

## Assessing the Stakeholders' Attitude towards the Farm Science Centre's Activity for Reenergizing the Technology Transfer Process

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### ABSTRACT

*Consequent upon the ever increasing need of food to feed the ever-growing populations sustainably and environment friendly manner, the sustainability of agriculture and natural resources with the help of knowledge revolution is emerging as a focal theme. The sustainable agricultural technology transfer involves complex processes consisting of diverse structures, and relationship of inter-dependent factors and related variables, aimed at enhancing adoption of innovations in the farm level. In the changed scenario, with the vertical expansion of the agricultural innovation, agricultural extension system in India is more of informative extension or knowledge intensive extension embedded with the traditional social system. This approach gives rise to a new institutional, single window extension system of Farm Science Centre. In such a research climate, the present paper envisages the stakeholders' attitude towards farm science centre's activity for restructuring the existing research extension linkage. The study was conducted at Coochbehar II block of Coochbehar District in West Bengal. The purposive as well as simple random sampling procedures were adopted for the present study. The data were collected with the help of structured interview schedule by personal interview method. The collected data were processed into correlation and multiple regression analysis for drawing conclusion. The study revealed that the attributes cosmopolitaness, training received, consumer durable assets possession, risk orientation, adoption leadership, primary occupation and farm material of the adopted farmer had effective association with and contribution in characterizing the stakeholders' attitude towards farm science centre's activity. The explained variation in the study is 57.40 %.*

**Key words:** Sustainable technology transfer; Farm Science Centre; Attitude assessments; Cosmopolitaness; Risk orientation; Knowledge intensive extension; Occupation;

As a consequence of the emergence of 'knowledge driven economy' vis a vis 'knowledge driven society', the need of the hour is to orient the Indian rural people in updating their skill and knowledge for making their identity in this competitive world by utilizing the existing research extension linkages. The present global agriculture is suffering from unabated decline in terms of productivity and sustainability as well. The decline of contributions of Indian Agriculture to the national gross domestic product and an apparent stagnation of the growth rate in agriculture, non remunerative agricultural system, ever increasing population pressure, shrinking land resources, global warming and climate change, indiscriminate use of agricultural inputs, over exploitation of natural resource

base and environmental quality have made the situation all set for creating an environment for utilisation of single window system of technology dissemination. Basically, the use of new technologies and tools will help meet the daunting challenges ahead and will ensure long-term sustainability of agricultural production in an environmental friendly manner. Utilizing appropriate methods in reaching small scale farmers in India with relevant, economically viable and culturally acceptable agricultural technologies in order to improve their knowledge, skill and overall attitude towards agricultural productivity, is sustainable agricultural technology transfer. In the changed scenario, with the vertical expansion of the agricultural innovation, agricultural extension system in India is more of informative extension

or knowledge intensive extension embedded with the traditional social system. The decision making process in agricultural technology adoption involves various decision stimuli *viz.* level of physical capital, human capital, access to productive resources, risk attributes (Feder *et al*, 1985), agro-ecosystem and types of technology (Pingali *et al*, 2001), farming season (Moser and Barrett, 2003), as well as chance factors such as neighbours and village colleagues (Case, 1992; Munshi, 2004; Pomp and Burger, 1995; Zhang *et al*, 2002). Involvement of these factors in shaping the farmers' adoption-decision seems to vary (Baruah *et al*, 2011). In the recent era, a clear penchant has been occurred towards the demand driven extension approach instead of supply driven one for aptly utilizing the agricultural information in the rural areas. Such type of extension approach gives birth to a process of agricultural technology socialization instead of mere technology transfer. Socialization of technology emphasises the venture wherein the knowledge and experience of the clientele have been taken into consideration with a system approach (Acharya *et al*, 2008). The paradigm shift of demand driven extension from supply driven extension gives rise to a new institutional, single window extension system of Farm Science Centre with a view to socialize the innovative eco-friendly agricultural technology in a sustainable manner. The Krishi Vigyan Kendra, an educational institution, offers a very real opportunity by organising training to work closely with trainees in developing a more skilled and educated work force (Dubey *et al*, 2008). Farm science centre helps create and build up attitude and method, with application of demand driven agricultural technology, is going to make a substantive contribution towards begetting both belligerence and freshness in agricultural productivity as well as sustainability. In such a research oriented background, the present paper has concentrated upon the stakeholders' attitude towards the farm science centre's activity at Coochbehar district of West Bengal with respect to some socio-personal, socio-economic attributes of the stakeholders. Coochbehar farm science centre was started its voyage during the year 2000 as remandated one but now it is the university led full fledged farm science centre shouldering the responsibility of single window technology dissemination at Coochbehar district.

## METHODOLOGY

The present study was conducted in Coochbehar II block of Coochbehar District in West Bengal.

Purposive as well as simple random sampling procedures were adopted for the present study. To select the district and block purposive sampling technique was followed. In case of selecting the villages and respondents the simple random sampling technique was followed. Out of five numbers of adopted villages in this block by remandated Farm Science Centre, the three villages namely Bararangras, Atialiguri and Shakunibala had been randomly selected for the present study. An exhaustive list of the adopted farmers was prepared for delineating the respondents. From this list hundred stakeholders had been identified randomly as respondents for the present study. After the completion of the pilot study the structured schedule was prepared by operationalizing the predicted and predictor attributes selected for the study. The stakeholder's attitude towards the farm science centre's activity was considered as the predicted variable for the study. The socio-economic, socio-personal and socio-psychological as well as communication attributes of the target stakeholders were considered as the predictor variables for the study. The data were collected with the help of structured interview schedule by personal interview method. The collected data were analysed with the help of statistical tools like correlation coefficient and multiple regression analysis for drawing conclusion.

## RESULTS AND DISCUSSION

Table 1 reveals the correlation co-efficient of attitude towards farm science centre's activities with sixteen causal variables. The result depicted that the variable cosmopolitaness, training received, consumer durable assets possession, adoption leadership and risk orientation had positively and significantly associated with the dependent variable attitude towards farm science centre's activity of the adopted farmers. The study revealed that among the sixteen causal variables contributing towards determining the attitude of the adopted people regarding the farm science centre's activity, the five variables had showed their strong positive significant association with the dependent one.

Among the five positively significant independent variables, consumer durable assets possession is the socio-economic variable, adoption leadership and risk orientation are the socio psychological variables and cosmopolitaness and training received are the communication variables. The data collected from the adopted village of remandated farm science centre revealed some astounding fact regarding the

associational relationship of dependent and independent variables.

**Table 1. Correlation co-efficient of attitude towards farm science centre's activity with sixteen causal variables**

S. No.	Variables	Co-efficient of correlation (r)
A.	<i>Socio-personal</i>	
1.	Age(X1)	-0.195
2.	Education status(X2)	0.167
3.	Family size (X3)	-0.044
4.	Family education status(X4)	0.128
B.	<i>Socio-economic</i>	
5.	Primary occupation(X5)	0.126
6.	Land holding (X6)	-0.136
7.	Annual income(X7)	0.098
8.	Farm material possession(X8)	-0.133
9.	Consumer durable assets possession (X9)	0.254*
10.	House type ( X10)	0.091
11.	Sanitation status(X11)	0.209
C.	<i>Socio-psychological</i>	
12.	Adoption leadership(X12)	0.515**
13.	Management orientation(X13)	0.098
14.	Risk orientation(X14)	0.554**
D.	<i>Communication</i>	
15.	Cosmopolitaness(X15)	0.282*
16.	Training received (X16)	0.504**

\* Significant at 5% level of significance.

\*\* Significant at 1% level of significance.

The consumer durable assets possession in any village or in a rural social system is a measurement of social esteem and prestige. The higher degree of durable assets possession reflects the individual's belongingness in socio-economically higher strata. As a result the socio-economically sound farmers are considered as the creamy layer people of the farming community and they have honoured as the term progressive farmers of the locality. They seek all agricultural information which has been recently developed in the research station and for this reason they have maintained a strong association with the farm science centre and develop a positive attitude towards the activities rendered by the farm science centre. As a result, this correlation analysis reflected that the independent variable consumer durable asset possession of the adopted farmer had strongly, positively and significantly correlated or associated with the attitude towards the activity rendered by the remanded farm science centre.

Cosmopolitaness is the character of an individual for delineating his outer exposure towards the environment and the source of information. The increased cosmopolitaness of an individual emphasizes the knowledge endowment and exposure as well as experience on the information received from different sources regarding good agricultural practices to augment his livelihood status. The knowledge endowment and experiences help to create a positive attitude towards any new agricultural information generated from agricultural research station and disseminated by extension system like farm science centre. That was why the study revealed that the variable cosmopolitaness had positively and significantly correlated and associated with attitude towards farm science centre's activity.

Training is to educate a person so as to he can do a particular job in an efficient manner. In the present study training received has been considered as one of the causal variable for deriving the attitude towards farm science centre's activity. The reception of training bestows the farmer's cognitive as well as skill oriented approaches in a given topic regarding agricultural information. The training received by the farming communities can help to land upon the knowledge and skill intensive agricultural approaches which ultimately prepare their psyche towards the development of positive attitude on any new agricultural practices. That was the why the variable training received had positively and significantly associated with the variable attitude towards farm science centre's activities.

Leadership is the character of an individual to lead the followers in an effective manner for achieving the community goal. Adoption leadership reflects the individuals' leadership character to lead the followers of farming community for adopting any agricultural innovation to augment their livelihood status. It's a positive human psyche for readily accepting the new information like anything and guiding his followers to adopt and apply the information in their field situation. That was why the variable adoption leadership had positively and significantly correlated with the variable attitude towards farm science centre's activity.

Risk orientation is also a psychological variable or mental state through which a person can orient himself to take any risk regarding his own entrepreneurship.

Here risk orientation is the psychological state of mind of the farmer to take risk in adopting any agricultural information disseminated by the extension system, instead of continuing their traditional practice which ultimately helps to develop a positive attitude towards any new agricultural information disseminated by the farm science centre. That was why the variable risk orientation had positively and significantly associated with the predicted variable attitude towards farm science centre's activity.

Table 2 has reflected the multiple regression analysis of the dependent variable attitude towards farm science center's activity with sixteen causal variables. From the above table it is very clear that the causal variables primary occupation, consumer durable assets possession, training received, risk orientation had positively and significantly contributed towards the development of positive attitude towards the farm

science centre's activity. One causal variable farm material possession had negatively and significantly contributed in determining the dependent variable attitude towards farm science centre's activity in presence of other causal variables.

The variable primary occupation is the variable which determines the occupational status of the individual in a rural context. The occupation implies the source of earning. In this study, occupation is categorized into two categories i.e. agricultural avocation and other than agricultural avocation. The results reflected that the individual with agricultural avocation had contributed in developing positive attitude towards farm science center's activity. It is obvious that the people who have staked to gather information regarding agriculture which is disseminated by farm science center are mostly dependent on farm enterprises. That was why the variable primary occupation had contributed positively

**Table 2. Multiple regression analysis of the variable attitude towards farm science centre's activity with sixteen causal variables**

S. No.	Variables	Standard regression Co-efficient( $\beta$ )	Regression Co-efficient(b)	Standard error of (b)	't' value of (b)
<i>I</i>	<i>Socio-personal</i>				
1.	Age (X1)	-0.050	-0.017	0.042	-0.396
2.	Education status (X2)	0.177	0.196	0.136	1.442
3.	Family size (X3)	0.043	0.129	0.299	0.432
4.	Family education status (X4)	-0.013	-0.023	0.236	-0.095
<i>II</i>	<i>Socio-economic</i>				
5.	Primary occupation (X5)	0.156	3.513	2.104	1.670*
6.	Land holding (X6)	-0.038	-0.028	0.140	-0.199
7.	Annual income (X7)	0.132	0.028	0.035	0.791
8.	Farm material possession (X8)	-0.412	-0.206	0.062	-3.300**
9.	Consumer durable assets possession (X9)	0.188	0.306	0.171	1.790*
10.	House Type ( X10)	-0.009	-0.073	0.842	-0.086
11.	Sanitation status (X11)	0.090	0.298	0.342	0.870
<i>III</i>	<i>Socio-psychological</i>				
12.	Adoption leadership (X12)	0.196	0.211	0.135	1.566
13.	Management orientation (X13)	-0.111	-0.143	0.120	-1.191
14.	Risk orientation (X14)	0.217	0.300	0.163	1.847*
<i>IV</i>	<i>Communication</i>				
15.	Cosmopolitaness (X15)	0.062	0.137	0.223	0.614
16.	Training received (X16)	0.302	0.540	0.192	2.814**

$R^2 = 0.574$ , Adjusted  $R^2 = 0.457$

\* Significant at 5% level of significance.

\*\* Significant at 1% level of significance.

and significantly in case of determining the dependent variable attitude towards farm science centre's activity.

Farm material possession reflects the present economic status and agricultural knowledge affluence. Mostly in the study area the progressive farmers are much more saturated in case of agricultural information seeking and passing. The character of self dependency has developed within themselves. It is evident that the progressive farmers who possess much more farm materials they don't want to seek any information from farm science centre regarding agriculture due to their self dependency and self reliance nature. That was why the variable farm material possession had contributed negatively and significantly in case of determining the dependent variable attitude towards the farm science centre's activity.

The consumer durable assets possession variable emphasizes the possession of basic goods as well as luxury goods. The result depicted that the consumer durable assets possession had contributed in developing positive attitude towards farm science centre's activity. It implies that the farm science centre's activity makes a person more efficient in doing his work and help to augment income. That's why he has gathered more money to buy those types of assets. It means the activities of farm science centre produce more economically stable farmers in the community who are quite able to buy these durable assets. That was why the variable consumer durable asset possession had contributed positively and significantly in case of determining variable attitude towards farm science centre's activity.

Training is a process for capacity building through an institution. It makes a man more informative about an unknown or semi-known matter. It also makes a man more knowledgeable with skill to his profession. From this table, it was revealed that the training received had contributed in developing a positive attitude of the farmer towards farm science centre's activity. It reflected that training to a farmer through farm science centre made a man more informative and skillful in increasing the income from his own enterprise. For this reason the variable training received had contributed positively and significantly in case of determining the variable attitude towards farm science centre's activity.

Risk orientation is a venture type attitude of an individual. A farmer who is technically sound and knowledgeable can only take a new initiative in his own situation with his existing resources. It revealed that the risk orientation had contributed in developing a positive attitude of the farmer towards farm science centre's activity. So, it is clear that the risk orientation nature helps the farmer to become close to the farm science centre.

The  $R^2$  value being 0.574, it is to infer that the sixteen causal variables put together had explained 57.40 % variation embedded with the dependent variable attitude towards farm science centre's activity. From the study, it is clear that still 42.60% variation embedded with the dependent variable was still unexplored. So, there is profuse scope to incorporate more contextual and realistic variables in future study.

## CONCLUSION

The present journey was started in quest of finding out the stakeholders' attitude towards farm science centre's activity with respect to some attributes through venturing into the ripples of stakeholder's perception, breaking the ices of frozen emotions and extracting the aroma of imbued local values towards the farm science centre. It also tries to envisage the dictum and destiny of evolving the correlates associated with the stakeholders' attitude by cherishing a clear focus on income, livelihood, economic status, leadership, capacity building as well as management so as to the well established research extension linkages can be restructured and applied in the Indian rural context to establish a knowledge intensive society.

The farm science centre, an emerging extension model ultimately aims to the socialization of agro-technology with a view to uplift the socio-economic condition of the people with the help of eco-friendly agro-technology in a sustainable manner along with a system approach. The activities of farm science centre helps in building the capacity of adopted stakeholders, enriches their skill embedded knowledge on the agricultural technologies and ultimate develops a positive attitude towards this type of technology transfer system. For developing the new approach or paradigm for the technology socialization system in future the present

study has also identified some critical attributes of the adopted stakeholders namely primary occupation, consumer durable assets possession, training received, risk orientation, adoption leadership, farm material possession. The conducted activities of the Farm science centre improves the livelihood status, assets possession status, builds capacity through training, orients the ability to take more risks, develops leadership through

inculcating the positive attitude towards the farm science centre's activity. The explained variations also paves the way of considering more realistic and contextual attributes of stakeholders in future study to construct a more rational paradigm and policy on technology socialization.

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