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Factors Influencing Knowledge and Adoption Level of Sericulturists in Cluster Promotion Programme

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ABSTRACT

Central Sericulture Board together with Directorate of Sericulture, Maharashtra implemented Cluster Promotion Programme (CPP) throughout the years 2007-10. The present paper analyzes the factors influencing the knowledge and adoption level of sericulturistsparticipated in CPP in Osmanabad district. In all total, a hundred and fifty sericulturists were selected by "probability proportionate sampling size technique" from eight talukas covering twenty five villages. Information was collected by personal interviews with sericulturists. The findings discovered that out of 15 variables, regression coefficient for three variables namely education (2.3910), cosmopoliteness (2.5217) and extension contact were significant at 5 per cent level of significance whereas economic motivation (3.9308) and innovativeness (7.2898) were significant at 1 per cent level of significance and are key factors influencing knowledge level of sericulturists. It was further revealed that out of 16 independent variables regression co efficient for 7 variables namely family size (4.2316), cosmopoliteness (3.7382), economic motivation (2.5978), attitude towards sericulture (3.5257), innovativeness (5.8339), area under mulberry (3.7891) and annual income were significant at 1per cent level of significance and are key factors influencing adoption level of sericulturists.

Under Catalytic Development Project(CDP) implemented by Central Silk Board (CSB)Ministry of Textiles, Govt. of India, sericulture production cluster were identified and Cluster Promotion Programme (CPP) were implemented by CSB in collaboration with Directorate of Sericulture, M.S in Osmanabad district during the years 2007-10. Success of any new technology depends on its acceptance /adoption by sericulturists and the user acceptance is much dependent on carefully drawn and implemented extension programme (P. Rama Mohanarao and Kambale, C.K. 2009). Considering the above mentioned facts, the present investigation was conducted in Osmanabad district of Maharashtra State wherein hundred and one villages are below mulberry plantation with an area of 274 ha (685acres) and having a cocoon production of 76380.2 kgs (Anonymous, 2010). The aim of study was to assess the factors influencing the knowledge and adoption level of sericulturists participated in CPP in Osmanabad district. t for identifying the key variables to be put emphasis by extension agencies in future sericulture development programmes.

METHODOLOGY

Location of study

The present investigation was undertaken in Osmanabad district. It is situated in the southern part of the state abutting Andhra Pradesh in South and lies between North latitudes 17°37' and 18°42' and East longitude 75°1 6' and 76°47'.

Sampling plan and data collection

Three stages sampling technique was adopted for this investigation. Cluster wise mulberry planted eight talukaswere selected wherever Cluster Promotion Programme was implemented throughout 2007-08. On the basis of this, list of mulberry growing villages were prepared, arranged in descending order of area and in all 25 villages were selected on number proportionate basis. The percentages of area under mulberry plantation in each block was calculated and converted into proportion for selection of 150 respondents. The respondents those have taken the advantage of CPP between 2007-2010 were selected from the selected villages; the list of sericulturist's under CPP was drawn. Thus, in all 150 respondents were selected for study from the list by adopting "ProportionateProbability sampling to the size technique. Information on pre-structured interview schedule was collected by conducting personal interviews with sericulturists.

Assessment of factors influencing the knowledge and adoption level of sericulturists

In order to find out the factors influencing knowledge and adoption level of sericulturists, Karl Pearson's Co-efficient of Correlation 'r' was worked out. The correlation analysis helps the researcher in determining the relationship of selected personal, situational, socio-economic communication and psychological characteristics of the respondents with their knowledge and adoption level of sericulturists under cluster promotion programme. To ascertainthe contribution of selected independent variables towards socio-economic impact, multiple regression analysis w

RESULTS AND DISCUSSION

Multiple regression analysis of independent variables with knowledge level Knowledge gained by the respondents which adds to Socio-economic impact of CPP on sericulture was considered as a function of personal, social and psychological characteristics of the respondents. This is not influenced solely by any one of the variables taken in isolation, but as a part of complex and interacting system, based on this approach the multiple regression analysis using linear model was carried out to know the important variables with their predictive abilities in explaining the variations in dependant variable i.e. knowledge gain of respondents, multiple regression analysis was carried out and the

results of this analysis is presented in Table 1.The results presented in Table 1 showed that innovativenessof the respondents was positively significant with knowledge gain whereas, extension contact is negatively significant at 1 per cent level of significance.

The coefficient of determination (R^2) showed that all 15 independent variables jointly explained 42.70 per cent of variation in knowledge gain of farmers. The F ratio 6.673 is significant at 0.01 level of probability.

The unexplained 57.30 per cent which may be attributed to the factors not included in this study.It was further revealed that out of 15 variables, regression coefficient for three variables namely education (2.3910), cosmopoliteness (2.5217) and extension contact were significant at 5% level of significance whereas economic motivation (3.9308) and innovativeness (7.2898) were significant at 1per cent level of significance.

Table 1
Multiple regression analysis of independent variables with knowledge gain

Sr. No.	Independent variables	Partial b	T value for partial b	Standard partial b value	P value	Rank
1.	Age	-0.0631	-0.5503	0.1146	0.5829	
2.	Education	0.5211	**2.3910 ***	0.5723	0.3641	**III**
3.	Caste	-0.6689	-0.6906	0.9685	0.4909	
4.	Family Size	-0.5515	-0.6772	0.8144	0.4994	
5.	Social participation	-1.0347	-0.6376	1.6227	0.5248	
6.	Cosmopoliteness	0.4433	**2.5217 ***	2.6019	0.8649	**I**
7.	Risk orientation	1.5206	1.0400	1.4620	0.3001	
8.	Economic motivation	0.3436	**3.9308 ****	0.5122	0.5034	**V**
9.	Attitude towards sericulture	1.0230	1.2260	0.8344	0.2223	
10.	Innovativeness	3.7931	**7.2898 ****	0.5203	0.2422	**IV**
11	Extension contacts	-7.9508	**2.0240 ***	1.9807	0.00000009	**II**
12	Size of land holding	-1.5604	-0.9066	1.7210	0.3662	
13	Area under mulberry	21.5562	1.3709	15.7237	0.1726	
14	Annual income	-0.0001	-0.5959	0.2315	0.5522	
15	Socio economic status	2.1569	1.6446	1.3114	0.1023	

$R^2 = 0.427$ (with 15 independent variables)   F $= 6.673$**
*Significant at 0.05 level of probability
**Significant at 0.01 level of probability

Regression coefficient for 10 independent variables namely age (-0.5503), caste (-0.6906), family size (-0.6772), social participation (-0.6376), risk orientation (1.0400), attitude towards sericulture (1.2260), size of land holding (-0.9066), area under mulberry (1.3709), annual income (-0.5959) and socio-economic status (1.6446) are non-significant.

Multiple regression analysis of independent variables with adoption level

Multiple regression analysis of the variables with adoption of various technologies related to mulberry cultivation and cocoon production under CPP. In order to ascertain the contribution of selected variables towards adoption, multiple regression analysis was carried out and the results of this analysis are showed in Table 2.

Table 2
Multiple regression analysis of independent variables with adoption

Sr. No.	Independent variables	Partial b	T value for partial b	Standard partial b value	P value	Rank
1.	Age	0.0495	0.4113	0.1203	0.6815	
2.	Education	-0.8644	-1.4359	0.6020	0.1533	

3.	Caste	1.8525	1.8206	1.0174	0.0709	
4.	Family Size	3.6202	4.2316 **	0.8555	0.000000004	IV
5.	Social participation	1.6733	0.9818	1.7042	0.3279	
6.	Cosmopoliteness	10.2007	3.7382 **	2.7287	0.0002	II
7.	Risk orientation	-2.4797	-1.6108	1.5393	0.1095	
8.	Economic motivation	1.3978	2.5978 **	0.5380	0.0104	VI
9.	Attitude towards sericulture	0.6666	3.5257 **	0.8798	0.4503	III
10.	Innovativeness	3.7618	5.8339 **	0.6448	0.391	V
11	Extension contacts	-0.6778	-0.3083	2.1984	0.7583	
12	Size of land holding	2.92176	1.2663	1.8103	0.0320	
13	Area under mulberry	22.895	3.7891 **	16.6035	0.1702	I
14	Annual income	0.0000009	3.8306 **	0.0024	0.9704	VII
15	Socioeconomic status	1.8012	1.2967	1.3890	0.1969	
16	Knowledge	0.1224	1.3514	0.0905	0.1788	

$R^2 = 0.6237$ (with 16 independent variables)   F $= 13.780$**
*Significant at 0.05 level of probability
**Significant at 0.01 level of probability

It can be revealed from Table 2 that a set of 16 independent variables under study had explained 62.37 per cent variation in adoption of various technologies related to sericulture whereas; remaining 37.63 per cent variation might be due to factors not included in the study. The F ratio 13.780 is significant at 0.01 level of probability.

It was further revealed that out of 16 independent variables regression coefficient for 7 variables namely family size (4.2316), cosmopoliteness (3.7382), economic motivation (2.5978), attitude towards sericulture (3.5257), innovativeness (5.8339), area under mulberry (3.7891) and annual income were significant at 1 per cent level of significance. Regression coefficient for 9 independent variables namely age (0.4113), education (-1.4359), caste (1.8206), social participation (0.9818), risk orientation (-1.6108), extension contacts (-0.3083), size of land holding (1.2663), socioeconomic status (1.2967) and knowledge (1.3514) has no effect on adoption of various technologies related to mulberry cultivation and cocoon production under CPP on sericulture.

CONCLUSION

It might be concluded that out of 15 variables, regression coefficient for three variables namely education (2.3910), cosmopoliteness (2.5217) and extension contact were significant at 5 per cent level of significance whereas economic motivation (3.9308) and innovativeness (7.2898) were significant at 1 per cent level of significance and are key factors influencing knowledge level of sericulturists. It was further revealed that out of 16 independent variables regression coefficient for 7 variables namely family size (4.2316), cosmopoliteness (3.7382), economic motivation (2.5978), attitude towards sericulture (3.5257), innovativeness (5.8339), area under mulberry (3.7891) and annual income were significant at 1 per cent level of significance and are key factors influencing adoption level of sericulturists. These variables should be considered by the extension agencies to lay emphasis in future sericulture development programmes.

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