Journal of Extension Education
Vol. 27 No. 1, 2015

Effectiveness of Hub and Spoke Model for Dissemination of Innovative Farm Technologies to the Farming Community

N. Sriram*

ABSTRACT

Hub and Spoke Model was established for dissemination of the innovative farming technologies at farmers' doorstep. The study was conducted to measure the Effectiveness of Hub and Spoke Model for dissemination of innovative farm technologies at Tiruvannamalai district of Tamil Nadu. The respondents were selected by adopting purposive random sampling technique. A sample of 75 respondents from five villages of Polur block was selected for this study. The hub and spoke model was established and the knowledge gain of the subjects both at the pre and post exposure stages were collected using teacher made knowledge tests respectively. The data were collected using a well structured and pre-tested interview schedule. The data were analyzed by using appropriate statistical tools. The percentage of knowledge gained before the exposure to treatment was 40.20 per cent and after exposed it was 76.70 per cent. The mean knowledge gain is 36.50 per cent. The 't' value 19.93 per cent indicates that the knowledge gained by the respondents was found to be significant at one per cent level. It was identified that there existed a significant differences in the effectiveness of the hub and spoke services in imparting knowledge.

The Information and Communication Technologies (ICT) can generate new opening to bridge the gap between information haves and information have-nots in the developing countries. Farmers have enthusiasm to obtain knowledge, particularly in the field of modern agriculture to become psychologically strong and conducive with necessary capacities to adopt modern methods of agriculture. In India, it is very difficult to contact each and every farmer in limited time to communicate latest agricultural technology. To diminish this difficulty, various mass media are certainly most effective avenues to convey information to the broad means of people, particularly to the huge illiterate segment of the farmers. Mahindra Kisan Mitra initiatives by Mahindra Tractor company, the company has established hub and spoke centre which links Samriddhi and Mahindra Kisan Mitra to further strengthening its service to farming community with power of information communication technologies. The study was conducted with objective to measure the effectiveness of hub and spoke model for dissemination of innovative farm technologies. The 'hub' is at the center and each of the 'spokes' extends outward from the center. The hub connects 'remote' offices in other cities. The remote offices are the 'spoke' sites. Each

*Assistant Professor (Agricultural Extension), Krishi Vigyan Kendra, Salem

of the remote sites connects to the main 'hub' site. Mahindra and Mahindra has established its first Samriddhi centre in Tamil Nadu at Polur, Tiruvanamalai to provide agro advisory service to the farming community in addition to the farm machinery solution. Further, Mahindra and Mahindra also established hub and spoke centres with help of TNAU interventions by linking Samridhhi centres to spread the farm specific information at farmers door step and to study its effectiveness in terms of knowledge gain.

METHODOLOGY

The study was conducted at Tiruvanamalai district of Tamil Nadu. Polur block of Tiruvannamali district was considered as the study area and from that block five villages were selected as suggested by the sponsoring agency. The respondents were selected by adopting purposive random sampling technique. A sample of 75 respondents from five villages of Polur block was selected for this study. The hub and spoke model was established and the knowledge gain of the subjects both at the pre and post exposure stages were collected using teacher made knowledge tests respectively. The data were collected using a well structured and pre-tested interview schedule. The data were analyzed by using appropriate statistical tools. One group is pre tested and exposed to the treatment, and then post tested. This is called a one-group pre test-post test design because the two tests are administered to the same group.

FINDINGS AND DISCUSSION

Knowledge gain of project farmers on paddy cultivation

Knowledge gain has been operationalised as the body of understood information possessed by the respondents on cultivation of paddy farming after hub and spoke intervention. The knowledge gain of the respondents was studied and the findings were presented in this section.

A glance at Table 1 pointed that there exists significant difference between before and after exposure of the treatment. The percentage of knowledge gained before the exposure to treatment was 40.20 per cent and after exposed it was 76.70 per cent. The mean knowledge gain is 36.50 per cent. The 't' value 19.93 per cent indicates that the knowledge

Table 1.
Distribution of Mean Knowledge Gain due to the Exposure of Treatment **(n=75)**

S.No.	Particulars	Means	Per cent	't' value
1.	Before exposure	9.65	40.20	19.93**
2.	After exposure	18.41	76.70	
3.	Mean knowledge gain	8.76	36.50	

** Significant at 0.01 per cent level.

gained by the respondents was found to be significant at one per cent level. It is identified that there existed a significant differences in the effectiveness of the hub and spoke services in imparting knowledge. The reason might be the exposure of spoke services through different communication methods via computers, mobile phones, distribution of booklets, posters, and training. Hence, majority of the respondents gain significant knowledge gain due to hub and spoke intervention. Nazreen (2008) also reported that there was significant knowledge gain among the respondents in his study on effective agricultural information delivery system.

From Table 2, it could be observed that out of fifteen characteristics taken for the study, three characteristics namely educational status (X_2), farming experience (X_5) and contact with extension agency (X_{10}) exhibited significant and positive correlation with knowledge gain at five per cent level of significance. It is quite natural that educational status, farming experience and contact with extension agency increases the level of knowledge gain. The educational status, farming experience and contact with extension agency have influenced the respondents to gain more knowledge. The other variables had non-significant

Table 2.
Correlation and Multiple Regression Analysis of Independent Variables towards Knowledge Gain **(n=75)**

Variable No.	Variables	'r' value	Regression coefficient	SE	't'
X_1	Age	-0.082^{NS}	0.060	0.021	1.517^{NS}
X_2	Educational status	0.250*	-0.090	0.170	2.523**
X_3	Family type	0.000^{NS}	0.000	0.000	0.000^{NS}
X_4	Occupational status	0.000^{NS}	0.000	0.000	0.000^{NS}
X_5	Farming experience	0.246*	1.582	0.318	0.954^{NS}
X_6	Farm size	-0.119^{NS}	-0.138	0.304	0.106^{NS}
X_7	Annual income	-0.115^{NS}	-1.092	0.468	0.360^{NS}
X_8	Farm power possession	-0.275^{NS}	-0.712	0.183	0.383^{NS}
X_9	Social participation	-0.119^{NS}	-0.146	0.094	-0.115^{NS}
X_{10}	Extension agency contact	0.118*	0.527	0.306	1.905*
X_{11}	Participation in extension methods	-0.211^{NS}	-0.319	0.095	-1.306^{NS}
X_{12}	Innovativeness	-0.198^{NS}	-0.132	0.066	1.210^{NS}
X_{13}	Awareness about the training centers	-0.044^{NS}	-0.122	0.188	0.996^{NS}
X_{14}	Perceived effectiveness of the training program	-0.279^{NS}	-0.256	0.165	-1.112^{NS}
X_{15}	Perceived attributes	0.302^{NS}	0.127	0.062	1.392

R^2 = 0.5133 ** = Significant at one per cent
F = 1.849 * = Significant at five per cent

relationship with dependent variable. The findings are in conformity with the findings of Fernandaz (2002) who found that the variable educational status had shown a positive relationship with knowledge gain of the respondents. As shown in the Table 2 the R^2 value is 0.5133, which means that the fifteen variables together contributed 51.33 per cent of variation in the knowledge gain of the respondents.

It could be seen from the Table 2 that the variables educational status and extension agency contact had shown positive and significant contribution towards knowledge gain of respondents at one per cent level. Here, one unit increase in educational status of the respondents would result in 2.523 units increase in the knowledge gain of the respondents, In the same way one unit increase in extension agency contact of the respondents, would result in 1.905 units increase in the knowledge gain of the respondents. Extension agency contact was found to have positive and significant association with knowledge gain of the respondents. This finding explained that more contact with extension agency would enhance the knowledge gain of the farmers. Extension agencies help the farmers to become aware of the latest technologies. This finding derives support from the finding of Rajakumar (1981) who reported that extension agency contact showed a significant association with the knowledge gain of the respondents.

CONCLUSION

The percentage of knowledge gained before the exposure to treatment was 40.20 per cent and after exposure was 76.70 per cent. The mean knowledge gain was 36.50 per cent. It shows that the treatment were effective in imparting knowledge. Hence, It could be concluded that the hub and spoke model may be established in all the rural areas with power of information communication technologies for effective transfer of farm technologies to farmers at doorstep for accelerating the farmers' production, productivity and livelihood status.

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