recognized that if progress has to be achieved in dairy farmers, they are to be modernized in knowledge, adoption and their personal,

social and economic characteristics should be improved (Surkar *et al.,* 2014). India has emerged as leading milk producer country in the world, however production potential per milking animal is very low i.e. with average in indigenous cows, crossbred cows and buffalo are 1.98, 6.75 and 4.50 kg/day respectively (Hegde, 2006). This low production in India is mainly due to lack or low level of adoption of the dairy farmers about improved animal husbandry practices which make differences in socioeconomic conditions. In these contexts, the present study was undertaken to know the socio-demographic profile of dairy farmers and its relationship with knowledge and adoption of animal husbandry practices.

Materials and Methods

The present study was conducted at dairy co-operative "Shivamrut Dudh Utpadak Sahakari Sangh Maryadit" place Akluj of Solapur district of Maharashtra State. Majority of the area was irrigated and had large population of crossbred cattle and buffaloes. There were 117 villages connected to the co-operative and 371 primary milk co-operatives were working in this area with daily milk collection of 1, 80,000 litres. Ten villages were selected for the study from 117 villages from the jurisdiction of co-operative on the basis of random sampling. Villages from irrigated part, partially irrigated and dry part of the area were selected to have composite sample for study. Twenty member producers of dairy co-operative were selected as respondents from each village with the help of random sampling. Thus a total of 200 dairy farmers were selected from 10 villages as sample. During selection of respondents due care was taken to ensure that they were evenly distributed in the village and truly represent animal management practices prevailing in the study area. Selected respondents were interviewed and the desired information was collected with the help of pre-tested interview

schedule. The ex-post facto research design of social science was used for the present investigation. Data were tabulated and analysed with various statistical tools like frequency, percentage and correlation analysis.

Results and Discussion

Socio-demographic profile of dairy farmers

The study revealed that majority of the dairy farmers (68.00%) belonged to middle age group and it was found that 38.50, 20.50 and 20 per cent of the respondents were educated upto high school followed by middle school and primary school level, respectively, while 3.50 per cent of the respondents had education upto graduation level. These findings are in line with the results of Gautam *et al.,* (2007) and contrary to the results of Aulakh *et al.,* (2011) and Lohakare *et al.,* (2013). The majority of the respondents (77.00%) were from medium family size and most of the respondents (58.50%) possessed 4-7 dairy animals followed upto 3 (29.50%) and large above 8 animals (12.00%), respectively. The probable reason behind medium herd size of the most of the respondents might be that dairy farmer members are trying to increase their herd size. These results are in agreement with the results of Senthilkumar *et al.,* (2006). It was observed that from Table 1 that 35.00 per cent of respondents' belonged to small farmers category, 22.50 per cent of respondents belonged to the category of marginal and 19.50 per cent to the category of medium farmers. Only 19.00 per cent farmers belonged to large category and 4.00 per cent farmers were landless, respectively. These findings are in agreement with the findings of Verma *et al.,* (2016) who also reported that majority of respondents were small and marginal. The result presented in table 1 indicated that majority of the respondents (46.50%) were in medium income group

followed by low income (27.00%) and high income (26.50%), respectively. The probable reason might be majority of respondents were co-operative member producers which has attributed to the major share of income coming from dairy business coupled with agricultural farming.

It was also observed that 36.50 per cent of respondents belonged to the category of high social participation followed by 35.00 per cent under medium and 28.50 per cent of the respondents were from low social participation category. The above findings are in contrary with the findings of Tomar *et al.,* (2016) who reported majority of the respondent were medium social participation. More than two-third (90.50%) had used the medium sources of information while, 7.50 and 2.00 per cent of the respondents had used high and low level of sources of information. It could be due to the organization of livestock campaigns, tours, kisan call centres, exhibition, strong network of technical and field staff of co-operative and the free and common access to the electronic media.

When risk orientation was considered, 71.50% belonged to medium risk orientation category followed by 20.00 per cent from high and only 8.50 per cent of the respondents reported low risk orientation category. Accepting the challenges and dared decisions of adopting new technological innovations regarding the various animal husbandry practices were the results of medium to high risk orientation categories observed in the present study of the member producers of co-operative. Regarding annual income, 71.50 and 20.00% were under medium to high annual income (1,01,000 to 2, 50,000) categories. The low risk orientation (8.50 per cent) observed in the present study may be from the member producers with low annual income category whose attitude is on the safer side of accepting the risk with adoption of new animal husbandry practices. These

results are similar with the findings of Verma *et al.,* (2016).

Knowledge level of dairy farmers on animal husbandry practices

A perusal of the table 2 reveals that, 72.00 per cent respondent had medium whereas 17.50 per cent had high and 10.50 per cent respondents possessed low knowledge level on animal husbandry practices. The knowledge level of respondents observed in the present study was restricted to only animal husbandry practices well acquainted and adopted by the respondents. The majority of the farmers had medium to high level of knowledge may be indicative of the fact that social participation, education level, use of sources of information and experience combined with co-operative dairy business must have played a pivotal role in upgrading their knowledge level regarding the animal husbandry practices. The findings of the present study are in conformity with Satyanarayan and Jagadeeswary (2010) who also reported that majority of dairy farmers (73.00%) possessed medium knowledge followed by high (16.00%) and low (11.00%) knowledge levels on recommended animal husbandry practices. Rahman and Gupta (2015) also reported that majority of members (38.00 per cent) had medium level of knowledge (48.87-56.38) on improved dairy farming practices. Similar findings are also reported by Biswas *et al.,* (2011).

Adoption of animal husbandry practices by the respondents

Data furnished in the table no 3 illustrates that 67.50 per cent of respondents had medium level of adoption of recommended practices of animal husbandry followed by 19.50 per cent of respondents under high whereas, 13.00 per cent of respondents had low adoption level.

Table.1 Socio-demographic profile of the dairy farmers

Sl.No.	Particulars of Variables	Respondents	
		Frequency	**%**
1.	**Age (Year)**		
(i)	Young (upto 26 years)	18	9.00
(ii)	Middle (27 to 49 years)	136	68
(iii)	Old (50 and above years)	46	23
2.	**Education**		
(i)	Illiterate	33	16.50
(ii)	Can read only	01	0.50
(iii)	Can read and write	01	0.50
(iv)	Primary school	40	20.00
(v)	Middle school	41	20.50
(vi)	High school	77	38.5
(vii)	Graduate	07	3.50
4.	**Family size**		
(i)	Small (up to 3 members)	16	8.00
(ii)	Medium (4 to 9 members)	154	77.00
(iii)	Large (10 and above members)	30	15.00
5.	**Size of land holding**		
(i)	Landless (No Land)	08	4.00
(ii)	Marginal (upto 2.5 acres)	45	22.50
(iii)	Small (above 2.5 to 5 acres)	70	35.00
(iv)	Medium (above 5 to 10 acres)	39	19.50
(v)	Large (above 10 acres)	38	19.00
6.	**Annual income**		
(i)	Low (up to Rs.100,000)	54	27.00
(ii)	Medium (Rs.101,000 to 250,000)	93	46.50
(iii)	High (Above Rs. 2,50,000)	53	26.50
7.	**Herd size**		
(i)	Small (Up to 3 animals)	59	29.50
(ii)	Medium (4 to 7 animals)	117	58.50
(iii)	Large (8 and above animals)	24	12.00
8.	**Social participation**		
(i)	Low (score up to 9)	57	28.50
(ii)	Medium (score 10-24)	70	35.00
(iii)	High (score 25 and above)	73	36.50
9.	**Source of information**		
(i)	Low (score up to10)	4	2.00
(ii)	Medium (score 10 to 18)	181	90.50
(iii)	High (score 19 and above)	15	7.50
10.	**Risk orientation**		
(i)	Low (score up to 20)	17	8.50
(ii)	Medium (score 21 to 25)	143	71.50
(iii)	High (score 26 and above)	40	20.00

Table.2 Distribution of respondents according to their knowledge level of respondents

Sr. No.	Category	Frequency	Per cent
1.	Low (score up to 30)	21	10.50
2.	Medium (score 31 to 39)	144	72.00
3.	High (score 40 and above)	35	17.50
	Total	**200**	**100.00**

Table.3 Distribution of respondents according to their adoption of dairy animals' management practices

Sr. No.	Category	Frequency	Per cent
1.	Low (score up to 68)	26	13.00
2.	Medium (score 69 to 79)	135	67.50
3.	High (score 80 and above)	39	19.5
	Total	**200**	**100.00**

Table.4 Relationship between selected characteristics of the respondents with knowledge

Sr. No.	Independent variables	Coefficient of correlation (r)
1.	Age	0.109 NS
2.	Education	0.331**
3	Family size	0.095 NS
4.	Herd size	0.270**
5.	Land holding	0.137 NS
6.	Annual income	0.127 NS
7.	Risk orientation	0.027 NS
8.	Social participation	0.154*
9.	Sources of information	0.248**

**Significant at 1 percent level of probability, *Significant at 5 percent level of probability
NS=Non Significant

Table.5 Association between selected characteristics of respondents with adoption of animal husbandry practices

Sr. No.	Independent variables	Coefficient of correlation (r)
1.	Age	0.025 NS
2.	Education	0.255*
3	Family size	0.117 NS
4.	Herd size	0.226*
5.	Land holding	0.119 NS
6.	Annual income	0.129 NS
7.	Risk orientation	0.050 NS
8.	Social participation	0.182**
9.	Sources of information	0.254*

**Significant at 1 per cent level of probability, *Significant at 5 percent level of probability; NS=Non-significant

The adoption level of the respondents might have been increased because of their experience of dairy business with co-operative pattern of dairy farming. The findings of the study are also in compliance with Rahman and Gupta (2015) who reported that members (47.00%) were found to have medium adoption level (47.96-54.45) of improved dairy farming practices (IDFPs).

Relationship between socio-demographic profiles of respondent with knowledge

Out of 9 variables studied 3 important variables namely, education, herd size, and sources of information were highly significant (P<0.01) with knowledge level while a significant relationship (P<0.05) was observed with social participation of dairy farmers. The positive non-significant correlation of age, family size, land holding, annual income, and risk orientation observed in the present study may be attributed to the fact that these socio-economic variables definitely will not have any bearing on the knowledge level of respondents. The highly significant positive correlation coefficient of education, herd size, use of sources of information and only significant correlation of social participation with knowledge level of dairy animal management practices may lead to conclusion that these socio-economic independent variables play a pivotal role in increasing the dependent variable knowledge of member producers of co-operative. These results are in agreement with Surkar *et al.,* (2014) who explored that there was positive and highly significant (P<0.01) relationship between use of sources of information and knowledge of livestock management practices, herd size was positively and significantly correlated with knowledge and contrast results for coefficient of correlation for education, family size, herd size, land holding, annual income and risk orientation were reported by Arora *et al.,* (2006). The

findings of the study are similar with Rahman and Gupta (2015) who reported that educational status and herd size have highly significant relationship (p<0.01) with knowledge level of farmers on improved dairy farming practices.

Association between socio-demographic profiles of respondents with adoption of animal husbandry practices

The results in the Table 5 indicate that, out of the eight selected characteristics of dairy farmers, social participation exerted highest positive correlation coefficient (P<0.01) with extent of adoption of animal husbandry practices. Variables like education, herd size and sources of information had positive significant relationship (P<0.05) with extent of adoption whereas age, family size, annual income and risk orientation had positive non-significant relationship with extent of adoption of animal husbandry practices. The findings of the study are in conformity with Rahman and Gupta (2015). The findings of the study are in contrast with Sabapara *et al.,* (2016) who reported that social participation had non-significant relationship with adoption of improved dairy husbandry practices. Satyanarayan and Jagadeeswary (2010) also reported similar results that family size, annual income and land holding had non-significant relationship with extent of adoption of improved dairy management practices.

In conclusion dairying is an important part of Indian agro based economy; it not only provides but also offers employment opportunities to the poor and weaker sections of the society. Now a day's Indian dairy industry is at cross roads of industry which has been dominated by government sector and working in co-operative mode. So in order to improve the same an extension agent has to work on the social participation of the dairy

farmers which is having direct effect on knowledge and adoption of animal husbandry practices followed by the farmers. Education and sources of information are also having significant relation which can be effectively utilized by the extension agent for disseminating improved dairy farming practices in rural areas.

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