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Construction of an attitude scale for the farmer producer organization beneficiaries of Jammu and Kashmir

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Abstract

This study presents the development and standardization of a Likert-type attitude scale to measure the attitude of Farmer Producer Organization beneficiaries towards Farmer Producer Organizations (FPOs) in Jammu and Kashmir. The objective was to identify relevant dimensions of attitude in this context, to generate and refine items, and to test the scale for reliability and validity. Using mixed methods of literature review, expert consultation, and field pre-testing, an initial pool of items was collected, edited, and subjected to item-analysis. The finalized instrument comprising 25 items/statements (positive and negative) was administered to a sample of 32 FPO beneficiaries. The reliability coefficient (Cronbach's alpha) was found to be $\alpha = 0.89$, indicating high internal consistency. Validity evidence (content) is also provided. The results show that the scale effectively discriminates among individuals with different attitude levels.

Keywords: Attitude scale, farmer producer organizations, reliability, validity, Likert scale

Introduction

Farmer Producer Organizations (FPOs) have emerged in India as a critical institutional mechanism to empower small and marginal farmers by aggregating their strengths in input procurement, marketing, and accessing institutional services (Mishra & Shyam, 2021) ^[7]. The main objective of FPO is to ensure better income for the producers through an organization of their own (Patel *et al.*, 2022) ^[8]. In the challenging terrain and socio-economic environment of Jammu and Kashmir, FPOs have the potential to alleviate market access constraints, reduce transaction costs, and enhance the incomes of member farmers.

Farmers' attitudes towards FPOs—how they perceive benefits, constraints, governance, and institutional functioning—are crucial as they influence participation and sustainability (Kumar & Rai, 2016) ^[6]. Past studies in various Indian states have developed attitude scales for farmer-related programmes using Likert's summated rating method, demonstrating that attitudes can be reliably and validly measured (Agrawal & Chandargi, 2008; Singh & Bhowmick, 2015) ^[1, 13]. Yet, there is a lack of standardized instruments specific to FPO beneficiaries in Jammu and Kashmir.

Therefore, this study aims to construct a psychometrically sound attitude scale tailored for FPO beneficiaries in Jammu and Kashmir. Such a scale can help extension educators, policy-makers, and FPO promoters to assess baseline attitudes, monitor changes, and tailor interventions

accordingly.

Objective

To develop a scale to measure the attitude of farmer producer organization beneficiaries of Jammu and Kashmir.

Methodology

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for something. Attitudes are generally positive or negative views of a person, place, thing or event, that is often referred to as the attitude object. The method of summated rating suggested by Likert (1932) was followed in the development of a scale to measure the attitude of farmers farmer producer organization beneficiaries of Jammu and Kashmir. The attitude in this study was operationalized as the predisposition of the farmers towards farmer producer organization.

Steps in construction of Likert attitude scale to measure the attitude of farmer producer organization beneficiaries of Jammu and Kashmir

1. Collection of statements from different sources

To develop a scale on the attitude of farmer producer organization beneficiaries of Jammu and Kashmir, a pool of statements was generated through literature review, expert consultations, and farmer discussions. Detailed in-depth review of FPO formation guidelines, research papers,

journals and internet sources were used.

2. Editing of statements by following Edward's 14 principles

The statements were edited according to the Edward's 14 principles. A total of 50 statements were finalized for the study.

3. Relevancy test of the selected statements

The selected statements were sent to experts via email to check each and every statement with respect to its relevancy on dichotomous response i.e. 'Essential' or 'Not Essential' using Lawshe's Content Validity Ratio (CVR). The CVR is an item statistic useful in rejection or retention of individual items/statements and is internationally recognized as the method for establishing content validity (Wilson, Pan, & Schumsky, 2012). When all the experts say that the tested knowledge or skill is "essential," or when none say that it is "essential," we are confident to include or delete the item/statement. The more experts (beyond 50%), perceiving an item as "essential", the greater the extent or degree of its content validity. The CVR is calculated using the following formula:

$$CVR = \frac{n_e - (N/2)}{(N/2)}$$

where,

'ne' is the number of experts identifying an item as "essential" and 'N' is the total number of experts (N/2 is half the total number of experts).

After checking the relevancy using content validity ratio, out of 50 statements, 31 statements were retained.

4. Interview schedule preparation

Statements retained after the calculating the content validity ratio, were framed on a five-point continuum—Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree based on Likert's (1932) technique. Both positive and negative items were included to avoid response bias.

5. Data collection

The data was collected from 32 farmers in a personal

interview belonging to both Jammu and Kashmir division. Respondents were requested to give their response on five-point continuum from 'strongly agree' to 'strongly disagree' with a score of 5,4,3,2,1 respectively for positive response and reverse for the negative statements.

6. Item analysis

Statement analysis formed a vital step in the construction of a valid and reliable attitude scale. The data was collected personally from 32 farmers representing both Jammu and Kashmir divisions through face-to-face interviews to ensure authenticity and contextual accuracy of responses. Each respondent was requested to record their opinion on a five-point continuum, namely *strongly agree*, *agree*, *undecided*, *disagree*, and *strongly disagree*. For the positive statements (favourable to the subject under study), numerical scores of 5, 4, 3, 2, and 1 were assigned respectively, whereas for negative statements (unfavourable to the subject), the scoring pattern was reversed. The total score of each respondent was obtained by summing up the scores assigned to all items. The respondents were then arranged in descending order based on their total scores. Subsequently, the top 20 per cent of respondents with the highest scores and the bottom 20 per cent with the lowest scores were identified as the "high" and "low" groups, respectively, for the purpose of item discrimination. The discriminating power of each statement was determined by computing the critical ratio or *t*-value, which indicates the extent to which a given statement differentiates between the high and low scoring groups. The *t*-values were calculated using the formula suggested by Edwards (1957) ^[3]

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

where,

H = The mean score on a given statement for the high group

L = The mean score on a given statement for the low group

n = number of respondents in each group

Table 1: List of statements with their t-value

Statement No.	Statement	t-value
1	I believe that joining an FPO would be beneficial for my farming practice.	5.35
2	I think that being part of an FPO would increase my market access.	1.25
3	I feel that membership in an FPO would improve my farms profitability.	1.45
4	I consider FPOs essential for individual and community agricultural success.	4.83
5	I am skeptical about the real impact FPOs have improved market access for individual farmer.	2.40
6	I am convinced that joining an FPO would enable me to access better farming inputs and technologies.	2.77
7	I believe that FPOs enhance entrepreneurship development.	7.29
8	I believe that FPOs enhance the business-minded decision-making capacity of farmers.	7.29
9	I believe that joining an FPO will significantly increase my farming income.	5.80
10	Farmers who join FPOs tend to have more stable and successful farms.	7.81
11	Being part of an FPO will give me access to better farming technologies.	1.45
12	Joining an FPO will allow me to get higher prices for my produce.	4.46
13	FPO membership could protect me from market fluctuations and price drops.	5.88
14	Access to training provided by FPOs could improve my farming skills.	1.04
15	I am concerned that my independence as a farmer would be compromised by joining an FPO.	3.60
16	Collaborating with other farmers in an FPO could open new market opportunities.	2.60
17	FPO membership can lead to better credit facilities and financial services.	2.20

18	FPOs have the potential to improve the local agricultural infrastructure and resources.	5.30
19	The support network within an FPO can provide a safety net during tough times.	4.90
20	I am of the view that being a member of the FPO in my region would give me a guarantee of sales.	4.90
21	I believe being a member of an FPO in my region would allow me to receive subsidies.	3.30
22	I am confident that joining an FPO will help improve the sustainability of my farming practice.	3.60
23	FPOs are crucial in helping farmers like me get fair compensation for our crops.	1.00
24	I believe that FPOs effectively advocate for farmers' rights and needs.	4.30
25	Membership in an FPO would likely result in cost savings due to collective purchasing.	8.80
26	I am optimistic that being part of an FPO would lead to innovative farming practices.	8.00
27	FPOs offer valuable networking opportunities with other farmers and industry players.	3.00
28	The collaborative environment of an FPO is beneficial for sharing knowledge and best practices.	1.00
29	I think that FPOs provide a platform for voicing concerns in shaping agricultural policies.	4.40
30	Joining an FPO would ease the marketing and distribution challenges I face as an independent farmer.	12.50
31	I feel that FPOs may not successfully market <i>all</i> types of agricultural products.	3.40

Out of 31 statements, 25 statements having 't-value' greater than 1.75 were selected for the final scale.

7. Reliability testing of the developed scale

Reliability refers to the precision or accuracy of the measurement or score. Reliability was tested through Cronbach's alpha. Cronbach's alpha for the finalized scale was 0.89, indicating high internal consistency.

8. Validity of the scale

Validity refers to the degree to which a measuring instrument accurately captures the concept it is intended to assess. The validity of the developed scale was established through content validity. To assess content validity, the

extent to which the scale items adequately represented the domain of the construct was examined. All potential items encompassing the complete range of content relevant to the study were identified through extensive discussions with experts, subject matter specialists, and a thorough review of the available literature. This comprehensive approach ensured that the scale possessed adequate content coverage and relevance. Therefore, the scale developed for measuring attitude of Farmer Producer Organizations beneficiaries towards Farmer Producer Organizations in Jammu and Kashmir was deemed to have satisfactory content validity and was considered suitable for final administration.

Results and Discussion

Table 2: Final scale for measuring the attitude of Farmer Producer Organizations beneficiaries towards Farmer Producer Organizations in Jammu and Kashmir

S. No.	Statements
1	I believe that joining an FPO would be beneficial for my farming practice.
2	I believe FPOs increase the employment opportunities.
3	I believe FPOs centralize the power. (-)
4	I feel FPOs ensure better quality inputs.
5	I believe that FPOs enhance entrepreneurship development.
6	I believe that FPOs enhance the business-minded decision-making capacity of farmers.
7	I believe that FPOs promote equal treatment to members.
8	I believe that joining an FPO will increase my farming income.
9	Joining an FPO will allow me to get higher prices for my produce.
10	I think collective purchasing weakens the bargaining power in the FPO. (-)
11	I am of the view that FPOs confirm timely availability of inputs.
12	I am of the view that FPOs provide timely and need based trainings.
13	I am concerned that my independence as a farmer would be compromised. (-)
14	I am of the view that being a member of the FPO would give me a guarantee of sales.
15	I believe being a member of an FPO would allow me to receive subsidies.
16	FPOs reduce post-harvest losses through storage/transport.
17	FPOs have the potential to improve the local agricultural infrastructure.
18	The support network within an FPO can provide a safety net during tough times.
19	I believe FPOs enhance marketing efficiencies.
20	I believe FPOs facilitate timely marketing of farm produce.
21	I believe that being part of an FPO would lead to innovative farming practices.
22	FPOs offer valuable networking opportunities with other farmers.
23	I think that FPOs are bounded with complex rules and regulations. (-)
24	FPOs do not provide insurance coverage. (-)
25	I feel political interference in FPOs. (-)

Table 2 presents the finalized attitude scale comprising 25 statements related to attitude of Farmer Producer Organizations beneficiaries towards Farmer Producer Organizations in Jammu and Kashmir. The responses had to be recorded on a five-point continuum—strongly agree,

agree, undecided, disagree, and strongly disagree—assigned scores of 5, 4, 3, 2, and 1 respectively for positive statements, and the reverse scoring pattern for negative statements. The overall attitude score of each respondent is to be determined by summing the scores of all items.

Accordingly, the maximum possible score on this scale is 125, while the minimum possible score is 25.

Conclusion

The constructed attitude scale serves as a cost-effective and easily administrable tool for collecting baseline information regarding farmers' perceptions of FPOs. Through item analysis, statistically sound statements were identified, ensuring effective discrimination between respondents with favourable and unfavourable attitudes. Consequently, the finalized items are found to be highly reliable and valid for measuring the attitude of farmer members towards FPOs, using the Likert-type scaling technique. The developed scale thus provides a scientifically robust instrument that may be utilized beyond the study area, with suitable contextual adaptations. Moreover, it holds significant potential as a guiding framework for policymakers, planners, and academic institutions in formulating and implementing programs aimed at enhancing farmers' participation and engagement in FPOs.

Recommendations/Policy Implications

1. The validated attitude scale developed in the present study may be used by extension agencies, policymakers, and FPO-promoting institutions to assess beneficiaries' perceptions and readiness towards Farmer Producer Organizations in Jammu and Kashmir. The scale can serve as a diagnostic tool for designing need-based capacity building, strengthening member participation, and improving the effectiveness of FPO interventions.
2. The findings underscore the need for region-specific extension strategies and policy support aimed at enhancing positive attitudes towards FPOs through continuous training, institutional handholding, and market-oriented support mechanisms. Incorporating attitude assessment into FPO monitoring frameworks can help in timely policy adjustments and sustainable FPO development.

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Conflict of Interest

The authors of the paper declare no conflict of interest.

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