

Psychological understanding of adoptional pattern of innovative technology in rural society

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ABSTRACT

Sustainable development is the motto of the present developing society. But, at international level, it is assumed that sustainability can be achieved only through globalization, privatization and open market. Economic turmoil in the developed countries today, confirms the suspicion of this model of development. The Government of India is also making efforts to increase the growth rate in the rural sector. A number of technologies have been introduced for rural development. But the obtained results of this study clearly indicate that although achievement motivation, education and change proneness, are important for adoption and the positive impact of technology, the relationship between psychological variables and technology related variables can not be considered as linear, probably because after attaining a certain level of development, the relevance of psychological variables changes. This finding supports the research that the strategies for rural development must be need based.

INTRODUCTION

Present scientific and technological development has greatly influenced the socio-economic lives of the people. In the rural areas, application of new techniques and use of machinery have initiated transformation in the traditional pattern of agricultural production and other fields. The use of new technology would depend upon the attitudes, beliefs, and perception of adopters. These psychological factors take some time to construct and image about the merits and demerits of the used techniques and tools.

Modern technology has its roots in western tradition and, to a larger extent, the third world depends on western countries to avail the same. It has now been observed that the use of modern technology, particularly in developing countries, has created serious problems of social structure, quality of output and also adverse impact on health. The present piece of research, therefore, was concerned with the use of technology in the field of agriculture and village life in Indian conditions. Theoretically, it is assumed that the use of new technology adopted by the peasants would induce social and economic changes depending upon the extent of its use. But past experiences in the last two decades, demand rethinking on its appropriateness and usage, specially in the Indian context.

The scarcity of studies which could have

taken primary cognizance of the social effects of modern agricultural technology and the ultimate impact of farm innovation and on social institutions made it imperative with relation to its social implications.

Naika and Setu Rao (1988), in their study of adoption programme of selected farm practices between adopted and non-adopted villages, observed that the farmers from adopted village had higher mean adoption score than non-adopted village respondents. In his comprehensive study, Kivlin (1971) has reported that among several factors, farm size emerged as a dominant factor affecting adoption. Sinha (1984) has reported a lack of difference in the pattern of motivation and aspiration among the villagers from developed and undeveloped villages. Muthayya (1980) advocated that the respondents of bigger land size obtained higher scores on modernization than those in the smaller land size indicating the prevalence of attitudes towards certain socio-psychological variables to a greater extent.

Therefore, it is clear that even technological innovation is a very essential asset in the improvement of village life, though its impact demands reconsideration due to its outcome. Agricultural growth rate, after some initial enthusiasm shows negative trend. Farmers are prone to suicide even after a good production.

Key words :

Adoptional
pattern, Attitude,
Belief,
Perception,
Perceived value,
Achievement
motivation,
Change
proneness

Accepted :
January, 2010

Against the above background, efforts have been made to assess the perceived value of technology in peasant society, under psycho-social umbrella. In this context, the objectives of the present study were as follows:

Study of the relationships between psychological variables (achievement motivation and change proneness) and technology related variables in the farmers from developed and undeveloped villages.

Identification of the predictors of adoption and impact of technology in the farmers of developed as well as undeveloped villages.

METHODOLOGY

The study dealt with developed and undeveloped villages of Satna district of Madhya Pradesh. These villages were categorized on the basis of facilities of education, transportation, agriculture, income, and other modern gadgets possessed by the villagers.

Sample:

A sample of 100 male farmers were drawn from four villages. Fifty representatives were from developed villages and fifty were from undeveloped villages. Their age range was 25 to 64 years. They were from different castes educational strata and socio-economic levels.

Tools:

Achievement motive scale:

The employed scale has been developed by Tiwari (1986b). It consists of 18 items with two alternatives. One option indicated high degree of n ach while the other revealed low degree of n ach. The split half reliability has been estimated at .76. The test-retest reliability was found to be .75.

Change proneness :

The change proneness scale developed by Tiwari (1986b) was used. It is a projective measure. The

responses are required on 4-point scales ranging from "rejection" (1) to "enthusiastic acceptance" (4). The first area of change proneness was related to agriculture. The second area dealt with animal husbandry, third with health and nutrition, fourth with children's education and untouchability issues were the last area. Its test - retest reliability was estimated at .84.

Technology scale:

This scale has been constructed to assess the development due to technological advancement in two areas. First, adoption of technology and second perceived impact of technology at individual and community levels. The responses were required on three point scale.

RESULTS AND DISCUSSION

Table 1 presents the intercorrelations of background and psychological variables with adoption and impact of technology for both types of settings.

It was observed that significantly adoption of technology was positively associated with education for the developed areas while no significant correlation was obtained for the undeveloped areas. Impact of technology was significantly and positively related to education at individual as well as community level for the developed villages whereas insignificant relationship was observed between these variables for the undeveloped settings. Achievement motivation and change proneness had proved ineffective in the context of adoption and impact of technology for the developed villages. Regarding adoption of technology, achievement motivation has proved close but so far as impact was concerned, it became insignificant for the undeveloped settings. Similarly change proneness has proved ineffective in undeveloped villages. It is very interesting that adoption of technology and impact of technology were closely related to each other for both the settings.

With a view of understanding the specific and relative contribution of age, education, achievement motivation and

Table 1 : Intercorrelations of background, psychological and technology related variables

Sr. No.	Particulars	1	2	3	4	5	6	7
1.	Age	100	-.47 ^{XX}	-.24 ^{XX}	-.18	-.09	.17	.16
2.	Education	-.51 ^{XX}	100	.28 ^{XX}	.0	.14	.12	.08
3.	Achievement motivation	.25 ^{XX}	-.15	100	-.42 ^{XX}	.26 ^{XX}	.08	.09
4.	Change proneness	-.11	.3	.02	100	-.01	.03	.09
5.	Adoption of tech.	-.32 ^{XX}	.53 ^{XX}	-.13	.11	100	.23 ^X	.16
6.	Impact of tech (individual level)	-.32 ^{XX}	-.31 ^{XX}	-.24 ^{XX}	-.16	-.79 ^{XX}	100	-.87 ^{XX}
7.	Impact of tech. (community)	-.37 ^{XX}	-.31 ^{XX}	-.18	-.13	-.80 ^{XX}	-.89 ^{XX}	100

** indicates significance of value at P=0.01

Table 2 : Results of stepwise multiple regression analysis for total sample (Developed and undeveloped)

Sr. No.	Predictor variables	Criterion variables	Variance explained % (cumulative)	F	Df
1.	Achievement motivation		47.94 ^{xx}	90.26	1,98
2.	Education	Adoption of technology	15.56 ^{xx}	60.62	2,97
1.	Achievement motivation	Impact of technology (Individual level)	39.49 ^{xx}	63.97	1,98
2.	Education		43.56 ^{xx}	37.49	2,97
3.	Change proneness		46.36 ^{xx}	27.66	3,96
1.	Achievement motivation	Impact of technology (Community level)	37.62 ^{xx}	59.09	1,98
2.	Education		41.77 ^{xx}	34.79	2,97
3.	Change proneness		43.65 ^{xx}	24.79	3,96

** indicates significance of value at P=0.01

change proneness to the adoption and impact of technology, a stepwise regression analysis was performed. It is clear from Table 2 that in the case of adoption of technology, three predictors were found among which achievement motivation contributed maximum variance followed by education for the total 100 representatives. For impact of technology achievement motivation, education and change proneness were found as significant predictors at individual as well as community levels.

Present findings suggest that achievement motivation, education and change proneness, although are important for adoption and positive impact of technology, the relationship between psychological variables and technology related variables can not be considered as linear. Probably the relationship may be curvilinear where after attaining a certain level of development, the relevance of psychological variables undergoes change. This argument supports the research that the strategies for rural development must be need based. This conjecture needs further investigation, where the villages at different levels of development are selected and the relationship of these psychological variables and technology related variables is examined. Similar findings were reported by Tiwari (1986a) who found a positive relationship between n-Ach and level of rural development. Sachchidanand (1972) and Rao (1968) found achievement motivation and adoption of agricultural technology, positively related with minor deviations. Several other studies provide empirical support for a positive relationship between achievement motive and agricultural growth (Hundal and Singh, 1975) Sinha and Chaubey, 1972).

In spite of differential pattern of relationships in developed and undeveloped villages, it was noted that the farmers of developed villages which are nearer to the town showed strong psychological disposition as well as

adoption of technology as compared to those from undeveloped villages.

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