



FACTORS INFLUENCING SYMBOLIC ADOPTION BEHAVIOUR OF PADDY GROWERS ON ORGANIC FARMING PRACTICES

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Abstract

Agriculture is an important sector with the majority of the rural population in developing countries depending on it. The sector faces major challenges of enhancing production in a situation of dwindling natural resources necessary for production and the quick dissemination of technological information from agricultural research systems to the farmers and reporting of farmers' feedback to the research system has always been one of the critical inputs in transfer of agricultural technology. At present the ratio of farmers to extension workers is very less. Considering its prime importance, newness and demand from the farmers, the farmer friendly Interactive Multimedia Compact Disc on organic farming practices in paddy was developed in Tamil language, The association and contribution of characteristics of respondents with the symbolic adoption on organic farming practices through IMCD module was studied. The study was taken up in Thiruvannamalai district of Tamil Nadu. The results indicated that out of the seventeen independent variables, seven variables were found to be significant at 0.01 percent level of probability. The correlation values of experience in paddy cultivation (X_6), social participation (X_8) and risk orientation (X_{14}) were found to be significant at 0.05 percent level of probability. Educational status, farm status and risk orientation were the most important crucial and influencing variables towards adoption of organic farming practices. Hence, while preparing IMCDs in future, one should consider the above variables while identifying trainees/ beneficiaries for imparting the know-how and do-how on agricultural technologies.

Key words: Factors Influencing Symbolic Adoption, Paddy Growers, Organic Farming Practices.

Introduction

Green Revolution in India has undoubtedly changed the scenario of food grain production. The food grain production in India has been doubled during post Green Revolution period with virtually no increase in the net cultivated area. This marvelous achievement in agriculture production was mainly due to the increased use of inputs like fertilizers, pesticides and farm machinery. As time went by, extensive dependence on chemical farming has shown its darker side. The land is losing its fertility and is demanding larger quantities of fertilizers. Pests are becoming resistant and warrant frequent sprays resulted in residues much above the safety levels and this brought to the attention of modern agriculture and paved the way for organic farming in India.

Among all the means of mass communication, multimedia is one of the most versatile audiovisual medium of communication (Brun & Mangstl, 2001). Multimedia

instructional material allows the learner actually to see, hear and use the content to be learned (Roden, 1991). Interactive multimedia compact disc can be used as an effective tool for the transfer of technology (Senthikumar *et al.*, 2003). Multimedia provides a higher level of mastery over the subject matter, which gives students "hands on" learning, better retention, specific feedback and increased levels of understanding (Andara, 1999).

Multimedia communication is the representation, storage, retrieval and dissemination of machine processable information expressed in multimedia such as text, voice, image, audio and video. Multimedia tools are ideally suited to demonstrate complex and dynamic process that cannot be explained easily with conventional media and methods. Presentation of agricultural technology through Interactive Multimedia Compact Disc (IMCD) to the subjects could disseminate farm information and thereby used as an effective transfer of technology tool (Vanetha, 2013).

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Interactive Multimedia package includes some combination of texts, graphics, still images, animation, video and audio. It has the capacity to deliver large amounts of materials in multiple forms, and to deliver them in an integrated environment that allows users to control the reading and viewing experience (Randall Bass, 2015). There have been only few research studies being conducted with interactive multimedia compact disc and its effectiveness. Among the newer digital opportunities, the information kiosks, interactive multimedia computer disks are enjoying positive opinion by farmers as they have more utility as a tool to solve farmer problems (Anandaraja *et al.*, 2003; Kavaskar and Santha Govind 2008).

The study will certainly accelerate the adoption of organic farming technologies. This will be made possible by using the developed IMCD for quick dissemination and improved access to agricultural based information as IMCD will be made available at individual farmer's level. Keeping the above views in mind, it was decided to develop Interactive Multimedia Compact Disc on organic farming practices in rice in Tamil language. The purpose of the study were to test the symbolic adoption of organic farming practices in paddy cultivation.

Table 1: Association and contribution of characteristics of respondents with their symbolic adoption of organic farming practices. (n=80).

Var. no.	Variables	'r' value	Regressionco-efficient (R)	Standard error	't' value
1	Age	0.291**	0.183	0.086	0.972NS
2	Educational status	0.289**	0.214	0.251	3.752**
3	Occupational status	0.196NS	0.103	0.064	1.602NS
4	Farm size	0.227**	1.886	0.445	1.217NS
5	Area under paddy	0.312**	0.255	0.099	4.241**
6	Experience in paddy cultivation	0.405*	0.165	0.084	0.780NS
7	Annual income	0.348**	0.933	0.420	2.245*
8	Social participation	0.462*	0.088	0.048	0.184NS
9	Media participation	0.204NS	0.206	0.140	1.469NS
10	Livestock possession	0.159NS	0.181	0.137	0.418NS
11	Information seeking behaviour	0.318**	0.367	0.163	2.252*
12	Information sharing behaviour	0.178NS	0.347	0.186	1.867NS
13	Training undergone	0.193NS	-0.530	0.306	-1.731NS
14	Risk orientation	0.462*	0.232	0.247	0.967NS
15	Economic motivation	0.317**	0.213	0.161	2.324*
16	Market perception	0.109NS	0.173	0.808	0.214NS
17	Perception on environmental degradation	-0.145NS	0.434	0.672	0.645NS

$R^2 = 82.741$ $F = 11.228^{**}$, ** - Significant at 0.01 per cent level, * - Significant at 0.05 per cent level, NS - Non-Significant

Materials and Methods

Among the computers, Interactive Multimedia Module are ideally suited to demonstrate complex and dynamic processes that cannot be explained easily by using conventional media and methods. Keeping this in mind, a farmer friendly Interactive Multimedia Module (IMMM) was developed on organic farming practices in paddy to analyze the association and contribution of characteristics of respondents with their symbolic adoption behavior respondents on organic farming practices. Seventeen independent variables were selected based upon judges opinion. A comprehensive interview schedule covering all the aspects of organic farming practices in paddy was developed. The study was taken up in Tiruvannamalai district of Tamil Nadu. A total sample size of 80 paddy growing farmers was selected. The collected data were analysed with the help of SPSS software. Zero order correlation and multiple regressions were employed to determine the factors influencing the symbolic adoption behavior respondents on organic farming practices.

Results and Discussion

Association of characteristics of respondents with their symbolic adoption of organic farming practices

The association of independent variables namely age (X_1), educational status (X_2), occupational status (X_3), farm size (X_4), area under paddy cultivation (X_5), experience in paddy cultivation (X_6), annual income (X_7), social participation (X_8), media participation (X_9), livestock possession (X_{10}), information seeking behaviour (X_{11}), information sharing behaviour (X_{12}), training undergone (X_{13}), risk orientation (X_{14}), economic motivation (X_{15}), market perception (X_{16}) and perception on environmental degradation (X_{17}) were studied with the dependent variable symbolic adoption of organic farming practices. The results are presented in Table 1.

It could be observed from the Table that out of 17 independent variables, seven variables *viz.*, age (X_1), educational status (X_2), farm size (X_4), area under paddy cultivation (X_5), annual income (X_7), information seeking behaviour (X_8) and economic motivation (X_{15}) were found to

be significant at 0.01 per cent level of probability. The correlation values of experience in paddy cultivation (X_6), social participation (X_8) and risk orientation (X_{14}) were found to be significant at 0.05 per cent level of probability. Hence, the null hypothesis stating that there will be no relationship between the independent variables with symbolic adoption of organic farming practices is rejected. The correlation values of the remaining seven variables *viz.*, occupational status (X_3), media participation (X_9), livestock possession (X_{10}), information sharing behaviour (X_{12}), training undergone (X_{15}), market perception (X_{16}) and perception on environmental degradation (X_{17}) were found to be non-significant.

Age had shown a positive and significant relationship with symbolic adoption at 0.01 per cent level of probability. It might be deduced that increase in age would have increased their adoption, due to more experience and knowledge gained on organic farming practices in paddy cultivation. This might be the reason for the existence of such relationship. This finding is in line with the findings of Sathyaseelan (1998). There was positive and significant association between educational status and symbolic adoption of paddy growers at 0.01 per cent level of probability. Majority of the paddy growers were literates. Hence, it is quite natural for the educated farmers to be more enthusiastic in gathering information, thus resulting with higher adoption.

Farm size and symbolic adoption of organic farming practices had shown a positive and significant relationship at 0.01 per cent level of probability. This showed that increase in farm size would have resulted with increase in symbolic adoption. The possession of large size land holdings, the respondents would get assured and additional income. Moreover larger the farm size possessed by a farmer higher would have been his earnings which would have facilitated him to adopt the recommended organic farming practices in paddy cultivation. This finding is in line with the findings of Karthikeyan (1997).

There was positive and significant relationship between area under paddy cultivation and symbolic adoption at 0.01 per cent level of probability. As the area under paddy cultivation increases, the farmers would be ready to take risk by adopting the organic farming practices in the field. Thus, the adoption of organic farming practices in paddy cultivation might have increased. Hence, area under paddy cultivation might have shown a positive and significant association with symbolic adoption. This finding is in accordance with the findings of Smitha (2002).

Experience in paddy cultivation showed a positive

and significant association at 0.05 percent level of probability with the adoption of organic farming practices in paddy cultivation. This would mean that farmers with more farming experience might have adopted the organic farming practices to a higher extent. This finding is in line with the findings of Punitha (2005). Annual income showed a highly significant relationship with symbolic adoption at 0.01 percent level of probability. This might be due to the fact that farmers are getting sustained net income from paddy cultivation by adopting the organic farming practices in paddy. Thus, annual income showed a positive and highly significant relationship with the adoption of organic farming practices in paddy cultivation. This finding derives support from the findings of Philip (1995).

Social participation had a significant and positive association with the symbolic adoption at 0.05 percent level of probability. This showed that greater the social participation more would be the extent of adoption. Many of them happened to be the members of milk producers society. Further, they were found to be either member or office bearer in the reputed village level organizations. Hence, they would have possessed the tendency to mentally adopt the recommended practices to a greater extent in order to maintain their prestige in the society. This might be the possible reason for the significant association between social participation and symbolic adoption. This finding is in accordance with the findings of Philip (1995).

Information seeking behaviour of paddy growers was found to have positive and highly significant relationship with symbolic adoption at 0.01 percent level of probability. Most of the respondents sought information through input dealers, friends and neighbours which would have made them to gain awareness and knowledge on the recommended organic farming practices in paddy. Further, the exposure of IMCD on organic farming practices might have persuaded them to adopt the organic farming practices in his field.

Risk orientation showed a positive and significant relationship with the symbolic adoption among the respondents at 0.05 percent level of probability. Adoption of some organic farming practices involves risk and hence the respondents with high risk orientation alone would have adopted the recommended organic farming practices in paddy cultivation to a greater extent. This might be the reason for the positive and significant relationship of risk orientation with symbolic adoption. Economic motivation had shown a positive and significant relationship with the symbolic adoption at 0.01 percent level of probability. The respondents with high degree of economic motivation

would come forward to adopt the organic farming practices and might possess high level of confidence in the adoption of technologies. The respondents with higher degree of economic motivation would have naturally adopted all the recommended technologies. This might have resulted with the obtained significant relationship.

Contribution of characteristics of respondents towards symbolic adoption of organic farming practices.

The contribution of set of independent variables were studied with the dependent variable symbolic adoption. To find out the contribution of seventeen independent variables towards the dependent variable symbolic adoption multiple regression was worked out and the results are presented in Table 1.

The multiple regression analysis was performed to find out the extent of contribution of each characteristic towards the symbolic adoption of the respondents. The data in Table 32 indicated that the R^2 value was 0.640 which revealed that there was 64.00 percent variation in the symbolic adoption of organic farming practices which was explained by seventeen independent variables selected for the study.

Since the 'F' value was found to be significant at one per cent level of probability, the prediction equation of the respondents is as given below.

$$Y = 5.45 + 0.183 + 0.214 + 0.103 + 1.886 + 0.255 + 0.165 + 0.933 + 0.088 + 0.206 + 0.181 + 0.367 + 0.347 - 0.530 + 0.232 + 0.213 + 0.173 + 0.434.$$

It could be seen from the above equation that the regression coefficient of the variables namely educational status (X_2) and area under paddy cultivation (X_5) were found to be positive and had significantly contributed towards the symbolic adoption of organic farming practices at 0.01 percent level of probability. The variables viz., annual income (X_7), information seeking behaviour (X_{11}) and economic motivation (X_{15}) were found to be positive and had significantly contributed towards the symbolic adoption of organic farming practices at 0.05 percent level of probability.

The strength of contribution of these variables can be explained as *ceteris paribus i.e* one unit increase in educational status (X_2) and area under paddy cultivation (X_5) would bring about 3.752 and 4.241 units increase in symbolic adoption level respectively at 0.01 percent level of probability. Further, the strength of contribution of these variables can be explained as *ceteris paribus i.e* one unit increase in annual income (X_7), information seeking behaviour (X_{11}) and economic motivation (X_{15}) would bring about 2.245, 2.252 and 2.324 units increase in the

symbolic adoption level respectively at 0.05 percent level of probability.

Conclusion

The adoption level was found to be high with almost all the respondents. This indicate the necessity for follow up by means of arranging the needed resources and making available the essential inputs for organic farming cultivation so that full adoption of organic farming practices in paddy cultivation could be achieved. The variable age showed a positive relationship with the adoption of organic farming practices. Generating awareness among young and middle aged farmers about the availability of ICT services is the first step to be considered to increase farmers' participation in ICT initiatives. Older farmers should be brought into the chain of ICT networks at a later stage. Educational status, farm status and risk orientation were the most important crucial and influencing variables towards adoption of organic farming practices. Hence, while preparing IMCDs in future, one should consider the above variables while identifying trainees/ beneficiaries for imparting the know-how and do-how on agricultural technologies.

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