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**FACTORS INFLUENCING ADOPTION
BEHAVIOUR OF COTTON GROWERS
ABOUT COTTON PRODUCTION
TECHNOLOGY**



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A B S T R A C T

Cotton is the most important fiber crop playing a key role in economic and social affairs of the world. It is the oldest among the commercial crop of the world. The study was conducted purposively in Khargone district. A representative sample of 120 cotton growers was drawn from the 10 randomly selected villages of Badwaha block and data were collected with the help of pre-tested interview schedule. The collected data was classified and tabulated and interpretations were made with the help of statistical tools like percentage, coefficient of correlation, multiple regression and T test. In this study the majority of the respondents (61.67%) had medium level of adoption behaviour. The result of correlation analysis indicated that out of 14 independent characteristics, 13 characteristics of cotton growers i.e. education, size of family, social participation, size of land holding, credit availability, annual income, source of information, contact with extension personnel, mass media exposure, innovativeness, cosmopolitaness, agriculture belief and knowledge were found significantly correlated with their adoption behaviour while age was found to be non significant.

Key words- Factors, Influencing, Adoption Behaviour and Cotton Growers.

INTRODUCTION

Cotton is the most important fiber crop playing a key role in economic and social affairs of the world. It is the oldest among the commercial crop of the world. Indian economy contributed to receive great support from the most important commercial crop of the country. Total 33 per

cent contribution is one of the reasons of cotton export from our country. In Madhya Pradesh, cotton is grown in 5.45 lakh hectares with an annual production of 3.8 lakh bales (180 kg/bale).

It has been observed that the majority of the farmers are still lagging behind the adoption of modern technology. It becomes a serious

concern to administration, agricultural scientists and extension workers. It thus becomes necessary to assess the barriers which influence the farmer's decision at farm level adoption of agricultural technology. There is a growing need to approach the farmers as quickly as possible and to assist them in increasing their present level of production. To perform this task successfully it is necessary to understand the adoption behaviour of farmers and to identify the factor that influences their adoption level. It is believed that socio-economic, communicational and socio-psychological characteristics of the respondents are greatly influence the adoption of recommended packages of the practices of cotton production technology.

Hence the present study was taken up to find out the various factors related to cotton production entitled "A study on factors influencing the adoption behaviour of cotton production technology among the cotton growers." with following specific objective-

1. To study the adoption behaviour of cotton growers about cotton production technology.
2. To study the relationship between characteristics of cotton growers and their adoption behaviour about cotton production technology.

MATERIALS AND METHODS- The study was conducted purposively in Khargone district due to maximum area and production of cotton. The district comprises 9 blocks out of which Badwaha block of the district was selected purposively. A list of cotton growing villages of Badwaha block was prepared and 10 villages were selected randomly. After the selection of the villages, a village wise list of the cotton growers of the selected 10 villages was prepared and 12 cotton growers from each village were randomly selected. Thus, the total

sample consisted of 120 cotton growers spread over ten selected villages.

The primary data were collected with the help of interview schedule. The data were collected through a well-structured and pre-tested interview schedule. The researcher personally met the respondents and explained to them about the purpose of this study. The data were collected and recorded in the interview schedule. Data collected were qualitative as well as quantitative. The quantitative data were interpreted in terms of percentage and qualitative data were tabulated on the basis of categorization methods. After tabulation, correlation coefficient and multiple regression analysis was carried out.

RESULTS AND DISCUSSION

(A) Adoption behaviour of cotton production technology among the cotton growers-The data in Table-1 depicts that the majority of the respondents (61.67%) possessed medium adoption behaviour of cotton production technology followed by 22.50 per cent in high and 15.83 per cent in low adoption behaviour category.

(B) Relationship between selected characteristics of cotton growers and their adoption behaviourThe zero order correlation coefficient of selected characteristics of cotton growers namely age, education, size of family, social participation, size of land holding, credit availability, annual income, source of information, contact with extension personnel, mass media exposure, innovativeness, cosmopolitaness, agriculture belief and knowledge were determined with adoption behaviour. The zero order correlation coefficient of characteristics of cotton growers with adoption behaviour is furnished in Table-2. it can be observed from the Table that correlation coefficients in respect of education

(0.768), size of family (0.326), social participation (0.337), size of land holding (0.307), credit availability (0.367), annual income (0.296), source of information (0.354), contact with extension personnel (0.353), mass media exposure (0.309), innovativeness (0.361), cosmopolitaness (0.301), agriculture belief (0.444) and knowledge (0.881) were found positively significant with adoption behaviour whereas age (0.087) was found non significant. Sharma et. al (1997) and Borkar et. al (2000) supported above findings.

(C) Multiple regression analysis of selected characteristics with adoption behaviour of cotton growers-For prediction of each of the characteristics were hypothesized to have an extent of relationship with adoption behaviour. Thus, the relationship was expressed in terms of zero order correlation coefficient. As adoption behaviour was conceptualized as manifestations of characteristics of cotton growers which was influenced by not only individual factors but all of them put together. For this purpose, step down method of multiple regression analysis was carried out to get estimates of predictive ability to antecedent factors on consequent factor of adoption behaviour. Stated in other words, the scores on characteristics of cotton growers will explain a significant amount of variance in the scores of adoption behaviour.

Table-3 presents the regression coefficient between adoption behaviour of cotton growers with their characteristics. It is observed that the regression coefficient in respect of education (0.077), size of family (0.065), social participation (0.431), size of land holding (0.336), credit availability (0.158), annual income (0.052), source of information (0.006), contact with extension personnel (0.171), mass media exposure (0.201), innovativeness (0.092),

cosmopolitaness (0.292), agriculture belief (0.669) and knowledge (0.731) were found positively significant with adoption behaviour whereas age (0.373) was found non significant. The coefficient of multiple determination (R²) indicated that only 95.00 per cent of variation in the adoption behaviour could be explained due to 14 independent variables and remaining 05.00 per cent variation is due to other factors yet to be located. The highly significant 'F' value reported that confirmation to the validity of R² (0.95) worked out with variable identified for the study. Hence, the multiple regressions attempted for the explanatory variables is justified. Thus, the multiple regression coefficient of all thirteen independent characteristics were found significant while only age was found to be non significant. Thus, it explains that these thirteen variables are significant factors in the prediction of adoption behaviour of the cotton growers. The coefficient of multiple determinations (R²) shows that all fourteen variables jointly explain 95.00 per cent of the variation in adoption behaviour. Similar findings reported by Chauhan (2007)

CONCLUSION-The present study concluded that the majority of the respondents had medium level of adoption behaviour. The result of correlation analysis indicates that out of 14 independent characteristics, 13 characteristics of cotton growers i.e. education, size of family, social participation, size of land holding, credit availability, annual income, source of information, contact with extension personnel, mass media exposure, innovativeness, cosmopolitaness, agriculture belief and knowledge were found significantly correlated with their adoption behaviour while age was found to be non significant. Multiple regression analysis of 14 independent characteristics with

adoption behaviour of cotton growers indicated that all the characteristics except age were found significant. The coefficient of multiple determination (R^2) indicated that only 95.00 per cent of variation in the adoption behaviour could be explained due to 14 independent variables and remaining 05.00 per cent variation is due to other factors yet to be located. The highly significant 'F' value reported that confirmation to the validity of R^2 (0.95) worked out with variable identified for the study.

Table-1 Adoption behaviour of cotton production technology among the cotton growers

SNo	Category	No. of respondents	percentage
1	Low	19	15.83
2	Medium	74	61.67
3	High	27	22.50
	Total	120	100.00

Table-2. Relationship between characteristics of cotton growers and their adoption behaviour

S.No.	Particulars	Correlation coefficient	't' value
A Socio-personal characteristics			
1	Age (X_1)	0.087 NS	0.86
2	Education (X_2)	0.768**	8.03
3	Size of family (X_3)	0.326*	3.22
4	Social participation (X_4)	0.337**	3.49
B Socio- economic characteristics			
1	Size of land holding (X_5)	0.307*	3.27
2	Credit availability (X_6)	0.367**	3.79
3	Annual income (X_7)	0.296*	3.16
C. Socio-communicational characteristics			
1	Source of information (X_8)	0.354**	3.66
2	Contact with extension personnel's (X_9)	0.353**	3.51
3	Mass media exposure (X_{10})	0.309*	2.96
D. Socio-psychological characteristics			
1	Innovativeness (X_{11})	0.361**	3.80
2	Cosmopolitaness (X_{12})	0.301*	3.14
3	Agriculture belief (X_{13})	0.444**	4.59
4	Knowledge (X_{14})	0.881**	11.4

* Significant at 1 % level of probability
NS = non significant

** Significant at 5 % level of probability

Table-3. Multiple regression analysis between characteristics of cotton growers and their adoption behaviour

S.No.	Particulars	Regression	Standard error	't' value coefficient
A Socio-personal characteristics				
1	Age (X ₁)	0.373NS	0.76	0.49
2	Education (X ₂)	0.077**	0.0054	14.11
3	Size of family (X ₃)	0.065**	0.0065	9.89
4	Social participation (X ₄)	0.431**	0.026	16.52
B Socio- economic characteristics				
1	Size of land holding (X ₅)	0.336**	0.0275	12.18
2	Credit availability (X ₆)	0.158**	0.0158	9.99
3	Annual income (X ₇)	0.052**	0.0048	10.77
C. Socio-communicational characteristics				
1	Source of information (X ₈)	0.006**	0.00036	16.52
2	Contact with extension personnel's (X ₉)	0.171**	0.0152	11.22
3	Mass media exposure (X ₁₀)	0.201**	0.0186	10.75
D. Socio-psychological characteristics				
1	Innovativeness (X ₁₁)	0.092**	0.0043	21.22
2	Cosmopolitaness (X ₁₂)	0.292**	0.0248	11.75
3	Agriculture belief (X ₁₃)	0.669**	0.0404	16.54
4	Knowledge (X ₁₄)	0.731**	0.068	10.64

R² = 0.95

'F' value (12,118) = 2.27**

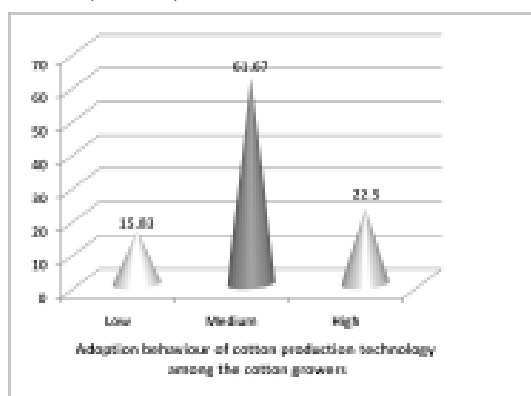
* Significant at 1% level of probability

** Significant at 5% level of probability

NS = Non significant

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