Full Length Research Article

STUDY ON ADOPTION BEHAVIOR OF TRIBAL DAIRY COOPERATIVE MEMBER'S IN PURULIA DISTRICT OF W.B.

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ABSTRACT

Tribal are having traditional culture of livestock rearing along with agriculture, Hunting etc. for their livelihood. A study was carried out in 05 no's of densely tribal populated blocks in Purulia district having dairy cooperatives farming system. From the purposively selected blocks, 05 GP's were selected and form each of the selected blocks & GPs 50% of the tribal and non-tribal dairy cooperative members were selected randomly. In this way, 69 tribal cooperative members and 87 non-tribal cooperative member's (Total 156 no's of respondent's) were selected, which constituted the sample of the present study. The data were collected with the help of pre-tested structured interview schedule. The data thus analysed through various statistical methods such as – Correlation, MDS, Indexing, Path analysis etc. The study explored that Non-tribal community had significant effect and higher scores on adoption, attitude in dairy farming & knowledge in deworming than Tribal community. The tribal members of dairy cooperative societies has highest ranking of adoption on deworming whereas in non-tribal members adoption in vaccination has highest ranking. Finally, education, family education status, decision making pattern, community, community farm power has largest direct effect on knowledge level, attitude & adoption index of selected respondent and this variables have come to be key factors in adoption of improved practices among selected tribal dairy cooperative members.

INTRODUCTION

A Tribe is an independent political division of a population with a common culture *(Lucy Mair)*. Tribal are having traditional culture of livestock rearing along with agriculture, Hunting etc. for their livelihood for which they cannot be ignored regarding their participation in animal Husbandry development. To enhance the production potential of our dairy wealth distributed throughout the rural India. The only way to introduce improved animal Husbandry practices for adoption through better knowledge level of both the tribal and non-tribal dairy farmers for successful animal Husbandry practices. Implementation of any improved A.H. technology in practical field depends upon the adoption behaviour of the individual who wants to implements. Adoption of any improved technological Practices by any community involves a process in which awareness created, attitudes are changed and favourable conditions for adoption are provided. The adoption process becomes more effective through cooperative mode for promotion of common economic interest and is based on

principles of unity, economy, democracy, equity & liberty among the tribal peoples. Therefore the present study was carried out with an aim ti find out the adoption behaviour of tribal & Non-tribal members of dairy cooperatives in relation to IAHP in Purulia district of West Bengal, India.

MATERIALS AND METHODS

The study was conducted in purposively selected Purulia district of W.B., where 42 nos. of Milk producer's Cooperative societies are there. Among, 19 district of West Bengal, Purulia district is in third position after Midnapore & Jalpaiguri district and due to its rain fed geographic condition dairy farming plays a pivotal role in the socio-economic development of the tribal people of the district. Among 20 blocks in the district, the present study was carried out in 05 no's of densely tribal populated blocks having dairy cooperatives farming system. From the purposively selected blocks, 05 GP's were selected on the basis of where minimum 15 tribal members are engaged in dairy cooperatives. Form each of the selected blocks & GPs 50% of the tribal and non-tribal dairy cooperative members were selected randomly. In this way, 69 tribal cooperative member's and 87 non-tribal cooperative member's (Total 156 no's of respondent's) were

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selected, which constituted the sample of the present study. The data were collected with the help of pre-tested structured interview schedule. The data thus analysed through various statistical methods such as – Correlation, MDS, Indexing, Path analysis etc.

RESULTS AND DISCUSSION

The result of MDS –one way analysis of variance showed that community has significant effect on adoption index, attitude of respondent toward dairy farming at 5% level and knowledge in deworming at 1% level of significance respectively. So, adoption index, attitude of respondent towards dairy farming and knowledge in deworming will construct the MDS (Minimum data set). The table included the result of principle component analysis involving only MDS parameter and component matrix showed that all those three MDS parameters were positively loaded at component-I, comp.-II can explain about 41% of total variance of the study. Considering the highest scores of adoption index, attitude respondent towards dairy farming & knowledge in deworming as most desirable and were linearly scored for each such MDS parameters. From the study it can be viewed that attitude of respondent towards dairy farming, followed by knowledge in deworming & adoption index have resulted better in community-2(Non-Tribal) than community-I (Tribal) as performing dairy cooperative farmers in the study area. *SudhakarRao (1975)* reported that knowledge level in improved dairy farming practices found to be high in cooperative members than non-cooperative members and supported the findings.

Knowledge in AI: The table revealed that the family education status and personal localities have the direct (0.16) on knowledge in AI followed in descending order by farm power(0.13), land holding (0.11), category, material possession, innovation proness, decision making pattern (0.06), family type (0.02), community(0.01), personal cosmopolite (-0.02), family size & house type (-0.03), education of respondents (-0.05), family economic status (-0.10), age and occupation (-0.11), urban contact, Sex (-0.21) and mass media (-0.24). Residual effect has been found to be 0.80) or in a way, 80% of the total variability has been left unexplained. Further processing of data revealed that out of 20 exogenous variables, 06 variables had their largest indirect effect through *Farm power (x12),* whereas 02 different variables had their largest indirect effect through Land (X10), Family education status (X7), urban contact (X15), Mass media (x18) etc. *Singh (1976)* majority of improved farming adopters had high & medium level of knowledge in AI respectively with low level of knowledge in non-adopters.

Knowledge in Deworming: The table revealed that the education of respondent has the largest direct effect (0.30) on knowledge in Deworming followed in descending order community (0.28), house (0.16), personal localities (0.14), category and land holding (0.05), family size and decision making pattern (0.03), family type, farm power & innovation proness (0.01), Urban contact (-0.23), family economic status (-0.12), sex and family education status (-0.06), material possession (-0.02), occupation and personal cosmopolite (-0.03), mass media (-0.02). Residual effect has been found to be 0.72 or in a way, 72% of the total variability has been left unexplained. Further processing of the revealed

that out of 20 exogenous variables, 11 had their largest indirect effect through community(x1), whereas 5 had their largest indirect effect through education of the respondent(X6) and 02 had their largest indirect effect through urban contact(X15) etc. *Sukla (1980)* indicated close association with knowledge in deworming & adoption of animal Husbandry practices.

ADOPTION INDEX: The table depicted that the decision making pattern have the direct effect (0.20) on adoption index followed in descending order by community (0.18), house type (0.15), mass media (0.10), occupation(0.08), family size (0.07), family education statues and family economic status (0.06), education of the respondent (0.04),s ex (0.03), urban contact (0.02), personal cosmopolite (-0.22), innovation proness (-0.18), land holding (-0.13), farm power (-0.10), category (-0.08), family type (-0.06), material possession (-0.04), age (-0.03), personal localities (-0.01). Residual effect has been found to be 0.80 or in a way, 80% of the total variables have been left unexplained. Further processing of data revealed that out of 20 exogenous variables , 05 different variables had their largest indirect effect through Community (X1) & House (X11) whereas 03 various variables had their largest indirect effect through Family size (X9) & personal cosmopolite (X16) etc. *Singh (2003)* reported that adoption level of the cooperative members towards recommended dairy practices were associated with no. of variables and supported the facts.

Attitude of respondent in Dairy farming: The table revealed that the community has the largest direct effect (0.28) on attitude towards dairy farming followed in descending order by family economic statues (0.20), family size (0.13), house type (0.09), innovation proneness (0.08), decision making pattern and personal cosmopolite (0.06), personal localities (0.05), family education status(0.04), category, sex and urban contact (0.03), occupation (0.02), land holding (-.016), age (-0.10), education of respondent (-0.09), farm power (-0.07), mass media (-0.05), material possession (-0.03) and family type (-0.01) etc. The residual effect has been found to be 0.85 or in a way, 85% of the total variability has been left unexplained. Further processing of data revealed that out of 20 exogenous variables, 8 variables had their largest indirect effect through family economic status (X14) whereas 07 variables had their largest indirect effect through community (X1) and 02 variables had their largest indirect effect through family size (X9) etc. *Gupta (1976)* observed that a favourable attitude towards dairy farming leads to higher adoption and supported the findings.

Attitude of respondent in Income generation: The table expressed that the farm power has the largest indirect effect (0.20) on attitude in income generation followed in descending order by community & family size (0.13), urban contact (0.11), age (0.10), personal localities (0.07), Category (0.05), material possession (0.03), innovation proneness (0.01), family economic status (-0.32), personal cosmopolite (-0.14), land holding (-0.12), sex & Family type (-0.09), family education status (-0.08), mass media (-0.07), house (-0.06), decision making pattern (-0.05), education of the respondent (-0.02) etc. The residual effect has been found to be 0.82 or in way, 82% of the total variability has been left unexplained. Further processing of data explained that out of 20 exogenous variables, 6 had their largest indirect effect through Farm power (X12) whereas, 03 variable had their largest indirect

Table 1. One Way ANOVA, Component Matrix & correlation using MDS variables among selected Independent & dependent variable under study

SOURCE	VARIABLES	SS	DF	MS	F	SIG.
Community	Family Edn.status	0.00	1	0.00	0.08	0.78
	Innovation Pron.	0.01	1	0.01	0.15	0.70
	Communication source	0.02	1	0.02	0.00	0.95
	Adoption index	0.31	1	0.31	4.37	0.03
	At in dairy farming	42.42	1	42.42	8.04	*0.005*
	Att.In Income gen.	0.31	1	0.31	0.50	0.48
	Att.In employ.status	0.36	1	0.36	2.14	0.15
	Know. In AI	0.12	1	0.12	0.07	0.80
	Know. In Deworm.	18.92	1	18.92	22.03	0.00
Error	Family Edn.status	8.29	154	0.05		
	Innovation Proneness	12.22	154	0.08		
	Communication source	847.29	154	5.50		
	Adoption index	11.01	154	0.07		
	Att.In dairy farming	812.26	154	5.27		
	Att. in Income generation	94.39	154	0.61		
	Att. in employ.status	25.82	154	0.17		
	Know. In AI	273.32	154	1.78		
	Know. In Deworming	132.23	154	0.86		

COMPONENT MATRIX USING MDS VARIABLES

MDS VARIABLES	COMPONENT		
	1	2	3
Adoption Index	0.56	0.75	0.34
Att. In Dairy farming	0.72	-0.06	-0.69
Know. in Deworming	0.62	-0.61	0.49
Eigen values	1.23	0.94	0.83
% of variance	40.86	31.36	27.78
Cumulative %	40.86	72.22	100.00

CORRELATIONS AMONG MDS PARAMETERS

	Know. in Deworming	Adoption Index	Att. In Dairy farming
Know. in Deworming	1	0.06	0.148
Adoption Index	0.06	1	0.125
Att. In Dairy farming	0.148	0.125	1

Table 2. Path analysis showing direct &indirect effect of selected Independent variable on Knowledge about AI, Deworm. & adoption index of Tribal dairy cooperative member's

variables	Know. In AI Res. Effect=0.80		Know in Deworm Res. Effect=0.72		Adoption index Res. Effect=0.80.	
	Direct Effect	Indirect Effect	Direct Effect	Indirect Effect	Direct Effect	Indirect Effect
(x_1)Community	0.01	X12-0.04	0.28	X6-0.06	0.18	X16-0.04
(x_2) Age	-0.11	X10-0.02	0.00	X1-0.05	-0.03	X11-0.03
(x_3) category	0.06	X12-0.04	0.05	X15-0.30	-0.08	X20-0.03
(x_4) Sex	-0.21	X15-0.03	-0.06	X1-0.02	0.03	X16-0.02
(x_5) Occupation	-0.11	X10-0.01	-0.03	X1-0.02	0.08	X9-0.02
(x_6) Edn. Of Respondent	-0.05	X7-0.08	0.30	X1-0.06	0.04	X1-0.04
(x_7) Family Edn.	0.16	X2-0.02	-0.06	X6-0.14	0.06	X16-0.03
(x_8)Family Type	0.02	X4-0.01	0.01	X1-0.03	-0.06	X9-0.03
(x_9) Family Size	-0.03	X18-0.02	0.03	X1-0.01	0.07	X5-0.02
(x_{10}) Land	0.11	X12-0.02	0.05	X1-0.11	-0.13	X1-0.07
(x_{11}) House	-0.03	X12-0.07	0.16	X6-0.03	0.15	X1-0.02
(x_{12}) Farm power	0.13	X13-0.03	0.01	X11-0.08	-0.10	X11-0.08
(x_{13}) Material Possesion	0.06	X12-0.06	-0.05	X1-0.04	-0.04	X11-0.03
(x_{14}) Family Economic sta.	-0.10	X12-0.06	-0.12	X1-0.06	0.06	X1-0.04
(x_{15}) Urban Contact	-0.24	X4-0.03	-0.23	X6-0.06	0.02	X11-0.02
(x_{16}) Personal Cosmopolit	-0.02	X17-0.02	-0.03	X17-0.02	-0.22	X9-0.01
(x_{17}) Personal Localite	0.16	X4-0.01	0.14	X6-0.03	-0.01	X3-0.01
(x_{18}) Mass Media	-0.24	X7-0.02	-0.02	X1-0.05	0.10	X1-0.03
(x_{19}) Innovation Pron.	0.06	X15-0.03	0.01	X15-0.03	-0.18	X10-0.01
(X_{20}) Decision making	0.06	X18-0.04	0.03	X17-0.01	0.20	X11-0.01

effect through community (X1) and finally 02 no's of different variables had their largest indirect effect through Category (X3), Family size (X9), Family eco. Status (X14), Urban contact (X15) & Mass media (X18) etc.

Attitude in Employment status through Dairy cooperative: The table explored that the community and personal cosmopolite have the largest direct effect (0.27) on attitude in employment of respondent followed in descending order by farm power (0.16), category (0.06), innovation proneness

(0.05), age (0.04), education of respondent (0.03), personal localities & Family type (0.02), occupation (0.01), house type, decision making pattern and family size (-0.03), sex (-0.05), urban contact and family education status (-0.06), mass media (-0.07), land holding and material possession (-0.14), family economic status (-0.29). Residual effect has been found to be 0.77 or in a way 77% of the total variability has been left unexplained. Further processing of data revealed that out of 20 exogenous variable's, 9 variables had their largest indirect

Table 3. Path analysis showing direct & indirect effects of selected Independent variable on Attitude in Dairy farm, Income gen. & Employ. of Tribal dairy cooperative member's

	Att. in dairy farm Res. Effect=0.85		Att. in Income gen. Res. Effect=0.82		Att. in Employment Stat. Effect=0.77	
	Direct Effect	Indirect Effect	Direct Effect	Indirect Effect	Direct Effect	Indirect Effect
(x_1) Community	0.28	X14-0.04	0.13	X16-0.02	0.27	X2-0.01
(x_2) Age	-0.10	X14-0.02	0.10	X1-0.02	0.04	X1-0.05
(x_3) category	0.03	X14-0.10	0.05	X12-0.07	0.06	X1-0.05
(x_4) Sex	0.03	X1-0.02	-0.09	X1-0.01	-0.05	X1-0.02
(x_5) Occupation	0.02	X9-0.03	0.00	X9-0.03	0.01	X1-0.02
(x_6) Edn. Of Respondent	-0.09	X1-0.06	-0.02	X15-0.03	0.03	X1-0.05
(x_7) Family Edn.	0.04	X14-0.03	-0.08	X12-0.02	-0.06	X6-0.02
(x_8) Family Type	-0.01	X9-0.06	-0.09	X9-0.06	0.02	X1-0.03
(x_9) Family Size	0.13	X1-0.01	0.13	X2-0.01	-0.03	X16-0.00
(x_{10}) Land	-0.16	X10.11	-0.12	X1-0.05	-0.14	X1-0.11
(x_{11}) House	0.09	X4-0.06	-0.06	X12-0.10	-0.03	X12-0.08
(x_{12}) Farm power	-0.07	X14-0.10	0.20	X3-0.02	0.16	X1-0.02
(x_{13}) Material Possession	-0.03	X14-0.08	0.03	X3-0.03	-0.14	X12-0.08
(x_{14}) Family Economic sta.	0.20	X1-0.06	-0.32	X12-0.10	-0.29	X12-0.08
(x_{15}) Urban Contact	0.03	X7-0.01	0.11	X12-0.03	-0.06	X16-0.05
(x_{16}) Personal Cosmopolit	0.06	X10-0.02	-0.14	X15-0.02	0.27	X7-0.01
(x_{17}) Personal Localite	0.05	X14-0.02	0.07	X14-0.03	0.02	X16-0.03
(x_{18}) Mass Media	-0.05	X1-0.05	-0.07	X12-0.02	-0.07	X1-0.05
(x_{19}) Innovation Pron.	0.08	X1-0.01	0.01	X14-0.02	0.05	X14-0.02
(X_{20}) Decision making	0.06	X14-0.02	-0.05	X18-0.01	-0.03	X13-0.01

effect through community (X1), whereas 03 different variable's had their largest indirect effect through farm power (X12) & Personal cosmopolite (X16) etc. *Anand & Sohal (1984)* reported that attitude towards employment have significant association with various socio-personal variables and supported similar facts. The table showed that the tribal members of dairy cooperative societies has highest ranking of adoption on deworming (43.47%) whereas feeding of concentrate ranks last. On the other hand the non-tribal members have the highest ranking of adoption on vaccination whereas feeding of concentrate ranks last. But, among the both members, cultivation of green fodder, feeding of green fodder and feeding of urea-straw-molasses mixture like practices are not adopted at all. It might be due to the reason that there are no facilities of water round the year for the cultivation of fodder. But, in case of adoption the table revealed that non-tribal members are always scored higher percentage in all the practices which might be due to their more awareness and updated knowledge about A.H. Practices. Tribal members are having less contact with Govt. animal Health center because of their ignorance which might be the reason for lowest adoption rate of vaccination. On the other hand, they are more exposed and knowledgeable about medicinal plants including ITK practices as compared to non-tribal members which may lead them for better adoption of deworming.

Conclusion

The study explored that Non-tribal community had significant effect and higher scores on adoption, attitude in dairy farming & knowledge in deworming than Tribal community. Considering highest scores all respondents were linearly scored for each MDS variables. The tribal members of dairy

cooperative societies has highest ranking of adoption on deworming whereas in non-tribal members adoption in vaccination has highest ranking. Finally, education, family education status, decision making pattern, community, community farm power has largest direct effect on knowledge level, attitude & adoption index of selected respondent and this variables have come to be key factors in adoption of improved practices among selected tribal dairy cooperative members.

REFERENCES

Anand, U. & Sohal, T.S. 1984. A psychological study of the dairy farmers' attitude towards extension. Asian *Journal of Dairy Research*, 3(3): 144-148.

Gupta, C.L. 1976. A study of differential motives of dairy farmers of milk co-operatives societies of ICDP, Kranal (Harayana) towards dairy innovations. Ph.D. Thesis, PAU, Ludhiana.

Singh, J.N. 1976. An analysis of the adoption of AI for cross breeding incows by dairy Farmers of ICDP, Karnal, M.Sc. Thesis submitted to JNKVV, Jabalpur.

Singh, Mithilesh, Dubey, M.K. and Kharde, Y.R. 2003. Factors affecting adoption of dairy management practices by members of dairy cooperative societies. *Indian Res. Journal of Extn. Edn.* 3(2): 25-28.

Sudhakar, Rao, B. 1975. A study of the combined impact of dairy cooperatives and ICDP on socio-economic changes in the milk shed areas of Bhongir (A.P.). M.Sc. Thesis submitted to Kurukshetra University, Kurukshetra.

Sukhla, S. 1998. Bottlenecks in the adoption of Artificial Insemination. The Veterinarian, 22:9.

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