A Scale to Measure Research Management Ability of the Research Scientists Working as Head.

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INTRODUCTION

Generally, it is oberved that, the scientists who are working as the heads of the functional administrative unit i.e. department/station/project/scheme are basically graduates in agriculture and not in management. Similarly, they have experience of agricultural research and not of management before they become head. Thus, neither they have education nor they have experience in the field of mangement, eventhough, they have to carry the responsibilities of management aspects too. Further, the importance of management is also realized in the agricultural research. In view of above facts, it was considered as worth to develop a scale to measure research management ability of scientists who are working as head.

METHODOLOGY

In the present study, research management ability of the head has been operationalised as the ability of the head to apply the basic principles of management in running the department/ station/project/scheme for agricultural research work. Researcher in this field have used different criteria to measure the performance of the managers. Krdej (1971) used the confidential reports as performance indicator of bank officers. Mitchell (1979) used the teachers rating (perception) for studying principals' effectiveness in the elementary schools. However, in the present scale, the research management ability of the heads was measured by subordinates rating (perception) scale.

On the basis of review of literature and personal discussions with research heads/management experts, 10 main items and 61 sub- items were selected as possible components of the research management ability scale. These components were either mailed or given in person to the pannel of judges. the judges were requested to indicate whether each of the component sent to them was relevant and suitable for inclusion in the scale and to rank the component and sub-component. Out of 105 judges, 80 judges have responded which comes to 76.19 per cent.

Relevancy of scale items

Those items which received more than 75 per cent positive responses were considered as the relevant items for inclusion in the scale. The responses received from the judges supported the relevancy of all 10 main items whereas, 21 sub-items out of 61 were deleted because, it was observed that, these items were supported by less than 75 per cent respondents. Thus, 10 main items and 40 sub-items finally selected for the scale.

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Obtaining scale values :

Using the normalised rank method as recommended by Guilford (1954), the scale values of each items and weightage for each sub-items was calculated.

Reliability of the scale :

To calculate the reliability of scale, split-half method was used. The scale was administered to 20 research subordinates. The coefficient of correlation was found (r = 0.760) highly significant. Moreover, correlation coefficient between ratings of two subordinates of the samehead was found 0.6797 i.e. highly significant.

Validity of the scale :

The content validity of the scale was computed by two ways. Firstly, the component/sub-component were selected on the basis of an extensive and exhaustive review of literatures, secondly, the opinion of the panel of 80 judges were obtained to know whether the components and sub-components suggested were suitable for inclusion in the scale. Only those items positively responded by more than 75 per cent judges were selected.

Calculating the research management ability index :

In order to calculate the research management ability index (RMAI), each sub-component was first rated for the maximum (3 score) as well as actual score (1 to 3 scores) and then RMAI was calculated by using the following formula :

$$RMAI = \frac{\sum \begin{array}{c}\text{Score obtained for the sub-component}\end{array} \times \begin{array}{c}\text{Weightage of the sub-component}\end{array} \times \begin{array}{c}\text{Scale value of the main component}\end{array}}{\sum \begin{array}{c}\text{Maximum score for the sub-component}\end{array} \times \begin{array}{c}\text{Weightage of the sub-component}\end{array} \times \begin{array}{c}\text{Scale value of main component}\end{array}} \times 100$$

RESULTS AND DISCUSSION

The final instrument consisting of 40 statements with scale values was developed as per Table 1.

IMPLICATIONS

The scale developed is reliable and valid, hence the same could be adopted for measuring the research management ability of research heads elsewhere in the agricultural university.

REFERENCES

Guilford, J.P. 1954. Psychometric method. Tata MCGraw Hill Publication Company, Bombay.

Kardej, V. 1971. Use of cognitive tests in predicting performance of training in banks' staff training college, *Indian Management*. 10(1): 23-28.

Mitchell, P.T. 1979. Organisational climate of elementary school and teachers' perceptions of principals' effectiveness. *Dessertation. Ab. International*, 39(9-A) : 5241.

Table 1 : A Scale to measure Research Management ability of the research scientists working as head :

Sr. No.	Statement	Check (✔) any one for each statement
1	2	3

(A) Planning (6.33)*

1.	With which purpose, your Head is mostly preparing research proposals ? (5.72)**	☐ To find out solution of the farmer's problems
		☐ To ascertain future needs of the farmer
		☐ Routine research work.
2.	How often does your head plan in advance to send reports regularly ? (4.48)	☐ Always ☐ Sometimes ☐ Never
3.	Due to lack of advance planning by the Head, how often do you feel the shortages of research material chemicals, stationary etc.	☐ Frequently ☐ Sometimes ☐ Never

(B) Organising (5.58)

4.	How frequently does your Head call staff meetings for discussing the problems and providing guidance ? (5.36)	☐ Frequently ☐ Sometimes ☐ Never
5.	How often does your Head provide opportunity to staff of the department to acquaint with each other's work/experiments ? (5.19)	☐ Always ☐ Sometimes ☐ Never
6.	In the events of mistakes by the staff, how does your Head behave ? (4.76).	☐ Tolerate the mistakes ? ☐ Fire the staff ?
		☐ Try to findout the cause of mistakes and guide.
7.	How frequently does your Head ask subordinates to make suggestions ? (4.92)	☐ Frequently ☐ Sometimes ☐ Never
8.	Does your Head specifically allot the helping staff to his associate research worker ? (4.74)	☐ Always ☐ Sometimes ☐ Never
9.	How many members of the staff in your department/station/project/scheme are allotted sufficient work to do ? (5.02)	☐ Almost all persons ☐ Some persons ☐ No one

1	2	3

(C) Directing (5.07)

10. How often does your Head delegate authority to a person in relation to the responsibilities assigned to him ? (4.80)
☐ Always
☐ Sometimes
☐ Never

11. How often does your Head appreciate good work done by a person ? (4.82)
☐ Always
☐ Sometimes
☐ Never

12. How often does your Head give due credit to a person connected with the work done ? (e.g. by writing name of a person in a research paper, report etc.) (4.92)
☐ Always
☐ Sometimes
☐ Never

13. How often does your Head give clear and complete instructions for work ? (5.29)
☐ Always
☐ Sometimes
☐ Never

14. How often does your Head provide technical guidance to the staff ? (5.21)
☐ Always
☐ Sometimes
☐ Never

(D) Communicating (4.91)

15. How often does your Head give instructions in time ? (5.46)
☐ Always in time
☐ Sometimes in time
☐ Never in time

16. How much clear is your Head in writing ? (5.06)
☐ Very clear
☐ Clear
☐ Not clear

17. How much clear is your Head in oral communication ? (4.86)
☐ Very clear
☐ Clear
☐ Not clear

18. How often does your Head listens to any employee who has something to tell him ? (4.79)
☐ Always
☐ Sometimes
☐ Never

19. How frequently does your Head ask/write to other scientists/organisations in respect of research work ? (4.84)
☐ Frequently
☐ Sometimes
☐ Never

(E) Controlling (4.86)

20. How frequently does your Head visit laboratory/department ? (4.87)
☐ Frequently
☐ Sometimes
☐ Never

21. How frequently does your Head visit research trials on farm ? (5.29)
☐ Frequently
☐ Sometimes
☐ Never

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1	2	3
22.	How frequently does your Head inquire about the condition/progress of research experiment/work from the concerned fellow ? (4.84)	☐ Frequently ☐ Sometimes ☐ Never
23.	How frequently does your Head make personal contact with the staff members ? (5.59)	☐ Frequently ☐ Sometimes ☐ Never
24.	How frequently does your Head say angry words to staff ? (4.89)	☐ Frequently ☐ Sometimes ☐ Never
25.	In the event of illness of staff and his family members, how often your Head is sympathetic with them ? (4.87)	☐ Always ☐ Sometimes ☐ Never
26.	How often does your Head try to develop junior scientists ? (e.g. to provide opportunity to attend workshop/meeting whenever possible (5.25)	☐ Always ☐ Sometimes ☐ Never
27.	How often does your Head attend social gathering ? (4.65)	☐ Always ☐ Sometimes ☐ Never
28.	How often does your Head understand the habits of the people for happy work relationship (4.77)	☐ Always ☐ Sometimes ☐ Never

(G) Leadership (4.73)

1	2	3
29.	How often does your Head say 'No' even to a higher authority for wrong things ? (5.07)	☐ Always ☐ Sometimes ☐ Never
30.	How often does your Head promote team work ? (5.52)	☐ Always ☐ Sometimes ☐ Never
31.	How often does your Head settle internal dispute of the staff ? (4.72)	☐ Always ☐ Sometimes ☐ Never
32.	How often does your Head choose right person for each job/task ? (5.47)	☐ Always ☐ Sometimes ☐ Never
33.	How does your Head behave with the staff ? (4.53)	☐ Too friendly ☐ Not at all friendly ☐ Friendly, but keeping distance

1	2	3
34.	How often can your Head convince higher authority about the needs ? (4.74)	☐ Always ☐ Sometimes ☐ Never

(H) Supervision (4.73)

35.	How frequently does your Head provide conselling and suggestions to staff ? (4.89)	☐ Frequently ☐ Sometimes ☐ Never
36.	How often does your Head help the staff in improving the research skills ? (e.g. operating instruments, analysis procedure, etc.) (5.11)	☐ Always ☐ Sometimes ☐ Never

(I) Coordination (4.87)

37.	How fequently does your Head co-ordinate the research activities with other departments/organisations ? (4.85)	☐ Frequently ☐ Sometimes ☐ Never
38.	How often does your Head elicit/give the co-operation from/to other departments/ organisation ? (4.98)	☐ Always ☐ Sometimes ☐ Never

(J) Decision making (4.93)

39.	How often does your Head take important decisions in time ? (5.32)	☐ Always ☐ Sometimes ☐ Never
40.	How often does your Head findout/consider all the facts before taking important decisions ? (4.68)	☐ Always ☐ Sometimes ☐ Never

Note : * Scale values for main items
** Weightage for sub-items.