Development of scale for assessing input dealers attitude towards diploma in agricultural extension services for input dealers (DAESI) programme

Aparna Jaiswal, NK Khare and SRK Singh

Abstract
Attitude is a behavioural construct that cannot be measured by a single variable, hence the need for developing a standardized instrument for its measurement. The present study has been conducted to develop a reliable and valid instrument for assessing DAESI input dealers attitude towards DAESI programme. A step by step procedure of developing a standardized attitude scale was followed using Likert’s summated rating approach. The steps include item collection, relevancy test, item analysis, reliability test as well as validity test. Finally sixteen items were selected for the attitude scale which were found reliable at by Rulon’s formula of 0.78 and satisfied content validity. This scale of attitude may be useful for researchers and extension functionaries in order to measure the attitude of input dealers towards DAESI programme.

Keywords: attitude, DAESI

Introduction
Attitude refers to the “degree of positive or negative feelings associated with some psychological object” (Thurstone, 1946) [6]. In the present study attitude is conceptualized as positive or negative feelings of DAESI input dealers towards the DAESI programme for understanding its positive and risky aspects. To measure this, researcher has developed and standardized the attitude scale. Among the techniques available, Likert’s technique (1932) [4] of summated rating was used in the present study. The details of the steps followed in the construction of scale method to measure the attitude of input dealers towards DAESI programme is presented in methodology.

Methodology

Item collection
The items of attitude scale are called as statements. In initial stage of developing the scale, total 64 statements reflecting feelings of the input dealers towards the DAESI programme were collected from review of literature, discussion with extension experts and personal experience. The collected statements were edited and subjected to screening according to the criteria laid down by Edward and Kilpatrick (1948) [2] for attitude scale construction. Out of 64 statements, 50 statements were retained after editing that satisfied the scaling criteria were finally selected from the pool of items collected. These statements were found to be non-ambiguous and non-factual.

Item analysis
It may possible that all the collected statements may not be appropriate equally in measuring the attitude of DAESI input dealers towards DAESI programme. Hence these statements were subjected to scrutiny by judges comprised of extension experts, professors and social scientists to determine their appropriateness. For this the list of statements had sent to selected judges. The statements were sent to 75 Judges with request to critically evaluate each statement for its relevancy, their difficulty level and content validity to measure the attitude of DAESI input dealers towards DAESI programme. The judges were requested to give their response on a five point continuum viz, strongly agree, agree, undecided, disagree and strongly disagree with scores 5,4,3,2 and1 respectively. Out of 75 judges 52 had responded in time. They were also asked to make necessary modification, addition or deletion of the statements. The relevancy score of each item was ascertained by adding the scores on rating scale for all the ‘52 judges’ responses.
Relevancy test
The data received from the judges were subjected to relevancy test to know the relevancy of the selected statements. For this purpose relevancy percentage, relevancy weightage and mean relevancy scores were worked out for all the 50 statements by using following formulae. (C Latha. et al. 2021) [1].

a. Relevancy percentage
Relevancy percentage was worked out by summing up the scores of all categories, which were then converted into percentage.

b. Relevancy weightage (R.W.)
Relevancy weightage was obtained by the formula.

\[ R_W = \frac{HRR + RR + NR + IR + HR}{MPS} \]

N = Number of judges

MPS = Maximum possible score (N ×5 =MPS).

HRR = Highly relevant response (X5)
RR = Relevant response (X4)
NR = Neutral response (X3)
IR = Irrelevant response(X2)
HR = Highly irrelevant (X1)

Using these three criteria the statements were screened for their relevancy. Accordingly, statements having relevancy % >70, relevancy weightage >0.70 and mean relevancy score > 3.5 were considered for final selection of statements. By this process, 35 statements were isolated in the first stage, which were suitably modified and rewritten as per the comments of judges.

c. Mean relevancy score (M.R.S.)
M.R.S. was obtained by the following formula.

\[ MRS = \frac{HRR + RR + NR + IR + HR}{N} \]

Using these three criteria the statements were screened for their relevancy. Accordingly, statements having relevancy % >70, relevancy weightage >0.70 and mean relevancy score > 3.5 were considered for final selection of statements. By this process, 35 statements were isolated in the first stage, which were suitably modified and rewritten as per the comments of judges.

Calculation of ‘t’ values
These 35 statements were subjected to item analysis to delineate the items based on the extent to which they can differentiate the DAESI input dealers with high attitude than the respondent with low attitude towards DAESI programmes. (Pilot Survey) For this 40 input dealers were selected from non sample area. The respondents were asked to indicate their degree of agreement or disagreement with each statement on the five-point continuum ranging from “strongly agree” to “strongly disagree”. The scoring pattern adopted was 5 to 1, in which, 5 weighs to strongly agree response, 4 to agree response, 3 to undecided response, 2 to disagree response and 1 to strongly disagree response for positive statement and for negative statement, the scoring pattern was reversed. Based upon the total scores, the respondents were arranged in descending order. The top 25.00 per cent of the respondents with their total scores were considered as the high group and the bottom 25.00 per cent as the low group, so as these two groups provide criterion groups in terms of evaluating the individual statements as suggested by (Edward, 1969) [3]. Thus out of 40 input dealers to whom the items were administered for the item analysis, 10 DAESI input dealers with lowest, 10 with highest scores were used as criterion groups to evaluate individual items. The critical ratio, that is the ‘t’ value which is a measure of the extent to which a given statement differentiates between the high and low groups of the respondents for each statements was calculated by using the formula suggested by (Edward, 1969) [3].

\[ t = \frac{\sum X_H - \sum X_L}{\sqrt{\sum (X_H - \sum X_H)^2 + (X_L - \sum X_L)^2}} \]

Where:
X H = the mean score on given statement of the high group
X L = the mean score on given statement of the low group
X² = Sum of squares of the individual score on a given statement for high group
X = Sum of squares of the individual score on a given statement for low group
n = Number of respondents in each group

After computing the t- value for all the items, 16 statements with highest ‘t’ value equal to or greater than 1.75 were finally selected and included in the attitude scale.

Table 1: Statements with t Value

<table>
<thead>
<tr>
<th>S. No</th>
<th>Statements</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>This programme transforms input dealers as the key informants of agro advisory services.</td>
<td>2.791*</td>
</tr>
<tr>
<td>2</td>
<td>It transforms input dealers into para extension professionals.</td>
<td>3.121*</td>
</tr>
<tr>
<td>3</td>
<td>Topic on organizing demonstration is very useful.</td>
<td>1.041</td>
</tr>
<tr>
<td>4</td>
<td>Programme helps to learn business tactics.</td>
<td>0.367</td>
</tr>
<tr>
<td>5</td>
<td>DAESI programme helps to fetch high return to the farmers.</td>
<td>0.758</td>
</tr>
<tr>
<td>6</td>
<td>DAESI brings change in perspective of input dealers by equipping them with scientific information.</td>
<td>2.208*</td>
</tr>
<tr>
<td>7</td>
<td>Facilitators are providing knowledge about the agricultural activities undertaken in the district</td>
<td>1.852*</td>
</tr>
<tr>
<td>8</td>
<td>DAESI will helps in business expansion</td>
<td>0.788</td>
</tr>
<tr>
<td>9</td>
<td>The curriculum is based on the basis of location specific crops and local needs.</td>
<td>0.795</td>
</tr>
<tr>
<td>10</td>
<td>One tutor over forty input dealers is not sufficient to maintain interaction.</td>
<td>-0.213</td>
</tr>
<tr>
<td>11</td>
<td>Qualifying marks for this course is high</td>
<td>-0.536</td>
</tr>
<tr>
<td>12</td>
<td>The field visit during the programme confronts with local problems.</td>
<td>2.573*</td>
</tr>
<tr>
<td>13</td>
<td>This programme helps to improve decision making ability</td>
<td>0.376</td>
</tr>
<tr>
<td>14</td>
<td>Lecture on IPM is useful.</td>
<td>-0.455</td>
</tr>
<tr>
<td>15</td>
<td>DAESI imparts relevant and location specific agricultural education.</td>
<td>3.397*</td>
</tr>
</tbody>
</table>
Among the 35 statements for the item analysis the 16 statements with the highest t values were selected for the final content validity. As the scale value difference for almost all the statements included had a very high discriminating value, it seemed reasonable to accept the scale as a valid measure of attitude. Thus ensuring a fair degree of content validity.

Validity of the scale
The content validity of the scale was tested. The content validity is the representative or sampling adequacy of the content, the substance, the matter and the topics of a measuring instrument. This method was used in the present scale to determine the content validity of the scale. As the content of the attitude was thoroughly covered the entire universe of agricultural diversification through literature and expert opinion, it was assumed that present scale satisfied the content validity. As the scale value difference for almost all the statements included had a very high discriminating value, it seemed reasonable to accept the scale as a valid measure of the attitude. Thus ensuring a fair degree of content validity.

Results
Among the 35 statements for the item analysis the 16 statements with the highest t values were selected for the final attitude scale and rest are rejected. The reliability coefficient for the constructed attitude scale was 0.78. Thus reliability coefficient obtained indicated high internal consistency of attitude scale.

References
4. Likert RA. A technique for the measurement of attitudes. Archives of Psychology, 1932, 140.