CORRELATES OF DISCONTINUANCE OF FARM INNOVATIONS BY SMALL FARMERS

Jitendra Chauhan[1] & P.M. Khan[2]

ABSTRACT

A very limited research study has been conducted to investigate the discontinuance of agricultural innovations and as a result very little is known about this important aspect of diffusion behaviour. It has been also observed that the new technology has benefited the big farmers mainly and the small farmers have not been so much benefited. Thus, the present investigation was designed to find out the extent of discontinuance of the new farm technology and to determine the degree to which the discontinuance of the new farm technology could be predicted from certain personal, socio-economic and psychological variables among small farmers. The study was conducted in five development blocks of the Udaipur district (Rajasthan) following a multistage stratified random sampling procedure in 10 villages. Ten recommended practices of maize and wheat cultivation were selected to measure discontinuance behaviour. The findings revealed high discontinuance of the new practices of maize and wheat cultivation. Significantly high discontinuance was also observed from innovation to innovation. Discontinuance behaviour was found influenced by risk preference, socio-economic status and cosmopoliteness in step-wise and multiple regressions.

Keywords : Discontinuance Behaviour, New Farm Technology, Independent Variables.

INTRODUCTION

There exists still a wide gap between the technology available at the research and its use in the farmer's field. It is therefore highly important that the new technology generated should find immediate application on the farmers' field, so that so-called techno-extension gap is reduced to the minimum. It is estimated that not more than 20-25 percent of the available technology reaches the Indian farmers as against 80 to 85 percent in some of the developed countries and they adopt a part of it. Further, a part of this adopted technology too is discontinued over a period of time. The frequency of discontinuance is not rare. It has been also observed that the new technology has benefited the big farmers mainly and the small farmers have not been so much benefited. The present study, therefore, was conducted with the following specific objectives:

To find out the extent of discontinuance of selected innovations by small farmers.

To determine the degree of association of selected personal, socio-economic and psychological variables with the discontinuance behaviour of small farmers.

To account for the contribution of selected independent variables in explaining the variation in the discontinuance behaviour of small farmers.

METHODOLOGY

The sample for this study was drawn from the five purposively selected development blocks of Udaipur district (Rajasthan) following a multistage stratified random sampling procedure. In all 100 small farmers were randomly selected from ten randomly selected villages. In consultation with the subject matter specialists and extension workers, ten improved package of practices for maize and wheat cultivation, which were under recommendation in the study area, were selected. In all, 15 variables were selected, out of which 14 were independent and 1 was dependant i.e. discontinuance behaviour.

The data were collected from the respondents by interview with the help of schedule constructed specially for the purpose.

RESULTS AND DISCUSSION

1. Extent of discontinuance of small farmers– Respondent's discontinuance behavior was measured with respect to the selected new practices of maize and wheat cultivation. Score of 1 was given for each of the practices discontinued by the respondents. During the study, it was observed that discontinued score varied from 0 to 8. The respondents were grouped into low, medium and high discontinuance levels on the basis of score so obtained. The results with this regard are presented in table 1.

1. Reader (Ag. Ext. RBS College, Bhchpuri, Agra (U.P.)
2. Associate Professor (Extension Education) and Chief Scientist-cum-Head, KVK, Bhilwara (MPUAT, Udaipur) Raj.

Table 1. Distribution of respondents on the basis of discontinuance scores (N=100)

Discontinuance Score	Small Farmers
Low (score up to 2)	38
Medium (score 3-5)	48
High (score 6-8)	14
Total	**100**

It is evident from the table 1 that 38 per cent respondents discontinued up to two practices and as many as 48 per cent farmers had discounted three to five innovations and 14 percent had discounted 6-8 practices, out of the total ten practices after their adoption. This finding obviously indicated a high rate of discontinuance by the respondents.

2. Relationship of independent variables with the discontinuance behaviour–Zero-order correlation coefficient was computed to determine the relationship between discontinuance behaviour and each one of the fourteen independent variables. The results with this regard are presented in table 2.

Table 2. indicated that except age, the relationship of each one of the independent variables was found to be significant but negative with discontinuance behaviour of the respondents. The relationship of age was found non-significant

Table2. Zero-Order Correlation Coefficient between Discontinuance Behaviour and Independent Variables

Independent Variables	'r' value Small Farmers
X_1 Age	0.18NS
X_2 Income	-0.80**
X_3 Extension Participation	-0.73**
X_4 Knowledge of Technology	-0.74**
X_5 Caste	-0.42**
X_6 Education	-0.65**
X_7 Farm Power	-0.40*
X_8 Social Participation	-0.70**
X_9 Socio Economic Status	-0.85**
X_{10} Level of Aspiration	-0.65**
X_{11} Risk Preference	-0.81**
X_{12} Economic Motivation	-0.76**
X_{13} Cosmo politeness	-0.43**
X_{14} Attitude towards new Farm Practices	-0.67**

** Significant at 1% level. * Significant at 5% level.
NS - Non-Significant

Table 3. Step wise Regression Analysis of the discontinuance behaviour of small farmers with independent variables

Variables for Regression	Dependent Variable	% of Variation Explained by Regression	Pure constant	F value	Partial F Value for Variables Entered
9	Y_1	72.27	10.97	255.56	-
9,11	Y_1	75.00	10.87	145.55	33.36**,10.60**
9,11,13	Y_1	76.21	10.25	102.53	38.62**,13.52**,4.87*
9,11,13,2	Y_1	77.02	9.91	79.59	27.86**,5012*,5.55*,3.32
9,11,13,2,1	Y_1	77.40	10.55	64.37	27.07**,6.12*,5.61*,3.33,1.57
9,11,13,2,1,4	Y_1	77.50	10.66	53.38	27.25,5.12*,5.92*,2.24,1.47,0.42
9,11,13,2,1,4,8	Y_1	77.65	11.10	45.65	21.88**,4.86*,6.28*,2.38,1.72,0.61,0.61
9,11,13,2,1,4,8,7	Y_1	77.76	11.26	39.77	19.61**,5.11*,5.94*,2.30,1.83,0.63,0.78,0.46
9,11,13,2,1,4,8,7,10	Y_1	77.81	11.36	35.07	18.13**,4.90*,6.09*,2.15,1.79,0.59,0.82,0.39,0.21
9,11,13,2,1,4,8,7,10,3	Y_1	77.86	11.33	32.30	17.63**,4.47*,6.18*,1.47,1.60,0.46,0.90,0.35,0.27,0.21
9,11,13,2,1,4,8,7,10,3,12	Y_1	77.91	11.25	28.22	17.48**,4.63*,6.13*,1.56,1.40,0.50,0.98,0.44,0.42,0.27,0.21
9,11,13,2,1,4,8,7,10,3,12,14	Y_1	77.92	11.22	25.59	17.31**,4.52*,5.45*,1.38,1.37,0.51,0.96,0.46,0.44,0.28,0.16,0.03
9,11,13,2,1,4,8,7,10,3,12,14,5	Y_1	77.93	11.21	23.36	14.06**,4.10*,5.32*,1.37,1.31,0.48,0.81,0.44,0.43,0.28,0.09,0.04,0.03

No further variables can enter regression, ** Significant at 1% level, * Significant at 5% level

3. Impact of selected independent variables on the discontinuance behaviour–The finding presented in table 2. provides an estimation of the degree of relationship of the independent variables with the discountenance behaviour. It, however, did not give a clear picture of the effect and contribution of these variables on discontinuance behaviour. The stepwise regression and multiple regression techniques were used for this purpose. The predictive power of stepwise regression and multiple regression was estimated with the help of coefficient multiple determination (R^2). The various independent variables had their own units of measurement, which did not permit a comparison of the partial 'b' values. To facilitate comparison, the partial 'b' values were converted into standard partial 'b' values, which were free from the units of measurement. The independent variables were then ranked on the basis of standard partial 'b' values to find out their relative importance in predicting the dependent variable. The result of stepwise regression and multiple regression analysis are presented in tables 3 and 4, respectively.

It is evident from table 3 that 76.21 per cent variation could be explained in the discontinuance behaviour of small farmers with the joint effect of three independent

variables viz. socio-economic status, risk preference and cosmopoliteness. With the addition of other variables though the value of R2 did not increase significantly but the joint effect of 13 independent variables accounted for 77.93 per cent variation in the discontinuance behaviour of small farmers. As there was no further increase due to education, it was not entered in the regression.

Table 4. Multiple Regression Analysis of the discontinuance behaviour of small farmers with the independent variables

Independent Variables	Partial Regression Coefficient 'b'	S.E. of Partial 'b'	F Value for Partial 'b'	Standard Partial 'b' Values	Rank
X_9	-0.242	0.065	14.06**	-0.555	I
X_{11}	-0.109	0.054	4.10*	-0274	II R2=0.7793
X_{13}	0.148	0.064	5.32*	0.159	III
X_2	-0.0002	0.0002	1.37	-0.149	
X_1	-0.012	0.011	1.31	-0.064	F=23.36
X_4	-0.013	0.020	0.48	-0.070	
X_8	0.262	0.292	0.814	0.0888	
X_7	-0.104	0.157	0.44	-0.041	Pure constant=11.21
X_{10}	-0.0007	0.001	0.43	-0.056	
X_3	-0.023	0.043	0.28	-0.054	
X_{12}	0.016	0.051	0.09	0.014	
X_{14}	0.006	0.013	0.04	0.019	
X_5	-0.020	0.113	0.03	-0.011	

The data reported in table 4 revealed that out of the 14 independent variables, only three independent variables viz. socio-economic status, risk preference and cosmopoliteness had negative significant influence on the discontinuance behaviour of the respondents which were depending upon the standard partial 'b' values ranked as first, second and third, respectively. The regression coefficient of the remaining independent variables were non significant, indicated that they were not important in their individual capacity to influence the discontinuance behaviour of small farmers.

CONCLUSION

Based on the findings of this study, the following major conclusions could be set forth which should be given due consideration by the extension agencies involved in the transfer of technology:

The findings of this investigation obviously indicated a high rate of discontinuance of new farm practices by small farmers.

Innovation to innovation difference in the rate of discontinuance was also observed.

The result of zero order correlation coefficient indicated that out of the 14 independent variables, 13 variables viz. income, extension participation, knowledge of technology, caste, education, farm power, social participation, socio-economic status, level of aspiration, economic motivation, cosmopoliteness and attitude towards new farm practices were found to be negatively significant with the discontinuance behaviour of respondents. The age was found non significant.

It was found that discontinuance behaviour of the farmers was influenced by risk preference, socio-economic status and cosmopoliteness. In multiple regressions, the other independent variables were found non-effective in their individual capacity to influence the discontinuance of innovations by the farmers.

REFERENCES

1. **Garret, H.E. Statistics in Psychology and Education. (1961).** Allied Pacific Pvt. Ltd., Bombay. Pp.315-318.
2. **Leuthold, F.O. (1967).** "Discontinuance of Improved Farm Innovation by Wiscosin Farm Operators". Ph. D. Thesis, University of Wisconsin, Madison,.
3. **Pareek, Udai and Trivedi, G. (1965).** Manual of the Socio-Economic Status Scale- (Rural). Delhi: Mansayan,
4. **Rogers, E.M. and Shoemaker, F.F. (1971).** Communication of Innovations. New York: The Free Press,
5. **Singh, S.N., Singh, K.N. and Pal, A. (1976).** Media Utilization for Various Categories of Farmers with Varying Socio-Psychological Characteristics. IJEE. 7(1&2) : 35.

■ ■ ■ ■ ■