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## Development of a scale to measure farmer's attitude towards farming as an occupation

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### Abstract

Farming as a profession provides opportunities to contribute to the mission of eradicating hunger and enabling food security. Woman plays a very significant role in farming throughout rural India but in hilly regions their role become more prominent as farmer, given the migration of male members to towns as a widespread phenomenon. Thus, under the study for assessing the attitude of tribal farm women towards farming as an occupation a reliable scale was constructed. The scale was materialized to analyze hill women's attitudes towards farming as an occupation which was conducted in Chamoli and Dehradun districts of Uttarakhand. The field survey was carried out among a sample of 200 selected tribal farm women, 100 from each tribe *i.e.* *Bhotiya* and *Jaunsari*. The attitude in this study was operationalised as the degree of positive or negative feeling of farmers' towards farming as an occupation. The method of summated rating was followed in the development of the scale. Respondents were categorized according to their attitude level by using cumulative square root method. The study found that majority of the overall respondents (42.00 percent) were having favourable attitude followed by 39.50 percent of the respondents having less favourable attitude and 18.50 percent having highly favourable attitude towards farming as an occupation. When compared ethnicity wise it was found that majority of respondents (63 percent) of *Bhotiya* tribe had less favourable attitude while majority of respondent (54 percent) of *Jaunsari* tribe had favourable attitude towards farming as an occupation.

**Keywords:** attitude, farm women, farming, occupation, tribal, scale, cumulative square root method

### Introduction

Farm Women is an integral part of human society. Women contribute one third labour force required for farming operations and allied enterprises. They have been playing significant role in home, farm and allied activities. They play a variety of roles with greater responsibilities in upbringing of a healthy society. They play an active role in supporting their households and communities in achieving food and nutrition security, generating income, and improving rural livelihoods and overall well-being. Active participation of women in the entire development process is essential for the overall socio-economic development of any country. Therefore, raising the status of women in general and that of socially and economically backward women, in particular, is not just a moral imperative but also a strategic one. In Uttarakhand, the workforce engaged in agricultural activities is 58.39 percent of total workforce. The share of female workforce in total workforce is 36.31 percent (Women and Men in India: 2014 by Ministry of Statistics and Programme Implementation, GOI). The occupational distribution (Census, 2001) [7] indicates that the share of cultivators is predominant in occupational structure. In India work participation of tribal women is the highest and even better than the participation of men. The work participation rate of tribal women is 43.5, whereas national average (for general population) is 25.5. Though the overall work participation rate decreased from 25.6 to 25.5, it is increased in urban areas. So given the feminization era of agriculture and even more prominent role of women, especially in tribal communities where women are providing livelihood support to family by increasingly getting involved in farming related activities often by choice and often as a sole option, it is crucial to undertake an intensive study to look into their perspective. Given the diversity of tribal communities living in Himalayan hill and most intensive participation of women in agriculture and allied sector in hilly region, a study on tribal women farmer has been conducted.

### Methodology

Allport (1967) [2] defined attitude as "a mental and neural state of readiness, organized through experience, exerting directive or dynamic influence upon an individual's response to all objects and situations with which it is related". In the Thurstone's study, the attitude was defined as the "sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions,

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ideas, fears, threats, and convictions about any specified topic” (Thurstone, 1967) [16]. The attitude towards ‘farming as an occupation’ in this study was operationalised as the degree of positive or negative feeling of farmers’ towards farming as an occupation. The method of summated rating suggested by Likert (1932) [6] was followed in the development of the scale. In this study, the attitude towards farming as an occupation has been conceptualized as composition of six different dimensions *i.e.* Migration, Economic, Aspiration, Technological, Social Status and Work Environment. Migration dimension has been conceptualized as attitude of farmers towards shifting of farmers from rural areas to urban areas for better work opportunity. Economic dimension has been indicated as attitude of farmers towards income and gaining the business motive in farming. Aspiration dimension has referred as attitude towards farmer’s future expectation with farming as an occupation. Technological dimension has expressed the attitude towards knowledge and use of various modern technologies in farming. Social status dimension has referred attitude towards the relative respect, competence, and deference accorded to people, groups, and organizations in a society as a farmer. Work environment defined as attitude towards the conditions while performing farming. The following steps were involved to develop the attitude scale.

**Collection and editing of statements:** In the first stage, many attitude scales measuring attitude towards farming as occupation were examined in order to determine the dimensions of the concept, statements of attitude scale and process of developing an attitude scale (Sullivan *et al.*, 1996; Palacios, 2005; Thakur and Sharma, 2016; Abolhasan *et al.*, 2010; Onima *et al.*, 2017) [14, 10, 15, 1, 9]. Semi-structured interviews and focused group discussions were also carried out with university faculties and experts to identify different dimensions of the concern concept and develop related items. After reviewing secondary literature and interacting with experts in this field, an item pool consisting of 62 statements about the attitude of women farmer towards farming as an occupation were developed. There were 46 positive and 16 negative statements in the item pool of draft attitude scale. Items were edited on the basis of criteria suggested by Thurstone (1946), Likert (1932) [6] and Edward (1957) [3].

**Relevancy test (content validity test):** In this stage, a panel of experts of this field was selected from different institute. For the purpose of content validation, initial draft of the attitude scale with 62 items on a five-point rating scale (1=Least relevant, 2=Less relevant, 3=Relevant, 4=Highly relevant, 5= Most relevant) was given to the panel for taking their opinions about whether the selected items were valid items to measure the concept of attitude towards farming as an occupation or not. The statements were sent to 150 judges with a request to critically evaluate each statement for its relevancy to measure the attitude of women farmer towards farming as an occupation. Out of 150 judges, 52 responded in a time span of fifty days. The relevancy score of each item was ascertained by adding the scores on rating scale for all the 52 judges’ responses. From this data, relevancy weightage was worked out for all the statements by using the following formula.

$$\text{Relevancy Weightage} = \frac{MR_i \times 5 + HR_i \times 4 + R_i \times 3 + LR \times 2 + LTR \times 1}{MPS}$$

Where

$MR_i$  = Number of judges consider the  $i^{\text{th}}$  item as Most Relevant

$HR_i$  = Number of judges consider the  $i^{\text{th}}$  item as Highly Relevant

$R_i$  = Number of judges consider the  $i^{\text{th}}$  item as Relevant

$LR_i$  = Number of judges consider the  $i^{\text{th}}$  item as Less Relevant

$LTR_i$  = Number of judges consider the  $i^{\text{th}}$  item as Least Relevant

MPS = Maximum possible score ( $55 \times 5 = 275$ )

N = Number of judges (55)

Using this formula the statements were screened for their relevancy. Accordingly, statements having relevancy weightage  $> 3.75$  were considered for selection of statements to the next step. By this process, 40 statements were selected, which were suitably modified and rewritten as per the comments of judges.

**Item Analysis:** These 40 statements were subjected to item analysis to delineate the items based on the extent to which they can differentiate the respondent with high attitude than the respondent with low attitude towards farming as an occupation. For this purpose, 120 farmers were selected from nonsample area. The respondents were asked to indicate their degree of agreement or disagreement with each statement on the five-point continuum ranging from “strongly agree” to “strongly disagree”. The adopted scoring pattern was 5 to 1, in which, 5 allotted to ‘strongly agree’ response, 4 to ‘agree’ response, 3 to ‘undecided’ response, 2 to ‘disagree’ response and 1 to ‘strongly disagree’ response for positive statement and for negative statement the reversescoring pattern was used. Based on the total scores obtained, the respondents were arranged in descending order. Then 25 percent of the subjects with the highest total scores and 25 percent of the subjects with the lowest total scores were sorted out for the purpose of ‘t’ value calculation. The ‘t’ value of each statement was calculated by using following formula as suggested by Edward (1957) [3].

$$t' = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{(X_H - \bar{X}_H)^2 + (X_L - \bar{X}_L)^2}{n(n-1)}}$$

Where,

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

$\bar{X}_L$  = the mean score on a given statement for 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 a given statement for high group

$\sum X_L$  = Summation of scores on a given statement for low group

n = Number of respondents for in each group

As many as 29 statements having the ‘t’ values equal to or greater than 1.75 were chosen in order to form the final scale. This has as many as 16 favourable and 13 unfavourable statements.

**Standardization of the scale:** Internal consistency examines the inter-item correlations within an instrument and indicates how well the items fit together conceptually. Cronbach's alpha was computed to examine the internal consistency of the final scale. The calculated value of Cronbach's alpha of this scale was 0.696. To measure time stability, test-retest reliability was estimated. Final 29 statements were administered twice to the same sample with 3 weeks gap. Wilcoxon non-parametric statistical test showed no significant differences between the two tests.

## Results and Discussion

The final scale consisted of 29 statements with a 5-point continuum against each item comprising of strongly agree, agree, undecided, disagree, and strongly disagree with scores of 5,4,3,2, and 1 for positive statements and vice-versa for negative statements. The attitude score of each respondent can be obtained by adding the scores on all the items. Thus the attitude score on this scale can vary from 29 to 145. The higher score indicates that respondent had more favourable attitude towards farming as an occupation.

**Table 1:** The items of the final attitude scale to measure farmers' attitude towards the farming as an occupation along with respective 't- values'

S.N.	Statements	t- value
<b>A. Migration</b>		
1	I have better employment opportunities outside village.*	6.779
2	There is scarcity of resources.	3.227
3	Available amenities in our area are not enough to maintain good standard of life.	3.758
4	I can get more income from migrated non-farm work than farming.*	5.139
<b>B. Economic</b>		
5	The agriculture sector has more influence on the overall development of community.	4.576
6	Low price for agriculture produce along with high production cost has made farming uneconomical at present time.*	2.103
7	There are less opportunities in agriculture for career development.*	2.099
8	Practicing agriculture leads to economic upliftment of farmers.	5.961
9	There is lack of proper knowledge and training on economic aspect of farming practices.*	2.500
10	Nowadays farming alone is not enough to cover input cost even.*	8.520
<b>C. Aspiration</b>		
11	I want to increase average monthly income from farming.	3.142
12	I want to increase average monthly income from livestock.	2.912
13	I want to ensure better living standard in future through better farming.	6.843
14	I want to become an agripreneur.	9.533
15	I will surely quit farming if I get another source of income.*	6.272
<b>D. Technological</b>		
16	New methods of farming give better results to a farmer than the old methods	3.902
17	Most of the modern technology for agriculture is not timely available in villages.*	1.989
18	Scope for agricultural growth has to be enlarged in terms of agro-based activities	4.363
19	Appropriate skill training will improve the participation of farmer in agriculture	2.181
<b>E. Social status</b>		
20	I want other people to respect me as a member of the agrarian society	4.331
21	Male members don't want to recognize women as a farmer.*	2.229
22	Everybody acknowledges farming but not the farmers.*	2.071
23	Farming is not considered as a respectable occupation in our society-*	2.203
<b>F. Work environment</b>		
24	Agriculture is an unappealing job.*	3.380
25	The workload in agriculture is very high.*	2.220
26	I feel fairly satisfied with my present job.	5.224
27	Farming is most suitable occupation as per my skills and interest.	4.155
28	I strictly follow the safety measures during pesticides application.	4.474
29	Due to farming farmers face regular health hazards.	4.410

\*Negative statements

## Women farmers' attitude towards farming as an occupation

Data regarding attitude towards farming as an occupation of respondents has been presented in Table 2. The three

category, viz. less favourable, favourable and highly favourable category were done by cumulative square root method.

**Table 2:** Distribution of respondents on the basis of their attitude towards farming as an occupation (N=200)

Sl. No.	Category	Bhotiya (n1=100) Percentage	Jaunsari (n2=100) Percentage	Overall (n=n1+n2)	
				Frequency	Percentage
1	Less favourable (<94.48)	63.00	10.00	73	36.50
2	Favourable (94.48-101.18)	36.00	54.00	90	45.00
3	Highly favourable (>101.18)	1.00	36.00	37	18.50
	Total	100	100	200	100

Majority of the overall respondents (45.00percent) had favourable attitude towards farming as an occupation followed by 36.50percent of the respondents who had less favourable and 18.50 percent who had highly favourable

attitude. From the perusal of Table 2 it also shows that majority of respondents (63 percent) of Bhotiya tribe had less favourable attitude while majority of respondent (54 percent) of Jaunsari tribe had favourable attitude towards

farming as an occupation. *Jaunsari* tribal women were solely involved into farming while *Bhotiya* women were engaged in handicraft too. Manohari (2011) <sup>[1]</sup> in her study also reported that more than half of the primitive tribal groups (58.75%) possessed favourable attitude towards agricultural technology.

### Conclusion

It can be concluded from the results that majority of the overall respondents (42 percent) had favourable attitude towards farming as an occupation followed by 39.50 percent of the respondents who had less favourable and 18.50 percent who had highly favourable attitude. Majority of respondents (63 percent) of *Bhotiya* tribe had less favourable attitude while majority of respondent (54 percent) of *Jaunsari* tribe had favourable attitude towards farming as an occupation. *Jaunsari* tribal women have farming as their primary occupation while majority of *bhotiyo*a tribe women have handicraft as their primary occupation. This might be because of medium level of education, insufficient information and limited access to the farming resources and continuous migration of men and youth from hills or rural to urban areas so this is need of the hour to make farming more attractive and income generating opportunity for youths and women. The finding of the study was helpful to the extension agency, policymaker and administrators in developing appropriate extension strategy for women farmers.

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