



Factors Influencing the Productivity of the Participant and Non Participant Farmers of Rice FFSs

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ABSTRACT

The present investigation was carried out in Nellore district of Andhra Pradesh state during 2014-15 to study the productivity and factors influencing the productivity of the participant and non participant farmers of rice FFS. A total of 150 respondents were selected for the study out of which 75 farmers were participant farmers of rice FFS and the other 75 were non participants. The results of the study revealed that 52.00 per cent of the participant farmers were having medium level of productivity, followed by equal (24.00%) percent of the farmers having low and high productivity levels. In case of non participant farmers 44.00 per cent were having medium level of productivity, followed by low (42.70%) and high (13.30%) levels. The profile characteristics viz., education, social participation, mass media exposure, extension contact, innovativeness, scientific orientation, achievement motivation and management orientation were found to be positively significant with the productivity of participant and non participants. Further, all the selected 12 independent variables put together explained about 77.60 per cent variation in the productivity of the participant farmers of rice FFSs and whereas in case of non participant farmers it was found 60.90 per cent.

Key words: *Integrated Crop Management, Farmer Field School, Productivity.*

India is an agricultural country but unluckily the potential per acre of various crops could not be exploited for many reasons including nutrient losses occurring, managing soil productivity and moisture conservation etc. Dealing with these challenges there is every need to plan for an effective programme that goes beyond dissemination of technologies among farmers. Further, helping them in organizing themselves for sharing production and protection technologies, marketing and advocacy in such a way that empowers themselves in making their soils productive and get higher yields.

The Farmer Field School (FFS) is one of the most effective extension approaches ever developed. It is described as a Platform and "School without walls" for improving decision making capacity of farming communities and stimulating local innovation for sustainable and productive agriculture. Hence, an attempt was made to study the impact of FFS programme in terms of productivity of the participant and non participant farmers of rice FFS as so far a limited research was done on FFS programme and also the Department of Agriculture organized

considerable number of farmer field schools on rice in Nellore district.

MATERIAL AND METHODS

Nellore district of Andhra Pradesh was purposively selected as rice is extensively cultivated and also Farmer Field School on Integrated Crop Management (ICM) was being successfully implemented in this district. Out of 46 mandals of Nellore district, 3 mandals were purposively selected based on the highest number of FFS on rice were conducted. Two villages i.e. one FFS village and another non FFS village were selected randomly from each selected mandal thus making a total of six villages of which three were FFS and three non FFS villages. From each FFS and non FFS selected villages, 25 respondents were selected by using simple random sampling procedure, thus making a total of 150 respondents for the study of which 75 farmers were FFS rice farmers and the other 75 were non FFS rice farmers.

RESULTS AND DISCUSSION

A perusal of Table 1 revealed that 52.00 per cent of the participant farmers had medium level

of productivity, followed by equal (24.00%) per cent of the farmers having low and high levels. In case of non participant farmers 44.00 per cent of the respondents had medium level of productivity, followed by low (42.7%) and high (13.30%) levels.

From the above results it is clear that FFS farmer's productivity levels of rice was higher than non participant farmers. As FFS is one of the participatory approaches and besides a new science based technology that enables farming community to learn new topics of interest which certainly improves their knowledge and skills in tern resulting in higher yields. Improved yields might be due to the reason that most of the farmers successfully adopted the various cultivation practices like seed treatment, optimum time of sowing, selection of suitable and improved varieties, optimum seed rate, irrigation water management, summer ploughing, INM, weed management, IPM etc. in their fields which they learnt during FFS programme. Adoption of these technologies might have enhanced the productivity of rice in case of participant farmers when compared to non participant farmers. Similar findings were reported by Yaminiverma and Rajendran (2007) Yeshwanth (2008) and Shabnam (2011).

Relationship between the selected profile characteristics with the productivity levels of the participant and non participant farmers of rice FFSs

In order to study the nature of relationship between the selected profile characteristics with the level of productivity of recommended ICM practices by the participant and non participant farmers of rice FFSs, correlation co-efficients ('r'

values) were computed and the values were presented in Table 2.

The 'r' values in table 2 indicated that education (0.636**), social participation (0.382**), mass media exposure (0.500**), extension contact (0.726**), innovativeness (0.687**), scientific orientation (0.693**), achievement motivation (0.543**), management orientation (0.538**) and economic orientation (0.505**) were found to be significant at 1% level of probability. Whereas age (0.091^{NS}), land holding (0.016^{NS}) and farming experience (0.048^{NS}) were found non significant with the productivity level of participant farmers of rice FFS.

In case of non participant farmers the 'r' values in table 2 indicated that education (0.519**), social participation (0.428**), mass media exposure (0.492**), extension contact (0.537**), innovativeness (0.360**), scientific orientation (0.604**), achievement motivation (0.337**) and management orientation (0.396**) were found to be significant at 1% level of probability. Whereas age (-0.306**) and farming experience (-0.337**) were found negative and significant at 1% level of probability. Economic orientation was exhibited non significant (0.066^{NS}) and land holding was found negatively non significant (-0.075^{NS}) relationship with the productivity levels.

Further, in order to study the combined effect of all the independent variables in explaining variation in levels of productivity on recommended ICM practices by the participant and non participant farmers of rice FFS, Multiple Linear Regression (MLR) analysis was carried out. The computed co-efficient of determination (R^2) and partial regression co-efficient (b) values with their

Table 1. Distribution of respondents according to their productivity levels.

S. No.	Category	Participant farmers (n ₁ =75)		Non participant farmers (n ₂ =75)	
		Frequency	Percentage	Frequency	Percentage
1.	Low productivity	18	24.00	32	42.70
2.	Medium productivity	39	52.00	33	44.00
3.	High productivity	18	24.00	10	13.30
	Total	75	100.00	75	100.00
	Mean	7680 (kg/ha)		6490 (kg/ha)	
	SD	382.5		860	

Table 2. Correlation coefficient between the selected profile characteristics with the productivity levels of the participant and non participant farmers of rice FFSs.

S.No.	Variable	Participant farmers (n ₁ =75)	Non participant farmers (n ₂ =75)
		Correlation co-efficient ('r' values)	Correlation co-efficient ('r' values)
X ₁	Age	0.091NS	-0.306**
X ₂	Education	0.636**	0.519**
X ₃	Land holding	0.016NS	-0.075NS
X ₄	Farming experience	0.048NS	-0.337**
X ₅	Social participation	0.382**	0.428**
X ₆	Mass media exposure	0.500**	0.492**
X ₇	Extension contact	0.726**	0.537**
X ₈	Innovativeness	0.687**	0.360**
X ₉	Scientific orientation	0.693**	0.604**
X ₁₀	Achievement motivation	0.543**	0.337**
X ₁₁	Management orientation	0.538**	0.396**
X ₁₂	Economic orientation	0.505**	0.066NS

* : Significant at 0.05 level of probability ** :Significant at 0.01 level of probability

NS : Non-significant

corresponding 't' values were presented in Table 3. The 'R²' and 'b' values were tested statistically for their significance.

The 'R²' value of 0.776 which depicted that all the selected thirteen independent variables put together explained about 77.60 per cent variation in the productivity of the participant farmers of rice FFSs. The partial regression coefficients presented in Table 3 further revealed that the independent variables viz., age, mass media exposure, extension contact and management orientation were found positively significant as evident from their significant 't' values. This implied that age, mass media exposure, extension contact and management orientation have contributed to most of the variation in the productivity of the participant farmers of rice FFSs.

The 'R²' value of 0.609 which depicted that all the selected thirteen independent variables put together explained about 60.90 per cent variation in the productivity of the participant farmers of rice FFSs. The partial regression coefficients presented in Table 3 further revealed that the independent variables social participation and scientific

orientation were found positively significant as evident from their significant 't' values. This implied that social participation and scientific orientation have contributed to most of the variation in the productivity of the non participant farmers of rice FFSs.

CONCLUSION

The results of the study showed that there is significant difference in the productivity levels of FFS participant farmers and non participant farmers with respect to ICM practices in rice. The Farmer Field School being a non formal education and learner centered educational process has technically empowered the rice growers in increasing their knowledge level which is basis for adoption of improved cultivation practices ultimately increases productivity of rice crop. It is therefore concluded that the Farmer Field School extension approach should be encouraged as an intensive teaching method among farmers for disseminating agricultural technologies.

Table 3. Multiple Linear Regression analysis of the selected independent variables with the productivity of the participant and non participant farmers of rice FFSs.

S.No.	Variable	Std. error	'b' values	't' values	'P values'	Std. error	'b' values	't' values	'P' values
X ₁	Age	0.014	0.000	-0.008*	0.024	0.130	0.016	0.122 ^{NS}	0.903
X ₂	Education	0.102	0.236	2.321 ^{NS}	0.959	0.204	0.239	1.173 ^{NS}	0.245
X ₃	Land holding	0.029	0.002	0.052 ^{NS}	0.395	0.160	0.066	0.415 ^{NS}	0.680
X ₄	Farming experience	0.013	0.011	0.856 ^{NS}	0.343	0.110	-0.044	-0.402 ^{NS}	0.689
X ₅	Social participation	0.060	0.058	0.956 ^{NS}	0.752	0.195	0.452	2.324*	0.023
X ₆	Mass media exposure	0.070	-0.022	-0.317**	0.000	0.124	0.219	1.762 ^{NS}	0.083
X ₇	Extension contact	0.70	0.286	4.063**	0.013	0.101	0.225	2.222*	0.030
X ₈	Innovativeness	0.59	0.152	2.573 ^{NS}	0.133	0.087	0.012	0.136 ^{NS}	0.892
X ₉	Scientific orientation	0.070	0.107	1.524 ^{NS}	0.133	0.136	0.422	3.097**	0.003
X ₁₀	Achievement motivation	0.053	-0.055	-1.038 ^{NS}	0.304	0.076	0.041	0.526 ^{NS}	0.601
X ₁₁	Management orientation	0.090	-0.241	-2.684**	0.009	0.048	0.060	1.252 ^{NS}	0.215
X ₁₂	Economic orientation	0.060	0.028	0.461 ^{NS}	0.646	0.099	-0.047	-0.473 ^{NS}	0.638

R² = 0.776 R² = 0.609

* : Significant at 5% level of probability.

** : Significant at 1% level of probability.

NS : Non significant

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