



A Measurement Tool to Assess Attitude of Rural Youth Towards Agriculture as An Occupation

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ABSTRACT

Attitude is said to be a complex phenomenon that can't be measured directly. Psychometric techniques have been found to be a highly reliable measurement method that takes into account the concept of unidimensionality. In the present study, Thurstone's (1946) equal appearing interval scale has been constructed to measure the attitude of rural youth toward agriculture and allied sectors as an occupation. The initial set of 83 statements has been structured according to the criteria given by Edwards. Later, the statements were given to the forty judges for the judgment of each item. Cronbach alpha coefficient and Intraclass correlation coefficient was determined to check the consistency in the judgment and nine judges with inconsistent response were eliminated. The statements for the final scale were selected by calculating the median and inter-quartile range and thirteen items were included in the final scale. The reliability was measured with the Cronbach alpha and inter-rater method (0.949). The scale was also found to be high in its content and construct validity (0.974). The study will help the researchers and policymakers to use this scale to understand the attitude of youth towards agriculture and allied sectors as an occupation.

Key words: Agriculture as an occupation; Equal appearing interval scale, Attitude measurement; Cronbach Alpha.

The early work regarding measurement of attitude added the quantitative dimension with the theoretical base and objectivity in the attitude measurement. Attitude was defined in qualitative terms as latent feelings, prejudice or mental state of readiness about a particular phenomenon or object which manifest in a specific period of time and have influence on individual's response to that particular object or phenomenon.

In the study of measurement of attitude as a latent construct, there are two conceptions of attitude: The conception of unidimensionality and the conception of multidimensionality. The unidimensional concept of attitude suggests that attitude involves well-defined evaluative continua along which it can be quantified from extremely negative through neutral to highly positive. Some of the primary measurement from this conception is direct measures (Semantic Differential method) and indirect measures (Psychometric methods). Whereas the multidimensional concept of attitude measurement considers it beyond the one dimension and to the structure of the domain to which it applies. There may be three domains, namely cognition, affect and, conation. Based on

these domains, two models are constructed. First The Tripartite Model of attitude which subsumes all three domains, and the second The Hierarchical Model which takes the three domains as distinct antecedents and consequences. The tripartite hierarchical model forms the basis for The Theory of Planned Behaviour and The Theory of Reasoned Action (*Ajzen and Krebs, 1994*).

Attitudes have been multidimensional constructs but that they can be compared along a linear continuum if it is possible to make a 'more or less' judgment (*Blackweir, 2016*). Unidimensional approach give rise to the two models through the latent attitude variable can be constructed. First is a cumulative model which says the greater the location of a stimulus on the continuum, the higher the probability of a positive response; the *Guttman (1950)* scale is an example of such scale. Second is the unfolding model which says that the closer the person's location the stimulus's location, irrespective of direction, the higher the probability of a positive response (*Andrich and Luo, 1993*). The unfolding model considers the notion of ideal point process in which the individual accepts an attitude statement to the extent that it reflects the

individual's own opinion (Coombs, 1964).

The most widely used scale using the unfolding process is Thurstone's equal Appearing Interval scale which better represents the choice process underlying rating scale judgments (Drasgow et al., 2010). It also provides interval level of measurement. There is a neutral or zero point involved in the interval level of measurement. Hence, in Thurstone's procedure a theoretical neutral point is there from which the values of latent variable increase when we move out in either direction; increasing degree of favourableness in the right direction and increasing degree of unfavourableness on the left side of the continuum. For the right side of the continuum, we might expect a "neutral" statement to show a decreasing probability of endorsement with an increase in the degree of favorableness. For the left side of the continuum, we should also expect a decrease in the probability of endorsement with increasing degrees of unfavourableness (Edwards, 1957). In addition, the unfolding model works on the basis of the absolute distance between an individual with the statement on the continuum, those persons with highly positive attitudes may exhibit relatively less agreement with a moderately positive item because it fails to reflect the extremity of their opinions. A moderately negative item would be characterized by the opposite pattern of responding (Roberts et al, 1999). Hence the reliability of the scale increases and the scale does not throw spuriously high consistency. Further, it is comparatively easy to administer to the respondents. However, construction of this scale might be a little tedious and time taking.

METHODOLOGY

Attitude scale for measuring the attitude of rural youth regarding agriculture and allied sectors as occupation was developed by using Thurston's Equal Appearing Interval Technique. For the construction of this psychometric scale, the construct was first defined as the positive or negative feeling of rural youth towards agriculture and allied sectors as occupation. In the next step items covering the universe of content were prepared and collected from relevant literature, discussion with experts and, resource personnel. A total of 83 statements on attitude towards agriculture and allied sectors were initially selected (Bagdi and Shah, 2019). The dimensions considered for scale construction were socio-economic aspects, complexities involved, personal choices, occupational prospects, knowledge

about farming, social responsibility and technological aspects etc. (Radhakrishnan and Arunachalam, 2017; Nag et al., 2017). Finally socio-economic factors, complexities involved and occupational prospects were considered in the development of attitude scale. The statements were thus carefully revised and restructured based on the fourteen informal criteria and guidelines suggested by Edwards (1957). Fifty generalized attitude statements which were found to be non-factual, non-ambiguous, written in simple, straight language and giving a clear idea were selected. The statements were then given to the experts of subject matter to eliminate the unsatisfactory statements. This was done with relevancy test with 6 experts into dichotomous scale i.e. relevant/ irrelevant. Thus, 35 out of 50 items were finalized for further analysis.

The statements were then given to the experts of the subject to judge the degree of favourableness and unfavourableness feeling expressed by each statement about the construct. The schedule containing 35 statements was sent to the 40 judges as Google Form to judge the statements on a 9-point continuum from extremely unfavourable through neutral to extremely favourable. Where '1' depicted extremely unfavourable, '5' neutral and '9' depicted extremely favourable feeling expressed by the statement towards agriculture and allied sectors as occupation. The judges were prompted for each statement with the question, "How strongly in favor of 'agriculture and allied sector as occupation' is someone who endorses this statement?" 30, Out of 40 judges responded to the form.

The method of inter-rater agreement as described by Bandalos (2018) was used to check the consistency between the judges. For this, Cronbach Alpha and Intra-class correlation coefficient was calculated for each of the judges. As consistency measures are appropriate to use when individual scores are to be compared. An absolute agreement between the judges is more appropriately used to find the raters' agreement in numerical ratings. Thus, for the study, intra-class correlation with two way mixed model for absolute agreement was used. Since Intraclass correlation gives results for single measures and the average measures, the measure with average values is of more interest for the study as it explains the scale value as the average or median value of all retained judges. The judges with the coefficient value less than 0.5 has been removed from the judgment for the scale values. Hence, nine judges (J1, J2, J5, J8, J12, J16, J19, J20 and J21 with

the Cronbach alpha value 0.231, 0.228, 0.214, 0.396, -0.225, -0.103, 0.194, -0.239, 0.082 respectively) were eliminated to reach to the consistent judgments for each statement.

The statements were finalized according to their scale values and lower inter-quartile range and tested for their reliability and validity. The coefficients were calculated using SPSS 16 software.

RESULTS AND DISCUSSION

Reliability of the judgment: The reliability coefficients were found to be high among the judges that have been shown in Table 1. The values of Cronbach alpha coefficient and intra-class correlation coefficient revealed high correlation (0.974) between the judges after eliminating the inconsistent judgments.

Finalization of the scale: The scale values (median) and Q-values (Q3-Q1) of the statements were calculated by taking 21 judges. The items with high scale value (median) and low ambiguity (low IQR value) were selected because of favourableness in the judgments. A total of 13 statements were selected for the finalization of the statements with scale values ranging from 2 to 8 and Q-value less than or equal to 2 (Table 2). Statements from each stratum (scale value) were selected with the help of subjective judgment of the experts.

Reliability and validity of the scale: A scale is reliable when it consistently produces the same result when applied to the same sample. In the present study, Cronbach alpha and intra-rater method of testing reliability was used (Table 3). The coefficient of

21	Agriculture is more profitable for me than any other occupation.	8	3
23	There is an opportunity for prosperity through farming.	8	1
24	Agriculture is suitable venture for youth to make them self-employed.	8	2
27	Agriculture provides lifetime livelihood security to the rural youth.	8	1*
28	The independence of farm life appeals to me.	8	2
32	I am proud to be engaged in a profession which feeds the Nation.	8	1*
33	Villages would prosper if the rural youth engage in agriculture.	8	1
34	I feel sorry for those who migrate to cities for a small job abandoning agriculture.	8	2
35	Agrarian society safeguards our cultural heritage.	8	2
2	Agriculture as an occupation provides secured income.	7	2
4	Agricultural activities provide more opportunity for social contacts with people.	7	1*
10	I would enjoy working with plants and animals.	7	2
13	Since agriculture is our ancestral occupation, I would like to continue it.	7	1*
16	Father's engagement in farming activities motivates me to choose agriculture.	6	2*
22	I would prefer agriculture as an occupation for my siblings.	6	2
26	I like farming well enough to make it my life's work.	6	1
8	Agriculture is laborious as compared to other occupations.	5	5
3	Agriculture is not viewed as a reputable profession in the society.	4	4
9	Agriculture supports only subsistence level of living.	4	2*
17	I will prefer any office job over agriculture.	4	1*
29	Choosing agriculture as my occupation will affect my children's prospective education avenues.	4	2
30	I am over-qualified to choose agriculture as an occupation.	4	1*
5	Getting suitable match for marriage is difficult for a farmer.	3	3
7	Agriculture is highly stressful.	3	2
15	I do not like farmer's way of life.	3	2
18	Youth choosing farming have an unattractive lifestyle.	3	2*
25	Agriculture based activities don't provide remunerative income.	3	2*
31	Farming requires less intelligence than most other vocations.	3	2
6	Agriculture will be the last option for me as an occupation.	2	2*
14	I am sorry to be a member of farming family.	2	1*
19	I don't find a better future in agriculture as an occupation.	2	4

* Statement selected for final scale; SV=Scale value; QV=Q-value

Table 1. Test coefficient values for judges before and after verification

No. of judges	Value of Cronbach Alpha	Intra-class correlation	
		Single measure	Average measure
30 (Before)	0.949	0.385	0.949
21(After)	0.974	0.640	0.974

Table 2. Final statements with their scale value and Q-value

Stat. Statements no.	SV	QV
1	Agriculture leads to increase in standard of living.	8 1
11	I will make farming worthy through hard work.	8 2
12	I feel proud to engage myself in Agricultural occupation.	8 2
20	I prefer agriculture as an occupation so as to be my own boss rather than to work under somebody else.	8 1*

reliability was found to be as high as 0.949. Further, the validity coefficient was also found high for the scale i.e. 0.974. In addition to this, content and construct validity was determined with the help of experts of different state agricultural universities and research institutions. Thus, the present scale satisfied the content validity.

Calculation of attitude score: The finalized statements were arranged randomly and were presented to the rural youth with instructions to indicate their agreement/disagreement with the statements. Attitude score was obtained for each of the respondent by taking the median of the scale values of the statements with which the respondent had agreed.

Table 3. Coefficient of reliability and validity of attitude scale

Scale	Coefficient of reliability	Intrinsic validity
Attitude	0.949	0.974

Table 4. Attitude categories

Categories (Attitude)	Score
Highly favourable	>6.5
Moderately favourable	5.5-6.5
Neutral	4.5-5.5
Moderately unfavourable	3-4.5
Highly unfavourable	<3

Attitude of rural youth about agriculture and allied sectors: Respondents were further categorized in five groups according to their observed score. The categories were ranged from highly favourable, moderately favourable, neutral, moderately unfavourable and highly unfavourable (Table 4).

CONCLUSION

The present study was conducted to construct and validate the scale for measuring the attitude of rural youth about agriculture and allied sectors as an occupation. As an outcome, 13 statements were finalized for final scale construction which enhanced the usability of the scale. Scale was found to be highly reliable with the reliability coefficient value of 0.949. The validity of the scale was also found to be higher i.e. 0.974 hence, it may be administered into similar future studies. The outcome of this study will support for the advancement of psychometric analysis in instrument development. It will be ready to be utilized by researchers and policymakers to assess the attitude of rural youth towards agriculture and allied sectors to pursue as an occupational choice.

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CONFLICT OF INTEREST

The authors have no conflicts of interest.

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