

Original Research Article

Correlates of Socio-Personal and Psycho-economic variables with skill of Beekeepers in Bihar

Ashok Kumar*

SMS (Extension Education), KVK, Gaya (Bihar), India

**Corresponding author*

ABSTRACT

The present investigation was done at the Honeybee Research and Training Centre, R.A.U., Pusa (Bihar) which investigated the association of socio-economic and demographic characteristics of trainees with development of skill on beekeeping technology in beekeeping training programme. For conducting this study, a total of 196 respondents (who participated in beekeeping training at the Center) were selected randomly and constituted the sample of the present study. A 'Pre' and 'Post' research design was used. The study revealed that the training plays a vital role in developing skill of the trainees. During pre-training session trainee's socio-personal and psycho-economic characteristics of beekeepers were not up to the mark as they were raw handed but after being exposed to the scientific beekeeping training, their psycho-economic characteristics has increased considerably leading to increasing the socio – economic status of trainees.

Keywords

Socio- personal
and psycho-
economic
variables,
Beekeeping,
training and Skill

Introduction

Beekeeping has significant impact on changing the behavioral components of beekeepers. In developing countries, it can be used in rural development programme designed to increase the income of individuals as well as of the group and thus has great potential in raising the economic and social status of rural communities. It is an ideal activity for the socio-economic development of rural people. Shipra (2004) studied and revealed that each and every trainee has gained significantly fine skill performance as a result of training. There are abundance of foliage present for bees in

Bihar state and also congenial environment, it has vast scope of establishing this enterprise, hence, it becomes imperative to study the association of socio – personal and psycho – economic characteristics of trainees with the skill regarding scientific honey production technology.

Materials and Methods

The study was done at the Honeybee Research and Training Centre, R.A.U., Pusa (Bihar). The main reason for purposive selection of this Centre was easy availability of trainees from all round the year pertaining to the objective of the study and hence it

became convenient for the investigator to conduct the research treatments at this Centre as per the requirement of the study. The sample, for the present investigation, consisted of a group of 196 trainees participating in the scientific beekeeping training programme at the Beekeeping Research and Training Centre, R.A.U., Pusa (Bihar). Here, the same group of respondents were studied twice (i.e. firstly when they were not exposed to such training programme and secondly just after they have been imparted such training). The basic idea behind taking such group of respondents was to see the relation of socio-personal and psycho-economic variables with the skill of trainees due to scientific beekeeping training programme as compared to the trainees who were not exposed to such training programme. These data were collected through personal interview.

Results and Discussion

Age

The perusal of data in table-1 indicates that 47.44% of trainees belonged to the young age group i.e. upto 35 years of age whereas only 3.57% of selected trainees were found in old age group. It could also be referred from this table that selected trainees for the study were distributed in all age groups in order of young followed by middle age (31.63%), advanced age (17.34%) and old age groups.

Education

The data in the table shows that a maximum of 27.55% of trainees had high school level of their education which was followed by graduation and above level of education with 26.02% then middle level of education with 17.34% of respondents. It is further noted that 8.67% of trainees were illiterate while 6.12% of trainees were found under the literacy and 14.28% of trainees had their education only

up to primary level. Thus, it could be predicted that by and large the trainees were having literacy in terms of their educational attainment.

Caste

Table-1 reveals that majority of the trainees (35.20%) belonged to backward-II group and 11.73% belonged to backward –I category. It has also been found that 34.18% trainees were coming from forward group while 8.87% were come under the schedule caste group. From the table it could be stated that the beekeeping enterprise had been the witness of participation from members of all groups of the society irrespective of their caste affiliation.

Size of family

It was found that majority of the trainees (40.30%) had large family size comprising more than 8 members which is followed by 36.73% medium family size and the least of 22.95% of the respondents were having small family size.

Land holding

The table also reveals that though the selected trainees belonged to all categories of land holdings but majority of them (51.53%) had small holding and few of them (2.55%) had large holding. It is also evident from the table that both categories marginal and small holders constituted more than 92% of total trainees. This may be probably due to very less average size of holding in the rural areas of the state where around 84% of training group comes under the category of small and marginal farmers.

Economic motivation

The table-2 reveals that the selected trainees who came for the training pertaining to the

honey production technology have been classified into three groups based on their scores on the economic motivation. Out of the total 196 trainees participated during the study, 125 belonged to low category on their economic motivation scale while 71 had medium level of economic motivation and only 2 had been indicated their high economic motivation score. It is apparent through the table that maximum percentage (63.37%) of selected trainees had shown their low level of economic motivation. This situation relates during the pre-training period of the respondents. After being exposed through the theoretical and practical training designed by the specialists and scientists of Honeybee Research and Training Centre of R.A.U., the trainees had shown the highest percentage (55.10%) economic motivation during the post training period. Even the trainees who had very low level of economic motivation had changed themselves into either high (23.97%) level of economic motivation or medium level of (55.10%) level of economic motivation. Even during the pre-training lowest percentage (1.02%) of economic motivation was found in high category of economic motivation which has been converted after the post-training period in low category of economic motivation.

The reflections were being supported with the average scores (2.94) of the pre-training period with the average score (4.29) of post-training period. Here, difference value indicates 1.35 which inferred about the relative contribution of the training for increasing the overall economic motivation among the selected trainees.

Change proneness

It is apparent from the table that maximum percentage (68.36%) of selected trainees had shown their low level of change proneness followed by medium level of change

proneness (31.63%) and no one had high level of change proneness during pre-training period. After being exposed to the scientific beekeeping training, it was found that maximum of (55.10%) respondents had acquired high level of change proneness followed by medium (38.77%) and then low (6.12%) level of change proneness.

The table revealed that training had positive impact in enhancing change proneness toward the honey production technology which were also reflected through the fact that during pre-training the average score of 33.07 increased to 51.46 during post-training period showing average score difference of 16.34. This was an indicative of positive impact of training on change proneness of the respondents.

Credit orientation

It is apparent through the table that during pre-training a maximum of 67.85 percent had shown their low level of credit orientation and 32.14 percent showed medium level of credit orientation while none of them showed high level of credit orientation. After being exposed to the training it was found that same trainees who had low level of credit orientation had acquired either medium level of credit orientation or high level of credit orientation. Through the table, it is apparent that after training a maximum of 100 respondents shifted to the medium category of credit orientation followed by 90 respondents in high category of credit orientation parameter and only 6 respondents found to have their position in low category of credit orientation scale. The table revealed that a maximum of them (51.02%) had medium level of credit orientation trailing behind by high (45.91%) and only few (3.06%) in low level of credit orientation.

The table also reflects the facts that average

score of 21.92 during pre-training had increased to 31.84 during post-training period with average score difference of 9.91 which is an indicative of increasing credit orientation among the respondents due to theoretical and practical training imparted during the study.

Risk preference

It is also apparent from the table that maximum of them (76.02%) had low level of risk preference followed by medium level (23.97%) of risk preference and none of them had high level of risk preference. This was the situation during pre-training period. After being exposed to training, it was found that

maximum of the respondents shifted to higher in high category (105) or medium category (80) and only few (11) were left in the low category of risk preference. It indicates that maximum of them (53.57%) acquired high level of risk preference which was followed by medium (40.81%) and low (5.61%) of level of risk preference.

The table also reveals that average score of 19.11 was found during pre-training which has increased to 31.59 during post-training period with an average difference of 12.47. These figures reveals the fact that there was an increase in the risk taking ability of the respondents after being exposed to scientific beekeeping training.

Table.1 Socio-personal variables of trainees (N=196)

Variables	Frequency	Percentage	Variables	Frequency	Percentage
1 Age group (Yrs)			3.Caste		
Up to 35	93	47.44	Forward	67	34.18
36-50	62	31.63	Backward-II	69	35.20
51-65	34	17.34	Backward-I	23	11.73
>65	7	3.57	Schedule Caste	37	18.87
2 Education			4. Size of Family		
Illiterate	17	8.67	Small	45	22.95
Can read	0	0.00	Medium	72	36.76
Can read and write	12	6.12	Large	79	40.30
Primary	28	14.28	5. Land holding		
Middle	34	17.34	Marginal	81	41.32
High School	54	27.55	Small	101	51.53
Graduation and	51	26.02	Medium	4	4.59
Above			Large	5	2.5

Table.2 Comparison of selected psycho-economic characteristics of trainees during ‘pre’ and ‘post’ training session (N=196)

Category	Pre-training			Post-training			Average score difference
	f	%	Average score	f	%	Average score	
a) Economic motivation							
Low	125	63.37	41	20.91			
Medium	71	36.22	2.94	108	55.10	4.29	1.35
High	2	1.02	47	23.97			
b) Change proneness							
Low	134	68.36	12	6.12			
Medium	62	31.63	35.07	76	38.77	51.46	16.34
High	0	0.00	108	55.10			
c) Credit orientation							
Low	133	67.85	6	3.06			
Medium	63	32.14	21.92	100	51.02	31.84	9.91
High	0	0.00	90	45.91			
d) Risk preferences							
Low	149	76.02	11	5.61			
Medium	47	23.97	19.11	80	40.81	31.59	12.47
High	0	0.00	105	53.50			

Table.3 Differential mean scores of ‘pre’ and ‘post’ training of trainees with respect to main psycho- economic characteristics of respondents (N=196)

Characteristics	Mean value		Mean difference	SEm	t-value
	Pre-training	Post-training			
Economic motivation	2.9435	4.2998	1.3563	7.6800	17.661**
Change proneness	35.0765	51.4694	16.3429	1.3580	12.071**
Credit orientation	21.9235	31.8418	9.9133	0.4186	23.695**
Risk preference	19.1122	31.5918	12.4796	0.4430	28.170**

Table.4 Coefficient of correlation between selected characteristics and their skill of honey production technology

Sl. No.	Independent variables	Value of coefficient of correlation (r)	
		Pre training	Post training
1.	Age	-0.154*	-0.197**
2.	Education	0.532**	0.920**
3.	Caste	0.307**	0.552**
4.	Size of family	-0.123 ^{NS}	-0.088 ^{NS}
5.	Land holding	0.134 ^{NS}	0.198**
6.	Economic motivation	0.372**	0.764**
7.	Change proneness	0.079 ^{NS}	0.904**
8.	Credit orientation	0.206**	0.897**
9.	Risk preference	0.284**	0.880**

**Significant at 0.01 level of probability ^{NS} Non-significant *Significant at 0.05 level of probability.

After the completion of experiment it revealed that best result found in (T6 - FYM 6 tha^{-1} +T2) OC and pH increased and EC decreased in organically applied plots. In T6 OC increased from 0.78% to 0.79%, pH increased from 7.61 to 7.62, EC decreased from 0.40 dSm^{-1} to 0.22 dSm^{-1} , Available N increased from 308 kg ha^{-1} to 310 kg ha^{-1} , Available P_2O_5 increased from 13.64 kg ha^{-1} to 14.70 kg ha^{-1} , Available K_2O increased from 708 kg ha^{-1} to 715 kg ha^{-1} and Available S increased from 18.07 kg ha^{-1} to 18.38 kg ha^{-1} . Followed by T6, treatment T7, T8, T9 gave better results. Experiment revealed that Organics adds nutrients in soil and made it nutrient rich, healthy and sustain its life for future needs, But on the other hand continuous use of chemical fertilizers have negative effect on soil because they reduce the nutrients from soil.

Good soil physical properties maintained by the application of organics. Treatment 6 which is applied with 6 tonnes FYM + N20P13 gave the better soil physical and chemical properties. In T6 status of Available N, P, K and S after harvest found increased, pH found increased, BD found decreased, WHC and Porosity found increased. Result shows that applying organics alone and in combination with inorganics improves the nutrient status in soil also improves its physical condition.

Prasad *et al.* (1983) reported that bulk density increases with application of inorganic fertilizers (50 to 150% NPK). Whereas, FYM incorporation with 100% NPK lower down the bulk density of soil as compared to 100% NPK application and control.

Maheswarappa *et al.* (1999) conducted an experiment and reported that the FYM and vermicompost application alone decreased the bulk density, improved soil porosity,

organic carbon and maximum water holding capacity to a great extent whereas, under NPK alone and control there was no change in physical and chemical properties of soil.

Jha and Rattan (2007) revealed that mineralization of crop residue also supply essential nutrients. Organic matter greatly influences the availability of N, P, K and several other plant nutrients.

Singh (2007) concluded from a comparative study of INM and the farmer's practice based on changes in relative soil quality index (RSQI) and quality changes that soil quality in INM trial was increased by 12-19 units as compared to 7-9 units in farmer's practice. The soil quality in terms of CEC, pH, N, P, K, organic matter, soil structure etc. increased up to 5 percent.

Pothare *et al.* (2007) conducted a long- term fertilizer experiment started since 1988 at Dr. P.D.K.V., Akola. There were 14 treatments replicated four times indicated that all the soil properties such as pH, EC, organic matter, total and available N, P, K and S etc. were favorably influenced with the conjunctive use of organics and inorganics. Highest values were observed in the treatment of 100% NPK + 10 t FYM ha. The influence on soil properties ultimately reflected in higher yield of sorghum and wheat and in the same treatment it is also observed that all the soil properties except pH, EC were highly significantly correlated with yield.

Thakur *et al.* (2009) conducted an experiment with soybean - wheat - maize cropping sequence initiated during 1972 at J.N.K.V.V., Jabalpur (Madhya Pradesh, India) with the aim to investigate the effect of continuous application of different agricultural inputs on the soil health and dynamics of nutrients of medium black soil (Vertisols). The study was designed with 10

treatments, namely: (T1) 50% NPK; (T2) 100% NPK; (T3) 150% NPK; (T4) 100% + HW (hand weeding); (T5) 100% NPK + Zn (ZnSO₄); (T) 100% NP; (T7) 100% N; (T8) 100% NPK + farmyard manure (FYM); (T9) 100% NPK-S (sulphur free) and (T10) control plot. Organic carbon content in the surface soil was found to be higher as compare to the lower layers in different treatments and the highest and significantly higher values at different depths were noted in the treatment that received recommended dose of fertilizer along with FYM (T). The contents were higher in all soil layers of the treatments receiving balanced applications as compared to the treatments where imbalanced application is being practiced.

Nandapure *et al.* (2011) conducted a study to assess the long term effects of fertilizers and FYM on soil physical properties and crop productivity after 19th cycle of sorghum-wheat cropping sequence in a Vertisols. The combined use of inorganic fertilizers (100% NPK) along with FYM @ 10 t/ha significantly improved the bulk density, hydraulic conductivity, available water capacity, water stable aggregates and coefficient of linear extensibility of soil and yield of crops. Total productivity (sorghum+wheat) was found to be positively correlated with these properties.

The study revealed that the training plays a vital role in enhancing skill of the trainees. During pre-training session trainee's socio-personal and psycho-economic characteristics of beekeepers were not up to the mark as they were raw hands but after

being exposed to the scientific beekeeping training, their psycho-economic characteristics has increased considerably leading to increasing the socio – economic status of trainees.

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