

Association of Profile Characteristics of Rice Growers and Adoption of Recommended Package of Practices

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ABSTRACT

Rice (*Oryza sativa* L.) is one of the most important cereal grains in the world today and serves as a staple food source for more than half of the world's population. In *Konkan* region the area is about 0.44 million hectares with a production of about 15.10 lakh tons in the year 2013-2014 and for the region the package of practices of rice cultivation is being recommended by DBSKKV, Dapoli since 1972. The present study was conducted in Palghar district of *Konkan* region of Maharashtra state. Six villages from each of the two tehsils namely Wada and Palghar were selected purposively for this study on the basis of maximum area under cultivation of rice crop. From each selected village 10 rice growers were selected from making a total sample of 120 farmers. The data were collected through personal interview method. The extent of adoption of recommended rice cultivation technology by the farmers was at medium level. The annual income, extension contact, input availability, knowledge level were found associated with adoption level.

Keyword: Adoption, Farmers, Rice, Socio economic profile

INTRODUCTION

Rice (*Oryza sativa* L.) is one of the most important cereal grains in the world today and serves as a staple food source for more than half of the world's population (www.thecropsite.com). Rice production; consumption and trade are concentrated in Asia. More than 90 per cent of global production is occurring in tropical and semi-tropical Asia. China and India are the major rice producing countries in the world, together contributing 55 per cent of the world rice production. (Source: www.usda.com). In India, rice is the promising crop to acquire self sufficiency of food grain production for the population. India is facing the challenges of food and fodder production to meet the demand of rising human and cattle population. There is no single solution to the challenge of global food security, instead, many options are available

to sustainably improve rice systems and enhance the overall performance of the global rice economy to reduce poverty and hunger. Priorities will differ greatly among countries and even within regions of countries. Highest yield may be obtained only under favourable physical technological and environmental conditions including soil fertility, well distributed rainfall and so on. The poor socio-economic condition of the farmers has a bearing on their investment capacity also poor supply system is responsible for yield gap at farmers' field as compared to research station's yield Singh *et al.* (2011). The present study was attempted to unravel the association of adoption of recommended practices with their socio personal attributes so that strategies in terms of capacity building or infrastructural support or policy interventions may be designed.

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METHODOLOGY

Present study was carried out in Palghar district of Konkan region of Maharashtra state. Two tehsils namely, Wada and Palghar were selected purposively for this study on the basis of maximum area under cultivation of rice crop. From each selected tehsil six villages were randomly selected, applying the criterion of maximum rice area. Thus, total twelve villages were selected. From each selected village ten respondents were selected randomly. Thus, total 120 respondents were randomly selected for this study. Exploratory study design was used. Personal characteristics were documented and adoption level of recommended practices of rice was associated with them to draw meaningful inferences.

RESULTS AND DISCUSSION

Association between the personal and socio-economic characteristics of the farmers namely, age, education, family size, area under rice cultivation, annual income, farming experience, extension contact, knowledge level and their extent of adoption of recommended cultivation practices of rice was tested by Chi-square test. The results are presented in Table 1.

It could be observed from Table 1 that the association between age and extent of adoption was 'non-significant'. In 'young' age group, only 66.67 per cent of the respondents had 'medium' extent of adoption. In 'middle' age group, more than three-fifth (69.14%) of the respondents had 'medium' extent of adoption. In 'old' age group more than three-fifth (66.66) of the respondents had 'medium' extent adoption. The chi square value 1.16 was found to be non-significant which means that there was no statistically significant association between age of paddy growers and adoption level of recommended rice cultivation practices. The finding receives support from Bhosale (2010); Dhenge (2013) and Krishna *et al.* (2007).

The association between education of rice growers and extent of adoption was 'non-significant'. Among the 'Illiterate' respondents 72.72 per cent had 'medium' extent of adoption. Among the respondents who had 'pre-primary' level of education, 60.86 per cent of the respondents had 'medium' extent of adoption. In

Education category, 'secondary' 68.09 per cent of the respondents had 'medium' extent of adoption. Among the respondents having 'higher'-secondary' education, 73.67 per cent of the respondents had 'medium' extent of adoption. In the education category, 'graduate' 75.00 per cent of the respondents had 'medium' extent of adoption.

In 'small' family size, only 83.34 per cent of the respondents had 'medium' extent adoption whereas in 'medium' family size, (62.69%) of the respondents had 'medium' extent of adoption. The chi-square value 4.90 was found to be statistically non-significant, as such there was non-significant association between Family of size paddy growers and their adoption level of recommended rice cultivation practices.

In the category, 'low area under rice cultivation', 42.85 per cent of the respondents had 'medium' adoption. There were 71.19 per cent of the respondents with 'medium' adoption who had 'medium area under rice cultivation'. In the category, 'high area under rice cultivation', 72.34 per cent of the respondents had 'medium' adoption. The chi-square value 26.72 was found to be significant. Hence, it may be inferred that there was significant association between area under rice cultivation of rice growers and their adoption level of rice among rice cultivation practicing farmers.

In the category, 'low rice yield', 50.00 per cent of the respondents had 'low' adoption. In the category, 'medium rice yield', 71.70 per cent of the respondents had 'medium' adoption. It indicated that rice growers with higher rice yield adopted more recommended practices. The chi-square value 23.74 was found to be significant showing significant association between rice yield of rice growers and their adoption level of recommended rice cultivation practices. Similar findings stand reported by Meena *et al.* (2012); Sasane *et al.* (2012) and Singh and Pandya (2012).

In the category annual income, 'low', 50.00 per cent of the respondents had 'medium' adoption. In the category, 'medium annual income', 70.84 per cent of the respondents had 'medium' adoption. In the category, 'high annual income', 75.00 per cent of the respondents had 'medium' adoption. The chi-square value 40.62 was found

Table 1: Association between socio economic variables of the rice respondents and their adoption of recommended package practices of rice

Variable/ Classification	Adoption Level			Total
	Low	Medium	High	
Age				
Young (upto 38 yrs.)	03(14.29)	14(66.67)	4(19.04)	21(100.00)
Middle (39 to 62 yrs.)	9(11.11)	56(69.14)	16(19.75)	81(100.00)
Old (63 yrs. and above)	3(16.67)	12(66.66)	3(16.67)	18
Total	15	82	23	120
$\chi^2 = 1.16$; Non-Significant d.f. = 4				
Education				
Illiterate (No Education)	02(18.18)	08(72.72)	01(9.10)	11(100.00)
Pre-primary (upto 4 Std)	06(26.09)	14(60.86)	03(13.05)	23(100.00)
Primary (5 to 7 Std))	02(16.67)	08(66.66)	02(16.67)	12(100.00)
Secondary (8 to 10 Std))	04(8.50)	32(68.09)	11(23.41)	47(100.00)
Higher secondary (11 to 12 Std))	01(5.27)	14(73.67)	04(21.06)	19(100.00)
Graduate (1 year degree programme and above)	-	06(75.00)	02(25.00)	8(100.00)
Total	15	82	23	120
$\chi^2 = 8.26$; Non –Significant d.f. = 10				
Family Size				
Small (upto 3 members)	01(3.33)	25(83.34)	04(13.33)	30(100.00)
Medium (4 to 5 members)	11(16.41)	42(62.69)	14(20.90)	67(100.00)
Big (6 members and above)	03(13.04)	15(65.22)	05(21.74)	23(100.00)
Total	15	82	23	120
$\chi^2 = 4.90$; Non-Significant. d.f. = 4				
Land holding				
Low (upto 1.0 ha)	7(50.00)	6(42.85)	1(7.15)	14(100.00)
Medium (1.01 to 2.0 ha)	8(13.56)	42(71.19)	9(15.25)	59(100.00)
High (2.01 to 4.0 ha)	0(00.00)	34(72.34)	13(27.66)	47(100.00)
Total	15	82	23	120
$\chi^2 = 26.72$; Significant d.f. = 4				
Rice yield				
Low (upto 22 qt)	7(50.00)	6(42.85)	1(7.15)	14(100.00)
Medium (23 to 32 qt)	8(7.55)	76(71.70)	22(20.75)	106(100.00)
High (33 qt and above)	0(00.00)	0(00.00)	0(00.00)	0(00.00)
Total	15	82	23	120
$\chi^2 = 23.74$; Significant d.f. = 4				
Annual Income				
Low (upto Rs. 36619/-)	7(43.75)	8(50.00)	1(6.25)	16(100.0)
Medium (Rs. 36620/- to Rs. 67464/-)	8(8.33)	68(70.84)	20(20.83)	96(100.0)
High (Rs. 67465/- and above)	0(00.00)	6(75.00)	2(25.00)	8(100.0)
Total	15	82	23	120
$\chi^2 = 40.62$; Significant d.f. = 4				

Table 1 contd....

Variable/ Classification	Adoption Level			
	Low	Medium	High	Total
Experience in rice cultivation				
Low (upto 21 yrs.)	09(26.47)	23 (67.64)	02(5.89)	34(100.00)
Medium (22 to 38 yrs.)	05(8.06)	42(67.75)	15(24.19)	62(100.00)
High (39 yrs. and above)	1 (4.16)	17 (70.84)	06 (25.00)	24 (100.00)
Total	15	82	23	120
$\chi^2 = 12.01517$; Significant d.f. = 4				
Extension contact				
Low (upto 1)	02(40.00)	03(60.00)	-	5
Medium (2 to 3)	12(12.90)	65(69.90)	16(17.20)	93
High (4 and above)	01 (4.55)	14(63.64)	07(31.81)	22
Total	15	82	23	120
$\chi^2 = 7.27$; Non-Significant d.f. = 4				
Input availability				
Low (upto 6)	01 (9.09)	08(72.73)	02(18.18)	11
Medium (7 to 13)	14(15.39)	64(70.32)	13(14.29)	91
High (14 and above)	0(00.00)	10(55.55)	08(44.45)	18
Total	15	82	23	120
$\chi^2 = 78.06$; Significant d.f. = 4				
Knowledge level				
Low (upto 49)	08(53.34)	07(46.66)	-	15
Medium (50 to 60)	06(6.67)	65(72.23)	19(21.10)	90
High (61 and above)	01(6.67)	10(66.67)	04(26.66)	15
Total	15	82	23	120
$\chi^2 = 27.51$; Significant d.f. = 4				

(Figure in parentheses indicate respective percentages)

to be significant showing that there was significant association between annual income of rice growers and their adoption level of rice among rice cultivation practicing farmers.

In the category 'low experience in rice cultivation', 67.64 per cent of the respondents had 'medium' adoption. In the category of 'medium experience in rice cultivation' 67.75 per cent of the respondents had 'medium' adoption. In the category 'high experience in rice cultivation' about 70.84 per cent of the respondents had 'medium' adoption. The chi-square value 12.01 was found to be significant.

In the category, 'low extension contact' 60.00 per cent of the respondents had 'medium' adoption. There

were 69.90 per cent of the respondents had 'medium' adoption who had 'medium extension contact'. In the category, 'high extension contacts' 63.64 per cent of the respondents had 'medium extension contact'. The chi-square value 7.27 was found to be non-significant.

In the 'low input availability' category, 72.73 per cent of the respondents had 'medium' adoption. There were 70.32 per cent of the respondents had 'medium' adoption who had 'medium input availability'. In the 'low knowledge level' category, 53.34 per cent of the respondents had 'low' adoption. In the category, 'medium knowledge level', 72.23 per cent of the respondents had 'medium' adoption. In the category, 'high knowledge of

the respondents 66.67 per cent had 'medium' adoption. The chi-square value 27.51 was found to be significant. Hence, the conclusion can be drawn that there was significant association between knowledge about rice technology by the rice growers and their adoption level of recommended rice cultivation practices.

CONCLUSION

Rice growers were middle age group, moderately educated, having an average five members in their family. The statistics in respect of their annual income, extension contact, input availability, knowledge level, which were associated with adoption, suggested that they were poor to fair in respect of these characteristics. The extension system should consider these facts while planning and executing the programmes for agricultural development of the farmers. It was observed that the extent of adoption of recommended rice cultivation technology by the farmers was at medium level. The study has clearly indicated the practices which were fully and partially adopted as well as not adopted by the farmers. These observations may serve as feedback for future line of action. Demonstration and training on rice technology need to be taken massively by concerned extension and development agencies in these areas for the practices which were least or non-adopted. The association between profile of rice growers and their adoption namely, area under rice cultivation, rice yield, and annual income, experience of rice cultivation, input availability and knowledge level about rice technology and their extent of adoption of selected agricultural technologies was significant. However, the association of age, education,

family size and extension contact, with extent of adoption of selected agricultural technologies was non-significant.

Paper received on : April 07, 2019

Accepted on : May 05, 2019

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