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Development of Scale to Measure Attitude of Farmers and Farm Women towards Front Line Extension System of ICAR

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A B S T R A C T

Attitude influences an individual's choice of action and responses to any services, incentives and challenges. The attitude of the farmers and farm women towards front line extension system of ICAR has a direct bearing on the performance of the system. A scale was constructed to measure the attitude of farmers and farm women towards the agriculture extension system of ICAR. For this, Thurston equidistance method of scale construction was used. The scale consisted of final 20 statements including ten positive and ten negative statements. Reliability of the scale was calculated by using reliability coefficient (Cronbach alpha) was 0.93. The validity of the scale was tested by the expert's judgments. The reliability and validity of the scale indicate its consistency and precision of the results. This scale can be used to measure the attitude of farmers and farm women to study their attitude towards front line extension system of ICAR.

Introduction

The ICAR established a section of Extension Education at its headquarters in 1971 which was later on strengthened and renamed as Division of Agricultural Extension. It was intended to enforce this functional relationship of the extension system down the line in the research institutes, agricultural universities and allied institutions. Front line extension system of ICAR presently comprises of DEE of SAUs and Krishi Vigyan Kendra (KVKs).

The system has a wide network of KVKs at district level which is mainly responsible for the dissemination of agricultural technologies to farmers, farm women and other extension field functionaries at the grass-root level. As attitude influences an individual's choice of

action and responses to any services, incentives and challenges. The attitude of the farmers and farm women towards front line extension system of the ICAR has a direct bearing on their participation in various extension activities and utilization of extension services.

Hence, an effort has been made to construct a scale to measure the attitude of the farmers and farm women towards various aspects of the transfer of technology, extension services of the system. The attitude scale thus constructed can be utilized for improving the participation and effectiveness of extension work.

Materials and Methods

An attitude is a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation. The attitude of the farmers and farm women towards the agricultural extension system of ICAR was measured by the attitude scale especially constructed to meet out the objectives.

The attitude was operationalized as the degree of positive or negative feeling of farmers and farm women towards the front line extension system of ICAR. Thurston's equal appearing interval technique was used to construct the attitude scale because the technique has an absolute system of units and also show higher reliability, as indicated by Pandey (2017). The methodological procedures for Thurston's equal appearing interval technique of attitude scale construction are as follows:

Defining the construct

A construct is a concept with added meaning, deliberately and consciously invented or adopted for a special scientific purpose (Kerlinger, 1973).

The construct is a proposed attribute of a person that often cannot be measured directly, but can be assessed using several indicators or manifest variables. In the present study construct was the attitude of farmers and farm women towards the agriculture extension system of ICAR.

Identification and operationalization of dimensions under the construct

Major dimensions identified under this construct were factors related to the extension activities, services rendered and facilities provided to the farmers and farm women by the extension system (mainly KVKs).

Collection and development of items

Items are the statements representing each dimension of the construct under study. Items related to the attitude of the farmers and farm women towards front line extension system of ICAR were collected and developed based on an extensive review of literature, consultation with the experts from State Agricultural Universities and KVKs.

These statements were obtained from all possible sources e.g. literature, discussion with experts, the experience of investigator and research papers. Initially, a tentative list of 65 statements was drafted keeping in view the applicability of statements suited to the area of study viz. Rajasthan.

Editing of items

The statements thus collected were edited for final selection based on the criteria suggested by Edwards (1957). Maximum care was taken in the editing of statements so that it could measure what is intended. After editing and based on pilot study on 30 respondents viz. 15 farmers and 15 farm women, finally 42 statements were selected.

Results and Discussion

Judges' rating of attitude statements

A copy of all the 42 statements together with 5 point continuum against each statement was personally given/ mailed to 50 judges with a request letter explaining the procedure of judgment. The judges selected for the study comprised of extension specialists, educationists and officials of DEE. The judges were requested to sort out the statements on 5 point continuum i.e. most favourable, favourable, neutral, unfavourable and most unfavourable statement in judging the attitude towards the front line extension system of ICAR. They were also requested to delete redundant statements and suggest modifications in the scale they deemed necessary. The response was received from 37 judges out of 50.

Calculation of scale and Q values

On the basis of judges rating in the equal appearing interval, the scale values of 48 statements were obtained by computing their medians. The semi-interquartile range 'Q' was computed as an index of dispersion of statements in the scale. The goal was to have a smaller number of statements evenly placed on the continuum. The 'Q' value indicated the ambiguity or uncertainty of the meaning of the statements. The statements with larger 'Q' value were omitted. Since the median of the distribution of judgment for each statement is taken as the scale value of the statement, the scale value was calculated with the help of the following formula:

$$S = 1 + \left(\frac{0.50 - \sum pb}{pw}\right) i$$

where,

S= the median or scale value of the statement

1= the lower limit of the interval in which the median falls

$\sum$pb= 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

To determine the Q value, two other point measures i.e. the 75th and 25th centile were calculated using the following formulae:

$$C_{25} = 1 + \left(\frac{0.25 - \sum pb}{pw}\right) i$$

$$C_{75} = 1 + \left(\frac{0.75 - \sum pb}{pw}\right) i$$

where,

C_{25} & C_{75} = the 25th and 75th centile respectively.

1= the lower limit of the interval in which the 25th and 75th centile falls.

$\sum$pb= the sum of the p proportions below the interval in which the 25th and 75th centile falls.

pw= the proportion within the interval in which the 25th and 75th centile falls.

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

The inter-quartile range or Q value was calculated as under:

$$Q = C_{75} - C_{25}$$

The scale value and Q value for each of the 42 statements was thus calculated according to the above mentioned formula.

Final selection of the attitude statements

When there was good agreement among the judges in judging the degree of

favourableness or unfavourableness of a statement, Q value was small as compared with the value obtained when there was relatively little agreement among the judges. Based on the following criteria, 20 statements were finally selected for the attitude scale:

Representation of the universe of the opinion about the extension system of the department.

The scale values should have equal appearing intervals and Equal distribution of favourable and unfavourable attitude statements.

Scoring procedure and final format of the scale

Out of twenty statements, ten statements were the indicators of favourable attitude towards the extension system and the remaining ten were indicating unfavourable attitude. These finally selected twenty statements were randomly arranged to avoid response bias.

Against each of these statements, thus arranged, there were five columns representing a 5 point continuum as strongly agree, agree, undecided, disagree and strongly disagree with the weightage of 5, 4, 3, 2 and 1, respectively for favourable statements and weightage of 1, 2, 3, 4 and 5 for unfavourable statements. The scale was then administered to the 30 farmers/farm women and attitude score of each individual was calculated.

Standardization of the scale

For standardization of the present scale reliability and validity was ascertained using "Cronbach's alpha" method and content validity, respectively.

The reliability of attitude scale

To measure the reliability of the attitude scale, "Cronbach's alpha" method was used. The developed attitude scale was administered to the same group of 30 respondents (farmers and farm women) other than the respondents included in the sample.

The instrument was re-administered to the same group of respondents after 15 days. Cronbach's alpha coefficient of correlation between the scores obtained by the respondents at two occasions was calculated. The value of correlation so obtained was 0.93 indicating highly significant or high reliability of the attitude scale.

The validity of attitude scale

The validity of a test depends upon fidelity with which it measures what it is expected to measure (Kerlinger, 1967). Content and construct validity of the attitude scale was examined. Statements were selected to cover the whole universe of the content with the help of literature and scientists from different departments.

The selected statements were presented to a panel of judges to find out the jury validity, to see whether the whole universe and sub-universe of content are covered or not and the statements framed were clear and in an understandable form. Those items which secured 70-80 per cent concurrence of experts were included in the final scale or test.

Administration of the scale

The final scale which would measure the attitude of farmers and farm women towards the front line extension system of ICAR consisted of 20 statements. The scale can be administered on a five-point continuum viz., strongly agree, agree, undecided, disagree and strongly disagree with a score of 5,4,3,2 and 1, respectively for positive statements and reverse scoring for negative statements.

Table.1 Final attitude scale statements with their respective 'S' and 'Q' values

S. No.	Statement	S Value	Q-Value
1	Regular contact with a scientist of KVK motivates farmers to adopt scientific practices	4.73	0.90
2	KVK does not conduct activities as per the needs of the farming community*	4.34	1.26
3	KVK helps farming community to develop linkages with other agencies and organizations	4.62	1.08
4	KVK's scientists do not provide solutions to all technical problems of the farming community about agriculture and allied activities*	4.58	1.05
5	Farmer's fair organized by KVK is a good platform for getting the latest technologies related to agriculture	4.47	1.03
6	Extension personnel of KVK do not have a good rapport with the farming community*	4.46	1.24
7	KVK use multiple teaching methods in training	4.36	1.07
8	Information provided by KVK scientists has no practical application*	3.90	1.07
9	KVK helps in providing livelihood security to the farming community	4.35	1.11
10	Food and lodging facilities in on-campus training are not good*	3.78	1.11
11	Trainings of KVK are very useful for developing skills	4.13	1.27
12	Front line demonstrations are confined to few crops only*	4.33	1.02
13	Crop production has substantially increased due to activities of KVK in the adopted village	4.31	1.09
14	Information received from KVK is not accurate*	4.29	0.99
15	The income of farmers in adopted villages is more compared to non-adopted villages	4.27	1.23
16	KVK does not have highly qualified and trained manpower*	4.26	1.06
17	Transfer of technology is fast in adopted villages of KVK	3.56	0.93
18	Vocational trainings of KVK are not sufficient to start a sound economic activity*	4.25	1.10
19	FLD helps the farmer in the adoption of the recommended package of practice	4.15	1.73
20	KVK activities focus more on farmer than farm women*	4.07	1.38

* shows negative statements

Therefore, the overall possible attitude score of the individual respondent towards the agriculture extension system of ICAR could range from 20-120. The high score of scale will represent the favourable attitude of farmers/farm women towards agricultural extension system of ICAR.

This scale was constructed keeping in mind the study area viz. Rajasthan. Due to uniformity of services, activities and approaches of ICAR extension system throughout the nation, the attitude scale thus constructed can be administered upon the farmers and farm women on a large scale to get a wider picture of their view towards the system. The results obtained will be helpful not only in planning and directing the future extension work but also help in improving the participation of the farmers and farm women thereby enhancing the effectiveness of the system.

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