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Construction of scale for measuring attitude of tribal beneficiaries towards *Wadi* project

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Abstract

A scale was constructed to measure the attitude of tribal beneficiaries towards *Wadi* project in Navsari, Valsad and Dang district of South Gujarat region of Gujarat state. Likert's summated rating scale technique was followed for construction of attitude scale. The final 32 statements were selected from total 50 statements according to 't' values equal to or greater than 2.13 't' table value. The split half method was followed for testing reliability of the scale. The reliability coefficient was found to be 0.8019 which was found to be significant at 1 per cent level. The validity of the scale was examined with content validity. The final 32 statements scale was administered for judging of attitude of 200 tribal beneficiaries of *Wadi* project.

Keywords: Attitude, tribal beneficiaries, Likert's summated rating, *Wadi* project

Introduction

Wadi project is agri-horti-forestry based farming system in the rain fed tribal areas, which envisaged empowering women through community participation, initiatives for micro financing as well as processing and marketing of products. The project is focused on development of small fruit orchard (*WADI*), agriculture improvement through inter cropping and restoration of denuded land through soil and moisture conservation measures. It was observed that this project is an effective tool for addressing the livelihood problems of the tribal families. Attitude refers to the "degree of positive or negative feelings associated with some psychological object" (Thurstone, 1946) [5]. In the present study attitude is conceptualized as positive or negative feelings of tribal beneficiaries towards *Wadi* project for understanding its positive and risky aspects. To measure this, researcher will developed and standardized the attitude scale.

Methodology

The details of the steps were followed in the construction of scale method to measure the attitude of tribal beneficiaries towards *Wadi* project were discussed below:

Item collection

In initial stage of developing the scale, 61 statements reflecting feelings of tribal beneficiaries towards *Wadi* project were collected from relevant literature and discussion with extension experts. The collected statements were edited according to the criteria laid down by Edward and Kilpatrick (1948) [1]. The final 50 statements list were selected. For among the techniques available, Likert's technique (1932) [4] of summated rating was used in the present study because it requires less number of items and judges to start with. It is also relatively less time consuming as compared to other techniques.

Item analysis

It may possible all the collected statements may not be appropriate equally in measuring the attitude of tribal beneficiaries. Hence, these 50 statements list were subjected to scrutiny by judges comprised of Extension Experts, Professors and Social Scientists to determine their appropriateness. For this the list of 50 statements were sent to 90 judges. Out of 90 judges 68 judges were responded in time.

The judges were asked to indicate their degree of appropriateness or inappropriateness with each statement on five point continuum ranging from strongly agree, agree, undecided, disagree and strongly disagree. The scoring for positive statements were followed as

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5, 4, 3, 2, and 1 and the scoring pattern were reversed *i.e.* 1, 2, 3, 4 and 5 for negative statements, respectively. The total score was calculated by summing up the responses on each item.

Calculation of ‘t’ values

Based upon the total scores, the judges were arranging in descending order. The top 25.00 per cent of the judges with their total scores were considered as high group and the bottom 25.00 per cent as the low group so that these two groups provide the criterion groups in terms of evaluating the individual statements. The ‘t’ values was work out in order to discriminate the responses of high and low groups for the individual statements by using the under mentioned formula (Edward, 1969) [2]:

$$t = \frac{X_H - X_L}{\sqrt{\frac{\sum (X_H - X_H)^2 + (\sum X_L - X_L)^2}{n(n-1)}}}$$

Where,

- X_H = the mean score on given statement of the high group
- X_L = the mean score on given statement of the low group
- $\sum X_H^2$ = Sum of squares of the individual score on a given statement for high group
- $\sum X_L^2$ = Sum of squares of the individual score on a given statement for low group
- $\sum X_H$ = Summation of scores on given statement for high group
- $\sum X_L$ = Summation of scores on given statement for low group
- n = Number of respondents in each group
- t = Extent to which a given statement differentiate between the high and low group

The obtained ‘t’ value was a measure the extent to which a given statement differentiates between the high and low groups. After computing of ‘t’ value for all the items, the 32 statements having ‘t’ value equal to or greater than 2.13 ‘t’ table value were selected (Table 1)

Table 1: Attitude of Tribal Beneficiaries towards *Wadi* Project

Sr. No.	Statements	t value
1.	It has little benefit and more propaganda. (-)	4.75
2.	<i>Wadi</i> project aims at improving socio-economic status of the tribal beneficiaries. (+)	2.68
3.	<i>Wadi</i> project provides the livelihood security to the tribal beneficiaries. (+)	2.25
4.	The benefits of <i>Wadi</i> project are available only to the selected tribal beneficiaries. (-)	2.17
5.	<i>Wadi</i> project is the best project for the tribals. (+)	4.21
6.	<i>Wadi</i> project includes agricultural, horticultural and forestry farming system. (+)	3.18
7.	<i>Wadi</i> project makes the tribal beneficiary self-sufficient and raises their income level. (+)	2.16
8.	<i>Wadi</i> project gives promotion of <i>Wadi</i> Mandals or Self-Help groups for self-dependency. (+)	2.46
9.	<i>Wadi</i> project includes peoples participation, starting with project development. (+)	2.69
10.	<i>Wadi</i> project is blending of grant with credit and self-reliance of the beneficiaries. (+)	2.80
11.	NGO plays important role in effective implementation of <i>Wadi</i> project. (+)	3.39
12.	Plants of high yielding varieties are timely distributed to the beneficiaries. (+)	2.79
13.	<i>Wadi</i> project established strong linkages between tribal beneficiaries and NGO personnel. (+)	2.88
14.	<i>Wadi</i> project helps beneficiaries to develop links with other allied activities. (+)	3.75
15.	NGO personnel motivate the tribal beneficiaries to adopt the different <i>Wadi</i> project components. (+)	7.36
16.	<i>Wadi</i> project motivates the tribal beneficiaries to adopt the new agricultural technology. (+)	2.16
17.	<i>Wadi</i> project planning is efficient but implementation is lacking at field level. (-)	2.65
18.	<i>Wadi</i> project is better than other agricultural development programme in the area. (+)	3.78
19.	Only resourceful influential tribal farmers can get the benefit of the <i>Wadi</i> project. (-)	2.50
20.	<i>Wadi</i> project does not discriminate between the rich and the poor. (+)	3.15
21.	<i>Wadi</i> project has helped the tribal farmers to sustain themselves during off-season. (+)	2.79
22.	<i>Wadi</i> project does not help in producing quality agricultural produce. (-)	3.70
23.	Tribal farmers are not well aware about the concept of <i>Wadi</i> , therefore they do not participated. (-)	3.47
24.	Beneficiaries of this project do not get remunerative prices for their products. (-)	2.16
25.	Activities selected under <i>Wadi</i> project are not according to the needs of the beneficiaries. (-)	7.80
26.	There is no need of <i>Wadi</i> project as it is not helpful in reducing poverty. (-)	2.67
27.	There is a lack of proper coordination between project personnel and beneficiaries. (-)	3.88
28.	<i>Wadi</i> project is useless effort due to its ineffective working pattern. (-)	4.39
29.	All the family members cannot be employed under <i>Wadi</i> project. (-)	2.55
30.	<i>Wadi</i> project is a well thought project for upliftment of below poverty line tribal farmers. (+)	2.84
31.	<i>Wadi</i> project are the best gift of the government to the tribals. (+)	2.78
32.	Only educated beneficiaries can adopt <i>Wadi</i> project efficiently. (-)	2.55

Reliability and Validity of the scale

Reliability of scale

A scale is reliable when it gives consistently the same results when applied to the same sample. The designed attitude scale for the study was tested for its reliability by using the split half method. It was introduced to 20 tribal beneficiary of non-sample area. Co-efficient of reliability between these two sets of score was calculated by Rulon’s formula (Guilford 1954).

$$r_{tt} = 1 - \frac{\sigma^2_d}{\sigma^2_t}$$

Where,

- r_{tt} = Coefficient of reliability
- σ^2_d = Variance of those differences
- σ^2_t = Variance of the total scores

The coefficient of reliability between two sets of score were found to be 0.8019 which was found to be significant at 1 per cent level, thereby testifying the reliability of the scale.

Validity of scale

The content validity of the scale was also tested. The content validity was representative or sampling adequacy of the

content, the substance, the matter and the topics of a measuring instrument. This method was used in the present scale to determine the content validity of the scale. As the content of the attitude was thoroughly covered the entire universe of *Wadi* project through literature and expert opinion, it was assumed that present scale satisfied the content validity. As the scale value difference for almost all the statements included had a very high discriminating value, it seemed reasonable to accept the scale as a valid measure of the attitude.

Administering the scale

The final attitude scale was administered on the selected sample tribal beneficiary. They were asked to express their reaction in terms of their agreement or disagreement with each item by selecting one of five response categories. The total attitude score for each respondent was obtained by adding all the scores of their responses of all the statements and on the basis of mean and Standard deviation.

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