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Socio-Economic Factors Influencing Adoption of Low Cost Agricultural Technologies

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ABSTRACT

The study was conducted by involving 240 farmwomen (possessing small and medium landholding) under Madhya Pradesh Women in Agriculture Programme in Katni district of Madhya Pradesh. The study leads to the conclusion that the socio-economic status of small farmwomen differs from medium farmwomen. It further concludes that both the categories of beneficiaries had different level of adoption. The socio-personal attributes of the beneficiaries like age, caste, education, family type and family size, land holding, occupation, annual income, social participation were found to be positively and significantly correlated with the adoption of low cost technologies taken under MAPWA programme.

Modern agricultural technology is capital intensive. The adoption of new agricultural technology largely depends on many factors viz., knowledge, skill and the attitude of the individual farmer. Mostly our farmers are illiterate or they are poorly educated, hence have very limited and inadequate knowledge. This has resulted in the continuity of usual methods of cultivation that ultimately results in low crop yields. Thus there is great pressure on them to increase their productivity with the least financial burden. It is therefore essential to immediately adopt sustainable and low cost technologies for improving production. In this way MAPWA (Madhya Pradesh Women in Agriculture) project is an encouraging movement. It is a skill oriented agriculture training and extension project for small and marginal farmwomen.

Keeping in view, the study was conducted with the following objectives:

1. To study the socio-economic profile of MAPWA beneficiaries.
2. To study the extent of adoption of low cost technologies/skills.
3. To study the relationship of socio-economic characteristics of MAPWA beneficiaries with their extent of adoption of low cost technologies/skills.

METHODOLOGY

The present study was conducted in Katni district of Madhya Pradesh. For the purpose of this study, Katni, Vijayraghavgarh and Bahoriband blocks of the district were purposively selected as Madhya Pradesh Women in Agriculture programme was in operation in these areas. Eight villages out of these three blocks were randomly selected considering multistage stratified random sampling having at least 30 MAPWA beneficiaries. Thus, finally 240 beneficiaries were selected for the study. The Total sample of the study comprised of 140 small and 100 medium farmwomen considering their possession of land.

RESULTS AND DISCUSSION

Socio-personal attributes of MAPWA beneficiaries

The study indicated that, majority of the beneficiaries from both groups (small and medium) were either of middle age of 35-45 years or old age of above 45 years. Significant difference in age of small and medium beneficiaries was observed indicating that two different types of beneficiaries were dissimilar in age.

With regards to caste, maximum beneficiaries in both the categories (small and medium land holding) belonged to other backward class.

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Table: 1 Distribution of respondents (possessing small landholding) according to their traits

S.N.	Category of Variables	Respondents	Percentage	Mean	S.D.
I	**Age**				
	Young	21	15		
	Middle	54	38.5	2.31	0.72
	Old	65	46.42		
II	**Education**				
	Illiterate	49	35		
	Can read & write	8	5.71	2.14	1.81
	Primary education	9	6.4		
	Middle School	35	25		
	High School	26	18.57		
	Graduate & above	13	9.2		
III	**Caste**				
	General	36	25.72		
	Other backward Class	69	49.28	2.01	0.71
	Schedule Caste/Schedule Tribe	35	25		
IV	**Family Size**				
	Nuclear	43	30.72	1.69	0.46
	Joint	97	69.28		
V	**Family Type**				
	Small	39	27.86	1.82	0.59
	Medium	87	62.14		
	Big	14	10.00		
VI	**Land holding**				
	Up to one acre	00	00	1.81	0.79
	Up to 5 acre	140	140		
	Above 5 acre	00	00		
VII	**Occupation**				
	Agriculture	62	44.30	2.29	1.33
	Agriculture + Labour	23	16.42		
	Agriculture + caste occupation	8	5.71		
	Agriculture + Service + Business	47	33.57		
VIII	**Annual Income**				
	Low	83	59.28	1.46	0.59
	Medium	50	35.71		
	High	7	5		
IX	**Social Participation**				
	Member of none organization	85	60.71	1.50	0.68
	Member of one organization	40	28.57		
	Member of more than one organization	15	10.72		

The findings regarding education of small beneficiaries' majority (59.17 per cent) of beneficiaries had formal education up to middle school, whereas, majority of medium beneficiaries found to posses high school and above level of formal education. A significant difference was observed amongst the small and medium beneficiaries indicating that medium beneficiaries possess greater formal education than the small beneficiaries.

The findings regarding family type and size of family indicated that, majority of beneficiaries in both the categories (Small and medium beneficiaries) belonged to joint family and had medium size of family.

The findings regarding land holding indicated that, majority of small beneficiaries possessed small size of farm, whereas, majority of medium beneficiaries owned medium size of farm indicating that medium beneficiaries owned medium farming area as compared to small beneficiaries.

Regarding the occupation of small and medium beneficiaries indicate that majority 44.30 percent of the small farmers were engaged in agriculture alone, whereas majority 78 percent of medium beneficiaries were engaged in agriculture along with service and business.

The findings in respect of income brought forth that majority (74 percent) of medium farmers were belonged to medium income category whereas a majority of small farmers (59.28 percent) were belonged to low income category. The differences in annual earning income between both the categories of beneficiaries are on account of large size of farming land and their occupation.

The distribution of the beneficiaries according to their socio-economic traits is shown in Table 1 and Table 2.

The study further revealed that, the beneficiaries of both the categories differed significantly with respect to the social participation. A majority over 60.71 percent of the small farmers were not associated with any of the

Table: 2 Distribution of respondents (possessing medium landholding) according to their traits

S.N.	Category of Variables	Respondents	Percentage	Mean	S.D.
I	**Age**				
	Young	14	14	2.06	0.55
	Middle	70	70		
	Old	16	16		
II	**Education**				
	Illiterate	26	26	2.66	1.92
	Can read & write	6	6		
	Primary education	10	10		
	Middle School	13	13		
	High School	24	24		
	Graduate & above	21	21		
III	**Caste**				
	General	24	24	1.99	0.70
	Other backward Class	51	51		
	Schedule Caste/Schedule Tribe	25	25		
IV	**Family Size**				
	Nuclear	41	41	1.59	0.49
	Joint	59	59		
V	**Family Type**				
	Small	23	23	1.89	0.58
	Medium	65	65		
	Big	12	12		
VI	**Land holding**				
	Up to one acre	00	00	2.66	0.65
	Up to 5 acre	00	00		
	Above 5 acre	100	100		
VII	**Occupation**				
	Agriculture	11	11	3.49	1.03
	Agriculture + Labour	7	7		
	Agriculture + caste occupation	4	4		
	Agriculture + Service + Business	78	78		

VIII	**Annual Income**				
	Low	17	17	1.92	0.51
	Medium	74	74		
	High	9	9		
IX	**Social Participation**				
	Member of none organization	10	10	2.49	0.67
	Member of one organization	31	31		
	Member of more than one organization	59	59		

organization; while over 59 percent of medium beneficiaries were members of more than one organization.

In relation to adoption level of low cost technologies taken under MAPWA programme, majority of the small landholding beneficiaries were found under the category of low level of adoption while, in medium, majority had medium level of adoption. The statistical parameter for adoption of low cost technologies under MAPWA programme among small and medium beneficiaries indicated large variation in the mean score (1.73 and 2.24) and coefficient of variation. When these data were tested for significance using Z-test, the results were 14.64 found to be significant indicated that there was difference between small and medium beneficiaries regarding their adoption of low cost technologies under MAPWA programme.

This might be due to low level of education, lake of social participation, economic motivation, scientific orientation, mass media exposure, extension participation and low knowledge level etc.

Adoption level of small and medium beneficiaries of MAPWA

Table 3: Distribution of beneficiaries according to their adoption

S.No.	Category of Variables	Categories of respondents	
		Small	**Medium**
1	Low (up to 30)	63 (45.0)	13 (13.0)
2	Medium (30-60)	52 (37.14)	50 (50.0)
3	High (above 60)	25 (17.86)	37 (37.0)
Total		**140**	**100**
Mean (X)		**1.73**	**2.24**
Standard deviation		**0.75**	**0.67**
Coefficient of variation (CV)		**43.25**	**29.84**
'Z value'		**14.64**	

Table 4:Correlation of the different attributes of the respondents with their adoption of low cost technologies

S.No.	Attributes of beneficiaries	Categories of beneficiaries		
		'r' value Small	**'r' value Medium**	**'r' value Overall**
A	**Socio-personal**			
1	X_1 Age	0.213*	0.289**	0.146*
2	X_2 Caste	0.61**	0.650**	0.585**
3	X_3 Education	0.798**	0.820**	0.797**
4	X_4 Family Type	0.380**	0.484**	0.359**
5	X_5 Size of Family	0.296**	0.301**	0.300**
6	X_6 Landholding	0.540**	0.627**	0.632**

7	X_7 Occupation	0.634**	0.664**	0.691**
8	X_8 Annual Income	0.594**	0.654**	0.663**
9	X_9 Social Participation	0.745**	0.678**	0.745**

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Correlation between socio-personal attributes of beneficiaries and adoption of low cost technologies

The socio-personal attributes of the beneficiaries like caste, education, family type and family size, land holding, occupation, annual income, social participation were found to be positively and significantly correlated with the adoption of low cost technologies taken under MAPWA programme. The age of small beneficiaries was positively correlated at 0.05 probability levels but in case of medium beneficiaries it was exhibited significant at 0.01 probability level.

The reasons for such findings were that, better the social status helped the farmers to informed and using the low cost technologies taken under MAPWA programme.

The finding of Ranganatha et al. (2001) also reported that education, mass media exposure, extension participation, scientific orientation and risk orientation were having significant relationship with the adoption level of small farmers.

The work of Gupta (2000) also confirms the present findings and reported that age, caste, education, size of family, type of family, land holding and annual income had fair association with adoption of the agricultural practices.

CONCLUSION

The study leads to the conclusion that the socio-economic status of small farmwomen differs from medium farmwomen. It further concludes that both the categories of farmwomen had different level of adoption.

The socio-personal attributes of the beneficiaries like age, caste, education, family type and family size, land holding, occupation, annual income, social participation were found to be positively and significantly correlated with the adoption of low cost technologies taken under MAPWA programme. Hence, there is an urgent need for intensification and diversification of farming systems particularly in rainfed areas of Madhya Pradesh. The focal point should be identification of low cost critical skills that would not only be beneficial to the small and marginal farm families but would ensure avoidance of financial burden on them. Besides, this improved extension methodologies could be identified to reach out to the farmwomen who are non-literate. They contribute substantially to the agriculture production and therefore would benefit immensely if the new technology would reach them through the agricultural extension system.

REFERENCES

Kumtakar Prema(1998) Skill based training-An effective tool. Madhya Journal of Extension Education, Vol.I, No.1, 1998

Ranganatha, A.D., V. Veerabhadriah and K.C. Lalitha (2001). Adoption of organic practices by small farmers. Agricultural Extension. Review, Nov.-Dec. 3-6