Development of Scale to Measure Attitude of the Farmers Towards Anubhav Liquid Bio-fertilizer Phosphate Culture

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ABSTRACT

Due to non-availability of a proper scale to measure farmers' attitude towards Anubhav liquid bio-fertilizer phosphate culture, it was thought necessary to construct a scale for the purpose. Keeping this in view, an attempt has been made to develop a scale for measuring the attitude of farmers towards Anubhav liquid bio-fertilizer phosphate culture. technique chosen to develop attitude scale was 'Scale Product Method' which combines the Thurstion's technique of equal appearing interval scale for selection of the items and likert's techniques of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown (1949).

Keywords: *Attitude, liquid bio-fertilizer phosphate culture, Continuum, Reliability, Validity*

INTRODUCTION

Attitude has been defined as "the degree of positive or negative feeling, affect, opinion, action and belief associated with some psychological object", psychological object may be any symbol, institution, person, phrase, slogan, idea or ideal towards which people may differ from each other with respect to positive or negative aspect. The cognitive component of an attitude consists of the beliefs, which involves attributes like favourable or unfavourable, desirable or undesirable, good or bad etc. The feeling component refers to the emotions which give attitude a motivating character or action tendencies. The action tendency component of an attitude includes all behavioural readiness associated with it. These three components of attitude, are, however, consistently related to each other. The psychological object for the present study has been conceptualized as the Anubhav liquid bio-fertilizer phosphate culture.

METHODOLOGY

In this study, an attempt has been made to develop a scale, which can scientifically measure attitude of the farmers towards Anubhav liquid bio-fertilizer phosphate culture. Among the techniques available for the development of scale, the Thurston's equal appearing interval scale (1928) and the Likert's summated rating scale (1932) are quite well known. However, both the methods suffer from the limitations, the first one in getting discriminating response and second one in selection of items. Thus, technique chosen to develop attitude scale was 'Scale Product Method' which combines the Thurstion's technique of equal appearing interval scale for selection of the items and likert's techniques of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown (1949).

Steps in development of attitude scale

Steps in development of the attitude scale are presented in Figure 2 and discussed as below.

Item collection

The items making up an attitude scale are known as statements. The statements were collected from the relevant literature as well as construct through discussion with experts, major guide and extension personnel.

Editing of Items

The statements, thus selected were edited on the basis of the criteria suggested by Edward (1957). At last, 21 statements were selected as they were found to be non-ambiguous.

Statements analysis

Seventy slips of these statements were distributed among 70 selected experts working in Department of Exten-

sion Education and Directorate of Extension Education of four agricultural universities of the Gujarat as well as Extension Education Institute, Agronomy and Microbiology department of Anand Agricultural University to judge the degree of unfavourableness to favourableness of each statement for its inclusion in the final scale on the five points equal appearing interval continuum. Out of these experts, only 50 experts returned the statements after duly recording their judgements and were considered for the analysis.

Determination of scale and quartile

The five points of the rating scale were assigned score ranking from 1 for most unfavourable and 5 for most favourable. Based on judgment, the median value of the distribution for the statement concerned was calculated with the help of following formula.

$$S = L + \frac{0.50 - \Sigma Pb}{Pw} \times i$$

Where,

S = The median or Scale value of the statement

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

∑Pb = The sum of the proportion 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, which was assumed as equal to 1.0 (one)

The inter-quartile range (Q = Q3 - Q1) for each statement was also worked out for determination of ambiguity involved in the statement.

To determine value of Q at 75th centile and 25th centile, the following formulas were used.

The 75th Centile was obtained by the following formula.

$$C_{75} = L \frac{0.75 - \Sigma Pb}{Pw} \times i$$

Where,

C_{75} = The 75th Centile value of the statement

L = The Lower limit of the interval in which the 75th Centile falls

∑Pb = The sum of the proportion below the interval in which the 75th Centile falls

Pw = The proportion within the interval in which the 75th Centile falls

i = The width of the interval and is assumed to be equal to 1.0 (one)

The 25th Centile was obtained by the formula.

$$C_{75} = \frac{0.25 - \Sigma Pb}{Pw} \times i$$

Where,

C_{25} = The 25th Centile value of the statement

L = The Lower limit of the interval in which the 25th Centile falls

∑Pb = The sum of the proportion below the interval in which the 25thcentile falls

Pw = The proportion within the interval in which the 25th Centile falls

I = The width of the interval and is assumed to be equal to 1.0 (one)

Then the Interquartile range worked out by taking the difference between C_{75} (Q3) and C_{25} (Q1), thus,

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

Final Statements for attitude Scale

In this manner the inter-quartile range (Q) for each statement was worked out. Only those statements were selected whose median values were greater than Q value. Thurstone and Chave (1928), Edwards (1957) described criteria in addition to Q as a basis for rejecting statement in scales constructed by the method of the equal appearing interval. Accordingly, when a few items had the same scale values, the items having lowest Q values were selected. Based on the scale (median) and Q values 12 statements were finally selected to constitute attitude scale. The selected 12 statements for final format of the attitude scale were randomly arranged to avoid response biase. The final format of the scale is presented in Table 1.

Table 1: Final scale to measure the attitude of farmers towards Anubhav liquid bio- fertilizer phosphate culture

No.	Statement	SA	A	UD	DA	SDA
1	I would like to apply Anubhav liquid bio fertilizer phosphate culture as it is eco friendly.(+)	5	4	3	2	1
2	I don't advice to apply Anubhav liquid bio fertilizer phosphate culture as it is not available in the local market.(-)	1	2	3	4	5
3	Anubhav liquid bio fertilizer phosphate culture is one of the best options for sustainable agriculture.(+)	5	4	3	2	1
4	I believe that use of Anubhav liquid bio fertilizer phosphate culture does not increase the soil fertility.(-)	1	2	3	4	5
5	I think that Anubhav liquid bio fertilizer phosphate culture give more yield.(+)	5	4	3	2	1
6	In my opinion it is difficult to apply Anubhav liquid bio fertilizer phosphate culture.(-)	1	2	3	4	5
7	I wish that my children should not make use of Anubhav liquid bio fertilizer phosphate culture.(-)	1	2	3	4	5
8	Anubhav liquid bio fertilizer phosphate culture is cheaper than chemical fertilizer.(+)	5	4	3	2	1
9	I feel that use of Anubhav liquid bio fertilizer phosphate culture is gambling.(-)	1	2	3	4	5
10	I believe that Anubhav liquid biofertilizer phosphate culture improve the taste of farm produce.(+)	5	4	3	2	1
11	I prefer to apply Anubhav liquid bio fertilizer phosphate culture as it is best for seed treatment.(+)	5	4	3	2	1

*SA = Strongly Agree, A = Agree, UD = Undecided, DA = Disagree, SDA = Strongly Disagree

Reliability of the scale

The split-half technique was used to measure the reliability of the scale. The 12 statements were divided into two equal halves with 6 odd numbered and 6 even numbered statements in other. These were administered to 25 respondents who were not selected for the study. Each of the two sets was treated as separate scales having obtained two score, for each of the 25 respondents. Co-efficient of reliability between the two sets of score was calculated by Rulon's formula (Guilford, 1954), which was 0.85.

Content Validity of scale

The validity of the scale was examined for content validity by determining how well the content of the scale represented the domain subject matter under study. Since as many items covering the area as possible were selected by discussion with experts, reviewing the literature and adherence to the judges' ratings, it was presumed that the instrument satisfied the content validity.

Administering the scale

The final attitude scale was administered on the selected sample farmers. The responses were collected in five point continuum viz. strongly agree, agree, undecided, disagree and strongly disagree with weight age of 5, 4, 3, 2 and 1, respectively for positive statements and reverse scoring for negative statements. The total attitude score for each respondent was obtained by adding all the scores of their responses of all the statements and categories on arbitrary basis.

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