Scientific Temperament of Farmers and Their Correlates

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ABSTRACT

This investigation attempted to identify the factors which determine the scientific temperament of farmers. An exhaustive survey was conducted in 5 Blocks of Saran district of Bihar. It was found that education, social participation, farm size, farm power, farm Implements and irrigation potentiality were positively and significantly related to communication behaviour and scientific temperament of farmers at 5 per cent level of significance. Age and credit behaviour were not significantly related to scientific temperament.

Key words: Communication behaviour, scientific temperament, correlates; farmers.

INTRODUCTION

The human mind, the human psyche and the human temperament are very complex entities, and the factors and the forces that could influence and / or determine their make up at any given time can be so many and so varied that prediction of individual human behaviour in a given situation, or under a given circumstances, becomes almost impossible. However, scientific temper can be acquired by or promoted among people. It has been defined in this study as farmers' mental disposition related to the items pertaining to four areas of human behaviour *i.e.* scientific attitude, scientific habit, scientific knowledge and scientific method. Today it is possible to find a solution to problem by using the potential of communication behaviour and scientific temperament of farmers to meet their needs. The present study was undertaken to identify the different independent factors which are responsible for communication behaviour & scientific temperament of farmers.

METHODOLOGY

The study was conducted in Saran district of Bihar in India during 2009 to 2010. Out of 21 blocks, 5 blocks were selected randomly from Saran district for the purpose of the study. The selected blocks were Chapra, Garkha, Ekma, Manjhi, and Rivilganj. Two gram panchayats from each block were selected randomly. Thus, a total of ten gram panchayats *i.e.* Nawaji tola, Ghengta, Mahmda, Pirouna, Hansrajpur, Bhorunpur, Manjhi (East), Manjhi (west), Sengertola and Semaria were selected for the purpose of study. Twenty villages were selected randomly from the selected gram panchayat for the study. A list of farmers were prepared from the selected gram panchayats and 8 per cent farmers were selected randomly from the each selected gram panchayats *i.e.* 200 farmers were selected randomly from the selected villages. An exhaustive survey was conducted on the pertinent issues to identify the different factors which are responsible for the scientific temperament of farmers.

RESULTS AND DISCUSSION

The relationship between the selected independent variables *i.e.* age, education, social participation, farm size, farm power, farm implements, irrigation potentialities and credit behaviour with the dependent variable *i.e.* scientific temperament was tested with the help of correlation.

Table 1. Relationship between selected independent and dependent variables *i.e* scientific temperament of respondentss

n=200

Predictor (independent) variables	r- values
Age	0.0768
Education	0.815*
Social Participation	0.636*
Farm Size	0.837*
Farm Power	0.445*
Farm Implements	0.768*
Irrigation Potentiality	0.675*
Credit Behaviour	0.0637

*Significant at 0.05 % level of Significance

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A critical examination of the data presented in Table 1 revealed that education, social participation, farm size, farm power, farm implements and irrigation potentiality were positively and significantly related to scientific temperament of farmers at 5 per cent level of probability whereas the remaining independent factors *viz.,* age, occupation and credit behaviour were not significantly related to scientific temperament. It means that these variables do not exert their influence on the scientific temperament of farmers. On the basis of 'r' value the null hypothesis were examined.

H_0 1. There is no association between scientific temperament and Age

The association between scientific temperament and age was calculated with the help of 'r' value. The calculated 'r' value was 0.0768, which is non-significant. Thus, this supports the null hypothesis $H_0$1. Therefore, this hypothesis is accepted.

H_0 2. There is no association between scientific temperament and Education

The association between scientific temperament and education was calculated with the help of 'r' value. The calculated 'r' value was 0.815, which is significant. Therefore, this does not support the null hypothesis H_0 2. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between scientific temperament and education.

H_0 3. There is no association between scientific temperament and social participation

The association between scientific temperament and social participation was calculated with the help of 'r' value. The calculated 'r' value was 0.636, which is significant. Therefore, this does not support the null hypothesis H_0 3. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between communication behaviour, scientific temperament and social participation.

H_0 4. There is no association between scientific temperament and farm size

The association between scientific temperament and farm size was calculated with the help of 'r' value. The calculated 'r' value was 0.837, which is significant. Therefore, this does not support the null hypothesis H_0 4. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between scientific temperament and farm size.

H_0 5. There is no association between scientific temperament and farm power

The association between scientific temperament and farm power was calculated with the help of 'r' value. The calculated 'r' value was 0.445, which is significant. Therefore this does not support the null hypothesis H_0 5. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between scientific temperament and farm power.

H_0 6. There is no association between scientific temperament and farm implements

The association between scientific temperament and farm implements was calculated with the help of 'r' value. The calculated 'r' value was 0.768, which is significant. Therefore, this does not support the null hypothesis H_0 6. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between scientific temperament and farm implements.

H_0 7. There is no association between scientific temperament and irrigation potentiality

The association between scientific temperament and irrigation potentiality was calculated with the help of 'r' value. The calculated 'r' value was 0.675, which is significant. Therefore, this does not support the null hypothesis H_0 7. Hence, this null hypothesis is rejected and alternative hypothesis is accepted that there is association between scientific temperament and irrigation potentiality.

H_0 8. There is no association between scientific temperament and credit behaviour

The association between scientific temperament and credit behaviour was calculated with the help of 'r' value. The calculated 'r' value was 0.0637, which is non-significant.

Thus, this supports the null hypothesis H_0 8. Therefore, this hypothesis is accepted. To predict the important independent variables the technique of multiple regressions was used. The technique was used to determine the effect of these selected variables on the dependent variable namely scientific temperament of the farmers.

Table 2: Multiple regression equation with significant independent variables with scientific temperament

n=200

Predictor (independent) variables	b-Value	S.E. of b-value	t value
Age	0.5312	2.0952	0.254
Educational level	6.9944	4.7461	3.673*
Social Participation	0.8440	1.3263	2.636*
Farm Size	4.3434	1.6054	2.837*
Farm Power	3.1602	1.1063	2.345*
Farm Implements	4.2591	2.2221	2.266*
Irrigation Potentiality	7.1357	3.1298	4.333*
Credit Behaviour	0.5342	0.8383	0.637

*Significant at 0.05 % level of Probability $R^2 = 0.6456$
Intercept Constant (a) = 80.89 'F' calculated = 5.77* at 10, 189 d.f.

A close study of the data in Table 2 indicated that all ten independent variables taken together explained to the extent of 64.56 per cent variation in the scientific temperament of the farmers. The calculated 'F' value was 5.77 at 10 and 189 degree of freedom, which was significant at 5 per cent level of significance. Thus, the result implied that all the independent variables taken together would account for a significant amount of variation in the scientific temperament of the farmers.

Further, the 't' test of significance expressed that coefficient of regression (b value) was found non-significant for age and credit behaviour which means that these variables were not contributing significantly in predicting the scientific temperament of the farmers.

On the other hand coefficient of regression was found positively significant for education, social participation, farm size, farm power, farm implements and irrigation potentiality at 5 per cent level of significance. It means that these variables were contributing significantly in predicting scientific temperament of farmers.

It has been adequately observed that education, social participation, farm size, farm power, farm implements and irrigation potentiality are important variables in the sphere of scientific temperament of farmers. Therefore attention has to be made with due care in education, social participation, farm size, farm power, farm implements and irrigation potentiality to enhance scientific temperament of farmers.

CONCLUSION

The study revealed that education, social participation, farm size, farm power, farm implements and irrigation potentiality were positively and significantly related to scientific temperament of farmers

at 5 per cent level of probability, whereas the remaining independent factors *viz.,* age and credit behaviour were not significantly related to scientific temperament. It means that these variables do not exert their influence on the scientific temperament of farmers.

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