

Effect of Personality Traits of Dairy Farmers on Recommended Buffalo Husbandry Practices

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ABSTRACT

The study was conducted on 240 buffalo owners selected from eight villages of Haryana State to assess the effect of various independent variables on knowledge, adoption, training needs and constraints affecting adoption of recommended buffalo husbandry practices. Path analysis revealed that economic motivation had maximum direct effect on knowledge level of buffalo owners about recommended buffalo husbandry practices followed by extension contact, education and caste. Indirect effect was also explained by herd size, education, caste, extension contact, mass media exposure and their attitude towards recommended buffalo husbandry practices. Opinion leadership, risk orientation and extension contact had shown maximum direct positive effect towards adoption of recommended buffalo husbandry practices in case of landless respondents. However caste, risk orientation, economic motivation and herd size explained their direct effect on adoption of recommended buffalo husbandry practices in case of the buffalo owners having upto 2 ha of land. More or less similar observations were also noticed in case of the farmers having more than 2 ha of land with regard to their adoption level. The study further indicated that in case of training needs of the respondents about recommended buffalo husbandry practices, extension contact, mass media exposure and their attitude had maximum direct positive effect in descending order in respect of landless buffalo owners. Almost similar results were seen in case of the farmers having 2 ha of land while in case of the dairy farmers having more than 2 ha of land, risk orientation, socio-economic status, economic motivation, age and education reflected their direct effect on training needs regarding recommended buffalo husbandry practices. Moreover, opinion leadership and mass media exposure were found to have maximum direct positive effect on constraints perceived by the landless buffalo owners whereas economic motivation, risk orientation, extension content, socio economic status, education and caste of the farmers having more than 2 ha of land had positive direct effect on the overall constraints as perceived by these respondents regarding in adoption of recommended buffalo husbandry practices.

Key words: Knowledge, Adoption, constraints, buffalo husbandry

In Haryana, the animal husbandry sector plays an important and vital role in providing a source of food rich in animal protein to the general public and supplementary income to the economically weaker section of the society like SC/ST and small farmers, marginal farmers and agricultural labourers. Haryana is rightly known as the 'milk pail' of India as production of milk in the state has increased from 1.1 million tons in 1966 to 5.4 million tons in 2006-07. The per capita per day availability of milk is 648gms against country's overall average of 240.1gms during 2006-07 (Anonymous, 2007). In recent past, the technological development in the field of animal husbandry with the

introduction of exotic breed and management practices etc. have made animal husbandry as an independent source of livelihood. It has been popularized under various development schemes too for the poorer sections of the rural community. However, production level and adoption of animal husbandry innovations have been far from satisfactory. There are so many factors which affect the knowledge and adoption of buffalo management practices including innovation characteristics, abilities of field veterinarians, para field staff in general and farmers personal characteristics in particular.

Keeping the above facts in mind, the present study was undertaken to ascertain various socio-economic, psychological and communicational attributes of buffalo owners which may affect their knowledge, adoption, training needs and constraints in adoption of recommended buffalo husbandry practices directly or indirectly.

METHODOLOGY

The present study was conducted in four selected districts viz., Kaithal, Sonapat, Faridabad and Jind of Haryana state. One block from each selected district and two villages from each selected block were selected randomly. For study purpose; a dairy farmer has been defined as one who is rearing at least one milch buffalo. Three categories of the dairy farmers were prepared on the basis of land holding, namely landless labourers, dairy farmers having land up to 2 ha and buffalo owners having more than 2 ha of land. A separate list of all the three categories of dairy farmers was prepared for each selected villages and 30 respondents were selected by using proportional size of sampling techniques. Therefore, the total sample size for this study was 240 dairy farmers.

Knowledge, adoption, training needs and constraints affecting adoption were considered as dependent variables. These variables were measured by developing suitable indices. Respondents-wise total scores of various dependent variables were also calculated. Thirteen important personality attributes were selected and were measured by using different scales, indices already developed by different scientists. Some independent variables were measured by developing schedule. The data were fitted in path equation to ascertain the direct and indirect effect of independent variables on dependent variables.

RESULTS AND DISCUSSION

Knowledge of buffalo owners : The data given in Table 1 revealed that extension contact had explained the highest positive effect (0.270) followed by opinion leadership (0.136) towards the overall knowledge level about recommended buffalo husbandry practices in case of landless buffalo owners. Socio economic status (1.721), age (1.665), attitude towards recommended buffalo husbandry practices (1.044), herd size (0.906)

opinion leadership (0.720), caste (0.556) and education (0.524) had indirect positive effect on knowledge level of landless respondents about recommended buffalo husbandry practices.

In case of the respondents having upto 2 ha of land, education (0.985) followed by risk orientation (0.840), economic motivation (0.189), and herd size (0.145) showed their direct and positive effect on knowledge level whereas all the variables were found to have negative indirect effect except education on knowledge. Extension contact and mass media exposure explained their positive and direct effect to the tune of 0.346 and 0.282, respectively, toward the knowledge of the respondent having more than 2 ha of land. More over education (2.293), herd size (1.766) and mass media exposure (1.114) had maximum positive and indirect effect. Similar findings were reported by *Das and Malik (2003)*.

Adoption of buffalo husbandry practices : The information provided in Table 2 indicated that opinion leadership, risk orientation and extension contact had maximum positive direct effect to the extent of 0.963, 0.445 and 0.236, respectively, on overall adoption of buffalo husbandry practices in case of landless respondents whereas education (2.944) had the highest positive indirect effect followed by extension contact (1.189), age of the respondents (0.982), mass media exposure (0.905) and herd size (0.277). In case of the buffalo owners having upto 2ha of land, the direct positive effect was channelized through caste (0.868), risk orientation (0.657) and economic motivation (0.296). However, the education of the respondents showed positive indirect effect of the tune of 1.149 followed by risk orientation. More or less similar findings were also reported in respect of the respondents having more than 2 ha of land as for as the adoption of recommended buffalo husbandry practices are concerned. Therefore it may be concluded that risk orientation, opinion leadership and extension contact were emerged as the important variables which needs improvement among the buffalo owners. However, education, mass media exposure and extension contact had also affected the adoption of recommended buffalo husbandry practices indirectly. Hence, the extension agencies particularly

Table 1. Path analysis : direct and indirect effect of independent variables on overall knowledge level of dairy farmers about recommended buffalo husbandry practices

S. N.	Variables	Landless			Upto 2 ha			More than 2 ha			Overall		
		Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial
1.	Age	-0.408	1.665	0.675 (x ₁₀) 0.598 (x ₄) -0.485 (x ₆)	-0.108	-0.197	-0.890 (x ₂) 0.93 (x ₉) -0.451 (x ₅)	-0.661	-1.593	-0.0925 (x ₃) -0.792 (x ₆) -0.783 (x ₇)	-0.161	-0.915	0.714 (x ₁₁) -0.60 (x ₃) -0.316 (x ₂)
2.	Education	-0.348	0.524	0.621 (x ₃) 0.561 (x ₈) -0.389 (x ₇)	0.985	0.029	0.985 (x ₂) -0.959 (x ₈) -0.657 (x ₆)	-0.130	2.293	-0.999 (x ₃) 0.849 (x ₅) 0.733 (x ₄)	0.448	2.013	0.998 (x ₆) 0.763 (x ₃) -0.704 (x ₄)
3.	Caste	-0.126	0.556	0.529 (x ₈) .292 (x ₅) 0.258 (x ₇)	-0.127	-1.971	-0.733 (x ₁₀) -0.485 (x ₇) -0.456 (x ₁₁)	-0.168	0.876	0.703 (x ₄) 0.521 (x ₁) 0.369 (x ₉)	0.298	2.041	0.960 (x ₆) 0.709 (x ₁) 0.518 (x ₁₁)
4.	Socio-Economic status	-0.332	1.721	0.878 (x ₈) 0.545 (x ₁) -0.519 (x ₇)	-0.924	-0.077	-0.924 (x ₄) 0.780 (x ₈) -0.602 (x ₁₁)	-0.732	-0.761	-0.766 (x ₆) -0.732 (x ₄) -0.595 (x ₇)	-0.290	0.149	-0.788 (x ₁) 0.696 (x ₈) -0.567 (x ₇)
5.	Herd size	-0.232	0.906	0.857 (x ₈) 0.590 (x ₇) -0.405 (x ₃)	0.145	-1.056	-0.702 (x ₁₀) 0.683 (x ₃) -0.344 (x ₁₁)	-0.396	1.766	0.786 (x ₁₁) 0.681 (x ₁) 0.478 (x ₈)	0.106	0.558	0.881 (x ₁₁) 0.797 (x ₂) -0.769 (x ₉)
6.	Extension contact	0.270	-0.514	-0.955 (x ₃) 0.810 (x ₁) 0.722 (x ₁₁)	-0.832	-0.138	-0.832 (x ₆) 0.481 (x ₁) 0.467 (x ₁₁)	0.346	-0.143	-0.829 (x ₈) 0.346 (x ₆) -0.543 (x ₂)	0.521	0.543	0.856 (x ₃) -0.672 (x ₉) 0.521 (x ₆)
7.	Mass media exposure	-0.384	0.225	0.625 (x ₅) 0.472 (x ₉) -0.384 (x ₇)	-0.195	-0.275	-0.964 (x ₁₀) 0.923 (x ₅) 0.676 (x ₂)	0.282	1.114	0.773 (x ₁₀) -0.655 (x ₂) 0.348 (x ₁₁)	-0.161	0.414	-0.635 (x ₁₀) 0.357 (x ₆) 0.327 (x ₁₁)
8.	Attitude towards R.B.H.P.	-0.308	1.044	0.847 (x ₁) 0.779 (x ₆) -0.753 (x ₅)	-0.465	-1.467	-0.742 (x ₁₁) -0.465 (x ₈) 0.360 (x ₂)	-0.605	0.557	0.763 (x ₅) -0.605 (x ₈) -0.551 (x ₂)	-0.223	0.92	0.849 (x ₃) -0.727 (x ₇) 0.678 (x ₅)
9.	Opinion leadership	0.136	0.720	0.408 (x ₁) 0.404 (x ₁₀) 0.188 (x ₁₁)	-0.120	-1.266	-0.514 (x ₁₁) 0.449 (x ₂) -0.267 (x ₈)	-0.749	-0.67	0.910 (x ₃) -0.825 (x ₅) -0.810 (x ₂)	-0.204	-1.003	-0.988 (x ₄) -0.901 (x ₇) 0.566 (x ₃)
10.	Risk orientation	-0.169	-0.590	-0.796 (x ₃) -0.756 (x ₈) 0.714 (x ₆)	0.840	-1.791	-0.903 (x ₁₁) 0.840 (x ₁₀) -0.765 (x ₇)	-0.797	-1.97	-0.797 (x ₁₀) -0.549 (x ₅) -0.439 (x ₂)	-0.826	-2.311	-0.917 (x ₁₁) -0.853 (x ₉) -0.826 (x ₁₀)
11.	Economic motivation	-0.889	-1.778	-0.964 (x ₈) -0.889 (x ₁₁) -0.872 (x ₁₀)	0.189	-1.65	-0.689 (x ₇) -0.658 (x ₄) -0.637 (x ₅)	-0.109	-1.391	-0.776 (x ₁) -0.571 (x ₁₀) -0.401 (x ₉)	0.551	-1.641	-0.959 (x ₉) -0.662 (x ₇) -0.627 (x ₄)

State Department of Animal Husbandry and KVKS of the CCS HAU, should formulate extension programmes to improve these factors so that the buffalo owners may be able to adopt latest scientific technology related to buffalo husbandry.

Training needs of buffalo owners : The path coefficient values given in Table 3 highlighted that extension contact, mass media exposure and attitude toward recommended buffalo husbandry practices exhibited the highest direct positive effect in descending order to the tune of 0.676, 0.580 and 0.429, respectively, in case of landless families, as for as the training needs of these respondents are concerned. Age (2.685), socio eco-

nomical status (2.302), caste (1.436), education (1.053) and economic motivation (0.465) had positive indirect effect on training needs of these respondents. It implies that besides extension contact, mass media exposure, attitude toward recommended buffalo husbandry practices, the age of the respondents and their socio economic status play an important role to influence the training needs of the dairy farmers. More specifically the old aged respondent's needs more training as well as the farmers having better socio-economic status want to undergo/ participate in the training courses related to recommended buffalo husbandry practices. Similar results were also obtained in case of farmers having upto

2 ha of land. Whereas risk orientation, socio-economic status and economic motivation had reasonable highest direct positive effect on training needs in case of the farmers having more than 2 ha of land.

From the above mentioned findings, it may be summarized that age, socio-economic status, risk orientation, extension contact and mass media exposure were the most important variables which affect directly or indirectly the training requirement of the buffalo owners in respective of their land holding. Therefore, the training institutes in particular and the field veterinarian in general should revise their training curriculum keeping the training needs of the farmers as

well as these variables in view for effective learning.

Constraints in adoption of buffalo husbandry practices : It is evident from the information presented in Table 4 that opinion leadership and mass media exposure of the landless respondents had maximum positive direct effect to the tune of 0.906 and 0.624, respectively, as for the constraints in adoption of recommended buffalo husbandry practices. However, age (2.998), herd size (1.471) and caste (1.460) exhibited their positive indirect effect on constraints perceived by these respondents. Therefore, the extension agencies should provide the extension literature particularly in simple and local language to the buffalo owners to

Table 2. Path analysis: direct and indirect effect of independent variables on overall adoption of dairy farmers about recommended buffalo husbandry practices

S. N.	Variables	Landless			Upto 2 ha			More than 2 ha			Overall		
		Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial
1.	Age	-0.326	0.982	0.538 (x ₁₁) 0.450 (x ₄) -0.424 (x ₆)	-0.254	0.181	0.803 (x ₉) -0.634 (x ₅) 0.631 (x ₇)	-0.791	0.595	-0.874 (x ₇) 0.791 (x ₁₁) 0.592 (x ₉)	-0.991	-1.111	-0.991 (x ₁) -0.807 (x ₁₀) 0.802 (x ₁₁)
2.	Education	-0.249	2.944	0.987 (x ₁₀) 0.960 (x ₉) 0.987 (x ₁₀)	0.118	1.149	0.893 (x ₃) 0.835 (x ₁) -0.489 (x ₇)	-0.365	1.312	0.896 (x ₄) 0.642 (x ₇) 0.442 (x ₁)	0.966	0.69	0.966 (x ₂) -0.780 (x ₁₁) 0.394 (x ₁)
3.	Caste	-0.114	-0.659	-0.970 (x ₆) -0.594 (x ₁₀) 0.593 (x ₅)	0.868	-0.81	-0.940 (x ₇) 0.868 (x ₃) -0.717 (x ₁₁)	-0.213	0.464	0.859 (x ₄) -0.781 (x ₆) -0.624 (x ₁)	0.125	1.036	0.621 (x ₁₀) -0.582 (x ₁₁) -0.517 (x ₉)
4.	Socio-Economic status	-0.250	0.161	-0.798 (x ₁₀) 0.749 (x ₈) 0.435 (x ₁)	-0.116	-0.151	-0.945 (x ₁₁) 0.605 (x ₂) -0.559 (x ₆)	-0.894	0.543	-0.894 (x ₄) -0.875 (x ₂) 0.732 (x ₉)	0.688	1.941	0.831 (x ₃) 0.688 (x ₄) 0.640 (x ₈)
5.	Herd size	-0.472	0.277	0.803 (x ₁) -0.785 (x ₁₀) 0.731 (x ₈)	0.204	-3.114	-0.799 (x ₆) -0.691 (x ₁) -0.540 (x ₁₁)	-0.553	1.896	0.946 (x ₁₁) 0.815 (x ₁) -0.553 (x ₅)	0.692	-1.029	-0.950 (x ₈) -0.886 (x ₇) 0.692 (x ₅)
6.	Extension contact	0.236	1.189	0.978 (x ₈) 0.976 (x ₁₁) -0.866 (x ₃)	-0.397	0.157	-0.931 (x ₁₀) 0.876 (x ₈) -0.734 (x ₁₁)	0.110	0.663	-0.846 (x ₈) 0.831 (x ₉) 0.375 (x ₇)	0.631	2.454	-0.982 (x ₇) 0.953 (x ₁) 0.641 (x ₁₀)
7.	Mass media exposure	-0.299	0.905	0.829 (x ₁) -0.460 (x ₁₁) 0.407 (x ₁₀)	-0.379	-0.049	0.809 (x ₂) -0.754 (x ₁₀) -0.588 (x ₁₁)	0.315	2.923	0.885 (x ₁₀) 0.837 (x ₆) 0.808 (x ₉)	-0.501	1.342	0.656 (x ₂) 0.501 (x ₇) 0.493 (x ₃)
8.	Attitude towards R.B.H.P.	-0.262	-1.643	-0.992 (x ₃) -0.900 (x ₂) -0.853 (x ₄)	-0.228	0.034	0.432 (x ₂) 0.383 (x ₁) -0.356 (x ₄)	-0.618	0.475	-0.618 (x ₈) 0.555 (x ₆) -0.292 (x ₄)	-0.205	1.048	-0.903 (x ₁₀) 0.572 (x ₉) 0.442 (x ₅)
9.	Opinion leadership	0.963	-0.952	-0.982 (x ₃) 0.963 (x ₉) -0.793 (x ₄)	-0.122	-1.416	-0.842 (x ₁₀) -0.808 (x ₁₁) 0.569 (x ₁)	-0.259	0.902	0.656 (x ₆) 0.588 (x ₁₀) 0.357 (x ₁₁)	-0.427	1.664	0.842 (x ₅) 0.468 (x ₁₁) 0.429 (x ₂)
10.	Risk orientation	0.445	-0.423	-0.957 (x ₂) -0.722 (x ₃) -0.645 (x ₈)	0.657	0.351	0.657 (x ₁₀) 0.585 (x ₁) -0.546 (x ₉)	-0.912	1.45	-0.912 (x ₁₀) -0.767 (x ₅) -0.432 (x ₄)	0.501	0.678	-0.933 (x ₈) 0.501 (x ₁₀) 0.355 (x ₂)
11.	Economic motivation	-0.120	-0.427	-0.822 (x ₈) -0.751 (x ₂) 0.592 (x ₆)	0.296	-1.173	-0.854 (x ₆) -0.825 (x ₄) -0.644 (x ₉)	-0.131	0.226	-0.653 (x ₁₀) 0.427 (x ₁) -0.653 (x ₁₀)	-0.619	0.095	-0.619 (x ₁₁) 0.373 (x ₂) 0.346 (x ₁₀)

Table 3. Path analysis: direct and indirect effect of independent variables on overall training needs of dairy farmers about recommended buffalo husbandry practices

S. N.	Variables	Landless			Upto 2 ha			More than 2 ha			Overall		
		Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial
1.	Age	-0.108	2.685	0.921(x ₁₁) -0.577(x ₇) 0.548(x ₃)	-0.444	0.336	-0.834(x ₇) -0.668(x ₉) -0.562(x ₁₁)	0.664	0.967	0.944(x ₃) 0.664(x ₁) 0.518(x ₇)	-0.109	2.988	0.813(x ₁₀) 0.720(x ₁₁) 0.681(x ₇)
2.	Education	-0.518	1.053	0.842(x ₆) -0.802(x ₁₁) -0.800(x ₉)	-0.241	-0.251	0.847(x ₁₁) 0.647(x ₇) -0.521(x ₃)	0.232	-2.142	-0.987(x ₅) -0.787(x ₆) -0.739(x ₄)	-0.897	-1.599	-0.959(x ₆) -0.897(x ₂) -0.701(x ₁₁)
3.	Caste	-0.307	1.436	0.870(x ₉) 0.738(x ₈) 0.680(x ₁₀)	-0.506	1.513	-0.727(x ₂) 0.691(x ₁) -0.506(x ₃)	0.172	-0.083	-0.708(x ₄) 0.524(x ₁) 0.408(x ₉)	0.758	-0.969	-0.922(x ₆) 0.758(x ₃) -0.626(x ₁₀)
4.	Socio-Economic status	-0.316	2.302	0.976(x ₆) 0.917(x ₅) 0.914(x ₁₀)	-0.190	1.527	0.487(x ₆) 0.458(x ₇) 0.446(x ₁₀)	0.738	-0.996	-0.975(x ₁₁) -0.853(x ₈) 0.738(x ₄)	-0.729	-1.878	0.895(x ₅) -0.729(x ₄) -0.613(x ₁₀)
5.	Herd size	-0.417	-0.552	-0.986(x ₃) -0.900(x ₁₀) -0.892(x ₃)	-0.918	-1.202	-0.954(x ₉) -0.918(x ₅) 0.696(x ₆)	0.460	-0.943	-0.684(x ₁) -0.505(x ₁₁) 0.460(x ₅)	0.214	-1.101	-0.971(x ₆) 0.752(x ₈) 0.538(x ₁₀)
6.	Extension contact	0.676	-0.988	-0.797(x ₁₀) -0.764(x ₅) 0.676(x ₆)	0.346	-0.379	0.862(x ₈) -0.859(x ₃) -0.663(x ₄)	-0.476	0.961	0.970(x ₂) 0.646(x ₈) -0.476(x ₆)	-0.500	0.099	0.941(x ₉) 0.646(x ₁₀) 0.643(x ₅)
7.	Mass media exposure	0.580	-0.538	-0.788(x ₁₁) 0.580(x ₇) 0.481(x ₆)	0.501	-0.147	-0.861(x ₄) 0.835(x ₁) -0.585(x ₅)	-0.187	-0.275	-0.794(x ₈) -0.721(x ₁₀) -0.361(x ₆)	-0.666	-0.377	0.991(x ₈) -0.666(x ₇) -0.609(x ₂)
8.	Attitude towards R.B.H.P.	0.429	-0.021	-0.429(x ₈) -0.266(x ₃) -0.246(x ₇)	-0.224	-1.055	-0.882(x ₂) -0.741(x ₅) 0.668(x ₁)	0.471	0.462	0.983(x ₂) -0.887(x ₅) 0.472(x ₈)	0.162	0.456	0.909(x ₁₀) -0.383(x ₉) -0.300(x ₇)
9.	Opinion leadership	-0.801	-0.184	-0.801(x ₉) 0.435(x ₁₁) 0.314(x ₆)	0.101	1.071	0.993(x ₁) -0.939(x ₃) 0.707(x ₅)	-0.827	-1.405	0.959(x ₅) -0.928(x ₃) -0.827(x ₉)	0.286	1.09	0.894(x ₈) 0.420(x ₁₁) -0.399(x ₂)
10.	Risk orientation	-0.510	-0.356	-0.671(x ₄) 0.666(x ₁₁) -0.510(x ₁₀)	-0.217	0.057	0.988(x ₅) -0.914(x ₃) -0.796(x ₂)	0.743	0.866	-0.788(x ₇) 0.783(x ₂) 0.743(x ₁₀)	-0.505	1.521	0.924(x ₁₁) 0.768(x ₅) 0.738(x ₈)
11.	Economic motivation	-0.206	0.465	0.880(x ₁) -0.441(x ₄) 0.405(x ₃)	-0.103	-0.432	-0.950(x ₃) 0.744(x ₆) -0.726(x ₂)	0.697	-0.31	-0.711(x ₇) 0.697(x ₁₁) 0.532(x ₁₀)	-0.556	-0.327	0.955(x ₃) 0.818(x ₈) -0.649(x ₅)

overcome their constraints in adoption of recommended buffalo husbandry practices. Key communicators in general and opinion leaders particular play an important role to solve the problems related to buffalo husbandry practices. In addition to the variables as mentioned above extension contact with the different agencies was also emerged as the important predictor in case of the respondents having up to 2 ha of land while caste (2.591), education (1.815) and age of the respondents (1.712) had highlighted their positive indirect effect to overcome the constraints perceived by the buffalo owners. In case of the respondents having more than 2 ha of land economic motivation, risk orientation, extension contact,

socio-economic status, education and the caste explained their positive direct effect to the extent of 0.868, 0.733, 0.463, 0.373, 0.364 and 0.228, respectively. Moreover almost all these variables had reflected their positive indirect effect in this regard.

These findings showed that in case of buffalo owners having more than 2 ha of land education, socio-economic status, extension contact, mass media exposure, risk orientation and economic motivation have an important place to overcome the constraint perceived by the them, while age, herd size and caste of the respondents were the important factors which influences the constraints indirectly in case of landless respondents.

Table 4. Path analysis: direct and indirect effect of independent variables on overall constraints perceived by the dairy farmers in adoption of recommended buffalo husbandry practices

S. N.	Variables	Landless			Upto 2 ha			More than 2 ha			Overall		
		Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial	Direct	Indirect	Substantial
1.	Age	-0.148	2.998	0.763(x ₂) 0.635(x ₄) -0.620(x ₇)	-0.643	1.712	0.672(x ₅) -0.643(x ₁) 0.577(x ₆)	-0.303	-0.19	-0.625(x ₇) 0.590(x ₉) -0.587(x ₈)	-0.330	2.26	0.935(x ₂) 0.806(x ₉) 0.491(x ₃)
2.	Education	-0.730	-0.143	-0.903(x ₉) -0.730(x ₂) 0.708(x ₁)	-0.213	1.815	-0.916(x ₈) 0.882(x ₆) -0.833(x ₃)	0.364	1.411	0.796(x ₈) -0.766(x ₆) 0.459(x ₅)	-0.133	-2.471	0.725(x ₇) -0.720(x ₄) -0.620(x ₉)
3.	Caste	-0.316	1.460	0.984(x ₉) 0.922(x ₁₁) 0.749(x ₁₀)	-0.810	2.591	0.984(x ₈) -0.810(x ₃) -0.643(x ₂)	0.228	0.37	-0.939(x ₈) 0.358(x ₄) 0.327(x ₆)	-0.243	-1.379	0.922(x ₇) -0.909(x ₉) -0.549(x ₅)
4.	Socio-Economic status	-0.352	0.376	-0.916(x ₃) 0.843(x ₇) 0.534(x ₁₁)	-0.304	0.619	-0.887(x ₉) 0.746(x ₈) 0.618(x ₁₀)	0.373	0.999	-0.871(x ₂) 0.730(x ₉) -0.475(x ₇)	-0.296	-1.793	-0.953(x ₅) 0.883(x ₈) -0.661(x ₂)
5.	Herd size	-0.482	1.471	0.991(x ₁₀) -0.959(x ₇) 0.902(x ₁₁)	-0.216	-1.008	-0.928(x ₄) 0.773(x ₁₀) -0.671(x ₈)	-0.469	-0.124	-0.629(x ₁₁) 0.521(x ₉) 0.482(x ₃)	-0.228	-2.067	-0.818(x ₃) 0.524(x ₇) -0.476(x ₁)
6.	Extension contact	-0.291	-2.004	-0.884(x ₅) -0.878(x ₁₀) -0.325(x ₂)	0.112	0.359	-0.470(x ₅) 0.457(x ₁₁) 0.427(x ₁₀)	0.463	0.3	-0.877(x ₄) 0.829(x ₉) 0.545(x ₁)	-0.630	-2.242	-0.698(x ₃) -0.685(x ₅) -0.630(x ₆)
7.	Mass media exposure	0.624	-0.415	0.624(x ₇) 0.600(x ₈) -0.513(x ₁₀)	0.220	0.878	0.617(x ₆) 0.366(x ₁₁) 0.346(x ₁₀)	0.225	0.754	0.825(x ₁) 0.806(x ₉) -0.712(x ₁₀)	0.296	-4.742	-0.960(x ₃) -0.928(x ₁₀) -0.900(x ₂)
8.	Attitude towards R.B.H.P.	-0.715	-1.256	-0.836(x ₆) -0.715(x ₈) 0.307(x ₁)	-0.444	-0.242	0.968(x ₁) -0.935(x ₃) -0.933(x ₄)	0.261	0.432	0.903(x ₅) 0.261(x ₈) -0.233(x ₆)	-0.284	1.017	-0.693(x ₃) 0.619(x ₁) -0.594(x ₄)
9.	Opinion leadership	0.906	-0.506	-0.906(x ₉) 0.680(x ₁₁) -0.355(x ₈)	0.708	0.213	-0.971(x ₂) -0.781(x ₄) 0.708(x ₉)	-0.259	-1.309	-0.977(x ₅) 0.839(x ₁) -0.473(x ₁₀)	-0.750	-0.634	0.926(x ₁₁) -0.750(x ₉) -0.589(x ₂)
10.	Risk orientation	-0.562	-2.031	-0.770(x ₆) -0.748(x ₄) -0.562(x ₁₀)	-0.301	1.007	0.884(x ₁₁) 0.860(x ₇) -0.704(x ₂)	0.733	0.803	0.951(x ₇) 0.733(x ₁₀) -0.650(x ₅)	-0.121	2.004	-0.818(x ₅) 0.752(x ₁) -0.590(x ₄)
11.	Economic motivation	-0.322	-1.512	-0.731(x ₆) -0.492(x ₄) 0.416(x ₃)	-0.185	0.363	-0.775(x ₇) -0.643(x ₂) 0.500(x ₅)	0.868	1.984	0.868(x ₁₁) 0.857(x ₇) -0.560(x ₄)	0.122	1.541	-0.834(x ₁₀) 0.738(x ₁) 0.692(x ₅)

CONCLUSION

On the basis of path analysis, it is revealed that economic motivation had maximum direct effect on knowledge level of buffalo owners about recommended buffalo husbandry practices followed by extension contact, education and caste. Indirect effect was explained by herd size, education, caste extension contact, mass media exposure and the attitude towards recommended buffalo husbandry practices as for as the knowledge level of buffalo owners are concerned. Opinion leadership, risk orientation, extension contact had shown maximum direct positive effect towards adoption of recommended buffalo husbandry practices

in case of landless respondents. However caste, risk orientation, economic motivation and herd size explained their direct effect on adoption of recommended buffalo husbandry practices in case of the buffalo owners having upto 2 ha of land. Opinion leadership and mass media exposure were found to have maximum direct positive effect on constraints perceived by the landless buffalo owners and the farmers having upto 2 ha of land, whereas economic motivation, risk orientation, extension content, socio economic status, education and caste of the farmers having more than 2 ha of land had positive direct effect on the overall constraints as perceived by these respondents regarding in adoption

of recommended buffalo husbandry practices. Extension contact, mass media exposure and the attitude had maximum direct positive effect on constraints in respect of landless buffalo owners. Almost similar results were seen in case of the farmers having 2 ha of land while in

case of the farmers having more than 2 ha of land, risk orientation, socio-economic status, economic motivation, age and the education had reflected their direct effect on training needs regarding recommended buffalo husbandry practices.

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