

SCALE CONSTRUCTION AND ASSESSING FARMERS' ATTITUDE TOWARDS THE FUNCTIONING OF RYTHU BHAROSA KENDRAS

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ABSTRACT

New extension models are essential for strengthening the hands of farmers to enhance the productivity and profitability. The Government of Andhra Pradesh provides heightened attention for better welfare of the farming community by providing hassle free services at village level. Rythu Bharosa Kendras (RBKs) is an innovative approach launched by the government in providing integrated platform to address the needs of the farmers. Establishing or developing any technology/novel approach in agriculture necessitates an understanding of farmers' attitude. Gaining a profound insight into farmers' attitudes towards any endeavour facilitates the formulation of more effective strategies to address their challenges. This study aimed to develop a valid and reliable scale for assessing farmers' attitudes towards the functioning of RBKs. The Likert summated rating scale method was employed, involving the collection of 77 statements, from which 30 statements were selected through a relevancy test. Following a t-test item analysis, 22 statements were retained on the final scale. The reliability and validity assessments of the scale affirm its consistency and precision. For this study, East Godavari district of Andhra Pradesh was purposively selected due to its status as the district with the highest number of Rythu Bharosa Kendras (RBKs) among all districts in the state. A total of 120 farmers were randomly chosen from twelve villages of East Godavari district, and data was collected using a structured interview schedule. Statistical analysis was done using tools such as SPSS and Microsoft Excel, revealed that indicated that over half (57.50 percent) of the farmers exhibited a moderately favourable attitude towards the functioning of RBKs.

Keywords: attitude, farmers, RBKs, scale

INTRODUCTION

In the vast landscape of India, where agriculture serves as the backbone of livelihood for most of the population, the evolution of agricultural extension systems has played a pivotal role in facilitating the transfer of technology. Despite the historical contributions of pre- and post-green revolution extension initiatives, challenges persist for farmers, including limited access to extension agents, a high extension worker-to-farmer ratio (1:1162), difficulties in purchasing inputs and selling produce, and inadequate testing facilities for agricultural inputs, resulting in significant losses for farmers (Anuhya *et al.*, 2022). Recognizing these challenges and with a dedicated focus on farmers' welfare, the state government of Andhra Pradesh took a transformative step by establishing 10,641 Rythu Bharosa Kendras (RBKs) on May 30, 2020, across the villages in the state (Babu *et al.*, 2021). These RBKs offer a comprehensive range of services at the village level, including input delivery, technical advisories, soil testing,

training, crop insurance, market intelligence, health clinics, and expert interactions through audio and video conferences. Additionally, RBKs facilitate the procurement of farmers' produce (Saifuddin *et al.*, 2023; Chowdary *et al.*, 2022). Each RBK, staffed by qualified individuals in agriculture and allied sectors, serves as an integrated platform to address farmers' needs. Previously, farmers had to visit Mandal-level departments for assistance, but with RBKs, technical staff such as Village Agricultural Assistants (VAA) and Village Horticulture Assistants (VHA) are easily accessible to farmers for technical assistance at the village level (Saifuddin *et al.*, 2022).

In fact, the concept of RBK, acknowledged by the Centre for the UN Award, has received acclaim for transforming the agriculture sector by addressing farmers' requirements comprehensively, ranging from seed to sale. Recognizing the crucial role of farmers for the ongoing success of RBKs, it was necessary to delve into assessing

farmers' attitudes towards the functioning of RBKs. This exploration aims to provide insights for necessary remedial measures, ensuring the smooth operation and efficient service delivery of RBKs to farmers.

OBJECTIVES

- (1) To develop a scale to measure the attitude of farmers towards functioning of Rythu Bharosa Kendras (RBKs)
- (2) To assess the attitude of farmers towards functioning of Rythu Bharosa Kendras (RBKs)

METHODOLOGY

Attitude refers to the "degree of positive or negative affect associated with some psychological object" (Thurstone, 1931). Attitude was operationally defined as favorable or unfavorable feeling of farmers towards functioning of RBK. To measure the attitude of farmers towards the functioning of RBKs, a scale was developed by the adopting method of Likert summated rating scale. Likert scale is a subject-centred/ individual difference among respondents with respect to their possession or standing on a particular attribute or aspect (Ramya *et al.*, 2019). The methodology was followed by Reddy *et al.*, (2023); Rajesh and Smitha, (2023); Gupta *et al.*, (2022), Vijayan *et al.*, (2022). Likert scale with a five- or seven-point continuum can produce enough variance for examining the relationships among items and scales, and create adequate internal consistency (Likert, 1932) and we used a five-point continuum in this paper.

Steps in development of attitude scale

Collection of Statements/ Items

A statement can be defined as anything that is said about a psychological object (Edward, 1948) and a list of statements that measure attitude were collected from relevant literatures, the expertise of intellectuals in extension, technical staff in RBKs, and own experiences. From all these sources, a list of 77 statements were prepared and out of which, 65 statements were retained and 12 statements were eliminated based on Edward's criteria. It is possible that not all the statements gathered are equally relevant for assessing farmers' attitude. As a result, the statements were examined by experts to ascertain their relevance and to screen them for inclusion in the final scale.

Screening of items through relevancy rating

A questionnaire, comprising 65 attitude statements rated on a five-point scale (ranging from highly relevant, relevant, undecided, less relevant and not relevant, with scores assigned as 5, 4, 3, 2, and 1, respectively), was distributed to 70 judges

via email and personally handed to them. Specific instructions were provided for the rating process. The selected judges were specialists in the domains of extension education and social science. They were instructed to express their responses by placing a tick mark on the appropriate continuum for each item. Additionally, the judges were encouraged to make any necessary modifications, additions, or deletions based on their preferences or insights. Out of the 70 judges approached, 45 provided their responses within a one-month timeframe. The scores for each item were aggregated across all judges, and a relevancy test was conducted using the formula (Kumar and Ratnakar, 2016).

$$\text{Relevancy test} = \frac{\text{"Total scores obtained on each item"}}{\text{"Maximum possible score"}} \times 100$$

Those items, which secured a relevancy test of 80 and above, were selected. Out of the initial 65 statements, a final set of 30 were selected, thereby retaining items deemed relevant through the judges' ratings. The 30 statements, chosen after the relevancy test, were subsequently administered to a group of 40 non-sample respondents, and their responses were collected. The standard procedure followed as suggested by Vaishnavi *et al.*, 2023; Sharma, 2023; Jadav and Christian, 2023; Patel *et al.*, 2023; Rohan and Vinaya, 2022.

Item analysis

Respondents expressed their responses on a five-point scale, ranging from Strongly Agree (SA) with a score of 5, Agree (A) with a score of 4, Undecided (UD) with a score of 3, Disagree (DA) with a score of 2, to Strongly Disagree (SDA) with a score of 1 for positive statements and vice-versa for negative statements. Upon receiving the responses, the individuals were organized in both descending and ascending orders, considering the total sum of scores obtained for all statements by each respondent. The criterion groups for evaluating individual statements were determined by selecting the top 25% of respondents with the highest scores and the bottom 25% with the lowest scores. The middle 50% of respondents were excluded from further analysis. The top 25% constituted the high group, while the bottom 25% formed the low group. The critical ratio, or 't' value, was then calculated for each statement based on these defined high and low groups (Semie *et al.*, 2009).

The computed 't' value for each statement was assessed to determine the extent to which the statement distinguishes between respondents in the high group and those in the low group. The 't' values were derived using the formula proposed by Edward (1948). Top of Form

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

- X_H = The mean score on a given statement for the high group
- X_L = The mean score on a given statement for the low group
- ΣX_H^2 = Sum of squares of the individual score on a given statement for high group
- ΣX_L^2 = Sum of squares of the individual score on a given statement for low group
- ΣX_H = Summation of scores on a given statement for high group
- ΣX_L = Summation of scores on a given statement for low group
- n = Number of respondents
- Σ = Summation

Table 1 : Final t – values of the statements that represent attitude of farmers towards functioning of RBKs

Sr. No.	Statements	't' value
1	Problem of duplicate and spurious inputs sale is avoided as RBKs are supplying quality & certified inputs	2.88
2	Getting certified inputs from RBK is a time-consuming process	2.29
	Farmers getting timely financial support with the involvement of RBKs	2.89
4	All sections of farming community are equally benefitted by RBKs	1.86
5	RBK promotes good agricultural practices /recommended techniques of farming through programmes like polambadi	1.84
6	RBKs are providing timely guidance through Village Agriculture Assistant	2.22
7	Trainings and advisory meetings are hardly ever conducted by the technical staff in the RBK	2.94
8	RBKs plays an important role in transforming traditional agriculture to modern agriculture	2.41
9	Access to information at village level through RBK is boon to the farming community	2.67
10	It is sheer wastage of money to continue the RBKs	1.79
11	Quite a few numbers of farmers in this area are aware of the activities carried out by the RBK	2.87
12	Regular diagnostic visits of farmer fields are possible due to establishment of RBKs	2.34
13	Performance of RBK is meagre in our area	2.58
14	The co-ordination between the farmers and agricultural department increased due to RBKs	2.42
15	Technical information provided by the RBK is age old	2.11
16	Usage of chemicals in crop production is at diminishing rate because of Polambadi /Thotabadi programme	2.26
17	RBK procurement center offering remunerative prices for the produce of farmers	2.48
18	RBK is the best center to avoid exploitation of farmers by stakeholders	2.34
19	There is political interference in selection of farmers for monthly advisory board meetings	2.57
20	RBK services are mainly pertaining to the agricultural activities neglecting allied sectors	2.22
21	The RBK channel helps the farmers to get latest information on agriculture and allied sectors	1.89
22	RBK is a single window approach for farmers where all sort of services and inputs points are available at one point	2.68

The reliability and validity of the developed scale were assessed through standardization procedures. Reliability, which refers to the consistency of results, was evaluated using the split-half method. This method involves assessing

whether the scale consistently produces similar outcomes when administered by the same individuals on various occasions or with different equivalent sets. Upon receiving the responses, the scale was split into two halves, with odd-

numbered statements forming one set and even-numbered statements comprising another. In this arrangement, one half included items 1, 3, 5, 7, and so forth, while the other half encompassed items 2, 4, 6, 8, and the like. Reliability coefficient (R.C) by Spearman-Brown formula (Srinivas, *et al.*, 2018).

$$\text{Reliability coefficient of test} = \frac{2 * \text{R.C of the half test, found experimentally}}{1 + \text{R.C of the half test, found experimentally}}$$

Out of 30 statements were deemed relevant through a relevancy test, wherein judges rated items. Subsequently, ‘t’ values were computed for all 30 statements, and those with ‘t’ values exceeding 1.75 were chosen for inclusion in the final scale. Thus, from the 30 statements, 22 were selected based on this criterion. The reliability coefficient, with a correlation value of 0.702, was found to be statistically significant at the 0.05 level of probability.

Standardization of the scale

The scale underwent a standardization process to ensure it effectively measures its intended constructs and maintains consistency in measurement. Prior to administration, the developed scale was subjected to standardization procedures, by verifying its reliability and validity.

Reliability of the scale

The reliability coefficient was computed between the two halves of the scale, and the correlation of reliability coefficient for both sets was determined. The obtained correlation of the reliability coefficient ($r = 0.702$) was found to be statistically significant at the 0.05 level of probability. This suggests that the scale is highly suitable for administration to farmers, as it demonstrates stability and dependability in its measurement. The positive and significant correlation between the two sets of scores indicates high reliability of the test.

Validity of the scale

If a scale measures what it is intended to measure, it is said to be valid. The degree to which a scale effectively expresses the concept or construct of interest. The sampling adequacy or representativeness of the content in relation to the universe’s content is referred to as the content validity. By collecting statements from relevant sources & consulting with the experts, and the selected statements for the scale underwent evaluation individually and whole by the judges. As a result, it can be reasonably inferred that the scale measuring the attitude of farmers towards the functioning of RBKs possesses content validity.

Administration of the Scale

The total score for each respondent on the final scale is calculated by summing the scores obtained across all items. The scores on this scale range from 22 to 110, where a higher score indicates a more favourable attitude towards the functioning of RBKs. The final scale for measuring farmers’ attitudes towards the functioning of RBKs consists of 22 statements, comprising 14 positive and 8 negative statements. Respondents rate each statement on a five-point continuum: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA), and Strongly Disagree (SDA). Scores of 5, 4, 3, 2, and 1 are assigned to positive statements, while the reverse scoring is applied to negative statements. Top of Form

The developed scale was utilized for assessing the farmers’ attitude towards the functioning of RBKs. The study, by employing an *ex-post facto* research design was conducted in the East Godavari district of Andhra Pradesh. The Purposive selection of East Godavari district and four mandals within district was based on the highest number of RBKs. From each selected mandal, three villages were selected through a simple random sampling procedure. Within each selected village, ten beneficiary farmers were randomly chosen, making a total of 120 respondents. The primary data was collected from these respondents using structured interview schedule in the year 2022. The gathered data underwent analysis using appropriate statistical tools and procedures to determine the frequency, percentage, mean and standard deviation.

RESULTS AND DISCUSSION

The overall attitude of farmers towards functioning of RBKs is the degree of favourable or unfavourable feeling expressed by the respondents. The data pertaining to the farmers’ attitudes towards the functioning of Rythu Bharosa Kendras (RBKs) presented in Table 2. The attitude level of farmers was categorized into three categories i.e., Low favourable attitude, moderately favourable and highly favourable based on the mean and standard deviation scores.

Table 2. Distribution of farmers according to their attitude towards functioning of RBKs (n = 120)

Sr. No.	Category	Frequency	%
1	Low favorable attitude (< 64.94)	19	15.83
2.	oderately favorable attitude ($64.94 - 78.48$)	69	57.50
3	Highly favorable attitude (> 78.48)	32	26.67
Mean = 71.71		S. D = 6.77	

Results furnished from the Table 2 shown that more than half (57.50%) of the farmers had moderately favourable attitude, followed by highly favourable (26.67%) and low favourable (15.83%) attitude categories. The likelihood of the observed trend can be attributed to the strategic placement of RBKs at the village level, facilitating continuous interaction between farmers and the technical staff. Furthermore, the establishment of RBKs has led to farmers receiving remunerative prices for their produce. However, there is a contrasting unfavourable attitude among farmers regarding specific aspects, such as the insufficient technical knowledge of RBKs' staff in crop protection matters, along with challenges in the distribution of inputs like IPM kits containing pheromone traps, sticky traps, and biofertilizers to the farmers. The results were in line with the findings of Kumar *et al.* (2015); Jadhav (2018); and Harisha (2021). Top of Form

CONCLUSION

The developed attitude scale was administered on a sample of 120 farmers, proven its utility in assessing farmers attitude towards functioning of RBKs. Consequently, researchers are encouraged to employ this scale in future studies to measure the farmers' attitudes towards the functioning of RBKs in various regions of Andhra Pradesh. Assessing the attitude of farmers towards the functioning of RBKs can serve as a guide for policymakers in formulating interventions that are conducive to revitalize the RBKs. The results shows the need of the government for capacity building of technical staff of RBKs to impart more number of refresher trainings and helps the government to direct their technical staff working at RBKs (VAA/VHA/VFA/Village animal husbandry Assistant) to maintain transparency in selection of farmers for advisory meetings, arrangement of inputs such as IPM kits like pheromone traps, sticky traps and biofertilizers for improving credibility and to build good rapport which ultimately reflects in the attitude of the farmers.

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CONFLICT OF INTEREST

The authors declare no conflict of interest

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