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MEASUREMENT OF PERCEPTION OF THE IMPORTANCE OF LINKAGE ACTIVITIES IN THE TRANSFER OF TECHNOLOGY OF IMPROVED RICE VARIETIES

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Abstract: An investigation was designed to measure the perception about the importance of linkage activities among the research, extension, client and input subsystems in the transfer of technology of improved rice varieties. The extension subsystem perceived its linkage activities with the research subsystem as less important. The research subsystem percieved its linkage with the input subsystem as less important and this was reciprocated by the latter also. The perception of the client subsystem about its linkage with the input subsystem was also poor. The extension subsystem was of opinion that its linkage with the client and input subsystem was important and this view was reciprocated by the client and input subsystems.

INTRODUCTION

The effectiveness of transfer of technology is greatly influenced by the linkage between and among those responsible for technology generation, technology transfer, those who actually put to use the technology and those who act as catalysts by supplying the required inputs. The need for strengthening the linkages between and among these subsystems has always been felt, more intensely after the initiation of the green revolution. The Kerala Agricultural University (KAU) has released 14 improved rice varieties from its four research stations. For effective transfer of technology of these varieties, a strong inter-subsystem linkage is of vital importance. A study was designed to measure the degree of perception of importance of linkage activities between and among the research, extension, client and input subsystems in the transfer of technology of these varieties.

MATERIALS AND METHODS

In the present study, transfer of technology of improved rice varieties was conceptualised as the 'system' and the researchers, extension personnel, farmers and input agencies involved in the transfer of technology process as the 'subsystems'. Thus there were four subsystems viz., the research subsystem (RSS), client subsystem (CSS), extension subsystem (ESS) and input subsystem (ISS). The possible number of combinations with regard to the extent of linkage between and among the four subsytems will be twelve. The tool for the measurement consisted of a set of activities that could possibly establish a functional linkage between any two subsystems, selected based on relevancy rating by judges, as shown in Table 1.

Table 1. Number of linkage activities originally included and number of activities finallly selected based on judges' rating

No.	Name of variable	Lo	Lf
1	RSS-ESS linkage	30	24
2	RSS-CSS linkage	30	24
3	RSS-ISS linkage	30	23
4	ESS-RSS linkage	25	21
5	ESS-CSS linkage	25	19
6	ESS-ISS linkage	21	16
7	CSS-RSS linkage	22	17
8	CSS-ESS linkage	21	16
9	CSS-ISS linkage	16	12
10	ISS-RSS linkage	18	13
11	ISS-ESS linkage	22	18
12	ISS-CSS linkage	24	19

Lo - No. of linkage activities originally included
Lf - No. of linkage activities finally selected

Respondents of the study consist of 52 researchers, 134 extension personnel, 110 farmers and 32 input agencies drawn from the districts of Alleppey, Ernakulam, Palghat and Trichur. The respondents were asked to indicate the degree of importance of the selected linkage activities as perceived by them, on a three point continuum ranging from 'most important' to 'least important' with scores 3, 2 and 1 respectively. The responses collected were used for developing an index using the following procedure.

A weighted average score for each respondent was worked out by computing the weighted mean of linkage score, the weight being the mean perception score for importance of linkage activities included under each subsystem using the following formula:

$$lwkj = \frac{\sum_{i=J}^{mk} wik \; lijk}{\sum_{i=1}^{mk} wik}$$

where lwkj = weighted linkage score of the jth respondent in the kth subsystem

mk = no. of linkage activities in the kth subsystem

lijk = the linkage score of the jth respondent for the ith linkage activity in the kth subsystem

$$wik = \frac{\sum_{i=1}^{nk} pik}{nk}$$

where pik - perception score for the ith linkage for the kth subsystem

nk = no. of respondents in the kth subsystem.

In order to give allowance for the varying number of linkage activities under each subsystem, percentage of effective linkage score was worked out by using the formula:

$$PCL = \frac{lwkj}{mk} \times 100$$

The perception of the respondents in different subsystems was then ranked based on linkage index score and the ranks of the respondents with regard to the different subsystems were arranged in a two-way table. A higher rank total indicated a lesser degree of importance of linkage activities. To determine whether the rank totals differ significantly among themselves or not the Friedman two-way analysis of variance was applied.

RESULTS AND DISCUSSION

The results of the analysis are presented in Table 2.

The Friedman test revealed that the X^2 values for all the combinations were significant indicating differences among the subsystems in the perception of the importance of linkage activities. Multiple comparisons were made among the different subsystems based on the ranks and the relevant critical ranges computed as per the procedure of Newman (1939) and Keuls (1952) extended to ordinal data (Zar, 1981). Thus W_2 was used to compare adjacent means and W_3 to compare alternate means.

The RSS had a higher degree of perception about the importance of its linkage with the CSS followed by the linkage with the ESS (88 and 92 respecitvely), and lesser perception about the

Table 2. Perception about the importance of linkage activities (results of Friedman test)

Sub-system	Sum of the ranks for perception				X^2	SE	Critical ranges	
	RSS	ESS	CSS	ISS			W_2	W_3
Research n = 52		92	88	132	22.8*	7.2	20.2	24.2
Extension n = 134	358	-	217	229	91.2*	11.6	32.4	38.9
Client n = 110	256	145	-	259	76.8*	10.5	29.0	34.6
Input n = 32	76	49	67	-	11.8*	5.7	16.0	19.2

* Significant at 5 per cent level of probability

importance of linkage with the ISS (132). The degree of perception of ESS was best with the CSS (217) very closely followed by with the ISS (229). But the ESS had a lesser degree of perception about the importance of linkage with the RSS (358). The CSS had a higher degree of perception about the importance of linkage with the ESS (145) whereas, it perceived the linkage with the RSS and ISS as less important (256 and 259) respectively. In the case of the ISS the degree of perception about the importance of linkage with the ESS was very high (49) compared with that of with the CSS and RSS (67 and 76 respectively).

The results of the investigation lead to conclude that there is a need to further strengthening the linkage of the research subsystem with that of extension and client subsystems. The mutual agreement between the extension and client subsytems about their better linkage could be attributed to the time bound farm and home visit of the former under the Training and Visit System. The linkage between the extension and input subsystems was also appeared very good. But the input agencies need to evolve strategies to improve its linkages with the client and research subsystems.

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