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Scale construction to measure the attitude of farm women towards farming

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Abstract

Farm women are the momentous contributors of agriculture and rural enterprises and play a potentially transformative role in agricultural growth in developing countries. In Indian agriculture, farm women are dominant work force and their attitude towards farming influences their productivity in farm operations. Therefore, the study intended to develop a scale to measure the attitude of farm women towards farming. Likert's summated rating technique was adopted to construct the scale. This paper elucidates the scale development procedure in a stepwise manner from collection of statements to their final selection. The attitude scale consisted of 24 statements and scale reliability was calculated to the tune of 0.80. It is tacit that the scale would be useful in further studies for determining the attitude of farm women towards farming.

Keywords: Attitude scale, farm women, farming, Telangana

Introduction

Agriculture is a key driver of economic development and poverty alleviation. Women contribute to agriculture and allied enterprises and their nature and extent varies to a great extent across different regions. Rural women in addition to farming and enterprises also play a prominent role at homes by fostering the upbringing of children and catering to the needs of the family. Dynamic involvement of women is indispensable for the overall development of the country. The unrelenting obstacles faced by women in farming influences their attitude towards farming and have an effect on their productivity in farm operations. Hence, a scale to measure the attitude of the farm women towards farming with the respondents from the Telangana state was developed.

Material and Methods

Thurstone (1946) [7] defined attitude as "the degree of positive or negative affect associated with some psychological object." In the present study, attitude of farm women towards farming was operationalised as the psychological disposition of the farm women about farming in varying degrees of favorableness or unfavorableness. The scale was developed using summated ratings method (Likert, 1932) [5]. The procedure followed for the development of scale is as detailed below.

Definition of Universe: The initial step in the attitude scale construction is to define the general area of universe of content. The set of all probable statements that could be made about a given psychological object is often called a universe. The possible statements about 'Attitude of farm women towards farming' represent the universe in this study.

Collection of Statements: A number of statements about "attitude of farm women towards farming" were gathered from books, farm magazines, newspapers, research articles, journals, expertise of intellectuals in extension, research, teaching, farmers, self intuitions and own experiences. A tentative inventory of 100 statements related to attitude of farm women towards farming were prepared based on the applicability of statements for the area of study.

Editing of the statements: The inventory of statements was subsequently subjected to close scrutiny with respect to the informal criterion suggested by many scientists (Thurstone and Chave, 1929; Likert, 1932; Wang, 1932; Bird, 1940; Edwards and Kilpatrick, 1948) [6, 5, 8 1, 3]. Imprecise, overlapping, double negative statements were rejected and 60 statements out of a total of 100 were retained.

Testing the statements for relevancy: The statements were subjected to scrutiny by judges to determine the relevancy and screening for inclusion in the final scale. For this purpose, the list of all the 60 statements was sent to 100 judges to critically evaluate each statement for its relevancy on a three point continuum as most relevant, relevant, and least relevant with scores 3, 2 and 1 respectively. They were also requested to feel free to add some more statements, if they feel important and also delete unrelated statements. The judges included the faculty and scientists of various agricultural universities and

institutions. The responses obtained from 55 judges in a time span of 60 days were subjected to standard normal deviate test (z test). After giving the scores to the statements, 'z' values were computed for each statement. Grand 'z' of all the 60 statements was obtained and ' \bar{z} ' was calculated. All the statements with 'z' values above ' \bar{z} ' (-0.0001) were selected as the scalable statements of attitude of farm women towards farming. The statements with 'z' values below ' \bar{z} ' were excluded and 37 statements were selected out of 60 statements through relevancy testing.

Table 1: Selected attitude statements based on relevancy test

S. No.	Statements	'z' value
1	Farming will give less scope for higher education accessibility to our children.*	1.77
2	I feel that my decision making skills improved after involving in farm activities.	1.71
3	I do not want to continue in farming further.*	1.69
4	I feel that large share of income is obtained from non-agricultural sources than through farming.*	1.54
5	I don't think farming support policies focus on farm women.*	1.46
6	I feel that farming is the best venture for farm women as it makes them self-employed.	1.40
7	As there is no other means of income I am forced to do farming.*	1.38
8	I feel that there is less opportunity for career development in farming particularly for women*.	1.38
9	I feel that women in farming are inevitable as most of the activities on farm are being done by farm women.	1.32
10	I feel that participation in farming activities curbs time for women to concentrate on household activities.*	1.23
11	I feel that practicing farming increased my self-reliance.	1.09
12	I enjoy autonomy in farm production activities.	1.07
13	I feel that men farmers can take up farming more effectively than farm women.*	1.01
14	I believe that higher standard of living is achieved more rapidly in non-agricultural job than through hard work in farming.*	0.92
15	I will not encourage my children to be in farming.*	0.92
16	I aspire to seek further knowledge and skills in farming.	0.86
17	I became self-confident after taking up farming.	0.86
18	I like farming as it is major source of income to my family since many generations.	0.86
19	I like farming as it is related to our tradition and culture.	0.78
20	I aspire to seek more entrepreneurial opportunities in farming.	0.78
21	Farming can provide employment to majority of rural women.	0.78
22	Farming has become more enjoyable and easier for women with the availability of gender friendly technologies.	0.78
23	I feel more professional as I am getting equal respect and importance as given to men farmers.	0.63
24	I feel proud and satisfied to be as a part of profession which feeds the nation.	0.63
25	I prefer to be in farming than as an employee.	0.47
26	I am interested in motivating others to take up farming after reaping the benefits through farming.	0.47
27	Women enjoy leadership position in farming.	0.40
28	I prefer farming as it provides continuous income throughout the year.	0.39
29	I enjoy the relationship with nature through farming.	0.32
30	I feel that rural household wellbeing will be increased when women take up farming.	0.32
31	Practicing farming helps in improving household amenities for farm women.	0.30
32	Gender equality is ensured through participation of women in farming.	0.24
33	Poverty can be reduced in rural areas when women take up income earning activities via farming.	0.16
34	Farming alone cannot guarantee economic stability to families of women farmers.*	0.14
35	I have experienced the benefits of team work by the activities carried out on farm along with others.	0.14
36	I enjoy abundant opportunities in farming along with men farmers in farming.	0.14
37	I am passionate towards farming.	0.14

* Negative Statements

Item analysis: These 37 statements selected through relevancy test were administered to 100 farm women from a non sample area and their responses were sought on a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree with scores of 5, 4, 3, 2 and 1 respectively for positive statements and vice-versa for negative statements. The sum of the scores of all statements given by each respondent was calculated and the respondents were arranged in descending order based on the total scores obtained for all the statements. The top twenty five per cent of the respondents with the highest scores and the bottom twenty five per cent of the respondents with the lowest scores were considered as criterion groups to evaluate individual statements to calculate the critical ratio, 't' value for each

statement. The calculated 't' value for each statement will measure the extent to which the statement differentiates between the respondents of high group and low group. The 't' values were calculated by using the formula suggested by Edwards (1957) [2]. The statements with 't' values more than 1.75 were included in the final attitude scale and thus 24 statements out of the 37 statements with 't' value more than 1.75 were included in the final attitude scale.

$$t = \frac{(\bar{X}_H - \bar{X}_L)}{\sqrt{\sum(X_H - \bar{X}_H)^2 + \sum(X_L - \bar{X}_L)^2 / n(n-1)}}$$

Where

\bar{X}_H = Mean score on a given statement for the high group

\bar{X}_L = Mean score on a given statement for the low group

$$\Sigma(X_H - \bar{X}_H)^2 = \Sigma X_H^2 - \frac{\Sigma(X_H)^2}{n_H}$$

$$\Sigma(X_L - \bar{X}_L)^2 = \Sigma X_L^2 - \frac{\Sigma(X_L)^2}{n_L}$$

$$\bar{X}_H = \frac{\Sigma X_H}{n_H}$$

$$\bar{X}_L = \frac{\Sigma X_L}{n_L}$$

$$n = n_L = n_H$$

Reliability of the scale: A scale is reliable when it will consistently produce the same results when applied on the same sample (Goode and Hatt, 1952) [4]. Split half method was employed to test the reliability. The attitude scale of 24 statements was administered to thirty farm women in non sample area. The 24 item scale was divided into two halves, all odd statements into one half and all even statements into another. Score of the respondents for each item of the two halves was computed. Then the co-efficient of reliability was calculated between the two halves treating the two halves as

separate scales. The correlation coefficient for both the sets was worked out using Rulon’s formula.

$R_{tt} = 1 - S^2 d / S^2 t$ where, d = Difference between two half scores of a respondent; $S^2 d$ = Variance of those differences and $S^2 t$ = Variance of total scores.

The correlation coefficient (r = 0.80) was significant at 0.01 level indicating the attitude scale was highly reliable for administration to the farm women in farming.

Validity of the scale: The content of the attitude scale was borne out by the method of collecting and screening statements within the universe of attitude of farm women towards farming. The validity of the scale on attitude of farm women towards farming was obtained through content validity by taking the judges opinion. The statements selected for the scale were evaluated individually and as a whole by the judges for their relevance and coverage.

Results and Discussion

The final scale had 24 statements depicted in table 2. Each statement of scale was provided with five point continuum of strongly agree, agree, undecided, disagree, strongly disagree with scores of 5, 4, 3, 2 and 1 respectively for positive statements and 1,2,3,4 and 5 for negative statements. The attitude score of the respondent on the scale can be obtained by aid of summing up the scores of all the statements in the scale. The possible minimum and maximum score lies in the range of 24 and 120. The high score of scale will represent the favourable attitude of farm women towards farming.

Table 2: Attitude scale statements with ‘t’ values

S. No.	Statements	‘t’ value
1	I aspire to seek further knowledge and skills in farming.	5.52
2	I feel that women in farming are inevitable as most of the activities on farm are being done by farm women.	4.60
3	Farming will give less scope for higher education accessibility to our children.*	4.26
4	Poverty can be reduced in rural areas when women take up income earning activities via farming.	4.13
5	I like farming as it is major source of income to my family since many generations.	3.95
6	I aspire to seek more entrepreneurial opportunities in farming.	3.91
7	I feel that farming is the best venture for farm women as it makes them self-employed.	3.56
8	Farming can provide employment to majority of rural women.	3.34
9	Gender equality is ensured through participation of women in farming.	3.22
10	I feel that rural household wellbeing will be increased when women take up farming.	3.16
11	As there is no other means of income I am forced to do farming.*	3.00
12	I prefer to be in farming than as an employee.	2.96
13	I feel that there is less opportunity for career development in farming particularly for women*.	2.75
14	Women enjoy leadership position in farming.	2.75
15	I feel that men farmers can take up farming more effectively than farm women.*	2.45
16	I feel that participation in farming activities curbs time for women to concentrate on household activities.*	2.38
17	I feel that practicing farming increased my self- reliance.	2.22
18	Practicing farming helps in improving household amenities for farm women.	2.21
19	I am interested in motivating others to take up farming after reaping the benefits through farming.	2.10
20	I feel that large share of income is obtained from non-agricultural sources than through farming.*	1.94
21	I believe that higher standard of living is achieved more rapidly in non-agricultural job than through hard work in farming.*	1.93
22	I don’t think farming support policies focus on farm women.*	1.81
23	I feel more professional as I am getting equal respect and importance as given to men farmers.	1.86
24	I became self-confident after taking up farming.	1.80

* Negative Statements

Conclusion

This scale aids in measurement of attitude of farm women towards farming and was developed considering the study area, Telangana. A favourable attitude towards farming facilitates farm women to improve their efficiency, utilize improved technologies and increase farm output. A negative attitude will be a barrier for their involvement in the farm

operations. The attitude scale can be administered to farm women on a large scale to get broad view towards the farming as a potential occupation. The results obtained help in improving the participation of the farm women by delivering more gender friendly technologies and planning their inherent inclusion in farming by adequate extension support services.

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