

Information Processing Behaviour of Dairy Farmers in Adoption of Animal Husbandry Practices

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ABSTRACT

The study was conducted in Jind district of Haryana as it has the highest concentration of cattle and buffalo population. A multistage random sampling technique was followed to select 240 dairy farmers from eight villages of the district. Most of the dairy farmers evaluated the worthiness of innovation by considering its profitability (87.92%) and discussing with progressive farmers (77.50%) before adopting innovation. Significant proportion of the dairy farmers retained the information by practicing in daily life (93.33%) followed by informing family members (76.67%) and memorizing (64.17%). The correlation coefficient revealed that socio-economic status, herd size, annual income, extension contact, mass media exposure, risk orientation and cosmopolitaness-localiteness had positive and significant relationship with the information processing behaviour, whereas age of the respondents had negative and significant relationship with the information processing behaviour. The R² value revealed that all the thirteen independent variables fitted in the regression equation had explained about 46 per cent variation towards information processing behaviour.

Information processing behaviour refers to all the activities performed by an individual for evaluation, retention and transformation of scientific and technical information related to animal husbandry practices. The dairy farmers generally discuss with family members and veterinary personnel about new technology before its adoption. They also considered the technology from several points of view such as, profitability, observability, trialability, complexity etc. There are several methods for preserving the available dairy technologies like memorizing, making notes, keeping leaflets, maintaining files, etc. Keeping the above points in view, the present study was undertaken to evaluate the information processing behaviour of dairy farmers.

METHODOLOGY

The present study was conducted in Jind district of Haryana as it has the highest concentration of cattle and buffalo population. A multistage random sampling technique was followed to select 240 dairy farmers from

eight villages of selected districts. Therefore, 110 small, 90 medium and 40 large herd size dairy farmers were finally selected with the help of PPS (probability proportion to size) technique. The data were collected from the dairy farmers using interview schedule.

To measure information processing behaviour of dairy farmers an information processing index was developed. Items related to information processing i.e. evaluation, preservation and transformation were included. The respondents were asked to give their reply on three-point continuum i.e. mostly performed, sometimes performed and never performed activities and the scores of 3, 2 and 1 were allotted, respectively.

RESULTS AND DISCUSSION

Level of information processing behaviour of dairy farmers

The data given in Table 1 reveal that most of the dairy farmers (60.83%) in case of composite analysis in case of composite analysis processing behaviour

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followed by low (23.33%) and high (15.83%). Farmers category-wise findings reported that in case of small herd size majority (70.91 %) of the respondents possessed medium level. of information processing behaviour followed by low (25.45%) and high (3.64%). However, in case of the dairy farmers with medium and large herd size, the results were reversed, where 53.33 and 50.00 per cent respondents had medium level and 35.56 and

50.00 per cent had high level of information processing behaviour, respectively. The data further revealed that information processing behaviour increased with increase in herd size of dairy farmers. These findings are in accordance with the findings of Sanoria et. al. (1985) who reported that most of the dairy farmers had medium level of information processing behaviour.

Table 1. Level of information processing behaviour of dairy farmers

Sl. No.	Level of information processing behaviour	Score range	Dairy farmers having different herd sizes						Pooled (N= 240)	
			Small (n ₁ = 110)		Medium (n ₂ = 90)		Large (n ₃ = 40)		Freq.	%
			Freq.	%	Freq.	%	Freq.	%		
1.	Low	< 39	28	25.45	10	11.11	0	0.00	38	15.83
2.	Medium	40-48	78	70.91	48	53.33	20	50.00	146	60.83
3.	High	> 48	4	3.64	32	35.56	20	50.00	56	23.33

Frequency of discussion by dairy farmers with interpersonal sources before adoption of animal husbandry practices

Almost all the dairy farmers in case of pooled analysis, used to discuss about technical information received by them with the progressive farmers (99.58%) followed by family members (95%) and neighbour/friends (96.25%), whereas only 47.50 per cent of them discussed with extension officers (Table 2). Among different herd sizes 100,92.73,93.64 and 29.09 per cent from small herd

size, 100,95.55,97.78 and 55.56 from medium herd size and 97.5, 100, 100 and 80 per cent dairy farmers from large herd size used to discuss with progressive farmers, family members, neighbour/friends and extension officers about technical information received by dairy farmers, respectively. It shows that the dairy farmers do not accept any information unless they discuss with their friends/ neighbour and progressive farmers. The similar results have been reported by Reddy (1994); Selvaraj (1987) and Singh (1989) in their studies.

Table 2. Frequency of discussion of dairy farmers with interpersonal sources before adoption of animal husbandry practices.

Sl. No.	Sources	Frequency of discussion									Total Mean rank					
		Small (n ₁ = 110)			Medium (n ₂ = 90)			Large (n ₃ = 40)			Pooled (n= 240)			score	score	
		Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)			
1.	Progressive farmers	81 (73.64)	29 (26.36)	-	74 (82.22)	16 (17.78)	-	36 (90.00)	3 (7.50)	1 (2.50)	191 (79.58)	48 (20.00)	1 (0.42)	670	2.79	I
2.	Family members	84 (76.36)	18 (16.37)	8 (7.27)	75 (83.33)	11 (12.22)	4 (4.45)	35 (87.50)	5 (12.50)	-	194 (80.83)	34 (14.17)	12 (5.00)	662	2.75	II
3.	Neighbours /friends	69 (62.73)	34 (30.91)	7 (6.36)	67 (74.45)	21 (23.33)	2 (2.22)	33 (82.50)	7 (17.50)	-	169 (70.42)	62 (25.83)	9 (3.75)	640	2.67	III
4.	Extension officer	10 (9.09)	22 (20.00)	78 (70.91)	9 (10.00)	41 (45.56)	40 (44.44)	8 (20.00)	24 (60.00)	8 (20.00)	27 (11.25)	87 (36.25)	126 (52.50)	381	1.59	IV

Figures in parenthesis indicate percentage of respondents

Parameters used for appraisal of information by dairy farmers

The dairy farmers generally used seven important parameters for evaluation of the worthiness of animal husbandry practices before adopting it. The data reported in Table 3 indicate that profitability of innovation (mean score 2.94) is the most important parameter of information evaluation before its adoption followed by method of doing (mean score 2.48) and availability of input (mean score 2.40). The results also revealed that only complexity

parameter (mean score 1.44) was never considered before adoption of an innovation by dairy farmers. However, parameters like observability (mean score 2.12), predictability (mean score 1.95) and triability (mean score 1.88) were sometimes considered before adoption of an innovation. The highest mean score obtained by dairy farmers on profitability and method of doing parameters are due to the fact that the dairy farmers want profit immediately after adopting new innovation. Moreover, easy methods of using the technology always accelerates

Table 3. Parameters used for appraisal of information by dairy farmers

Sl. No.	Consideration for	Level of consideration												Total score	Mean score	rank
		Small (n1= 110)			Medium (n2= 90)			Large (n3= 40)			Pooled (n= 240)					
		Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)			
1.	Profitability from innovations	104 (94.55)	6 (5.45)	-	84 (93.33)	6 (6.67)	-	37 (92.50)	3 (7.50)	-	225 (93.75)	15 (6.25)	-	705	2.94	I
2.	Method of doing	41 (37.27)	60 (54.54)	9 (8.18)	54 (60.00)	34 (37.78)	2 (2.22)	32 (80.00)	8 (20.00)	- (52.92)	127 (42.50)	102 (4.58)	11	596	2.48	II
3.	Availability of inputs	41 (37.27)	48 (43.64)	21 (19.09)	56 (62.22)	26 (28.89)	8 (8.89)	31 (77.50)	7 (17.50)	2 (5.00)	128 (53.33)	81 (33.75)	31 (12.92)	577	2.40	III
4.	Observability	32 (29.09)	43 (39.09)	35 (31.82)	32 (35.56)	43 (47.78)	15 (16.67)	18 (45.00)	19 (47.50)	3 (7.50)	82 (34.12)	105 (43.75)	53.22	509	2.12	IV
5.	Predictability	5 (4.55)	30 (27.27)	75 (68.18)	5 (5.56)	49 (54.44)	36 (40.00)	5 (12.50)	20 (50.00)	15 (37.50)	15 (6.25)	99 (41.25)	126 (52.50)	468	1.95	V
6.	Triability	3 (2.73)	30 (27.27)	77 (70.00)	3 (3.33)	42 (46.67)	45 (50.00)	4 (10.00)	23 (57.50)	13 (32.50)	10 (4.17)	95 (39.58)	135 (56.25)	450	1.88	VI
7.	Complexity	12 (1.82)	31 (28.18)	77 (70.00)	4 (4.44)	40 (44.44)	46 (51.11)	1 (2.50)	20 (50.00)	19 (47.50)	7 (2.92)	91 (37.92)	142 (59.17)	34	1.4	VI
													5	4	I	

Figures in parenthesis indicate percentage of respondents

Mean score = 2.40 = mostly, between 1.65- 2.39 = sometime, < 1.65 = never

Table 4. Action taken by dairy farmers before adoption of animal husbandry practices

Sl. No.	Action taken	Level of action taken												Mean score	rank	
		Small (n1= 110)			Medium (n2= 90)			Large (n3= 40)			Pooled (n= 240)					
		Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)			
1.	Considering its profitability	93 (84.55)	15 (13.64)	2 (1.82)	80 (88.89)	9 (10.00)	1 (1.11)	38 (95.00)	1 (2.50)	1 (2.50)	211 (87.92)	25 (10.42)	4 (1.67)	286	2.77	I
2.	Discussing with progressive farmers	77 (70.00)	33 (30.00)	-	75 (83.33)	13 (14.45)	2 (2.22)	34 (85.00)	6 (15.00)	-	186 (77.50)	52 (21.67)	2 (0.83)	277	2.77	II

3.	Observation of demonstration by fellow farmers	7 (6.36)	69 (62.73)	34 (30.91)	13 (14.45)	65 (72.22)	12 (13.33)	9 (22.50)	28 (70.00)	3 (7.50)	29 (12.08)	162 (67.50)	49 (20.42)	1.92	III
4.	Conducting trial on own farm	-	30 (27.27)	80 (72.73)	3 (3.33)	33 (36.67)	54 (60.00)	2 (5.00)	23 (57.50)	15 (37.50)	5 (2.08)	86 (35.83)	149 (62.09)	1.40	IV

Figures in parenthesis indicate percentage of respondents

Table 5. Extent of use of different methods for information retention by dairy farmers

Sl. No.	Method of information retention	Level of utilization											Mean score	rank		
		Small (n1= 110)			Medium (n2= 90)			Large (n3= 40)			Pooled (n= 240)					
		Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)	Never (1)	Mostly (3)	Some Time (2)			Never (1)	
1.	By practicing in daily life	98 (89.09)	12 (10.91)	-	86 (95.55)	4 (4.45)	-	40 (100.00)	-	-	-	224 (93.33)	16 (6.67)	-	2.93	I
2.	By informing family members	73 (66.36)	35 (31.82)	2 (1.82)	72 (80.00)	16 (17.78)	2 (2.22)	39 (97.50)	1 (2.50)	-	-	184 (76.67)	52 (21.66)	4 (1.67)	2.75	II
3.	By memorizing	52 (47.25)	47 (42.73)	11 (10.00)	64 (71.11)	23 (25.56)	3 (3.33)	38 (95.00)	1 (2.50)	1 (2.50)	-	154 (64.17)	71 (29.58)	15 (6.25)	2.61	III
4.	By making notes in simple note books	-	5 (4.55)	105 (95.45)	4 (4.45)	23 (25.56)	63 (70.00)	3 (7.50)	20 (50.00)	17 (42.50)	-	7 (2.92)	48 (20.00)	185 (77.08)	1.26	IV
5.	By keeping leaflets hand outs etc in aspecified safe place	1 (0.91)	-	109 (99.09)	2 (2.22)	5 (5.56)	83 (92.22)	-	4 (10.00)	36 (90.00)	-	3 (1.25)	9 (3.75)	228 (95.00)	1.06	V
6.	By maintain ing a special file	-	-	110 (100.00)	2 (2.22)	4 (4.45)	84 (93.33)	-	4 (10.00)	36 (90.00)	-	2 (0.83)	8 (3.33)	230 (95.84)	1.05	VI

the rate of adoption. The possible reason for obtaining lowest mean score by trialability of characteristics of innovation may be that very few dairy farmers adopt new innovation on trial basis and majority of the farmers adopt the innovation which is well tested. They do not take any risk in case of animal husbandry practices. Similar findings were reported by Balasubramanium (1976) and Pandey (1979).

Action taken by dairy farmers before adoption of animal husbandry practices

The data given in Table 4 show that for the evaluation of the information, majority of the dairy

farmers (99.17%) had discussion with progressive farmers followed by considering its profitability (98.34%), observing demonstration of fellow farmers (79.58%) and only 37.91 per cent of the respondents were conducting trial on own farm before adoption of animal husbandry practices. As far as the results about action taken by the dairy farmers of different herd size are concerned, almost similar results were obtained. Majority of the dairy farmers had discussed with fellow farmers about worthiness of technology and then considered the profitability of new technology. The findings were supported by Pandey (1979), Ambastha and Singh (1976).

Table 6. Correlation between independent variables and information processing behaviour of dairy farmers

Sl. No.	Independent Variables	Correlation-coefficient 'r' value with information processing behaviour			
		Small (n1= 110)	Medium (n2= 90)	Large (n3= 40)	Pooled (n= 240)
1.	Age	0.036	-0.090	0.313*	0.053
2.	Socio-economic status	0.025	0.184	-0.200	0.289**
3.	Occupation	0.278**	0.127	0.160	0.126
4.	Education level of respondent	-0.069	0.132	0.135	0.078
5.	Social participation	-0.025	0.184	0.306	0.087
6.	Family education status	-0.112	-0.031	0.313*	0.032
7.	Herd size	-	-	-	0.470**
8.	Annual income from A.H.	0.155	0.230*	0.145	0.414**
9.	Total annual income	0.086	0.274**	0.069	0.390**
10.	Extension contact	0.437**	0.411 **	0.038	0.516**
11.	Mass-media exposure	0.381 **	0.481**	0.186	0.533**
12.	Risk orientation	0.433**	0.289**	0.438*	0.441 **
13.	Cosmopolitaness-localitiness	0.168	0.271 **	0.209	0.234**

*Significant at 5 per cent level of significance

**Significant at 1 per cent level of significance

Table 7. Regression-coefficient between independent variables and information processing behaviour of dairy farmers

Sl. No.	Independent variables	Regression-coefficient 'b' value with information processing behaviour											
		Small (n1= 110)			Medium (n2= 90)			Large (n3= 40)			Pooled (n= 240)		
		b	Std. Error	t	b	Std. Error	t	b	Std. Error	t	b	Std. Error	t
1.	Age	-0.008	0.03	-0.246	-0.007	0.046	-0.153	0.053	0.066	0.808	0.003	0.024	0.147
2.	Socio-economic status	-0.054	0.060	-0.911	-0.109	0.060	-1.798	-0.110	0.0698	-1.125	-0.116	0.036	-3.237
3.	Occupation	1.010	0.447	2.262*	0.320	0.535	0.599	1.962	1.995	0.984	0.702	0.320	2.190*
4.	Education level of respondent	-0.223	0.236	-0.943	0.304	0.335	0.907	-0.029	0.472	-0.063	6.817	0.167	0.409
5.	Social participation	0.317	0.678	0.467	-0.059	0.773	-0.072	3.021	2.497	1.210	0.299	0.472	0.634
6.	Family education status	-0.583	0.422	-1.380	-1.226	0.579	-2.118	0.548	1.039	0.527	-0.611	0.305	-2.001
7.	Herd size	-	-	-	-	-	-	-	-	-	1.985	0.519	3.826*
8.	Annual income from A.H.	0.062	0.036	1.760	-0.029	0.035	-0.820	-0.020	0.034	-0.612	0.004	0.016	0.248
9.	Total annual income	-0.006	0.014	-0.474	0.020	0.011	1.809	0.014	0.020	0.710	0.011	0.007	1.603
10.	Extension contact	0.225	0.209	1.073	0.514	0.256	2.009**	-0.223	0.377	-0.591	0.270	0.142	1.905**
11.	Mass-media exposure	0.387	0.208	1.859**	0.827	0.266	3.113*	0.244	0.416	0.588	0.549	0.142	3.861*
12.	Risk orientation	0.387	0.114	3.395*	-0.144	0.178	-0.807	0.399	0.203	1.964**	0.239	0.084	2.834*
13.	Cosmopolitaness-localitiness	0.031	0.119	-0.260	0.188	0.166	1.128	0.061	0.214	0.286	3.033	0.086	0.354
R ²		0.385			0.362			0.425			0.457		
F		5.054**			3.637**			1.661			14.615**		

Extent of use of different methods for information preservation by diary farmers

It is evident from the Table 5 that all the dairy farmers used to remember the important points for retaining the information for future used preserved the information by practising in daily life followed by informing family members (98.33%), memorizing (93.75%), making notes in simple note book (22.92%), keeping leaflets/hand outs in a safe place (5%) and also maintaining special files. Among different herd sizes 100, 97.78, 96.67, 30, 7.78 and 6.67 per cent from medium herd size and 57.50, 10 and 10 per cent dairy farmers from large herd size preserved the information by practising in daily life, informing family members, memorizing, making notes in simple note books, keeping leaflets/hand out etc. in a safe place and by maintaining a special file, respectively. The results of the study implies that 'learning by doing' and 'practice makes man perfect' and the basic principles of extension education. When farmers used the dairy technology in their routine life, they do not forget it. They discuss technology with family members as a routine and most of the farmers retain information by memorizing it. Very few farmers prepare note/keep leaflets due to the fact that educational levels of the rural dairy farmers are low. Similar finding were reported by Pandey (1979), Aruliah (1983) and Singh (1990).

Correlation analysis

It can be seen from Table 6 that in case of composite analysis, the socio-economic status, herd size, annual income, extension contact, mass media exposure, risk orientation and cosmopolitaness-localiteness had positively and highly significant correlation with information processing behaviour of dairy farmer, whereas age, occupation, education and social participation were found to have positive but non-significant correlation with information processing behaviour of dairy farmers. In case of farmers with small herd size, correlation analysis revealed that occupation, extension contact, mass media exposure and risk orientation had positive and highly significant correlation whereas education, social participation had negative. Age, socio-economic status, annual income, cosmopolitaness-localiteness had positive but non-significant correlation with information processing behaviour of dairy farmers.

As far as farmers of medium herd size are concerned correlation analysis highlighted that annual income, extension contact, mass media exposure, risk orientation and cosmopolitaness-localiteness had positive and highly significant correlation, whereas age and family

education status had negative but non-significant correlation. In case of large herd size farmers, correlation analysis indicated that risk orientation, age and family education had positive and significant correlation with information processing behaviour of dairy farmers whereas. Socioeconomic status had negative but non-significant correlations.

Based on the findings it can be inferred that younger dairy farmers of different herd sizes with higher socioeconomic status having more annual income, with better contact with extension agencies, high mass-media exposure, higher risk orientation and more cosmopolitaness tend to have more animal husbandry information than others.

Multiple Regression analysis

A perusal of the Table 7 revealed that in case of composite analysis, all the independent variables jointly explained 45.70 per cent variation in the information processing behaviour. The computed 'F' value 14.61 was found to be highly significant with information processing behaviour. It was further observed that occupation, herd size, extension contact, mass media exposure and risk orientation had strong influence on the information processing behaviour. The education and cosmopolitaness-localiteness were also found to be significant with information processing behaviour. It implies that occupation, herd size, extension contact, mass media exposure and risk orientation had significant contribution in influencing and predicting the information processing behaviour of dairy farmers. Almost similar results of regression analysis were found in all the three categories of the dairy farmers. These findings are in accordance with the findings reported by Bhalarlal et al. (1986).

CONCLUSION

The dairy farmers were evaluating information by discussing with progressive farmers, family members, neighbour/friends and extension officer. Most common parameters used for appraisal of information were profitability, method of doing, availability of input and observability. The actions taken by most of the dairy farmers before adoption of an innovation were considering its profitability, discussing with progressive farmers and observing demonstration of fellow farmers. They retained information mostly by practicing in daily life, informing family members and memorizing. Out of the thirteen independent variables socio-economic status, family education, extension contact, mass media exposure, risk orientation and cosmopolitaness-localiteness were found to have positive and significant correlation with information processing behaviour

of dairy farmers. The R^2 value revealed that all the thirteen independent variables fitted in the regression equation had explained about 46 per cent variation towards information processing behaviour of dairy farmers .

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