Correlates of Improved Wheat Production Technology

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ABSTRACT

The rapid growing population of India will need 35-37 million metric tones more food production by 2020 A.D. To achieve this projected target, the adoption of latest production technologies is must, particularly in major crop i.e. wheat, which could be got momentum, if these technologies are disseminated through Front-Line demonstrations.A study was undertaken in three districts of UP and the results of this study reveals that education, size of land holding, average annual income and marketing facilities were most important factors to effect the adoption of farmers of wheat production technologies as the 'r' values were found 0.20128 in case of education (significant at 5 per cent level of probability), 0.27788, 0.36250 and 0.30509 respectively in case of size of land holding, average annual income and marketing facilities (significant at 1 per cent level of probability). Further, study reveals that size of land holding and value orientation were most important factors for predicting the adoption of improved wheat cultivation technologies by practicing farmers.

Key word *: Improved wheat production technology; Correlation coefficient;*

*I*ndia is the second largest most populated country in the world. As per the demographic anticipation, the population of India will be 1.25 billion by A.D. To suffice the food requirement by 2020 A.D., wheat production will be increased by 35-37 million metric tones. In the millennium, the challenges in agricultural sector are quite different from those met in the previous decades. The enormous pressure to produce more food from less land with shrinking natural resources is a tough task. Presently, the area under wheat is almost stagnant and there is no scope for horizontal expansion. Therefore, projected wheat demand will be have to be met by increasing wheat production, which could be possible, along with other measure by eradicating or minimizing the ignorance toward wheat production technology and increasing the adoption of newly evolved technologies. For this purpose, Front Line Demonstrations (FLDs) have been proved the best means for creating awareness of new development in technology generation and to assess the various socio-economic variables for affecting the knowledge and adoption level of farmers as the regular feedback is a necessary component of these demonstrations. Keeping in view the above facts, a research study was conducted in the three districts, namely, Varanasi, Chandauli and Mirzapur of eastern Uttar Pradesh to assess the collelation of various socio-economic and personal factors for having high or low level of adoption by the farmers, who were the beneficiaries under the FLD programme of wheat.

METHODOLOGY

Districts of Varanasi, Chandauli and Mirzapur of eastern Uttar Pradesh were selected purposively for the study, where Institute of Agricultural Sciences, Banaras Hindu University, Varanasi had organized Front Line Demonstrations (FLDs) on wheat during 1998-1999. Out of 13 wheat FLDs locations ,10 from Varanasi, 2 from Chandauli and 1 from Mirzapur district were selected randomly. Later on 26 FLD farmers from respective villages of selected locations were selected randomly for making the sample size of 104. A well structured and pre-tested interview schedule was used to collect the information from the respondents after having through consultation with experts. The interview schedule used under the study was having 23 statements regarding different wheat production technolo-

gies like preparatory tillage, selection of varieties, sowing of seed, fertilizer application, plant protection and water management etc. The reponses obtained towards these statements were recorded. A score of 3 was given to regular practitioners , 2 to less frequent practitioners, 1 to very less frequent practitioners and Zero (0) to every non-practitioners.The score ranges from 69 to 0 based on the answers given by the respondents. Individual score was later converted to standardized score of adoption index with the help of the following formula:

Adoption (Wheat Technology)

$$= \frac{\text{Obtained Adoption Score}}{\text{Highest Obtainable Score}} \times 100$$

In order to know the relationship between the variables, correlation coefficient was calculated and similarly, the average relationship between the variables was calculated by multiple regression analysis.

RESULTS AND DISCUSSION

Table 1. Correlation analysis of selected socio-personal variables of farmers with adoption of improved wheat cultivation technologies

S. No.	Independent variables	Coefficient of correlation (r)
1	Age	-0.08414
2	Caste	0.14251*
3	Education	0.201281*
4	Size of land holding	0.27788**
5	Annual average income	0.36259**
6	Marketing facilities	0.30509**
7	Value orientation	-0.15384

*Significant at 5 per cent level of probability

**Significant at 1 per cent level of probability

It may be observed from the values of coefficient of correlation presented in Table-1 that caste (r = 0.14251) and education (r = 0.20128) were positive and significantly related to the adoption of improved technologies at 5 per cent level of probability. It means caste and education were important factors for increasing the level of adoption of demonstrated technologies under the FLDs programme of wheat. It may be due to the fact that education increases the knowledge and understanding power of an individual, which heips to perceive new technologies quicker and enables a person to adopt innovations with confidence. Similary, size of land holding (r = 0.27788), annual average income (r =

0.36250) and marketing facilities (r = 0.30509) were positive and significantly related to the adoption of improved technologies at 1 per cent level of probability. It indicates that size of land holding as a factor affects the adoption of farming technologies. It may be due to the fact that adoption of farming technologies is a dependent variable to be affected by size of land holding and annual average income of the respondents. The independents variables marketing facilities was also found a deterministic factor to affect the level of adoption positively, may be due to the fact that cultivation of wheat needs assured marketing supply. Therefore, availability of marketing facilities must have helps the respondents in the adoption of farming technologies in a better way. On the other hand, age(r = -0.08414) and value orientation(r = -0.15384) were non-significantly related to the adoption of farming technologies. As the data reveals that the age of the respondents was not significantly related to the adoption of the farming technologies, may be due to fact that the respondents belonged to a single age category. The results of this study are inline with the findings given by *Choudhary, et. al. (2001).*

Table 2. Multiple regression analysis of selected socio-personal variables of selected farmers with adoption of improved wheat cultivation technologies

S. No.	Independent variables	b-value	S.E. of ' b'	't'value
1	Age	-0.02374	0.03141	-0.75569
2	Caste	-0.28100	0.59610	-0.47140
3	Education	-0.22606	0.44914	0.50330
4	Size of Land holding	0.93100	0.48839	1.90625*
5	Annual average income	-0.22808	0.91323	-0.24974
6	Marketing facilities	0.10504	0.47220	0.22245
7	Value orientation	0.51617	0.17306	.98247**

*Significant at 5 per cent level of probability

**Significant at 1 per cent level of probability

Multible R=0.57807

Standard Error= 7.5559 R2 = 0.35092

Intercept Constant = 49.070

Degree of Freedom= 7,103   Calculated F= 2.862**

Table 2 reflects that seven independent variables put together explained 35 per cent of variation in the

dependent variable i.e., adoption of improved wheat cultivation technologies among the respondents. The calculated "F" value of the estimation was 2.862** and found significant at 5 per cent and 1 per cent level of probability. Thus, the result imlpied that the seven selected socio-personal variables would account for a significant amount of variation in the adoption of improved wheat cultivation technologies. From the observation of "t" values for the test of significance of coefficient of regression (b-value or the partial b) in the table-2, it was found that the t-values were significant for the size of land holding (1.90625*) and value orientation (2.98247**). This indicates that these variables were most important for predicting the adoption of improved wheat cultivation technologies by practicing farmers. The regression coefficient were not significant for the values namely, age, caste, education, annual income and marketing facilities. These results supported with the findings of *Hales and Anderson,(1994)* and *Kher and Halyal (1991).*

CONCLUSION

On the basic of the study it can be concluded that caste, education, size of land holding, annual average income and marketing facilities were found to be significantly and positively related to the adoption of improved wheat cultivation technologies of FLD respondents. Age and value of orientation were found to be non-significantly associated with the adoption of improved wheat technologies of FLD respondents. The regression of coefficients were found to be significant and positive for the size of land holding and value orientation with the adoption of improved wheat cultivation technologies of FLD respondents. On the other hand, regression coefficients were found to be non-significant with the five selected independent variations, viz.,age, caste, education, annual average income and marketing facilities with the adoption of improved of wheat cultivation technologies of FLD respondents.

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