Original Research Article

Development of Scale to Measure Attitude of Organic Paddy Farmers towards Organic Paddy Farming in Cauvery Delta Zone of Tamil Nadu, India

D. Karpagam[1]* and R. Jansirani[2]

[1]Department of Agricultural Extension and Rural Sociology, [2]Department of Sustainable Organic Agriculture, Tamil Nadu Agricultural University, Coimbatore -064103

Corresponding author

A B S T R A C T

Attitude is a settled way of thinking or feeling about something. It is an acquired state which is attained through experiences in a person's life. It is a state which makes someone liable for this actions and reactions. Attitude is a state of thought which is totally dependent on the condition of the event or situation. It can be evaluated by two measures, the one is extremely positive and the other is extremely negative. There are people who can take hold on both the types of attitude positive as well as negative which simply leads to the controversy if a person can hold multiple attitudes towards something. Organic farming is gaining popularity all over the world, as it can diversify agricultural production systems towards attaining improved productivity, farm income and food, as well as environmental safety. Organic farming is gaining momentum in the recent years with the initiatives undertaken by government of Tamil Nadu. So the present study, analyze the attitude of organic paddy farmers towards organic paddy farming in Cauvery Delta 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 (positive and negative). The scale thus developed was reliable with $r_{tt} > 0.60$, r_{tt} 0.80 and validity test value 3.41.

Introduction

Paddy is a plant of Asian origin and the second most important crop in India, next only to wheat. Rice is the most prominent crop of India as it is the stable food for most of the people of the country. The paddy is the backbone of livelihood for millions of rural households and plays vital role in the country's food security, so the term "rice is life" is most appropriate in Indian context. In India organic farming was practiced since thousands of years. According to Naik *et al.,* (2012) organic farming is a holistic production management system which favours maximum use of organic materials (crop residues, animal excreta, on and off farm organic wastes, growth regulators and bio pesticides etc.,) and discourages use of synthetically produced agro inputs, for maintaining soil productivity, fertility and pest management under conditions of

sustainable natural resources and healthy environment. Organic farming is gaining momentum in the recent years with the initiatives undertaken by government of Tamil Nadu. Attitude is a psychological construct, a mental and emotional entity that inheres in, or characterizes a person. They are complex and an acquired state through experiences. Attitude is an expression of favour or disfavour toward a person, place, thing or event. This kind of scale is used to measure people's attitude towards a fairy clear and undimensional concept, using a number of statements that vary in how they express a positive or negative opinion about main concept (Jayanthi and Asokhan, 2016). The study was undertaken with the objective of development of attitude scale to measure the attitude of organic paddy farmers towards organic paddy farming in Cauvery Delta Zone of Tamil Nadu. In Cauvery delta zone, Thanjavur, Thiruvarur and Tiruchirappalli Districts were selected which constitute maximum number of certified organic paddy farmers.

Materials and Methods

Attitude is a psychological construct, a mental and emotional entity that inheres in, or characterizes a person. They are complex and an acquired state through experiences. An attitude scale was developed by using equal appearing interval method given by Thurstone and Chave(1929). Attitude is an expression of favour or disfavour toward a person, place, thing or event. This kind of scale is used to measure people's attitude towards a fairy clear and undimensional concept, using a number of statements that vary I how they express a positive or negative opinion about main concept (Jayanthi and Asokhan, 2016). Attitude in this study was operationalised as the degree of positive or negative feeling of organic paddy farmers towards organic paddy farming.

Possible statements indicating the psychological object i.e. "Organic paddy farming" were collected after reviewing literature, discussion held with Scientists and Extension Personnel. Totally 76 statements were collected which were organized and structured in the form of items. The item was 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, 65 items were finally selected which formed the universe of content.

Item scoring and computation of scale values and Q values

The 65 selected statements were then subjected to judge's opinion on a five point continuum ranging from most unfavourable to most favourable. The list of statements then sent to 50 judges that comprised of scientists of Sate agricultural University of Tamil Nadu and Extension personnel of Sate Department of Agriculture, Tamil Nadu. Out of 50 judges, 30 judges responded by sending their judgements. By applying the formula as suggested by Thurstone and Chave (1929), the scale values and Q values were computed for 65 statements by using this formula given below.

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

where,

S – The median or scale value of the statement

l - The lower limit of the interval in which the median falls

$\Sigma\, pb$ – The sum of the proportions below the interval in which the medial 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

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

Where,

Q – Interquartile range

C_{75} – The 75th centile, $C_{75} = l + \left[0.75 - \dfrac{\Sigma^{pb}}{pw} \right] i$

C_{25} – The 25th centile, $C_{25} = l + \left[0.25 - \dfrac{\Sigma^{pb}}{pw} \right] i$

Results and Discussion

Selection of attitude items

The statements selected from the represent the universe of content, high scale values and small Q values are more or less equal number of statements with favourable and unfavourable attitudes. The attitude scale values were arranged in descending order of magnitude and calculated difference between the successive scale values and the cumulative total of the computed differences. Considering the time limitation from respondents' point of view, it was decided to select ten statements to constitute the attitude scale. Since the selected scale values should have equally appearing interval and distributed uniformly along the psychological continuum. It was necessary to form ten compartments so as to select ten statements with 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 1.142 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. Statements having high scale values and low Q values were selected at one

item from each compartment. Thereby, ten items were selected with equal appearing interval and with uniform distribution along the psychological continuum. The attitude scale thus constructed is given in Table 1.

Reliability of the scale

The reliability of the scale was determined by 'Split-half' method. The split-half method is regarded by many as the best method for measuring reliability. The 10 selected attitude items were divided into two equal halves by odd-even method (Singh, 2008). The two halves were administered separately to 30 farmers engaged in organic paddy farming 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 half-test reliability coefficient r was 0.65, which was significant at one per cent level of probability. Further the reliability coefficient of the whole test was computed using the Spearman- Brown prophecy formula. The whole test reliability r_{tt} was 0.80. According to Singh (2008), when the purpose of the test is to compare the means 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.

Content validity of the scale

Content validation was carried out by subjecting the selected 10 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 the domains of the psychological object "Organic Paddy farming" 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 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 3.41 and therefore the constructed attitude scale is said to be valid.

Administration of the scale

The ten attitude items selected were arranged randomly in order to avoid biased responses. Final attitude scale comprising 10 statements is given in Table 1. A five point continuum of 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly Disagree' was used as response categories. The scoring procedure adopted is as follows.

Nature of the statement	Continuum				
	Strongly Agree (SA)	Agree (A)	Undecided (UD)	Disagree (DA)	Strongly Disagree (SDA)
Favourable	7	5	4	3	1
Unfavourable	1	3	4	5	7

Table.1 Final set of attitude items selected with corresponding S and Q values and the Nature of Statements

S. No.	Statement No.	Statement	Scale Value	Q value	Nature of Statement
1	28	Organic paddy farming will decrease the production cost by reducing the input purchases	-8.000	1.000	Favourable
2	4	Crop productivity was decreased in organic paddy farming compared to that of chemical farming	-5.333	1.714	Unfavourable
3	21	I would feel proud for doing organic paddy farming, if it is considered as a respectable profession.	-4.667	1.242	Favourable
4	46	I believe organic paddy farming more a way of life than as a business	-4.557	6.683	Favourable
5	5	The organic paddy farming standards are too complicated to follow	-2.450	8.100	Unfavourable
6	43	Organic paddy farming is labour intensive	-1.650	2.000	Unfavourable
7	42	Organic paddy production is harmless and healthier for both the environment and human beings	-0.480	1.411	Favourable
8	1	Organic paddy farming was more beneficial for the improvement of soil physical and chemical properties of soil	0.480	1.595	Favourable
9	36	Organic paddy cultivation give sustainable yield for a long time	1.667	-1.500	Favourable
10	61	Documentation of day to day organic paddy farm activities is burden to me	2.400	-0.833	Unfavourable

This scale was administered to obtain organic paddy farmers responses. The score obtained for each statement was summed up to arrive at the attitude score for that respondent. The

score ranged from 70 (maximum) to 10 (minimum). The responses were grouped as less favourable, moderately favourable and highly favourable based on the cumulative frequency method.

In conclusion, the attitude scale developed through Equal Appearing Interval method lead the study to make 10 statements for measuring the attitude of organic paddy farmers towards organic paddy farming. The reliability and validity of the scale showed that the consistency and fidelity of the scale. So the constructed scale was reliable and valid one.

References

Edwards L Allen. 1969. Techniques of attitude scale construction. Vakils, Feffer and Simons private limited, Bombay, India. Pp. 83-117

Jayanthi. M and M. Asokhan. 2016. A scale to measure ICT enabled agricultural extension services among farmers.International Journal of Agricultural Science and Research, 6(2)

Naik, V., Kunnal, L., Patil, S., and Guledgudda, S. 2012. Organic and inorganic cultivation of chilli and its marketing - An economic analysis. *Karnataka Journal of Agricultural Sciences,* 25 (2).

Singh, A.K. 2008. Tests, measurements and research methods in behavioural sciences. Tata McGraw-Hill publishing company limited, New Delhi.

Thurstone, L.L. and E.J. Chave. 1929. The measurement of Attitude. Chicago University, Chicago Press, Chicago.