CONSTRUCTION OF SCALE ON PERCEPTION OF FARMERS TOWARDS E-CROP BOOKING

Abstract

In this modern era, farmers encounter difficulties in receiving timely services from extension agents. So, technological advancement in quality of services, speed in deliverables and precision actions are possible by creating proper interface between farmers, scientists, extension officers, service providers etc. and by bringing innovation/sustainable interventions in agriculture and allied sector. With this context as a new extension reform, Government of Andhra Pradesh has launched Rythu Bharosa Kendras. Hence, this study represents the construction of an perception scale to understand the perception of farmers towards Rythu Bharosa Kendras. Keeping this in view, an attempt has been made to develop a scale for measuring the perception of farmers towards Rythu Bharosa Kendras. Likert's method of summated rating technique was adopted to construct the scale. Based on the available literature and expert's opinion, 50 statements were developed. After editing as per informal criteria, 40 statements were subjected to item analysis among the farmers of non-sample area. Out of which, 32 statements were retained in the developed attitude scale based on the highest 't' value. The 'r' (correlation coefficient) value was found to be 0.852 which represents significant at 1 per cent level and the reliability and validity of the constructed scale were found appropriate to measure the perception of farmers towards Rythu Bharosa Kendras.

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Keywords: Scale, Perception, e-Crop

1. INTRODUCTION

Perception of a person determine one's knowledge about any ideas, its acceptance, adoption and rejection. It also has a bearing with other requirements associated with the idea. E-crop booking is one of the service offered by Rythu Bharosa Kendras to provide support to the farmers.

Agricultural extension system is profoundly dynamic in nature and reforming at ages in order to serve the farming community in a better and effective way. Availability of quality farm inputs and right advisories are critical in improving the crop productivity and reducing the cost of cultivation. In the era of technological advancement the quality of services, speed in deliverables and precision actions are possible by creating proper interface between farmers, scientists, extension officers, service providers etc. and by bringing innovation/sustainable interventions in agriculture and allied sector. With this context as a new extension reform, 'Government of Andhra Pradesh has launched Rythu Bharosa Kendras' on 30th May, 2020 for bringing the extension system nearer to the farming community and more transparency to

ensure quality of services. These centres offer services like delivery of inputs to farmers within 24-48 hours of ordering through kiosks, custom hiring of machinery, technical advisories at respective centres itself. It is a decent attempt made by the Government of Andhra Pradesh to bring the agriculture extension system more closely to the farmers. This innovative approach will act as a one-stop-shop to address all the needs of farmers across the state. RBKs would assist the farmers in every step from the purchase of seed to sale of their final product. However lack of grassroot level approach has been a limiting factor in up-scaling strategy for application of digital extension tools. Hence it becomes an urgent need for RBKs in terms of digital competences and resources. In this view the present study was formulated to develop mechanisms for integration of digital extension services at grassroot level.

2.METHODOLOGY

'Likert's method of summated rating' is adopted in the construction of perception scale. In summated rating scale the respondent is requested to respond to each of the statement based on their degree of agreement or disagreement in a five point or seven-point continuum.

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2.1 Collection of Items:

The statements were developed based on the available literature and experts opinion, 50 statements were developed. Based on the informal criteria given by Edwards [4], those statements were edited and finally 40 statementswere retained.

2.2. Item Analysis:

The statements were sent to farmers of non-sample area to get their responses. The respondents (farmers) were requested to indicatetheir response as 'Strongly agree', 'Agree','Undecided', 'Disagree' and 'Strongly disagree' with the scores 5, 4, 3, 2 and 1 respectively, for favorable statements and scoring pattern is reversed for negative statements. Based on the total scores obtained by the respondents, they were arranged in descending order. For each respondents, the possible highest score was 200 and the least possible score was 40.

The 't' value was calculated to identify the extent of differentiation between highest and lowest group. The criterion group is selected by selecting 25 per cent of the respondents with highest scores (high group) and 25 per cent ofthe respondents with the lowest scores (low group). In order to calculate 't' value, thefollowing formula was used.

$$t = \frac{(\overline{X_H} - \overline{X_L})}{\sqrt{\frac{\sum(\overline{X_H} - \overline{X_L})^2 + \sum(\overline{X_L} - \overline{X_L})^2}{n(n-1)}}}$$

$$\sum(\overline{X_H} - \overline{X_H})^2 = \sum X_H^2 - \frac{\sum(X_H)^2}{n}$$

$$\sum(\overline{X_L} - \overline{X_L})^2 = \sum X_L^2 - \frac{\sum(X_L)^2}{n}$$

Where,

$\overline{X_H}$= the mean score on a given statement for the high group

$\overline{X_L}$= the mean score on the same statement for the low group

X_H = The sum of scores of all subjects on a givenstatement for the high group

X_L = The sum of scores of all subjects on a givenstatement for the low group

X_H^2= Sum of squares of the individual score on agiven statement for high group

X_L^2= Sum of squares of the individual score on agiven statement for low group

The calculated 't' value is presented in Table 1. The statements which possess the highest 't' value are selected.

3. RESULTS AND DISCUSSION

Selection of Statements for Final Attitude Scale:

According to Jamal (2018), the norms to considera statement for the final scale were

i. 't' value of more than 1.75.

ii. the statement should be expressing a new idea which does not overlap with the idea expressed by the other statement.

iii. iii. the statement should be simple worded and brief.

The final list of selected statements for construction of attitude scale were presented in Table 2.

Table 1. Calculation of 't' Value for perception scale

S.No.	Statements	't' value
1	Farmers perceive e-crop booking as a convenient way to access agricultural services in their smart phone	5.210**
2*	Farmers believe that e-crop booking cannot reduce corruption and ensure transparency in delivering services	1.859**
3	The younger generation of farmers embraces e-crop booking more readily than the older ones.	4.301**

4*	The integration of crop insurance options with e-crop booking is viewed negatively by some farmers.	4.560**
5	The accuracy of data collected through e-crop booking helps in better planning and resource allocation by the department of agriculture	1.859**
6	Farmers appreciate the option to provide feedback on e-cropbooking services to improve them continuously.	1.032
7	Real-time market information provided by e-cropbooking benefits farmers in pricing their produce.	0.534
8	E-crop booking is seen as a means to reduce paperwork of farmers	5.376**
9	E-crop booking can be a catalyst for agricultural research and development plans.	2.531**
10	The success of e-crop booking depends on effective training and capacity-building of farmers and extension service providers.	2.536**
11	The availability of local language support is vital for wider e-crop booking adoption.	2.664**
12*	Some farmers are skeptical about e-crop booking and prefer traditional methods in getting services	2.261**
13*	There is political interference in selection of farmers for monthly advisory board meetings	1.216
14	E-crop booking can promote sustainable farming practices and resource conservation	3.376**
15	E-crop booking helps farmers with hassle-free claims during natural calamities	2.536**
16	E-crop booking can contribute to the overall modernization of agriculture in the region	4.780**
17	E-cropbooking should be promoted as a complement to traditional agricultural knowledge rather than a replacement	1.032
18	The integration of e-crop booking with other agricultural services enhances its value for farmers	3.049**
19	E-crop booking platforms should be designed to work efficiently even in low-bandwidth areas	3.763**
20	The success of e-crop booking depends on building trust and credibility between farmers and government	3.226**
21	E-crop booking can help in benchmarking and comparing the performance of different crops	2.449**
22*	All farmers are not benefited by e-crop booking	1.953**
23	Linking Rythu Bharosa kendras with e-crop booking enhances growth and support for farmers	4.560**
24	The digital documentation of crop details is seen as an advantage of e-crop booking	5.210**
25*	Some farmers worry about data security and privacy when using e-crop booking platforms	1.994**
26*	E-crop booking is not considered as a way to bridge the gap between farmers and government agricultural schemes	1.075
27*	Some farmers worry about the digital divide and the exclusion of marginalized farmers from e-crop booking initiatives	1.876**
28*	The affordability of technology and internet connectivity affects the widespread adoption of e-crop booking	2.822**
29	Supplying the inputs through e-crop booking helps reduce the usage of urea	0.528

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30	E-cropbooking can help in predicting and managing pests and diseases in crops.	0.723
31*	Farmers will not appreciate the technical support and assistance offered by e-crop booking providers.	2.266**
32*	Concerns about the reliability of e-crop booking data are raised by some farmers.	2.065**
33*	E-crop booking cannot help farmers access to credit and financial services more easily.	2.347**
34*	Some farmers worry about the overreliance on technology and its potential risks.	3.376**
35	Getting certified inputs from RBK is a time-consuming process. (-)	1.988**
36*	Some farmers feel left out from e-crop booking initiatives due to a lack of awareness or resources.	1.876**
37	Farmers see e-cropbooking as a way to diversify their income sources through information on alternative crops.	2.534**
38*	The digital literacy of farmers is not a critical factor affecting the adoption of e-crop booking.	5.376**
39	E-cropbooking can help farmers adopt precision agriculture techniques for better resource management	0.692
40	e-crop booking can empower small and marginal landholding and provide them with more access to government schemes	2.568**

(* Negative statements, ** Statements with significant t values)

Table 2. Final list of statements selected for construction of Perception scale

S.No.	Statements	Response				
		SA	A	UD	DA	SDA
1	Farmers perceive e-crop booking as a convenient way to access agricultural services in their smart phone					
2	Farmers believe that e-crop booking cannot reduce corruption and ensure transparency in delivering services (-)					
3	The younger generation of farmers embraces e-crop booking more readily than the older ones.					
4	The integration of crop insurance options with e-crop booking is viewed negatively by some farmers. (-)					

5	The accuracy of data collected through e-crop booking helps in better planning and resource allocation by the department of agriculture					
6	E-crop booking is seen as a means to reduce paperwork of farmers					
7	E-crop booking can be a catalyst for agricultural research and development plans.					
8	The success of e-crop booking depends on effective training and capacity-building of farmers and extension service providers.					
9	The availability of local language support is vital for wider e-crop booking adoption.					
10	Some farmers are skeptical about e-crop booking and prefer traditional methods in getting services (-)					
11	E-crop booking can promote sustainable farming practices and resource conservation					
12	E-crop booking helps farmers with hassle-free claims during natural calamities					
13	E-crop booking can contribute to the overall modernization of agriculture in the region					
14	The integration of e-crop booking with other agricultural services enhances its value for farmers					
15	E-crop booking platforms should be designed to work efficiently even in low-bandwidth areas					
16	The success of e-crop booking depends on building trust and credibility between farmers and government					
17	E-crop booking can help in benchmarking and comparing the performance of different crops					
18	All farmers are not benefited by e-crop booking (-)					

19	Linking Rythu Bharosa kendras with e-crop booking enhances growth and support for farmers					
20	The digital documentation of crop details is seen as an advantage of e-crop booking					
21	Some farmers worry about data security and privacy when using e-crop booking platforms (-)					
22	Some farmers worry about the digital divide and the exclusion of marginalized farmers from e-crop booking initiatives (-)					
23	The affordability of technology and internet connectivity affects the widespread adoption of e-crop booking (-)					
24	Farmers will not appreciate the technical support and assistance offered by e-crop booking providers.(-)					
25	Concerns about the reliability of e-crop booking data are raised by some farmers.(-)					
26	E-crop booking cannot help farmers access to credit and financial services more easily.(-)					
27	Some farmers worry about the overreliance on technology and its potential risks. (-)					
28	Getting certified inputs from RBK is a time-consuming process. (-)					
29	Some farmers feel left out from e-crop booking initiatives due to a lack of awareness or resources.(-)					
30	The digital literacy of farmers is not a critical factor affecting the adoption of e-crop booking. (-)					
31	e-crop booking can empower small and marginal landholding and provide them with more access to government schemes					
32.	Farmers see e-cropbooking as a way to diversify their income sources through information on alternative crops.					

(SA= Strongly Agree, A=Agree, UD=Undecided,DA=DisAgree, SDA= Strongly DisAgree)

4 Reliability and Validity

4.1 Reliability: test-retest method

The final 40 statements which indicate the perception of the farmers towards Rythu Bharosa Kendras were administered on a five point continuum scale to 30 farmers of non-sample area. Later on, after a period of 15 days, again the test was administered to the same 30 farmers, which resulted in two sets of scores. The 'r' (correlation coefficient) value was found to be 0.852 which represents' significant at 1 per cent level'. Hence, the constructed perception scale was favorable to assess the perception of farmers towards Rythu Bharosa Kendras

4.2 Validity: Content validity

The content of the developed scale was assessed to determine the extent of the content to measure perception of the farmers towards Rythu Bharosa Kendras . Thus, it was observed that, each of the statement had a high discriminating value representing that the scale acts as a valid measure to assess the perception of farmers. Eventually, the constructed scale was found to have reliability and validity; thus, it can serve as a standard tool to measure the perception of the farmers towards Rythu Bharosa Kendras.

5. CONCLUSION:

In conclusion, farmers' perception towards e-crop booking platforms is shaped by a complex interplay of factors. While many farmers appreciate the convenience offered by these platforms, particularly in saving time and effort, their perception also hinges on access to technology, trust in the reliability of the platforms, and cost-effectiveness compared to traditional methods. Awareness and education play significant roles, with farmers in regions with better internet connectivity and higher education levels generally showing more positive attitudes. However, resistance to change, skepticism towards technology, and reliance on traditional practices can hinder adoption. Overcoming these barriers requires not only addressing concerns about reliability and security but also providing adequate support and training to facilitate a smooth transition. By addressing these multifaceted considerations and fostering trust through transparent communication and reliable service delivery, e-crop booking platforms can become valuable tools for enhancing efficiency and productivity in agriculture while positively transforming farmers' perceptions over time.

6. RECOMMENDATIONS

The developed perception scale was assessed to determine to measure the perception of the farmers towards Rythu Bharosa Kendras Andhra Pradesh State. It can be commended to do in all over thecountry so the policy implementation will easier and allocation of budget will improved and most impotently the perception of the farmers towards this services will enlighted.

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