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A Scale to Measure Attitude of Research Scientists Towards their Research Work

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ABSTRACT

Research has crucial role in agricultural development of our nation. Research Scientists are the backbone persons performing lot of important functions at different stages of research. Among all factors, attitude of the scientists towards his research work is an important factor that motivate a scientist to put his assets and abilities to maximum use for the advancement of research. Hence, there is great need to measure attitude, but the assessment of the attitude would be impossible without standard devices. Therefore, an effort was made to develop an instrument. The scale developed could be used to measure the attitude of research scientists working in Agricultural University as well as at other places with partial modifications.

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INTRODUCTION

Research has a significant role in agricultural development in country. By improving the quality and yield potential of different crops, research upgrades the economical condition of farmers which ultimately affects the development of society, state and nation.

Research scientists working as head of the department/station/project/scheme are the backbone persons having responsibility of performing lot of important tasks at different stages of research work. He has to initiate new research projects.

He has to discuss problems of his co-workers and provide maximum help and encouragement by supplying satisfactory solutions to them. But among all factors that motivate a scientist to put his assets and abilities to maximum use for the advancement of research work, his attitude towards his research work is of prime importance. Hence, the quality and quantity of research carried out in the department/station/project/scheme are mainly depending on the attitude of the scientist working as head towards their research work. Therefore, the present study was conducted to develop a scale to measure the attitude of Research Scientists of GAU towards their research work (in GAU).

According to Allport (1935), 'an attitude is a mental and neural state of readiness,

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organised through experience exerting a directive of dynamic influence upon the individual's response to all objects and situations with which it is related'. It refers as 'the degree of positive or negative effect associated with some psychological object' (Thurstone, 1946).

MATERIALS AND METHODS

The technique chosen to construct the attitude scale was 'scale product method' which combines the Thurstone's technique of 'Equal appearing interval scale' for selection of items and Likert's technique of summated rating for ascertaining the response on the scale as proposed by Eysenek and Crown (1949).

(1) Collection of attitude statements

The objective was to select a set of items in such a manner that the acceptance or rejection of each one will imply a different degree of favourable or unfavourable attitude of research scientists working as head of department/station/project/scheme toward their research work. As such, 21 statements were collected from relevent literature and experts.

The statements thus collected were carefully examined in the light of 14 criteria suggested by Edward and Kilpatric (1984) for screening the items. As a result, 15 of the 21 statements were retained.

(b) Item analysis

The selected statements were so recorded as to express positive or negative attitudes. All the statements were typed in a random sequence and presented to 53 extension experts in order to judge the degree of 'unfavourableness-favourableness' of each. They were also asked to check as to the specificity, ambiguity, generality, different interpretations and understandability of the statements.

(c) Determination of Scale and 'Q' values

The seven points of the rating scale were assigned scores ranging from 1 (for strongly unfavourable) to 7 (for strongly favourable). Based on the judgement, the medium value of the distribution, the 'Q' value for the statement concerned was calculated with the help of following formula (Edward, 1957).

$$S = L + \left(\frac{0.50 - Epb}{Pw} \right) \times i \quad \text{Formula} - 1$$

$$Q_2 = L + \frac{0.25 - Epb}{Pw} \times i \quad \text{Formula} - 2$$

$$Q_3 = L + \left(\frac{0.75 - Epb}{Pw} \right) \times i \quad \text{Formula} - 3$$

where,

S = the median or scale value of the statement.

L = the lower limit of the interval in which the median falls.

Epb = the sum of the proportions below the interval in which the median falls.

Pw = the proportion within the interval in which the median falls.

i = the width of the interval and is assumed to be equal to 1.0

Q_2 & Q_3 = interquertile.

The interquertile range Q=Q3 - Q2 for each statement was also worked out for determination of ambiguity involved in the statement, with the use of formula 2 and 3.

(d) Method of scoring

The selected 13 statements for final format of the attitude scale were randomly arranged to avoid response bias that might contribute to low reliability and detraction from validity of the scale. Against each of 13 statements, there were five response column representing a 5 point agree-disagree continuum as followed by Likert (1932) in his summated rating technique. The point on the continuum were strongly agree, agree, undecided, disagree and strongly disagree with weights of 5, 4, 3, 2 and 1 respectively for positive items and 1, 2, 3, 4 and 5 respectively for negative items.

The weightages of Likert's technique and the scale values of Thurstone's technique were combined in form of a product and the total score for an individual was the sum of the product.

(e) Reliability of the scale

To know the reliability of the scale split-half method was used. The scale was administrated to 20 research scientists who were neither previously used as judge nor had chance to come in the final sample. The scores for the alternate items were separated and two sets were prepared. The coefficient of correlation between the two sets of scores was found 0.648 (r-value) which significantly indicated the stability of the scale.

(f) Validity of the scale

The content validity of the scale was computed by two ways. Firstly the component/sub-component selected for inclusion in the scale was based on an extensive and exhaustive literature reviewed and secondly, the opinion of the panel of 53 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 75 per cent judges were selected.

RESULTS AND DISCUSSION

For determination of ambiguity involved in the statement, the interquatile range (Q) for each statement was calculated. When there was a good agreement among the judges in judging the degree of favourableness or unfavourableness of a statement, Q-value was small as compared to the S-value. When there was a relatively little agreement among judges, the Q-value was higher than S-value. Only these items were selected whose median (scale) values (S-values) were greater than Q-values. On the basis of scale and Q value, 13 statements were selected for final format of the attitude scale as per Table 1.

TABLE 1

Final format of the scale to measure attitude of research scientists towards their research work.

Sr. No.	*Statement*	*Scale value*	*Strongly agree*	*Agree*	*Undecided*	*Diss-agree*	*Strongly disagree*
1.	I have never regretted decision to join research work.	4.7					
2.	Research work is a waste of time.	1.2					
3.	Research work is related to my interest	6.2					

Sr. No.	Statement	Scale value	Strogly agree	Agree	Undecided	Diss-agree	Strongly disagree
4.	I am well adjusted with research work	5.6					
5.	Research work is too hard a job to do	4.5					
6.	Research work offers social status	4.8					
7.	I accepted research work job because of the non-availability of any other job.	3.1					
8.	Research work gives me great deal of pleasure	6.1					
9.	Money spent on research work is just a wastage	1.1					
10.	I am proud that I am engaged in research work	6.3					
11.	Honestly speaking. I hate research work.	1.0					
12.	Research work is the need of the hour.	6.6					
13.	I would not mind to work even for seven days for research.	4.9					

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