RESEARCH ARTICLE :

Association between level of knowledge of rice cultivation technology with the selected independent variables

■ DWARKA PRASAD, L.S. BARETH, DEEPAK CHATURVEDI, AMIT KUMAR KESHRI AND HEMANT KUMAR JHINGONIYA

SUMMARY : The study was conducted in Hanumangarh district of Rajasthan as the district had highest area and production of rice crop as compared to other district of Sri Ganganagar region. Three Panchayat samities were selected from district having highest area under rice crop and demonstrations were conducted under MMA about improved package of practices of rice crop. The Department of Agriculture, Govt. of Rajasthan has conducted demonstration on improved package of practices of rice cultivation technology in these twelve villages under MMA scheme. All the respondents who had participated in demonstration on improved package of practices of rice cultivation technology were called as beneficiary. Equal numbers of non- beneficiary farmers, who did not participate in the demonstrations, from each selected villages were also selected to make the study comparable. In all 210 respondents were included for the study purpose out of which 50 per cent *i.e.* 105 were beneficiaries and remaining 105 non-beneficiaries were rice growers. Data were collected by personal interview method. Various statistical measures *viz.*, chi- square test, 'z' test, 't' test and Spearman's rank correlation tests were used for analyzing the data. There was significant association between education, size of land holding, annual income, social participation and sources of information utilized with knowledge level of the farmers. The age, caste, family type and family size of rice growers were non-significantly associated with the knowledge level of the farmers.

How to cite this article : Prasad, Dwarka, Bareth, L.S., Chaturvedi, Deepak, Keshri, Amit Kumar and Jhingoniya, Hemant Kumar (2017). Association between level of knowledge of rice cultivation technology with the selected independent variables. *Agric. Update*, **12**(1): 129-132; **DOI : 10.15740/HAS/AU/12.1/129-132.**

Author for correspondence :

DEEPAK CHATURVEDI
Directorate of
Extension Education,
S.K. Rajasthan
Agricultural University,
BIKANER (RAJASTHAN)
INDIA
Email:dpjangir02@gmail.
com

See end of the article for
authors' affiliations

BACKGROUND AND OBJECTIVES

Rice is most important cereal crop. India is the 2nd largest producer of rice in the world next to china having 43.97 mha area, 104.32 mt production and 2.3 t/ha productivity. In Rajasthan rice is grown in an area of 134337 lakh hectares with a production of 253360 lakh tonnes. The productivity of rice per unit area can be increased by adopting recommended scientific and sustainable management practices using a suitable high yielding variety.

DWARKA PRASAD, L.S. BARETH, **DEEPAK CHATURVEDI**, AMIT KUMAR KESHRI **and** HEMANT KUMAR JHINGONIYA

Taking into account the above consideration, Demonstration was conducted under MMA scheme on improved package of practices of rice cultivation for enhancing productivity of rice. The information regarding the level of knowledge would become the bench mark for scientists and field functionaries for preparing their future line of actions in order to upgrade the knowledge level of farmers, wherever they lack substantially.

RESOURCES AND METHODS

The present study was conducted in Sri Ganganagar region as the region had highest production and productivity of rice crop as compared to other regions of Rajasthan. Hanumangarh district ranks 1st in area and production of rice crop as compared to other rice growing district of Sri Ganganagar region. Three Panchayat samities of Hanumangarh district were chosen for study purpose as demonstration on improved package of practices of rice cultivation technology under MMA scheme had been conducted only in these three Panchayat samities. Twelve villages from three Panchayat samities where demonstrations were conducted under MMA scheme regarding improved package of practices of rice cultivation were selected for investigation. All the respondents who had participated in demonstration on improved package of practices of rice cultivation technology under MMA scheme were included for study purpose and called as beneficiary farmers. Further, village wise list of rice growers who had not participated in any benefit regarding demonstration of improved package of practices of rice cultivation technology was prepared. From the list, equal number of respondents that of beneficiary were selected randomely and called as non-beneficiary respondents. Thus, the total sample size from the twelve villages was 210 rice growers. To find out the association between selected personal attributes *viz.*, age, caste, education, size of land holding, annual income, social participation, family type, family size, and sources of information utilized with their level of knowledge of rice cultivation technology, Multiple Linear Regression Analysis was done. The value of 't'test for determining it's significance was compared with table value at 5 and 1 per cent level of significance to draw the inference.

OBSERVATIONS AND ANALYSIS

In order to ascertain the association between selected personal characteristics of rice growers with their level of knowledge about improved package of practices of rice cultivation, Multiple Linear Regression Analysis was done. Paradigm showing association between personal attributes and the level of knowledge of respondents about rice cultivation technology is being presented here.

Association between selected personal characteristics of rice growers with their level of knowledge about rice cultivation technology :

H_0:There is no association between selected characteristics *i.e.* age, caste, education, size of land holding, annual income, social participation, family type, family size and sources of information utilized with level of knowledge of beneficiary, non-beneficiary and overall respondents rice cultivation technology.

H_1:There is an association between selected characteristics *i.e.* age, caste, education, size of land holding, annual income, social participation, family type, family size and sources of information utilized with level of knowledge of beneficiary, non-beneficiary and overall respondents rice cultivation technology.

Through Multiple Regression, data were critically analysed to work out the separate as well as combined relative influence of selected independent variables on the knowledge level of the rice growers about recommended rice cultivation technology. All the nine selected independent variables *viz.*, age, caste, education, size of land holding, annual income, social participation, family type, family size and sources of information used, were fitted with the knowledge level of the farmers in multiple regression equation. The findings have been presented in Table 1.

Total respondents :

Data in Table 1 showed that all the nine variables together explained 57.10 per cent variation in the knowledge level of the rice cultivation technology by the total respondents which was significant at 1 per cent level of probability.

The respective 'F' value *i.e.* 75.60 which was significant at 1 per cent level with (209) degree of freedom. Thus, the result implied that all the nine independent variable would account for a significant amount of variation in the knowledge level of rice cultivation technology by the respondents.

Further, it was observed that the 't' test of

significance indicated that co-efficient of regression (b-value) were found to be significant for the variables namely: education, size of land holding, annual income and sources of information utilized at 1 per cent level of significance and social participation at 5 per cent level of significance. This means that these variable were the important for predicting the knowledge level about rice cultivation technology by the respondents. The regression co-efficient was found non-significant for remaining four variable namely: age, caste, family type and family size. This leads to the conclusion that these variables were not important with regard to knowledge level of rice cultivation technology by the respondents.

Beneficiary respondents :

It was revealed from the same table that the nine independent variables taken together explained to the 60.10 per cent in the knowledge level of rice cultivation technology by the beneficiaries. The respective 'F' significant at 1 per cent level at (104) degree of freedom which was 15.87. Thus, the result implied that all nine independent variables would account for a significant amount of variation in the knowledge level of the beneficiaries.

Further, 't' test of significance indicated that co-efficient of regression (b-value) were found to be significant for the variables namely: education, size of land holding, annual income, social participation, sources

of information utilized. This means that these variables were the important for predicting the knowledge level of rice cultivation technology by the respondents. The regression co-efficient was found non-significant for remaining four variable namely: age, caste, family type and family size.

Non-beneficiary respondents :

It was also revealed from the same table that the nine independent variable taken together explained to 49.70 per cent of the variation in the knowledge level of the non-beneficiaries. The respective 'F' significant at 1 per cent level at (104) degree of freedom which was 10.43. Thus, the result implied that all nine independent variables would account for a significant amount of variation in the knowledge level of the non-beneficiaries.

The 't' test of significance indicated that co-efficient of regression (b-value) were significant for the variable namely: education, size of land holding, social participation and sources of information utilized at significant 1 per cent level of significant and annual income at 5 per cent level of significance. This means that these five variables were the most important for predicting the knowledge level of rice cultivation technology by the non-beneficiaries as compared to rest of the variables under the study. The regression co-efficient was found non-significant for remaining variable namely: age, caste, family type and family size.

Table 1 : Association between personal attributes of rice growers with their level of knowledge about rice cultivation technology

Sr. No.	Personal attributes	Beneficiary (n=105)			Non-Beneficiary (n=105)			Pooled (n=210)		
		b value	Standard error	t value	b value	Standard error	t value	b value	Standard error	t value
1.	Age	-0.080	0.064	-0.814[NS]	-0.074	0.057	-0.750[NS]	-0.071	0.045	-0.718[NS]
2.	Caste	-0.044	0.835	-0.445[NS]	-0.039	0.909	-0.396[NS]	-0.122	0.631	-1.250[NS]
3.	Education	0.658	0.518	8.871**	0.459	0.583	5.250**	0.504	0.390	5.920**
4.	Size of land holding	0.304	0.233	3.236**	0.357	0.220	3.873**	0.342	0.144	3.690**
5.	Annual income	0.312	0.198	3.338**	0.267	0.245	2.807*	0.348	0.118	3.769**
6.	Social participation	0.311	0.681	3.326**	0.289	0.687	3.069**	0.204	0.494	2.112*
7.	Family type	-0.172	1.102	-1.770[NS]	-0.069	1.364	-0.701[NS]	-0.079	1.236	-0.806[NS]
8.	Family size	0.075	1.027	0.764[NS]	0.040	1.163	0.402[NS]	0.080	1.101	0.814[NS]
9.	Sources of information utilized	0.465	0.109	5.332**	0.290	0.162	3.078**	0.387	0.143	4.259**

* and ** indicate significance of values at P=0.05 and 0.01, respectively level,   NS = Non-significant

Beneficiary	Non-beneficiary	Overall
Co-efficient of determination (R^2) = 0.601	Co-efficient of determination (R^2) = 0.497	Co-efficient of determination (R^2) = 0.571
Multiple correlation (R) = 0.775	Multiple correlation (R) = 0.705	Multiple correlation (R) = 0.756
f- Value = 15.873**	f- Value = 10.436**	f- Value = 14.061**
d.f. = 104	d.f. = 104	d.f. = 209

These findings are in compliance with the findings of Barman *et al.* (2002); Jana and Verma (2004) and Gedam and Sagane (2007) revealed that variables namely; land holding, annual income, social participation, socio-economic status, irrigation potential, area under paddy source of seeds, scientific orientation, economic motivation and source of information used had significant influence on knowledge.

Conclusion :

It can be concluded from the above findings that there was significant association between education, size of land holding, annual income, social participation and sources of information utilized with knowledge level of the farmers. The age, caste, family type and family size of rice growers were non-significantly associated with the knowledge level.

Authors' affiliations :

DWARKA PRASAD AND L.S. BARETH, Department of Extension Education, College of Agriculture, BIKANER (RAJASTHAN) INDIA

AMIT KUMAR KESHRI, Department of Extension Education, Sam Higginbottom Institute of Agriculture, Technology and Sciences, ALLAHABAD (U.P.) INDIA

HEMANT KUMAR JHINGONIYA, Department of Extension Education, Rajasthan College of Agriculture, UDAIPUR (RAJASTHAN) INDIA

REFERENCES

Barman, S., Neog, P.K. and Gogoi, M. (2002). Impact of farmers training programme on rice production technology. *J. Agric. Sci. Soc. North-East India,* **15** (2):152-156.

Gedam, A.R. and Sagane, M.A. (2007). Technological gap in paddy cultivation, Thesis Abstracts (1995-2008) Post Graduate Institute, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, M.S. (INDIA).

Jana, H. and Verma, H.K. (2004). Association of the paddy grower's socio-personal traits with their knowledge level on recommended plant protection practices in West Bengal, *Environ. & Ecol.,* **22** (spl-3) : 517-520.

12th Year
★ ★ ★ ★ ★ of Excellence ★ ★ ★ ★ ★

132

Agric. Update, **12**(1) Feb., 2017 : 129-132
Hind Agricultural Research and Training Institute