

A TOOL TO MEASURE ATTITUDE OF AGRICULTURE STUDENTS TOWARDS STUDENT-READY PROGRAMME IN EMPLOYABILITY GENERATION

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ABSTRACT

Attitude is defined as the degree of favourable or unfavourable feeling of the agricultural students towards student-READY programme in employability generation. It is the accepted fact that an attitude of an individual plays an important role in determining one's behaviour. Keeping this in view a standardized scale has been developed to measure the attitude of agricultural students towards student-READY programme in employability generation. A summated (likert) rating scale was been developed. The process started with identifying the dimension, collection of items followed by relevancy and item analysis and checking the reliability and validity for precision and consistency of the results. A total of thirty (33) statements were framed in which finally eleven (11) statements were finally retained for of the agricultural students towards student-READY programme in employability generation. The scale contains total 11 statements, out of which six statements are positive and five statements are negative. The scale developed was found highly reliable and valid.

Keywords: attitude agriculture students, employability, student ready programme

INTRODUCTION

Considering the importance of knowledge of socio-economic situations, an internship programme has been added for agriculture graduates. To work and study in rural areas RAWE programme is offered by SAU's usually in final year (VII or VIII Semester) of undergraduate degree programme. In 12th plan, RAWE programme was reconstructed as student-READY programme and was adopted by Fifth Dean Committee. The programme aims entrepreneurship and awareness development among the youths. READY in student-READY stands for Rural Entrepreneurship Awareness Development Yojana. Based on recommendations of Fifth Dean's Committee, ICAR initiated Student-READY programme and it was launched by our Honourable Prime Minister Narendra Modi on 25th of July 2015.

The B. A. College of Agriculture has implemented student-READY programme for final year students of B.Sc. (Agriculture). During seventh semester RAWE and Agro-Industrial Attachment (AIA) is conducted and experiential learning programme is offered in eighth semester. The students undertake the RAWE and AIA for duration of 20 weeks with weightage of 0+20 credits hours. College offers experiential learning programme for eighth semester of B.Sc. (Agriculture).

This approach is essentially demand driven, and efforts has been made by SAUs to provide necessary requirements. It

is equally important to know the attitude of students towards student-READY programme in generating employability and get suggestions from them. In order to know the attitude of agriculture students towards this programme, an attempt has been made to develop a scale, which scientifically measures the attitude of agriculture students towards student-READY programme in generating employability.

OBJECTIVE

To develop and standardize a scale to measure the attitude of of agricultural students towards student-READY programme in employability generation

METHODOLOGY

Among available techniques for the construction of the scales, the Thurston's Equal Appearing Interval Scale (1928) and the Likert's Summated Rating Scale (1932) are quite well-known. However, both these methods suffer from the limitations, the first one in getting discriminating response and second one in the selection of items. Thus, the technique chosen to construct the attitude scale was "Scale Product Method" which combines the Thurston's technique of equal appearing interval scale for selection of the items and Likert's technique of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown (1949). The procedures are followed as followed by Chauhan *et al.* (2022), Meenu *et al.* (2022) and Vinaya *et al.* (2018).

Steps in construction of attitude scale

The steps followed in the construction of scale are explained below:

(1) Item Collection

A statement may be defined as anything that is said about a psychological object. Items making up an attitude scale are known as statements. As a first step of developing the scale, 30 statements were collected from the relevant literature, consulting major advisor, experts and extension personnel. The statements, were edited on the basis of the criteria suggested by Edward (1957) and finally, 24 statements were selected as they were found to be non-ambiguous.

(2) Judge's Rating of Attitude Statements

Fifty copies of these statements were sent to 50 experts involved in student-READY programme across state agricultural universities through direct contact and mail, in order to judge the degree of unfavourableness to favourableness of each statement for its inclusion in the final scale on the five points equal appearing interval continuum of agreement viz. strongly agree, agree, undecided, disagree, strongly disagree to each statement with score of 5, 4, 3, 2, and 1 for positive statements respectively and reverse for negative statements. All 50 experts returned the statements after duly recording their judgments and were considered for the analysis.

(3) Determination of Scale and Quartile Value

The five points of the rating scale were assigned a score ranking from 1 for most unfavourable and 5 for most favourable. Based on their judgment, the median value of the distribution for the statement was calculated with the help of the following formula.

$$S = L + \frac{0.50 - \sum Pb}{Pw} \times i$$

Where,

S = The median or scale value of the statement

L = The lower limit of the interval in which the median falls

$\sum Pb$ = The sum of the proportion 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, which was assumed as equal to 1.0 (one)

The inter-quartile range ($Q = Q_3 - Q_1$) for each statement was also worked out for determination of ambiguity involved in the statement. To determine value of Q at 75th centile and 25th centile, the following formulas were used. The 75th centile was obtained by the following formula.

$$C_{75} = L + \frac{0.75 - \sum Pb}{Pw} \times i$$

Where,

C_{75} = The 75th centile value of the statement

L = The lower limit of the interval in which the 75th centile falls

$\sum Pb$ = The sum of the proportion 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 (one)

The 25th centile was obtained by the formula

$$C_{25} = L + \frac{0.25 - \sum Pb}{Pw} \times i$$

Where,

C_{25} = The 25th centile value of the statement

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

$\sum Pb$ = The sum of the proportion 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 (one)

Then the inter-quartile range worked out by taking the difference between C_{75} (Q_3) and C_{25} (Q_1), thus,

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

In this manner the inter-quartile range (Q) for each statement was worked out. Only those statements were selected whose scale values were greater than Q value.

(4) Procedure of selection of statements to measure attitude

The data from the 50 judges were arranged in the form as shown in Table 1. The Table shows the frequency

Table 1: Frequency distribution of statement no.4 based on responses given by judges on five categories

(n = 50)

Sr. No.	Frequency distribution of judgements for statement no. 4		Frequency
1	Strongly agree	IIII	05
2	Agree	IIII IIII IIII IIII IIII	23
3	Undecided	IIII IIII	08
4	Disagree	IIII IIII	10
5	Strongly disagree	IIII	04
Total			50

distribution of judgments made by the judges for statement no.4 on five categories:

(5) Reliability of the Scale

Table 3: Final scale to measure attitude of attitude of agricultural students towards student-READY programme in employability generation

Sr. No.	Statements	SA	A	UD	D	SD
1	Student-READY develops an interest amongst the students to work in a rural situation. (+)					
2	Student-READY decreases rural area working zeal of students. (-)					
3	Student READY develops understanding about rural situations. (+)					
4	Student-READY is wastage of time for the students. (-)					
5	Student-READY is employability generating programme for the students. (+)					
6	Student-READY is more information generating programme than wisdom generating. (-)					
7	Student-READY is capable to motivate students to be an Agri-entrepreneur. (+)					
8	Student-READY is competent to develop professionalism amongst the students. (+)					
9	Student-READY provides confidence to work in agricultural scientific bodies. (+)					
10	Student-READY builds confidence of the students to be victorious farm-scientists. (+)					
11	Student-READY is potential programme to train student to perform as capable personality to develop rural India. (+)					

SA = Strongly Agree, A = Agree, UD = Undecided, D = Disagree, SD = Strongly Disagree

As shown in Table 3, three rows are used for each statement. The first row gives the frequency (f) with which the statement was placed in each of the five categories. The second row gives proportions (p) of these frequencies, viz., 05/50 = 0.1, 10/50 = 0.2, 08/50 = 0.16, 23/50 = 0.46, 4/50 = 0.08. The proportions are obtained by dividing each frequency by n i.e. the total number of the judges. The third row gives the cumulative proportions (C_p) that is the proportion of the judgments in a given category plus the sum of all the proportions below the categories, viz., C_p of category 1st is 0.1, for 2nd it is 0.1 + 0.2 = 0.3, for 3rd 0.3 + 0.16 = 0.46, for 4th it is 0.46 + 0.46 = 0.92 and for 5th it is 0.92 + 0.08 = 1.00.

If the median of the distribution of the judgment for each statement is taken as the scale value of the statement,

Table 2: Summary of judgments given by judges on five categories for statement no.4 (n=50)

Statement no. 4	Sorting categories					Scale value	Q value
	1	2	3	4	5		
f	5	10	8	23	4	3.5	1.75
p	0.1	0.2	0.16	0.46	0.08		
C _p	0.1	0.3	0.46	0.92	1		

Here, Table 2 indicates that out of 50 judges, 05 judges were strongly agreed and believed that the statement no. 4 (student-READY decreases rural area working zeal of students) should be a part of the scale, 23 were agreed to include the statement, while 08 were undecided, 10 judges disagreed and 04 judges strongly disagreed.

then the scale values can be found from the data arranged in the Table 3 by means of the following formula:

$$S = L + \frac{0.50 - \sum Pb}{Pw} \times i$$

Substituting the number in the above formula to find out the scale value (S) for statement no.4 in Table 3, we will get

$$S = L + \frac{0.50 - \sum Pb}{Pw} \times i$$

$$S = 1.5 + \frac{0.50 - 0.1}{0.2} \times 1$$

$$S = 1.5 + 2$$

$$S = 3.5$$

In the same manner, scale values for the other statements were found.

Thurst one and Chave (Edwards, 1957) used the inter-quartile range Q as a means of the variation of the distribution of the judgments for a given statement. To determine value of Q, two other points were measured, the 75th centile and 25th centile. The 75th centile was obtained by the formula:

$$C_{75} = L + \frac{0.75 - \sum Pb}{Pw} \times i$$

Where,

C_{75} = The 75th centile value of the statement

L = The lower limit of the interval in which the 75th centile falls

$\sum Pb$ = The sum of the proportion 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 (one)

For statement no. 4, C_{75} value is calculated as follows

In the same manner C_{25} was calculated for the other statements

25th centile value was found by using following statements

$$C_{75} = L + \frac{0.75 - \sum Pb}{Pw} \times i$$

$$C_{75} = 1.5 + \frac{0.75 - 0.1}{0.2} \times 1$$

$$C_{75} = 1.5 + 3.25$$

$$C_{75} = 4.75$$

Where,

C_{25} = The 25th centile value of the statement

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

$\sum Pb$ = The sum of the proportion 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 (one)

Then the inter-quartile range worked out by taking the difference between C_{75} (Q_3) and C_{25} (Q_1), thus,

$$C_{25} = L + \frac{0.25 - \sum Pb}{Pw} \times i$$

$$C_{25} = 0.5 + \frac{0.25 - 0}{0.1} \times 1$$

$$C_{25} = 0.5 + 2.5$$

$$C_{25} = 3$$

In the same way Q value of all the statement was found to determine the ambiguity involved in all statements. Selection of statements was done based on median (S) and quartile (Q) value. Statements with greater S value than Q value is selected. Here in case of statement no. 4, $S = 3.5$ and $Q = 1.75$ and therefore this statement was selected.

Thurstone and Chave (Edward, 1957) described one more criterion in addition to Q value as a basis for rejecting statement in scales by the method of the equal appearing interval. Accordingly, when a few statements had the same scale values, the statement with lowest Q values were selected. Based on the median and Q values, out of 24, 11 statements numbering 1, 2, 3, 4, 6, 9, 11, 15, 17, 18, and 24 of the original lists were finally selected to constitute attitude scale to measure the attitude of students towards student-READY programme in generating employability (Table 3).

(6) Co-efficient of reliability

A scale is reliable when it consistently produces the same results once applied to the same sample. In the present study, split-half method of reliability was used because of limited time and resources available to the researcher. The eleven statements were divided into two halves with 06 odd numbered in one half and 05 even-numbered statements in the other. These were administered to 20 non-sample students. Each of the two sets of statements was treated as a separate scale and then these two sub-scales were correlated. The co-efficient of reliability was calculated using Rulon's formula (Guilford, 1954).

Rulon's Formula

$$r_{tt} = 1 - \frac{\sigma^2 d}{\sigma^2 t}$$

Where;

$$\sigma^2 d = \frac{\sum d^2 - \frac{(\sum d)^2}{n}}{n}$$

$$\sigma^2 t = \frac{\sum t^2 - \frac{(\sum t)^2}{n}}{n}$$

$$\sum d = 89$$

$$\sum d^2 = 471$$

$$\sum t = 887$$

$$\sum t^2 = 39603$$

$$n = 20$$

$$\begin{aligned}\sigma^2 d &= \frac{\sum d^2 - \frac{(\sum d)^2}{n}}{n} \\ &= \frac{471 - \frac{(89)^2}{20}}{20} \\ &= \frac{471 - 396.05}{20} \\ &= 3.747\end{aligned}$$

$$\begin{aligned}\sigma^2 t &= \frac{\sum t^2 - \frac{(\sum t)^2}{n}}{n} \\ &= \frac{39603 - \frac{(887)^2}{20}}{20} \\ &= \frac{39603 - 39338.45}{20} \\ &= 13.227\end{aligned}$$

$$\begin{aligned}rtt &= 1 - \frac{\sigma^2 d}{\sigma^2 t} \\ &= 1 - \frac{3.747}{13.227} \\ &= 1 - 0.283 \\ &= 0.717\end{aligned}$$

The co-efficient of reliability obtained through Rulon's formula was 0.71. Reliability is directly related to the length of the scale when we split to odd and even number of items. The reliability coefficient which has been calculated is the value of half size of the original scale. Therefore, correction factor should be added and is calculated by using Spearman Brown formula.

$$rtt = \frac{2ro}{1 + ro}$$

Where,

rtt = Coefficient of reliability of original test

ro = Reliability of coefficient of odd and even score

$$= 0.834$$

Thus, the scale developed was found highly reliable.

(7) Validity of the scale

The validity of the scale was examined for content validity by determining how well the content of the scale is representative of the subject matter under study. Since as

many items were selected by discussion with the experts, reviewing the literature and strict adherence to the judges' ratings, it was assumed that the scale has satisfactory content validity.

RESULTS AND DISCUSSION

A standardized scale for measuring attitude of agricultural students towards student-READY programme in employability generation was developed according to scale product method which combines the Thurston's technique of equal appearing interval scale for selection of the items and Likert's technique of summated rating. The selected 11 statements for final format of the attitude scale have been randomly arranged to avoid response bias. The final format of the scale is presented in Table 2. This scale was found to be reliable with a correlation coefficient of 0.834.

Administration of the scale

The eleven statements selected for the final format of the attitude scale were randomly arranged to avoid response bias, which might contribute to low reliability and reduce validity of the scale. Out of the eleven selected statements, eight statements were positive attitude statements and three statements indicated negative. Against these eleven statements, there were five columns representing five points.

CONCLUSION

An attitude scale was developed for measuring the attitude of agricultural students towards student-READY programme in employability generation by using 'Scale Product Method' which combines the Thurston's technique of equal appearing interval scale for selection of the items and Likert's technique of summated rating. The scale developed to measure attitude of agricultural students towards student-READY programme in employability generation consisting total 11 statements, was found reliable and valid. Hence the same can be used by other investigators elsewhere in the context of Agricultural Universities or for other organizations with due modifications.

CONFLICT OF INTEREST

No conflict of interest among researchers.

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Received : October 2023 : Accepted : December 2023