

A Scale to Measure the Attitude Towards Improved Fish Processing Methods

R. THIAGARAJAN, BRAJ MOHAN and M.K. KANDORAN

Central Institute of Fisheries Technology, Cochin - 682 029

An attitude scale was constructed to measure the attitude of fisherwomen towards improved fish processing methods. To construct the attitude scale, 'scale' and 'Q' values (the interquartile ranges) were calculated for 31 statements selected, based on the opinion of 34 judges. Based on the 'scale' and 'Q' values 16 statements were selected with eight favourable statements and eight unfavourable statements. The weightages given were 3, 2 and 1 for favourable statements and 1, 2 and 3 for unfavourable statements.

Allport (1935) has defined an attitude as a "mental and neural state of readiness, organised through experience exerting a directive or dynamic influence upon the individual response to all objects with which it is related." Thurstone (1946) had defined an attitude as the "degree of positive or negative effect associated with some psychological object." By a psychological object, Thurstone means any symbol, phrase, slogan, person, institution, ideal or idea towards which people can differ with respect to positive or negative affect. An individual who has associated positive affect or feeling with some psychological object is said to like that object or to have a favourable attitude towards the object. An individual who has associated negative affect with the same psychological object would be said to dislike that object or have an unfavourable attitude towards the object.

Russell (1977) reported that the attitudes have intellectual, biological, social and emotional components that are derived from experience and exercise a determining influence upon behaviour. The individual having favourable attitude towards an introduced technology will adopt the technology but those who are having unfavourable attitude towards a technology will refuse to adopt the technology. Thus attitude played a crucial role in the adoption of the technology. So to measure the attitude of the fisherwomen towards the improved fish processing methods, it is necessary to construct and standardise an attitude scale.

Materials and Methods

A number of measuring techniques have been evolved since Thurstone (1946) advanced his theories in 1929. Among the techniques available for constructing attitude scale, the method of equal appearing interval of Thurstone and Chave (1929) and Likerts (1932) summated ratings are quite well known. The same methods as described by Edwards (1969) with slight modifications in the procedure were used for developing the attitude scale for fisherwomen towards improved fish processing methods.

Method of equal appearing intervals

Fifty attitude statements about the improved fish processing methods were initially collected from all the possible sources and then edited for selection of items, comprising the attitude scale. The editing was done on the basis of the criteria suggested by Edwards (1969). Of the 50 statements collected, initially 31 statements were selected. The statements, thus selected reflected the opinion of the fisherwomen about the improved fish processing methods.

All the 31 statements were then subjected to judgement on a seven point continuum ranging from most unfavourable to most favourable. These were administered to 60 judges selected for this study comprising of psychologists of different universities, teachers working in Departments of Extension Education in various Agricultural

Universities, Scientists of Agricultural Extension in Indian Council of Agricultural Research at various institutes and the specialists in the field of fisheries. Of the 60 judges, 46 judges returned the statements after duly recording their judgements. Of these twelve were eliminated on the criteria of Thurstone & Chave (1929) for carelessness in judging or otherwise failed to respond to the instructions send for judgement and also those judges who placed more number of statements on one of the seven points. Thus finally the responses of 34 judges were considered for calculation of the scale and Q values of the attitude statements using following formula.

Scale value

The median of the distribution of judgements for each statement is taken as the scale value of the statement.

$$S = 1 + \left(\frac{.50 - \sum pb}{pw} \right) i$$

where S = the median or scale value of the statement

1 = 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 value

Thurstone & Chave (1929) used the interquartile range or Q as a measure of the variation of the distribution of judgements for a given statement. The interquartile range contains the middle 50 per cent of the judgements. To determine the values of Q we need to find two other point measures, the 75th and the 25th centile. The 25th centile can be obtained from the formula.

$$C_{25} = 1 + \left(\frac{.25 - \sum pb}{pw} \right) i$$

where C_{25} = the 25th centile

1 = the lower limit of the interval in which the 25th centile falls

pb = the sum of the proportions below the interval in which the 25th centile 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

The 75th centile will be given by

$$C_{75} = 1 + \left(\frac{.75 - \sum pb}{pw} \right) i$$

where C_{75} = the 75th centile

pb = the sum of proportions 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

Then the interquartile range or Q will be given by taking the difference between C_{75} and C_{25} . Thus

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

The scale and the Q values for statements judged on equal appearing interval by 34 judges were accomplished by computing the median (S) and interquartile range (Q) as given by Edwards (1969).

Selection of statements

For the selection of the final attitude statements to constitute the scale the following criteria were used.

- The statements should have smaller Q values as far as possible.
- The statements selected should represent the universe of opinion of content in respect of fish processing methods.
- The scale values should have equal appearing interval i.e. distributed uniformly along the continuum.
- There should be equal number of statements with favourable and unfavourable attitudes.

Results and Discussion

The scale values and Q values were computed for all the 31 statements.

Based on the criteria mentioned, 16 statements were finally selected. The scale values of these statements ranged from 1.74 to 7.51

Table 1. *Attitude scale*

Sl. no.	Statements	'S' Scale value	'Q' value
1.	Improved methods of preparation of fish products are not difficult to be practised	5.56	1.48
2.	Improved methods of preparation of fish products are only to well off fisherwomen	3.69	0.82
3.	It is good to adopt improved methods of preparation of fish products as they give higher quality products when compared to traditional methods of preparation	7.51	1.46
4.	Improved methods of preparation of fish products make on indebted	2.15	1.41
5.	Fisherwomen need not invest more for the adoption of improved methods of preparation of fish products	5.16	1.44
6.	Average fisherwomen cannot adopt improved methods of preparation of fish products due to high cost involved in it	2.92	0.78
7.	Improved methods of preparation of fish products are profitable on a commercial scale	6.73	1.05
8.	Improved methods of preparation of fish products will improve the economic condition of the fisherwomen	5.95	1.15
9.	Fisherwomen using improved methods of preparation of fish products will incur heavy loss	1.74	1.01
10.	There is no guarantee that improved methods of preparation of fish products will give good returns every year	4.81	1.07
11.	Improved methods of preparation of fish products involve heavy risk	2.52	1.27
12.	Improved methods of preparation of fish products do not increase the knowledge and skill level of fisherwomen	4.45	1.23
13.	Marketing of the improved fish products is not very difficult	6.36	0.83
14.	The raw material and credit facility for preparing the fish products are easily available	4.08	1.16
15.	The fish products obtained through the improved methods fetch high price in the market	7.11	1.40
16.	Improved methods of preparation of fish products are not suitable for all types of fisherwomen	3.31	1.51

while their Q values ranged from 0.78 to 1.51 (Table 1).

The attitude statements selected finally were arranged randomly in the scale in order to avoid biased response (Table 1). In the final format, there were three columns representing a three point continuum of agreement to disagreement with undecided at the centre, as the scale was to be administered to fisherwomen. The weightages given were 3, 2

and 1 for favourable statements and 1, 2 and 3 for unfavourable statements.

The total attitude score for an individual fisherwomen is obtained by adding the weightages over all the statements.

Standardisation of attitude scale

The attitude scale was standardised by testing the scale for its reliability and validity.

Reliability of the scale

The reliability of the scale was tested by test-retest method. The scale was administered to 30 fisherwomen twice with an interval of 15 days. The two sets of attitude scores obtained from the same respondents were correlated. The correlation coefficient was 0.81 indicating that attitude was highly stable for measurement.

Validity of scale

The content validity is used to measure the validity of a scale. This is a kind of validity by assumption. The main criterion here is how well the contents of the scale sample match the subject matter which is important for the variable under study. This was ensured by perusing relevant literature and discussing with social scientists, extension scientists and fishery scientists while collecting and selecting the statements for the construction of the scale. Care was taken to include all the statements covering the universe of content relating to fisherwomen's attitude towards improved fish processing methods.

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