

## Scale Measuring Attitude of Coffee Growers towards Extension Services of Coffee Board

Sridevi K<sup>1</sup> and V. Sekar<sup>2</sup>

1.Ph. D Scholar, Department of Agricultural Extension and Rural Sociology

2.Professor and Head, Department of Agricultural Extension and Rural Sociology, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Madurai, India

Corresponding author e-mail: [shridevi\\_k@yahoo.com](mailto:shridevi_k@yahoo.com)

### ABSTRACT

*Recommended technologies of Coffee Board has great potential to achieve higher yield at lower cost of production along with conservation of natural resources and improve the quality of coffee. Therefore it is desirable on the part of coffee growers to adopt the recommended technologies. It is presumed that following advisories rendered or adopting recommended technologies to increase the productivity of coffee becomes easier once the coffee growers have favourable attitude towards extension services of Coffee Board. The present study was contemplated to develop and standardize the same. The method of equal appearing intervals developed by Thurstone and Chave (1929) was used to finalize the attitude scale for this study purpose. The final scale was comprised 10 statements (5 positive and 5 negative). The attitude scale was administered on the 175 coffee growers of Pulneys division to measure their attitude towards extension services of Coffee Board. The study revealed that a vast majority (92.57 %) of them had favourable attitude towards extension services of Coffee Board.*

**Key words :** Attitude, Coffee growers, Extension Services of Coffee Board, Equal appearing interval method

Coffee research and extension are wholly managed by Coffee Board which is a statutory organization under the control of Ministry of Commerce, Government of India constituted under an Act of Parliament in 1942. The Board focused on research, development, extension, quality upgradation, market information and the domestic and external promotion of coffee.

The extension wing of Coffee Board was established in 1949 established linkage between the research fraternity and coffee growers for continued transfer of technology with the objective of achieving higher productivity and quality levels of coffee. The Extension wing is a vast network of extension units located in all the major coffee growing zones. The extension personnel are involved in dissemination of latest technologies to the growers, organizing capacity building programmes to the growers and farm workers, implementation of various development supports, risk insurance, supply of seed coffee and labor welfare schemes and other activities like estimation of crop and crop losses.

Recommended technologies of Coffee Board have great potential to achieve higher yield at lower cost of production along with conservation of natural resources and improve the quality of coffee. The adoption of recommended coffee production and post harvest technologies becomes easier once the coffee growers have favorable attitude towards the extension services of Coffee Board. Hence, an effort was made to construct and standardize a scale to measure the attitude of coffee growers towards extension services of Coffee Board.

Attitude is defined as the degree of positive or negative affect associated with some psychological object (Thurstone, 1946). The psychological object may be any symbol, phrase, slogan, person, institution,

idea or ideal towards which people can differ with respect to positive or negative affect. The psychological object for the present study has been conceptualized as the extension services of Coffee Board. Following methodology was adopted to develop an attitude scale towards extension services of the Coffee Board based on equal appearing interval method developed by Thurstone and Chave (1929).

### METHODOLOGY

For the purpose of this study, attitude was operationalized as the mental disposition of the coffee growers towards extension services of Coffee Board in varying degrees of favourableness or unfavourableness.

#### Collection of attitude items

Possible statements concerning the psychological object i.e. "extension services of Coffee Board" in terms of practicability and cost effectiveness of the advisories, satisfaction over the services and subsidy schemes, perceived usefulness and timeliness of the market information, trainings and meetings, addressing the needs of small growers and weaker section, orientation towards coffee cultivation and perceived impact in increasing the production and productivity were collected based on review of literature, discussion with scientists and extensionists. Totally 70 statements were collected which were organized and structured in the form of items. The items were screened by following the informal criteria suggested by Edwards (1969) for editing the statements to be used in the construction of the attitude scale. Based on the screening, 55 items were finally selected which formed the universe of content.

### Item scoring and computation of scale values and Q values

The 55 statements were then subjected to judge's opinion on a five-point continuum ranging from most unfavourable to most favourable. The list of statements was sent to 60 judges who comprised extensionists working at State Agricultural Universities and ICAR Research Institutes. Of which, 40 judges responded by sending their judgments. By applying the formula as suggested by Thurstone and Chave (1929), the scale values and 'Q' values were computed for the 55 statements.

#### Selection of attitude items

The attitude items to be included in the final attitude scale were selected based on the following criteria.

□ The statements selected should represent the universe of content with respect to "Extension services of Coffee Board"

□ The statements selected should adequately represent the domains such as practicability and cost effectiveness of the advisories, satisfaction over the services and subsidy schemes, perceived usefulness and timeliness of the market information, trainings and meetings, addressing the needs of small growers and weaker section, orientation towards coffee cultivation and motivation in participation in Coffee Board's programmes.

□ The scale values of the selected attitude items should have equal appearing interval i.e. distributed uniformly along the psychological continuum.

□ Those items with high scale values and smaller 'Q' values should be selected as far as possible.

□ There should be more or less equal number of

statements with favourable and unfavourable attitudes as far as possible.

An objective methodology was devised in order to select the attitude items keeping in mind the above mentioned criteria. The scale values were arranged in descending order of magnitude and the difference between the successive scale values and the cumulative total of the computed differences were worked out. Considering the time limitation from coffee growers' point of view, it was decided to select **ten** statements to constitute the attitude scale.

Since the selected scale values should have equal appearing interval and distributed uniformly along the psychological continuum, it was necessary to form **ten compartments** so as to select ten statements at one statement from each compartment. The basis for forming the compartments was that, each compartment should be equally spaced in the continuum. For this purpose, the cumulative total was divided by ten, which worked out to **0.316**, and this formed the width of the class intervals. Each class interval represented a compartment for the selection of the attitude items.

To select the attitude items from the ten compartments the scale values and the corresponding 'Q' values were considered. Based on the criteria already mentioned, items having high scale values and low 'Q' values were selected at one item from each compartment. Care was taken to ensure that the selected items represented the universe of content and covered different components of Extension services of Coffee Board. Thereby, ten items were selected with equal appearing interval and with a uniform distribution along the psychological continuum. The attitude scale thus constructed is given in **Table 1**.

**Table 1**  
Final set of attitude items selected with corresponding 'S' and 'Q' values

| S. No. | Scale value | 'Q' Value | Statement   | Nature of the statement |
|--------|-------------|-----------|---|-------------------------|
| 1      | 4.66667     | 1.04487   | Extension Services of Coffee Board greatly benefitted the coffee growers                                      | Favourable              |
| 2      | 4.42857     | 1.25940   | Coffee Board supports in formation of groups to start their own coffee enterprises                            | Favourable              |
| 3      | 4.08333     | 1.12381   | Coffee Board's advisories are not suitable for small growers  | Unfavourable            |
| 4      | 3.58333     | 1.66667   | Efforts taken by the Coffee Board increased the production and productivity of coffee                         | Favourable              |
| 5      | 3.42308     | 1.59615   | Coffee Board's linkage with other developmental departments is not benefitting the growers                    | Unfavourable            |
| 6      | 3.37500     | 2.51948   | Attending to Coffee Board's Extension programmes is waste of time   | Unfavourable            |
| 7      | 2.60000     | 2.16667   | Coffee Board persuades next generation growers towards coffee cultivation                                     | Favourable              |
| 8      | 2.25000     | 1.96591   | Coffee Board encourages less labour intensive technologies in the plantation                                  | Favourable              |
| 9      | 1.96667     | 1.63077   | Market information provided by the Coffee Board is of no use to the growers                                   | Unfavourable            |
| 10     | 1.61765     | 1.15033   | Information and Communication Technology (ICT) usage is yet to play a vital role in coffee extension services | Unfavourable            |

### Reliability of the scale

The reliability of the scale was determined by 'split-half' method. The split-half method is regarded by many as one of the best of the methods for measuring reliability (Garrett and Woodworth, 1973). The ten selected attitude items were divided into two equal halves by odd - even method (Singh, 2008). The two halves were administered separately to 30 coffee growers in a non-sample area. The scores were subjected to product moment correlation test in order to find out the reliability of the half-test. The reliability coefficient (r) was found to be 0.55.

The reliability coefficient which has been worked out by using Spearman Brown's formula

$$r_{tt} = \frac{2 r_{oe}}{1 + r_{oe}}$$

Where,

$r_{oe}$  = Reliability coefficient of odd and even number

Then the reliability coefficient of the whole test ( $r_{tt}$ ) was found to be 0.71. According to Singh (1986), when the mean scores of the two groups are of narrow range, a reliability coefficient of 0.50 or 0.60 would suffice. Hence, the constructed scale is reliable as the  $r_{tt}$  was greater than 0.60. as perceived by the scientists of CRRI, Cuttack, Odisha.

### Content validity of the scale

It referred to the representativeness or sampling adequacy of the content of a measuring instrument (Kerlinger, 2002). Content validation was carried out by subjecting the selected ten attitude items to judges' opinion. Experts in the selected field of study formed the judges. They were asked to indicate the extent to which each attitude item covered with different component of entrepreneurial behaviour or judge each item for its presumed relevance to the property being measured. The responses were obtained on a four-point continuum of 'most adequately covers', 'more adequately covers', 'less adequately covers' and 'least adequately covers'. Scores of 4, 3, 2 and 1 were given for the points on the continuum respectively. Totally 30 judges responded by sending their judgments. The mean score of 2.5 was fixed as the basis for deciding the content validity of the scale i.e. if the overall mean score of the attitude items as rated by the judges was above 2.5, the scale will be declared as valid and if not otherwise. In the present case, the overall mean score was worked out as 2.8 (most adequately covers and more adequately covers) therefore, the constructed attitude scale is said to be valid.

### Administration of the scale

The ten attitude statements selected were arranged randomly in order to avoid biased responses. A five-point continuum of 'strongly agree', 'agree',

'undecided', 'disagree' and 'strongly disagree' was used as response categories. For the five favourable statements scoring as 7, 5, 4, 3 and 1 was followed for the above continuum while the five unfavourable statements received the reverse scoring procedure. Thus, the constructed attitude scale was administered among the coffee growers of Pulneys (Batlagundu) division (which ranks top in the total planted area and production of coffee in TamilNadu) to find out their attitude towards extension services of Coffee Board. Of the five liaison zones in Pulneys division, three liaison zones namely Perumalamalai, Adalur and Pannaikadu were selected based on more area under coffee cultivation. Some of the major extension activities which are being carried out in this area are implementation of development supports, farm mechanization, supply of seed coffee, labour welfare measures, trainings, demonstrations, mass contact and mass communication programmes.

Similarly, names of all the 19 villages which grow coffee in these three liaison zones have been arranged in descending order based on the number of coffee growers in each village. The first six villages having more number of coffee growers have been selected for the study. Then, proportionate random sampling was adopted to fix the sample size for each village to get the total sample size of 175. The details of sampling design adopted are given in Table 2.

**Table 2**  
**Sampling design**

| S. No | Name of the village | No of coffee growers in each village | Sample selected |
|-------|---------------------|--------------------------------------|-----------------|
| 1     | Vadagouchi          | 850                                  | 39              |
| 2     | Pannaikadu          | 786                                  | 36              |
| 3     | Kamanur             | 605                                  | 28              |
| 4     | Poolathur           | 574                                  | 26              |
| 5     | Periyur             | 566                                  | 26              |
| 6     | Pandrimalai         | 469                                  | 21              |
|       | <b>Total</b>        | <b>3850</b>                          | <b>175</b>      |

The scores obtained for each statement was summed up to arrive at the attitude score for each respondent. The scores ranged from 70 (maximum) to 10 (minimum). The responses were categorized as less favourable, moderately favourable and highly favourable based on the cumulative frequency method.

## RESULTS AND DISCUSSION

The distribution of coffee growers on their attitude towards extension services of coffee board is given in Table 3.

From the Table 3, it could be seen that among the total growers, a vast majority (92.57%) were found to possess moderately favourable to highly

favourable attitude towards extension services of Coffee Board and the rest (7.43%) had less favorable attitude. The attitude scores are more in the favourable range which indicates the coffee growers are satisfied with the extension services of the Coffee Board.

The less favourable attitude prevailing among the coffee growers might be due to the perceived opinion like less number of visits by the extension staff of Coffee Board to their estates and inability to perceive the benefits of extension programmes like trainings, meetings and demonstrations as expressed by the respondents during field investigation.

**Table 3.**  
**Attitude of coffee growers towards extension services of Coffee Board (n=175)**

| S.No | Categories            | Number     | Percentage    |
|------|-----------------------|------------|---------------|
| 1.   | Less favourable       | 13         | 07.43         |
| 2.   | Moderately favourable | 89         | 50.86         |
| 3.   | Highly favourable     | 73         | 41.71         |
|      | <b>Total</b>          | <b>175</b> | <b>100.00</b> |

This finding derives support from the findings from

studies conducted by Suresh (2001) and Lavanya (2010).

### CONCLUSION

Of the various methods available for the constructing an attitude scale, Equal Appearing Interval Scaling technique was exercised in this study to measure the attitude of coffee growers towards Extension services of coffee Board. The reliability and the content validity of the ten statements were assessed. These statements can be used in similar situations wherever applicable with necessary modifications if required. Administering the scale a study was taken up to measure the attitude of coffee growers in Batlagundu (Pulneys) division of TamilNadu revealed most (92.57 per cent) of them were found to have favourable attitude towards extension services of Coffee Board. Further, this study will also help to the Extension Wing of Coffee Board to redesign the Transfer of Technology (TOT) interventions to enhance the adoption of recommended coffee cultivation technologies.

*Paper received on : April 24, 2014*

*Accepted on : June 17, 2014*

### REFERENCES

1. Edwards, A. L. 1969. Techniques of Attitude Scale Construction. *Vakils, Feffer and Simons Private Limited, Bombay.*
2. Garrett, H.E. and R.S. Woodworth. 1973. Statistics in Psychology and Education. *Vakils, Feffer and Simons Private Limited, Bombay.*
3. Kerlinger, F.M. 2007. Foundation of Behavioural Research. *Rinehart and Winston. Inc., New York.*
4. Lavanya, P. 2010. Diversification pattern in Dryland Eco-system – An Empirical Analysis. *Ph.D Thesis. (Unpub.) TNAU, Coimbatore.*
5. Singh, A.K. 2008. Tests, Measurements and Research Methods in Behavioural Sciences. *Tata McGraw-Hill Publishing Company Limited, New Delhi.*
6. Suresh, R. 2001. Farmers Adoption of Agricultural Technologies in Tankfed Area of Gundar River Basin of Ramanathapuram District in TamilNadu. *M.Sc (Ag.) Thesis (Unpub.) AC & RI, TNAU, Madurai.*
7. Thurstone, L.L. and E.J. Chave. 1929. The Measurement of Attitude. Chicago University, *Chicago Press, Chicago.*