

Management Efficiency of Dairy Entrepreneurs: An Analysis

Letha Devi G.¹, P. Khandekar² and Chandrappa T.³

1. Scientist, 2. Principal Scientist, 3. Scientist,
ESE Section, National Institute of Animal Nutrition and Physiology, Bangalore, Karnataka
Corresponding author e-mail: lethayur@gmail.com

ABSTRACT

The present study was conducted in peri-urban and rural localities of Rural Bangalore district of Karnataka. Data were collected personally from 180 dairy owning households hailing equally from peri urban and rural areas. Family education status, herd size, input availability, market facilities, level of knowledge about improved dairy husbandry practices, economic motivation, scientific orientation, achievement motivation, self confidence and innovation proneness were found to have positive and significant relationship with management efficiency of overall sample of respondents, irrespective of the localities. Amongst situational and personal characteristics, family education status had positive and significant relationship with management efficiency among peri-urban respondents. The regression model showed 81.70 per cent variability in management efficiency among rural respondents followed by 76.20 per cent variability in peri-urban areas. The regression model fitted using ten independent variables had accounted for 74.60 per cent of variation in management efficiency among overall sample of respondents, irrespective of the localities. Knowledge level about improved dairy husbandry practices had the maximum direct effect and scientific orientation showed maximum indirect effect on management efficiency of peri-urban respondents. In rural area, scientific orientation and achievement motivation exhibited maximum direct and indirect effects, respectively.

Key words: Management efficiency; Dairy entrepreneurs;

Dairy farming is a crucial component of rural economy that has the highest potential of generating income and employment through augmenting productivity of milch animals. It is an effective instrument of social and economic change. The implementation of various dairy development programmers/schemes by Government of India has changed dairy farming scenario tremendously and helped the dairy entrepreneurs to obtain higher profits. Sustainability of dairy enterprise however largely depends on the efficient management of the resources by the entrepreneurs running the dairy units. The location of dairy farm in a peri urban and rural area also have a definite influence on the efficiency of dairy farmers in the management of their dairy enterprise as a whole besides the effect of situational, personal and psychological factors. A clear understanding of all those factors influencing management efficiency of the dairy farmers is therefore, of paramount importance in augmenting productivity of milch animals and generating family employment and income.

The study was framed with the objective to measure the management efficiency of dairy farmers in peri-urban and rural areas.

METHODOLOGY

The present study was conducted in peri-urban and rural localities of Rural Bangalore district of Karnataka. Rajankunte and Doddaballapur were taken as peri urban area, whereas Hadonahalli and Antarahalli villages were taken as rural area. From each of the selected peri-urban and rural areas, 90 dairy owning households classified into small (1-4 milch animals) and large (more than 4 milch animals) herd owning categories were selected through proportionate random sampling method. One adult member (above 20 years of age) who was actively involved in the dairy farming activities from each selected family was considered as respondent for the study. The data were collected through personal interviews. Management efficiency of dairy farmers was measured through management efficiency index specifically

developed for the study on the basis of normalized rank approach method recommended by *Guilford (1954)*.

RESULTS AND DISCUSSION

Correlation analysis between situational, personal and psychological factors with management efficiency of dairy farmers: Table 1 reveals that out of six independent variables; three variables viz. family education status, herd size and input availability were found to be positively and significantly correlated with management efficiency of dairy farmers, irrespective of locale of the study. It implies that higher the educational status of the family members, better the comprehension and understanding of the intricacies of scientific dairy farm management and higher management efficiency. Educated farm housewives of West Bengal were found to be efficient in the management of financial affairs of their livestock enterprises (*Sarkar et al., 2001*). The result however was found different with respect to the respondents of peri urban and rural areas.

The variable herd size was found to have positive and highly significant ($P < 0.01$) relationship with management efficiency among overall sample of respondents, irrespective of the locality. It indicates that as the number of milch animals per family increases, the managerial efficiency of the dairy farmers also increases. Locale wise, the study revealed non significant relationship between herd size and management efficiency among peri-urban and rural respondents. Input availability showed positive and highly significant ($P < 0.01$) relationship with management

efficiency of overall sample of respondents. The better availability of inputs facilitated efficient planning, easy mobilization of resources, timely adoption and better management of the dairy enterprise by the respondents

Table 1 further shows that the existence of market facilities had a positive and significant relationship with the management efficiency of overall respondents, irrespective of the locality. Better the market facilities for milk/ milk products, easier will be their disposal and regular will be the flow of income from the dairy enterprise. Non significant relationship however was revealed between market facilities and management efficiency among peri urban respondents and no correlation in case of rural respondents.

Multiple regression analysis for management efficiency of dairy entrepreneurs on selected situational, personal and psychological factors: The contribution of situational and personal factors towards management efficiency among overall sample was studied by using multiple regression analysis model only of those situational and personal factors that were found significantly correlated with management efficiency. To isolate the independent variables that had significantly contributed towards the variability of the dependent variable, t-test was also employed.

The regression analysis showed that the value of co-efficient of multiple determination was found highly

Table 1: Zero order correlation analysis between situational, personal and psychological variables and management efficiency of dairy entrepreneurs

Variables	Correlation coefficient		
	P	R	O
X ₁ Family education status	0.306**	0.2	0.180*
X ₂ Herd size	0.190	0.23	0.305**
X ₃ Experience in dairy farming	0.16	-0.102	-0.13
X ₄ Input availability	0.19	-0.022	0.222**
X ₅ Market facilities	0.182	0.001	0.18*
X ₆ Proximity to veterinary support systems	-0.064	0.03	-0.03

P=Peri urban (n=90), R=Rural (n=90), O=Overall (n=180)

**Significant at 0.01 level of probability,

* Significant at 0.05 level of probability

Table 2: Multiple regression analysis for management efficiency of overall respondents of two localities on selected independent variables (N=180)

Independent variables	'b'	S.E.(b)	't' value
X ₁ Family education status	-0.77	0.359	-2.14*
X ₂ Herd size	0.060	0.199	0.29
X ₄ Input availability	-0.30	0.121	-2.51*
X ₅ Market facilities	0.45	0.259	1.73
X ₇ Level of knowledge about improved dairy husbandary practices	1.28	0.290	4.43**
X ₈ Economic motivation	0.81	0.198	4.07**
X ₉ Scientific orientation	0.14	0.174	0.79
X ₁₀ Achievement motivation	0.19	0.225	0.86
X ₁₁ Self confidence	0.50	0.548	0.91
X ₁₂ Innovation proneness	0.92	0.433	2.13*

Tabulated value of 't' = 1.960 at 0.05 level and 2.576 at 0.01 level of probability R²= 0.746

**- Significant at 0.01 level of probability;

*- Significant at 0.05 level of probability

Table 3: Direct and indirect effect of selected independent variables on management efficiency of overall sample of respondents (N=180)

Independent variables		Direct effect		Total indirect effect		Largest indirect effect through single variable	
		Effect	Rank	Effect	Rank	Effect	Variable No.
X ₁	Family education status	-0.1218385	V	0.3018386	VIII	0.1320858	X ₈
X ₂	Herd size	0.0151050	X	0.2898951	IX	0.1368957	X ₈
X ₄	Input availability	-0.1540363	IV	0.3760364	VII	0.1291259	X ₈
X ₅	Market facilities	0.0982100	VI	0.0857900	X	0.0469885	X ₈
X ₇	Level of knowledge about dairy husb. practices	0.2904832	II	0.4345171	V	0.2645416	X ₈
X ₈	Economic motivation	0.3699883	I	0.4270122	VI	0.2076955	X ₇
X ₉	Scientific orientation	0.0584085	IX	0.6165917	II	0.2800811	X ₈
X ₁₀	Achievement motivation	0.0890492	VII	0.6299951	I	0.2919207	X ₈
X ₁₁	Self confidence	0.0757397	VIII	0.5992606	III	0.2708314	X ₈
X ₁₂	Innovation proneness	0.1712297	III	0.5437705	IV	0.2778612	X ₈

significant ($R^2 = 0.746$). All the ten independent variables considered in the analysis had accounted for 74.60 per cent of variation in management efficiency among overall sample of respondents (Table 2). The results in Table 2 indicate that level of knowledge about improved dairy husbandry practices and economic motivation showed positive and highly significant ($P < 0.01$) contribution while innovation proneness was contributing significantly at 5 per cent level of significance. Family education status and input availability showed negative and significant ($P < 0.05$) contribution. The other variables like herd size, scientific orientation, achievement motivation and self confidence fitted in the model did not contribute at statistically significant level in influencing management efficiency of the respondents.

The prediction equation could be written from the table 3 as $Y_1 = 30.27 - 0.77 * X_1 + 0.06 X_2 - 0.30 * X_4 + 0.45 X_5 + 1.28 ** X_7 + 0.81 ** X_8 + 0.14 X_9 + 0.19 X_{10} + 0.91 X_{11} + 0.92 * X_{12}$ which reveals that unit increase in level of knowledge, economic motivation and innovation proneness would cause an increase in the level of management efficiency to 1.28, 0.81 and 0.92 units, respectively, while others were kept constant in each case. Family education status and input availability would cause a decline in the level of management efficiency by 0.77 and 0.30 units, respectively, while other variables were kept constant in either case. Thus, it could be stated that higher the level of knowledge, economic motivation and innovation proneness of respondents, better was their level of management efficiency.

Direct and indirect effect of selected situational, personal and psychological factors on management efficiency of dairy entrepreneurs: The direct and indirect effects of situational and personal factors on management efficiency of overall sample of respondents was studied. Those factors were included as the independent variables that were found significantly correlated with management efficiency of dairy farmers.

Table 3 shows that all the selected independent variables exercised positive direct effect on management efficiency of all the respondents, irrespective of their localities except family education status (X_1) and input availability (X_4) which were found to have negative direct effect on it. Economic motivation (X_8), level of knowledge about improved dairy husbandry practices (X_7) and innovation proneness (X_{12}) in that order had exercised highest positive direct effect on management efficiency of overall respondents. Table further indicates that the ranks of the variables with respect to direct effects and total indirect effects were not the same. The highest total indirect effect on management efficiency of overall respondents was found to be exercised by achievement motivation (X_{10}) followed by scientific orientation (X_9) self confidence (X_{11}) and innovation proneness (X_{12}).

It was further observed that nine out of ten independent variables had their largest indirect effect through economic motivation (X_8) whereas economic motivation (X_8) had its largest indirect effect through level of knowledge about improved dairy husbandry

practices (X_7) on management efficiency of overall respondents. Similar results are reported by Manivannanan *et.al* (2007).

CONCLUSION

Economic motivation was the important variable that exercised highest direct effect on management efficiency of dairy farmers regardless of the localities followed by knowledge level about improved dairy husbandry practices and innovation proneness. Achievement motivation followed by scientific orientation and self-confidence exercised the largest indirect effect on management efficiency of overall sample of respondents. Dairy farmers in rural areas were found to possess lower level of management efficiency than those in peri urban area. It necessitates

formulation and implementation of suitable education strategies specifically for rural and peri-urban areas to increase the level of management efficiency among the dairy farmers that in turn influences on productivity of milch animals. Similarly situational, personal and psychological factors viz., family education status, herd size, input availability, market facilities, knowledge level, economic motivation, scientific orientation, achievement motivation, self-confidence and innovation proneness should be given due consideration while formulating and implementing suitable extension and training strategies for improving the management efficiency of the dairy entrepreneurs as well as productivity of milch animals.

Paper received on : September 12, 2012

Received after revision : October 22, 2013

Accepted on : November 12, 2013

REFERENCES

- Guilford, J. P. (1954). Psychometric methods. Tata McGraw Hill Publishing Company, Bombay.
- Sarkar, P.; Acharjee, S. K. and Haque A. (2001). Prediction of management of animal enterprise by farm housewives from some socioeconomic and psychological factors. *Economic Affairs*, **46** (2): 106-115.
- Manivannanan, C. and Hema Tripathi. (2007). Management efficiency of dairy entrepreneurs. *Indian Res. J. Ext. Edu.* **7**(2&3):44-51.

