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Development of scale to measure attitude of the farmers towards KVK activities

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Abstract

Attitude refers as the degree of positive or negative effect associated with some psychological object (Thurstone, 1946). Attitude exhibits a pivotal role in influencing one's behaviour towards any psychological object. The psychological object for the present study has been conceptualized as KVK activities. Hence the attitude in present study was operationalized as the psychological disposition of the KVK beneficiary farmers about KVK activities in varying degrees of favourableness or unfavourableness. Attitude plays a crucial role Keeping this in view, an attempt has been made to study attitude of farmers towards Krishi Vigyan Kendra activities. For this a tentative list of 60 statements were collected from different sources of information. After editing of these 60 statements by using various informal criteria 46 statements were retained. 36 statements out of 46 were selected through relevancy testing. Out of 36 statements, 22 statements (14 positive and 8 negative) with t value more than 1.75 were selected for final attitude scale. It is tacit that this scale with suitable modifications could be used in further studies for determining the attitude of farmers towards activities of any KVK.

Keywords: Scale, measure attitude, farmers

Introduction

Krishi Vigyan Kendras (KVKs) are the district-level organisations that provide technological support for the agricultural and allied sectors. All KVKs are designed to shorten the time gap between technology development at the research stations and its implementation to location specific farmer fields in order to steadily increase production, productivity and net farm profit. For this KVKs associate with the agricultural Universities, non-government organizations, Farmer producer organizations, Credit giving Institutions, leaders, farming community as well as development functionaries of different departments. KVK organize multiple activities like On Farm Trials, Front Line Demonstrations, capacity building programmes, diagnostic visits, mobile advisory services etc. to the farmers, farm women and Rural youth. These activities are helping the farming community in raising their level of farm productivity, income and employment with the application of agricultural innovation generated at the research stations. The favourable attitude of the farmers encourages them to actively participate in different activities of KVK which act as light house for the farming community, enhances their knowledge and guide them for adoption of scientific practices. Understanding the attitude of the farmers will help to bring about desirable changes in the knowledge and adoption level of the farmers in relation to technologies disseminated by KVKs. It is worthwhile to study the attitude of the farmers towards KVK activities in order to plan and implement the need based activities to be imparted by Krishi Vigyan Kendras. Hence, in the present study an attempt has been made to study attitude of farmers towards Krishi Vigyan Kendra activities.

Methodology

Thurstone (1946) [8] defined attitude as "the degree of positive or negative affect associated with some psychological object." In the present study, attitude of KVK beneficiary farmers was operationalized as the psychological disposition of the KVK beneficiary farmers about KVK activities in varying degrees of favourableness or unfavourableness. The scale was developed using summated ratings method (Likert, 1932) [7]. The following steps were carried out to construct the scale to measure the attitude of KVK beneficiary farmers towards KVK activities (Edwards, 1969) [4].

Definition of universe: The first step in the scale construction is to define the general area of universe of content. The class of all possible statements that could be made about a given psychological object is often called a universe. In the present study all the possible statements about "Attitude of KVK beneficiary farmers towards KVK activities" represent the universe.

Collection of statements: A number of statements about "Attitude of KVK beneficiary farmers towards KVK activities" were gathered from books, magazines, newspapers, research articles, journals, academic attainments, expertise of intellectuals in extension, research, teaching, farmers, self-intuitions and own experiences. From all these sources a tentative list of 60 statements belonging to attitude of KVK beneficiary farmers towards KVK activities were prepared keeping in view of the applicability of statements suited to the area of study.

Editing of statements: The 60 statements collected were carefully edited by using various informal criteria suggested by Chave (1929) [2], Likert (1932) [7], Wang (1932) [9], Bird (1940) [1], Edwards (1941) [3], Thurstone (1946) [8] and Kilpatrick (1948) [6]. After editing the 60 statements, 14 statements were deleted and 46 statements were retained.

Testing the statements for relevancy: The 60 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 46 statements was prepared in the form of questionnaire and was sent to 100 judges. The judges were requested to critically evaluate each statement for its relevancy to measure attitude of KVK beneficiary farmers towards KVK activities. They were requested to give their responses on a four-point continuum *viz.*, highly relevant, moderately relevant, slightly relevant and less relevant with scores 4, 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 working in Acharya N. G. Ranga Agricultural University and extension personnel, scientists and researchers across the country. The questionnaire was prepared in google forms and sent to judges by their e-mails. The responses obtained from judges were subjected to Standard Normal Deviate test (z test). After giving the scores to the statements, 'z' values were calculated for each statement. Finally, the grand 'z' of all the 46 statements was obtained and ' \bar{z} ' was calculated. All the statements with 'z' values above ' \bar{z} ' (0.031) were selected as the scalable statements of attitude of KVK beneficiary farmers towards KVK activities. The statements with 'z' values below ' \bar{z} ' were eliminated. Thus, 36 statements out of 46 were selected through relevancy testing.

Table 1: Selected attitude statements based on relevancy test

S. No:	Statements	'z' value	Selected/Not selected
1	One can get additional income for the family by following KVK interventions	1.10#	Selected
2	Recommendations given by KVK are not profitable to farmers (-)	-1.06	Not selected
3	Rural youth trainings given by KVK are beneficial in improving their physical and mental status.	1.37#	Selected
4	Getting Solutions for field problems is quicker through KVK	1.76#	Selected
5	The KVK does not keep abreast you with the latest technological changes	1.43#	Selected
6	The Interpersonal relationships between KVK scientists and farmers are friendly in nature	1.52#	Selected
7	The KVK scientists are unable transfer the latest technical know-how to the farmers	0.76#	Selected
8	The KVK prepares an individual mentally and physically to adopt a new innovations	0.65#	Selected
9	The Front line demonstrations of KVK act as local proof of new technology	1.47#	Selected
10	Rural youth trainings are beneficial in improving their physical and mental status.	-0.32	Not selected
11	The demonstrations conducted by KVK are useful in motivating the farmers	1.77#	Selected
12	Knowledge levels of farmers can be enhanced through various activities of KVK	1.98#	Selected
13	Nutritional status of the family can be improved by following KVK activities	0.83#	Selected
14	KVK activities help in diagnosis of pests and diseases	1.35#	Selected
15	KVK Scientists are inefficient in explaining the technologies for better understanding (-)	0.33#	Selected
16	The KVK scientists are not fully updated to transfer the technology	-0.57	Not selected
17	The instructional farm at KVK acts as crop museum to the visitors	1.64#	Selected
18	Because of KVK activities farmers become more innovative	0.99#	Selected
19	KVK is selecting the same beneficiaries repeatedly for different activities	-0.64	Not selected
20	Mobile advisories of KVK are Untimely (-)	0.21#	Selected
21	KVK plays vital role in developing skills about various activities in the farming	1.64#	Selected
22	Information material provided by KVK help the farmers in developing confidence in new technology.	1.71#	Selected
23	KVK disseminates unnecessary information in the training programmes (-)	0.29#	Selected
24	KVK can improve overall agricultural economy of the farmers.	0.44#	Selected
25	The technologies can be reached to the unreached farmers through digital platform of KVK	-0.46	Not selected
26	Higher productivity on farms is possible through KVK activities	1.29#	Selected
27	KVK focussing more on development of a farmer instead of his family (-)	0.52#	Selected
28	One can reduce the crop losses during natural calamities by following the advisories given by KVK	-0.24	Not selected
29	One can be self employed by participating in vocational trainings of KVK	1.01#	Selected
30	KVK encourages individual approach among the farmers rather than group approach (-)	0.73#	Selected
31	KVK encourage the farmers in adoption of recommended technological know-how.	-0.12	Not selected
32	KVK technologies helps in efficient utilization of natural resources	0.85#	Selected
33	The critical inputs supplied by KVK are Poor in quality (-)	0.16#	Selected
34	The recommendations of KVK are highly remunerative	1.18#	Selected
35	KVK help the farmers to control diseases and pests	0.02	Not selected

36	KVK technologies are biased towards resource rich farmers (-)	0.18#	Selected
37	The productivity of crops does not increase after taking the advice of scientists working at KVK.	0.01	Not selected
38	Diversification of Agriculture is possible through KVKs	1.21#	Selected
39	KVK encourage the farmers to adopt the new agricultural practices	1.28#	Selected
40	KVK helps the farmers to exchange the idea and also to solve their problem on priority basis.	0.89#	Selected
41	The technologies recommended by KVK are age old (-)	0.45#	Selected
42	KVK is helpful in raising the living standard of farmers	1.07#	Selected
43	The subject matter information given by KVK Scientists on phone calls are inadequate (-)	0.03	Not selected
44	KVK farm visit develops interest in the farmers on limited technologies (-)	1.55#	Selected
45	KVK has not created feelings of cooperation and coordination among the farmers.	1.41#	Selected
46	KVK helps the farmers in changing their attitude towards the improved cultural practices	1.74#	Selected

Note: (-) Negative Statements #The statement with z value more than Z value (0.031)

Treating the statements with Likert’s Summated Rating Technique of scale construction:

In this step, the 36 statements selected through relevancy test were given to 100 KVK beneficiary farmers from a non-sample area and were asked to indicate their responses on a five-point continuum viz., strongly agree (SA), agree (A), undecided (UD), disagree (DA) and strongly disagree (SDA) with 5,4,3,2 and 1 for positive statements and *vice-versa* for negative statements respectively. After receiving the responses from the respondents, 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 sum of the scores obtained for all the statements. Then the top 25 per cent of the respondents with the highest scores and the bottom 25 per cent of the respondents with the lowest scores were considered as criterion groups to evaluate individual statements. The middle 50 per cent of the respondents were deleted for further analysis. The top 25 per cent was considered as high group and bottom 25 per cent was considered as low group to calculate the critical ratio *i.e.*, ‘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 (1969) [4]. The ‘t’ value for each statement was calculated by using the formula.

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

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

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

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

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

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

$$n = n_L = n_H$$

After computing ‘t’ values for all the 36 statements, the statements with ‘t’ values more than 1.75 were selected for the final attitude scale. Thus, the final attitude scale to measure the attitude of KVK beneficiary farmers towards KVK activities comprises of 22 statements, out of which were 14 positive statements and 8 negative statements measured on a five-point continuum viz., strongly agree (SA), agree (A), undecided (UD), disagree (DA) and strongly disagree (SDA) with 5, 4, 3, 2 and 1 for positive statements and *vice-versa* for negative statements respectively.

Testing the 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) [5]. For testing the reliability, split half method was employed. The attitude scale of 22 statements was distributed to thirty KVK beneficiary farmers of non-sample area for their responses. After getting back the responses, the scale was divided into two halves, all odd statements into one half and all even statements into another. Then the co-efficient of reliability was calculated between the two halves. The correlation coefficient for both the sets was worked out. The correlation coefficient (r=0.79) was significant at 0.01 level indicating the attitude scale was highly suitable for administration to the KVK beneficiary farmers.

Testing the validity of the scale: The validity of the scale on attitude of KVK beneficiary farmers towards KVK activities was obtained through content validity by taking the judge’s opinion. The statements selected for the scale were evaluated individually and as a whole by the judges. These were again checked by experts in Acharya N.G. Ranga Agricultural University for their relevance and coverage. As the content of the attitude scale was borne out by the method of collecting statements within the universe of attitude of KVK beneficiary farmers towards KVK activities, it may reasonably be assumed that the attitude of KVK beneficiary farmers towards KVK activities scale has content validity.

Results and Discussion

The final scale had 22 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 22 and 110. The high score of scale will represent the favourable attitude of beneficiary farmers towards KVK activities.

Table 2: Attitude scale statements with ‘t’ values

S. No:	Statements	‘t’ value	Selected/Not selected
1	One can get additional income for the family by following KVK interventions	1.80#	Selected
2	Rural youth trainings given by KVK are beneficial in improving their physical and mental status	1.37	Not selected
3	Getting Solutions for field problems is quicker through KVK	4.76#	Selected
4	The KVK does not keep abreast you with the latest technological changes	1.43	Not selected
5	The Interpersonal relationships between KVK scientists and farmers are friendly in nature	3.52#	Selected
6	The KVK scientists are unable transfer the latest technical know-how to the farmers	0.76	Not selected
7	The KVK prepares an individual mentally and physically to adopt a new innovations	0.65	Not selected
8	The Front line demonstrations of KVK act as local proof of new technology	2.47#	Selected
9	The demonstrations conducted by KVK are useful in motivating the farmers	1.70	Not selected
10	Knowledge levels of farmers can be enhanced through various activities of KVK	5.68#	Selected
11	Nutritional status of the family can be improved by following KVK activities	0.83	Not selected
12	KVK activities help in diagnosis of pests and diseases	2.23#	Selected
13	KVK Scientists are inefficient in explaining the technologies for better understanding (-)	4.33#	Selected
14	The instructional farm at KVK acts as crop museum to the visitors	1.64	Not selected
15	Because of KVK activities farmers become more innovative	2.92#	Selected
16	Mobile advisories of KVK are Untimely (-)	2.29#	Selected
17	KVK plays vital role in developing skills about various activities in the farming	3.62#	Selected
18	Information material provided by KVK help the farmers in developing confidence in new technology.	1.46	Not selected
19	KVK disseminates unnecessary information in the training programmes (-)	4.36#	Selected
20	KVK can improve overall agricultural economy of the farmers.	0.44	Not selected
21	Higher productivity on farms is possible through KVK activities	2.01#	Selected
22	KVK focussing more on development of a farmer instead of his family (-)	2.55#	Selected
23	One can be self employed by participating in vocational trainings of KVK	2.05#	Selected
24	KVK encourages individual approach among the farmers rather than group approach (-)	3.43#	Selected
25	KVK technologies helps in efficient utilization of natural resources	1.85#	Selected
26	The critical inputs supplied by KVK are Poor in quality (-)	3.46#	Selected
27	The recommendations of KVK are highly remunerative	1.78#	Selected
28	KVK technologies are biased towards resource rich farmers (-)	2.28#	Selected
29	Diversification of Agriculture is possible through KVKs	1.93#	Selected
30	KVK encourage the farmers to adopt the new agricultural practices	1.28	Not selected
31	KVK helps the farmers to exchange the idea and also to solve their problem on priority basis.	0.89	Not selected
32	The technologies recommended by KVK are age old (-)	2.53#	Selected
33	KVK is helpful in raising the living standard of farmers	1.87#	Selected
34	KVK farm visit develops interest in the farmers on limited technologies (-)	1.50	Not selected
35	KVK has not created feelings of cooperation and coordination among the farmers.	1.41	Not selected
36	KVK helps the farmers in changing their attitude towards the improved cultural practices	1.74	Not selected

Note- (-) Negative Statements, #The statement with ‘t’ values more than 1.75

Table 3: Attitude scale to measure attitude of farmers towards KVK activities

S. No.	Statements	SA (5)	A (4)	UD (3)	D (2)	SD (1)
1	One can get additional income for the family by following KVK interventions					
2	Getting Solutions for field problems is quicker through KVK					
3	The Interpersonal relationships between KVK scientists and farmers are friendly in nature					
4	The Front line demonstrations of KVK act as local proof of new technology					
5	Knowledge levels of farmers can be enhanced through various activities of KVK					
6	KVK activities help in diagnosis of pests and diseases					
7	KVK Scientists are inefficient in explaining the technologies for better understanding (-)					
8	Because of KVK activities farmers become more innovative					
9	Mobile advisories of KVK are Untimely (-)					
10	KVK plays vital role in developing skills about various activities in the farming					
11	KVK disseminates unnecessary information in the training programmes (-)					
12	Higher productivity on farms is possible through KVK activities					
13	KVK focussing more on development of a farmer instead of his family (-)					
14	One can be self employed by participating in vocational trainings of KVK					
15	KVK encourages individual approach among the farmers rather than group approach (-)					
16	KVK technologies helps in efficient utilization of natural resources					
17	The critical inputs supplied by KVK are Poor in quality (-)					
18	The recommendations of KVK are highly remunerative					

19	KVK technologies are biased towards resource rich farmers (-)					
20	Diversification of Agriculture is possible through KVKs					
21	The technologies recommended by KVK are age old (-)					
22	KVK is helpful in raising the living standard of farmers					

Note: (-) indicates Negative statements

Conclusion

The attitude scale developed in this study aids in measurement of attitude of farmers towards KVK activities and was developed considering the study area, Andhra Pradesh. A favourable attitude towards KVK activities facilitates farmers to improve their efficiency, utilize improved technologies recommended by KVK and increase farm output. A negative attitude will act as a barrier for them to involve in the KVK activities. The final attitude scale developed in this study can be administered to farmers with suitable modifications in further studies for determining the attitude of farmers towards activities of any KVK.

References

1. Bird C. Social Psychology. Appleton-Century-Crafts, New York, 1940, 140.
2. Chave EJ. The Measurement of attitude. University of Chicago Press, Chicago, 1929.
3. Edwards AL. Political frames of reference as a factor influencing recognition, Journal of Abnormal Psychology. 1941;36:34-50.
4. Edwards AL. Techniques of Attitude Scale Construction. Valkies, Feffer and Simons Pvt. Ltd., Bombay; c1969. p. 149-171.
5. Goode JW, Hatt PK. Methods in Social Research, London, McGraw Hill book company; c1952.
6. Kilpatrick FP. A Technique for construction of attitude scale. Journal of Applied Psychology. 1948;32:374-384.
7. Likert R. A technique for the measurement of attitude. Archives of Psychology, 1932, 140.
8. Thurstone LL. Comment. American Journal of Sociology. 1946;52:39-50.
9. Wang KA. Suggested criteria for writing attitude statements. J Social Psychol. 1932;3:367-373.