



## Research Article

# A SCALE TO MEASURE ATTITUDE OF FARMERS TOWARDS ORGANIC FARMING IN WESTERN ZONE OF TAMIL NADU

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**Abstract-** Attitude refers to the degree of positive or negative affect associated with psychological object. The psychological object may be any symbol, phrase, slogan, person, institution, idea or ideal towards which the people may differ with respect to positive or negative effect. The psychological objects for the present study have been conceptualized as Organic farming. Organic farming provides quality food without affecting the soil health and environment adversely. The present study, analyze the attitude of farmers towards organic farming in western zone of Tamil Nadu by developing a scale to measure the same. The study was contemplated to develop and standardize the same. The method of equal appearing intervals was used to develop the attitude scale, which comprises of 10 statements (Six positive and four negative). The scale thus developed was reliable with  $r_{tt} > 0.60$ ;  $r_{tt} 0.822$  and validity test value 3.60.

**Keywords-** Attitude, Psychological object, Organic farming, Statements, Test.

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## Introduction

Agriculture is the mainstay of livelihood in India and majority of the population depends on farming. In this backdrop, organic farming is seen as an innovative approach to agriculture. It aims to create an eco-friendly production system. Thereby, ensuring the sustainable agriculture for the future generation. Organic farming is not only revival to the farming but also bring brought to the consumers and helps to lead a happy and healthy life. The use of high yielding varieties, more fertilizers, chemicals and irrigation increases yields due to intensive agriculture. Excessive use of chemical fertilizers, pesticides, and herbicides has long lasting and deleterious effects on soil health, fertility, pollution of air. Besides, the effects on environment would reduce the quality of food produce, consumers of agricultural produce and increased cost of cultivation. Hence, organic farming save soil micro organism and maintain healthy environment. Promoting organic farming practices among the farming community in a large scale will be a promising strategy to face these challenges by Elavarasi and Ponnusamy [1]. The objective of the study necessitated the selection of districts where more certified organic farming is practiced. For this purpose, Coimbatore, Erode and Tiruppur districts were selected which constitute maximum number of certified organic farmers. A total of 54 statements resulted after deletion of 75 statements (as per the criteria suggested by Edwards [2] were sent to 60 scientists working in various ICAR institutes and SAUs throughout India for the critical evaluation of statements on a five point continuum. The study was conducted with 180 certified organic farmers with farming background for assessing their attitude towards organic farming practices. An attitude scale was developed by using equal appearing interval method given by Thurstone and Chave [3].

## Materials and Methods

### Computation of attitude scale

The scale was developed through Thurstone and Chave [3] 'Equal Appearing Interval' method. The selected psychological object of the study was 'organic farming'. In total, 75 statements were collected which were organized and structured in the form of attitude items. For the construction of the attitude scale all statements are edited by Edwards 14's criteria. Then 54 statements were selected for the universe of the content. Statements were sent for judges rating with five-point continuum contain from unfavorableness to favorableness. The list of statements was sent to 50 judges who comprised of scientists of state agricultural universities of Tamil Nadu, Kerala, Andhra Pradesh and Karnataka and Rajasthan. Finally, 30 judges are reply the response out of 50 judges. With help of all 30 response applying Thurstone and Chave [3] Equal Appearing Interval scale. Calculated 'S' and 'Q' values for all 54 statements.

$$S = l + \left[ \frac{0.5 - \sum pb}{pw} \right]$$

Where,

S – The median or scale value of the statement

l – 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

Q = C<sub>75</sub> – C<sub>25</sub>

Where,

Q – Interquartile range

$$C_{75} - \text{the 75}^{\text{th}} \text{ centile}, C_{75} = l + \left[ 0.75 - \frac{\sum pb}{pw} \right] i$$

$$C_{25} - \text{the 25}^{\text{th}} \text{ centile}, C_{25} = l + \left[ 0.25 - \frac{\sum pb}{pw} \right] i$$

The computed scale and 'Q' values are tabulated in [Table-1].

### Selection of attitude items

Distributing statements with high scale value and smaller 'Q' values uniformly along the psychological continuum. Arranged scale value in descending order of their magnitude and calculated difference between the successive scale values and the cumulative total of the computed differences. Considering the time limitation from organic farming's 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 10 statements with one statement from each of the compartment. The basis for forming the compartments was that the each compartment should be equally spaced in the continuum. For this purpose [Table-1] the difference between the highest scale value (4.0) and lowest scale value (1.17) was worked out. The difference values obtained (0.283) was divided by 10. This formed the width of the first class interval. The second interval was worked out by adding the value (0.283) with the width of the first class interval (0.566). Adding the value 0.283 with the width interval of second class (0.566) gave the third interval (0.849). Subsequently, all the 10 intervals were worked out. Each class interval represented a compartment for the selection of the attitude items. For example, the value 0.139 is close to 0.283 of the cumulative value of difference. So this formed the first compartment and similarly ten compartments were worked out.

**Table-1** Computation of equal appearing intervals

S. No.	Statement No.	Scale value	'Q' value	Difference between successive 'Scale' value	Cumulative value	Interval	Compartments
1.	17	4	0.95	0.066	0.066		I
2.	33	3.934	1.166	0.073	0.139	0.283	
3.	32	3.861	1.01	0.171	0.31		
4.	54	3.69	2.29	0.05	0.36		II
5.	53	3.64	2.34	0.01	0.37		
6.	20	3.63	1.5	0.13	0.5	0.566	
7.	52	3.5	2.46	0.23	0.73		III
8.	22	3.27	2.435	0.07	0.8		
9.	24	3.2	2.86	0.04	0.84	0.849	
10.	3	3.16	2.3	0.013	0.853		IV
11.	46	3.147	1.804	0.147	1		
12.	26	3	2.63	0.27	1.27	1.132	V
13.	9	2.73	2.25	0.1	1.37	1.415	
14.	6	2.63	1.78	0.13	1.5		VI
15.	1	2.5	2.34	0	1.5		
16.	35	2.5	1.58	0.06	1.56		
17.	42	2.44	1	0.017	1.577		
18.	50	2.423	2.21	0.003	1.58		
19.	2	2.42	2.38	0.02	1.6		
20.	44	2.4	2.03	0.06	1.66		
21.	23	2.34	1.81	0.03	1.69	1.698	VII
22.	43	2.31	1.765	0.028	1.718		
23.	34	2.282	1.51	0.052	1.77		
24.	51	2.23	1.99	0.01	1.78		
25.	41	2.22	1.41	0.12	1.9		
26.	47	2.1	1.49	0.006	1.906		
27.	40	2.094	0.676	0.019	1.925		
28.	31	2.075	1.37	0.045	1.97	1.981	VIII
29.	12	2.03	1.47	0.09	2.06		
30.	7	1.94	1.65	0.01	2.07		
31.	29	1.93	1.526	0.005	2.075		
32.	16	1.925	1.343	0.005	2.08		
33.	21	1.92	0.89	0.02	2.1		
34.	37	1.9	1.07	0.007	2.107		
35.	48	1.893	1.52	0.003	2.11		IX
36.	19	1.89	1.74	0.01	2.12		
37.	10	1.88	1.2	0.02	2.14		
38.	25	1.86	1.13	0.003	2.143		
39.	45	1.857	0.97	0.017	2.16		
40.	36	1.84	1.083	0.03	2.19		
41.	28	1.81	1.19	0.03	2.22		
42.	13	1.78	0.345	0.03	2.25		X
43.	27	1.75	1.25	0.01	2.26	2.264	
44.	15	1.74	1.52	0.05	2.31		
45.	49	1.69	1.28	0.09	2.4		
46.	18	1.6	1.55	0.03	2.43	2.547	
47.	11	1.57	1.11	0.145	2.575		
48.	39	1.425	1.64	0.035	2.61		
49.	5	1.39	1.11	0.01	2.62		X
50.	30	1.38	1.01	0.05	2.67		
51.	38	1.33	1.09	0.037	2.707		
52.	14	1.293	1.01	0.003	2.71		
53.	8	1.29	0.96	0.12	2.83	2.83	
54.	4	1.17	0.68	1.17	4		

To select the attitude items from the 10 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 with one item from each compartment. Care was taken to ensure that the selected

items represented the universe of content and covered the psychological and economical domains of organic farming. Thereby 10 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-2].

**Table-2** Final set of attitude items selected with corresponding Scale and 'Q' values

S. No.	State ment No.	Statement	Scale value	'Q' value	Nature of the statement
1.	17	Organic farming will decrease the production cost by reducing the input purchases	4.00	0.95	Favourable
2.	32	I will have the problem in sourcing and purchasing of organic inputs	3.861	1.01	Unfavourable
3.	22	Chemical herbicides are more suitable to control weeds than organic method of weed control	3.27	2.435	Unfavourable
4.	46	Scientist has insufficient knowledge and training of organic farming practices	3.147	1.804	Unfavourable
5.	9	Supervision of organic farming activities will be very difficult	2.73	2.25	Unfavourable
6.	42	Organic farming strengthens the use of indigenous knowledge	2.44	1.00	Favourable
7.	40	Organic farming is the application of innovations compatible to the local issues	2.094	0.676	Favourable
8.	13	Organic manures applied in farm does not affect consumers' health	1.78	0.345	Favourable
9.	49	If I do organic farming then my family members will have better health condition	1.69	1.28	Favourable
10.	30	Organic farming save the soil beneficial organism	1.38	1.01	Favourable

### Reliability of the scale

The reliability test was done with selected statements are workout through split-half method (odd even method). The half-test reliability coefficient 'r' was 0.670, which was significant at one per cent level of probability. Moreover, the reliability coefficient of the whole test was computed using the Spearman-Brown Prohecy formula. The whole test reliability  $r_{tt}$  was 0.802. According to Singh [4] when the purpose of the test is to compare the mean scores of the two groups 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 >0.60.

### Validity of the scale

The validation was workout by selected 10 statements through judges response. Four point continuum used with the 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 2.5 was fixed as the basis for deciding the content validity of the scale. 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 3.60 and therefore the constructed attitude scale is said to be valid.

**Table-3** Administration of the scale

S. No.	Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1.	Positive statements	7	5	4	3	1
2.	Negative statements	1	3	4	5	7

### Administration of the scale

Arrange selected statements randomly to avoid biased results. Five point continuum with the scores for favourable statements as strongly agree-7, agree-5, undecided-4, disagree-3 and strongly disagree-1 and for unfavourable statements the scoring procedure was reversed. The score obtained for each statement was summed up to arrive at the attitude score for the respondents. The score ranged

from 63 (maximum) to nine (minimum). The responses were grouped as less favourable, moderately favourable and highly favourable based on the cumulative frequency method.

### Conclusion

The attitude scale developed through Equal Appearing Interval (EAI) method lead the study to make 10 statements for measuring the attitude of the farmers towards organic farming. As there are limited study and tools for measuring farmer's attitude pertaining to organic farming. The present study will aid researchers in their research by adopting the scale developed.

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### Abbreviations

ICAR- Indian Council of Agricultural Research  
SAU- State Agricultural Universities

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