

Development of a Scale to Measure Attitude of Farmers towards Pradhan Mantri Fasal Bima Yojana (PMFBY) Programme

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ABSTRACT

The present study was contemplated to develop and standardize the scale to measure attitude of farmers' towards PMFBY programme. Based on the review of literature and discussion with the experts, 110 statements were prepared. After scrutinizing and editing 70 statements were retained and sent to the experts for giving relevancy rating. In the relevancy analysis 50 statements with the relevancy weightage of 0.80 and above & mean relevancy score of 3.00 and above were selected. Using the item analysis six statements with the t-value of less than 2.14 were removed and finally the scale consisted of 44 statements. The reliability and validity of the scale were tested using the split half method and square root of the correlation and the scale thus developed was found reliable (0.97) and valid (0.984). The developed scale was used to assess the attitude of 32 farmers of Chikkaballapura district. The analysis of the data revealed that 43.80 per cent of the farmers had a more favourable attitude towards PMFBY programme followed by 31.20 and 25.0 per cent of the farmers having a favourable and less favourable attitude towards PMFBY programme respectively. The six dimensions namely adoption of advanced agricultural practices, claim and settlement, management and mitigation of risk in farming, implementation and bringing stability in farming and providing insurance coverage got the mean attitude scores of 4.89, 4.31, 4.27, 4.25, 4.25 and 4.13, respectively.

Keywords : Attitude, PMFBY, Item analysis, Reliability, Validity

INDIA is the land of farmers where the maximum proportion of rural population depends on agriculture. Agriculture in India is highly susceptible to risks like droughts and floods. It is necessary to protect the farmers from natural calamities and ensure their credit eligibility for the next season. For this purpose, the Government of India introduced many agricultural schemes throughout the country. The Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched by the Prime Minister of India on 18 February 2016. This scheme has been implemented throughout India, in association with respective state governments. This scheme envisaged to help in reducing the burden of premium on farmers who take loan for cultivation and also safeguard them against the inclement weather. An uniform premium of only

2.00 per cent has to be paid by the farmers for *kharif* crops and 1.50 per cent for the *rabi* crops. The premium for annual commercial and horticulture crops is 5.00 per cent. This scheme replaced the earlier two crop insurance schemes *viz.*, National Agricultural Insurance Scheme (NAIS) and Modified NAIS. In this context, it will be important for the extension system to know about the attitude of farmers towards PMFBY programme. To measure attitude level of farmers towards PMFBY, there is no scale available; Hence, the present study was taken up with following objectives:

- 1) To develop and standardize a scale to measure the attitude of farmers towards PMFBY programme.
- 2) To analyse the attitude of farmers towards PMFBY programme.

METHODOLOGY

Developing and Standardizing Attitude Scale

Attitude is an organized predisposition to think, feel, perceive and behave towards a cognitive object. Likert (1932) defined attitude as the degree of positive or negative disposition / association towards an innovation, object, programme etc. Similarly, Thurstone (1946) also defined attitude as a degree of positive or negative effects associated with some psychological object like symbol, person, institute, ideal or idea towards which people can differ in varying degrees.

Attitude in this study is operationally defined as the positive or negative feeling of the beneficiaries and non-beneficiaries towards PMFBY programme on coverage, implementation, risk mitigation, stability in farming, adoption of advanced agricultural practices, and claim and settlements. The method of summated rating suggested by Likert (1932) and Edwards (1969) was followed in the development of the scale. The following steps were considered for measuring the attitude of farmers' towards PMFBY programme.

Identification of Dimensions

Six major dimensions related to the attitude of the farmer towards PMFBY programme were identified based on review of literature and discussion with experts in the field of agricultural extension. The major six dimensions identified were providing insurance coverage, implementation, management and

mitigation of risk in farming, bringing stability in farming, adoption of advanced agricultural practices, claim and settlement.

Collection and Editing of Items

The items on the attitude of the farmers were collected exhaustively. A tentative list of 110 items pertaining to the attitude of the farmers was prepared. The items developed were edited as per the 14 criteria enunciated by Edwards (1969) and Thurstone & Chave (1929) and consequently 40 statements were eliminated and the remaining 70 statements were included for further analysis.

Relevancy Analysis

The proforma containing 70 items were sent to 90 judges by means of google form and also handed over personally to the experts in the field of Agricultural Extension and Economics to critically evaluate their relevancy of each item in four-point continuum viz., Most Relevant (MR), Relevant (R), Less Relevant (LR), and Not Relevant (NR) and the responses were assigned the score of 4, 3, 2 and 1, respectively. The judges were also requested to make necessary modifications and additions or deletion of statements if they desire so. A total of 57 judges who returned the question naire duly completed were considered for further processing. From the data gathered, 'Relevancy Percentage', 'Relevancy Weightage' and 'Mean Relevancy Score' were worked out for all the 70 statements. Using these criteria individual statements were screened for relevancy using the following formulae.

TABLE 1

Number of attitude statements considered and retained during various steps of scale construction

Steps	Attitude level	
	Considered	Retained
Collections of Dimensions	6	6
Collection of items	110	110
Editing of items	110	70
Relevancy Analysis	70	50
Item Analysis	50	44

$$\text{Relevancy Weightage of } i^{\text{th}} \text{ indicator (RW}_i\text{)} = \frac{(\text{MR} \times 4) + (\text{R} \times 3) + (\text{LR} \times 2) + (\text{NR} \times 1)}{\text{Maximum possible score}}$$

$$\text{Relevancy Percentage of } i^{\text{th}} \text{ indicator (RP}_i\text{)} = \frac{(\text{MR} \times 4) + (\text{R} \times 3) + (\text{LR} \times 2) + (\text{NR} \times 1)}{\text{Maximum possible score}} \times 100$$

$$\text{Mean Relevancy Score of } i^{\text{th}} \text{ indicator (MRS}_i\text{)} = \frac{(\text{MR} \times 4) + (\text{R} \times 3) + (\text{LR} \times 2) + (\text{NR} \times 1)}{\text{Number of judges responded}}$$

TABLE 2
Selected statements based on the relevancy percentage, relevancy weightage,
mean relevancy and t- value

Statements	RP	RW	MRS	t-value
I feel that the PMFBY programme is a good initiative by the Government to help the farming community in securing their livelihood	88.793	0.888	3.552	4.163
I feel that the sum insured fixed by the GOI is inadequate for all crops	81.897	0.819	3.276	4.080
Awareness on PMFBY created by the government through farmer's fairs, exhibitions, documentaries, SMS and short film is adequate.	80.172	0.802	3.207	4.175
I feel that participation in PMFBY is difficult for illiterate farmers	80.310	0.803	3.272	3.296
PMFBY doesn't makes a farmer to feel more relaxed and confident in farming.	87.586	0.875	3.534	4.315
The state government gives adequate advertisements to create awareness on PMFBY among farmers	82.759	0.828	3.310	4.430
Getting insurance cover under PMFBY is stressful for me	81.586	0.816	3.103	3.143
The PMFBY should be made compulsory for all the farmers irrespective of loanee/beneficiary type	88.362	0.884	3.534	4.580
Terms and conditions given by PMFBY insurance programme are easy for the farmers to follow	82.758	0.827	3.310	1.980*
Farmer's welfare is best assured through enrolling with the PMFBY insurance programme	87.586	0.875	3.534	3.454
PMFBY insurance plays an important role in collective sharing of risks in farming by all its stakeholders	84.052	0.841	3.362	3.434
In PMFBY crop insurance agencies are not fairly compensating crop loss of farmers	81.897	0.819	3.276	2.160
"Samrakshane" crop insurance app" is very much helpful for farmers to get online information on insurance of various crops under PMFBY programme	81.466	0.815	3.259	4.207
Membership to the PMFBY should not be open to large farmers	80.603	0.806	3.224	1.728*
The PMFBY features like samrakshane app, online application procedure are attractive to farmers	87.586	0.875	3.534	3.670
In my view premium charges at the rate of 2 per cent of sum assured for <i>kharif</i> season crops is reasonable	83.190	0.832	3.328	4.675
In my view premium rate of 1.5 and 5 per cent of sum assured for rabi season and annual commercial horticultural crops is reasonable	80.172	0.802	3.207	4.667
Sum insured by the PMFBY is very less compared to their crop loss value	83.620	0.836	3.344	1.328*
I don't believe that the PMFBY is more beneficial for the insurance companies than farmers	82.328	0.823	3.293	4.339
The time frame of 21 days provisioned for processing of insurance claims is acceptable	84.052	0.841	3.362	4.574
I feel that the PMFBY programme should provide insurance to cover all the crops	86.638	0.866	3.466	4.410
PMFBY insurance reduces government's excessive burdon on providing relief measures during natural calamities or disasters	82.328	0.823	3.293	4.152
PMFBY secures the farmers livelihood to grow the notified crops in a notified area during the season	83.621	0.836	3.345	4.430

Statements	RP	RW	MRS	t-value
In PMFBY should consider providing add-on coverage for crop loss due to attack by wild animals by default	83.621	0.836	3.345	4.563
Features of PMFBY motivates and encourages the farmers to voluntarily come forward for adopting crop insurance	82.328	0.823	3.293	4.543
Awareness of PMFBY programme is very less among farmers growing field crops	80.603	0.806	3.224	1.755*
Implementation				
In coordination with the agricultural department and block officials, the PMFBY plays a vital role in the management of the crop loss situation	86.638	0.866	3.466	4.076
The method of calculating the threshold yield for a crop in an insurance unit based on an average yield is more appropriate	87.931	0.879	3.517	4.321
The mechanism of inviting insurance companies every year to quote premium and sum insured based on threshold yield is appropriate	83.621	0.836	3.345	3.791
In PMFBY the claim amounts are not timely released by the nodal bank to the individual accounts	82.328	0.823	3.293	3.783
The method adopted for arriving the farmer's crop loss based on crop cutting experiments values is appropriate	86.638	0.866	3.466	4.717
Management and Mitigation of Risk in Farming				
The method of addressing the natural calamities problem through video/image capture of crop growth at various stages in PMFBY is more appropriate	87.931	0.879	3.517	4.667
To get insurance for the crop loss PMFBY adopts simple formalities	82.758	0.827	3.310	1.283*
The PMFBY has rightly excluded crop yield losses due to preventable risks	82.328	0.823	3.293	3.806
PMFBY does not help the farmers to sustain themselves from crop loss during unforeseen events	82.328	0.823	3.293	4.054
PMFBY insurance ensures minimum farm income during disaster years for the farmers	85.776	0.858	3.431	4.586
Bringing Stability in Farming				
PMFBY programme helps the farmers to become stabilized in their socio-economic status	84.914	0.849	3.397	3.893
Availing of PMFBY insurance would improve financial security of my family	83.621	0.836	3.345	4.192
I believe that the PMFBY is more welfare-oriented for the farmers	84.483	0.845	3.379	3.651
PMFBY is not helpful to maintain farmer's economic conditions during unforeseen events	86.207	0.862	3.448	4.574
PMFBY insurance helps to bring back farmers confidence in farming	87.069	0.871	3.483	4.586
Adoption of Advanced Agricultural Practices				
PMFBY has increased the confidence level of the farmers to take up diversified the number of enterprises in their farm	81.466	0.815	3.259	4.519
I believe that PMFBY encourage me to adopt innovative agricultural practices in my farming	86.207	0.862	3.448	4.652
Claim and Settlement				
PMFBY yields to political interferences in processing claims of partisan farmers	83.621	0.836	3.345	4.619

Statements	RP	RW	MRS	t-value
Even though the PMFBY claims the settlements are made in 21 days, in practical it takes even years for many farmers	80.172	0.802	3.207	4.543
PMFBY ensures providing claim from insurance company with in the due time	82.759	0.828	3.310	3.384
PMFBY insurance programme is implemented with a well-defined procedure for enrollment, claim and settlement	84.914	0.849	3.397	4.695
Insurance claiming process, approval and settlement by KSDA (implementing agency) to the farmers is faster in PMFBY	87.068	0.871	3.482	1.475*
KSDA officials provide proper facilitation support to the farmers in the enrollment, claim and settlement process	84.052	0.841	3.362	4.685
In PMFBY insurance claim settlement through direct benefit transfer into farmers bank account avoids bribe demands by the intermediates	93.103	0.931	3.724	3.893

*Statements wise t value less than 2.14 were not retained in final scale.

TABLE 3

Selected statements based on the relevancy percentage, relevancy weightage, mean relevancy and t- value

Statements	SA	A	UA	DA	SDA
I feel that the PMFBY programme is a good initiative by the Government to help the farming community in securing their livelihood					
I feel that the sum insured fixed by the GOI is inadequate for all crops					
Awareness on PMFBY created by the government through farmer's fairs, exhibitions, documentaries, SMS and short film is adequate.					
I feel that participation in PMFBY is difficult for illiterate farmers					
PMFBY doesn't makes a farmer to feel more relaxed and confident in farming.					
The state government gives adequate advertisements to create awareness on PMFBY among farmers					
Getting insurance cover under PMFBY is stressful for me					
The PMFBY should be made compulsory for all the farmers irrespective of loanee / beneficiary type					
Farmer's welfare is best assured through enrolling with the PMFBY insurance programme					
PMFBY insurance plays an important role in collective sharing of risks in farming by all its stakeholders					
In PMFBY crop insurance agencies are not fairly compensating crop loss of farmers					
"Samrakshane" crop insurance app" is very much helpful for farmers to get online information on insurance of various crops under PMFBY programme					
The PMFBY features like samrakshane app, online application procedure are attractive to farmers					
In my view premium charges at the rate of 2 per cent of sum assured for kharif season crops is reasonable					
In my view premium rate of 1.5 and 5 per cent of sum assured for rabi season and annual commercial horticultural crops is reasonable					

Statements	SA	A	UA	DA	SDA
<p>I don't believe that the PMFBY is more beneficial for the insurance companies than farmers</p> <p>The time frame of 21 days provisioned for processing of insurance claims is acceptable</p> <p>I feel that the PMFBY programme should provide insurance to cover all the crops</p> <p>PMFBY insurance reduces government's excessive burden on providing relief measures during natural calamities or disasters</p> <p>PMFBY secures the farmers livelihood to grow the notified crops in a notified area during the season</p> <p>In PMFBY should consider providing add-on coverage for crop loss due to attack by wild animals by default</p> <p>Features of PMFBY motivates and encourages the farmers to voluntarily come forward for adopting crop insurance</p>					
<p>Implementation</p>					
<p>In coordination with the agricultural department and block officials, the PMFBY plays a vital role in the management of the crop loss situation</p> <p>The method of calculating the threshold yield for a crop in an insurance unit based on an average yield is more appropriate</p> <p>The mechanism of inviting insurance companies every year to quote premium and sum insured based on threshold yield is appropriate</p> <p>In PMFBY the claim amounts are not timely released by the nodal bank to the individual accounts</p> <p>The method adopted for arriving the farmer's crop loss based on crop cutting experiments values is appropriate</p>					
<p>Management and mitigation of risk in farming</p>					
<p>The method of addressing the natural calamities problem through video/image capture of crop growth at various stages in PMFBY is more appropriate</p> <p>The PMFBY has rightly excluded crop yield losses due to preventable risks</p> <p>PMFBY does not help the farmers to sustain themselves from crop loss during unforeseen events</p> <p>PMFBY insurance ensures minimum farm income during disaster years for the farmers</p>					
<p>Bringing stability in farming</p>					
<p>PMFBY programme helps the farmers to become stabilized in their socio-economic status</p> <p>Availing of PMFBY insurance would improve financial security of my family</p> <p>I believe that the PMFBY is more welfare-oriented for the farmers</p> <p>PMFBY is not helpful to maintain farmer's economic conditions during unforeseen events</p> <p>PMFBY insurance helps to bring back farmers confidence in farming</p>					
<p>Adoption of advanced agricultural practices</p>					
<p>PMFBY has increased the confidence level of the farmers to take up diversified the number of enterprises in their farm</p> <p>I believe that PMFBY encourage me to adopt innovative agricultural practices in my farming</p>					

Statements	SA	A	UA	DA	SDA
Claim and Settlement					
PMFBY yields to political interferences in processing claims of partisan farmers					
Even though the PMFBY claims the settlements are made in 21 days, in practical it takes even years for many farmers					
PMFBY ensures providing claim from insurance company with in the due time					
PMFBY insurance programme is implemented with a well-defined procedure for enrollment, claim and settlement					
KSDA officials provide proper facilitation support to the farmers in the enrollment, claim and settlement process					
In PMFBY insurance claim settlement through direct benefit transfer into farmers bank account avoids bribe demands by the intermediates					

SA: Strongly agree; A: Agree; UD: Undecided; DA: Disagree; SDA: Strongly disagree

Individual items were screened based on these three calculated values. Accordingly, items having relevancy weightage of more than 0.80, relevancy percentage of more than 80 per cent and mean relevancy score more than or equal to 3.00 were included for further analysis. Thus, from 70 statements a total of 50 were retained and considered for item analysis.

Item Analysis

To remove any ambiguity in understanding of the attitude statements among farmers item analysis was carried out. For item analysis, 32 respondents were selected from the non-sample area and the respondents were asked to indicate their response in each of the items in their respective scoring pattern. Based on the total scores obtained, the respondents were arranged in descending order. The top 25 per cent of the respondents with their total scores were considered ashigh group and the bottom 25 per cent as low group. These two groups provide criterion groups in terms of evaluating the individual statements suggested by Edwards (1969). ‘t’ value was calculated for each of the statement by using the following formula:

After computing the ‘t’ value for all the 50 statements and only those with ‘t’ value equal and greater than 2.14 (Table 2) were finally selected for inclusion in the scale. Thus, it was found that out of 50 statements 44 items were significant at 5.00 per cent were included.

Standardization of Scale

The reliability and validity was ascertained for standardization of the scale by adopting the following methods.

Reliability of the Scale

The split-half method was employed to test the reliability of the attitude scale. The value of correlation coefficient was 0.94 and this was further corrected by using Spearman Brown formula to obtain the reliability coefficient of the whole set. The ‘r’ value of the scale was 0.97, which was found significant at one per cent level indicating the high reliability of the scale. It was concluded that the scale constructed was reliable.

Validity

Validity refers to the ability of the instrument to measure what it proposed to measure (Mulay and Sabarthanam, 1980). Validity of a scale is the property which ensures that the test scores obtained measure the variable they are supposed to measure. Content validity or construct validity and criterion validity are the methods generally followed to know the validity of the scale.

According to Kerlinger (1973), content validity is the representativeness or sampling adequacy of the content – the substance, the matter and the topics of a measuring instrument. He further stated that, content

validation consists essentially in judgement. Alone or with others, one judges the representativeness of the item. The data was subjected to statistical validity, which was found to be 0.984 for scale which is greater than the standard requirement of 0.70. Hence, the validity coefficient was also found to be appropriate and suitable for the tool developed. Thus, the scale was developed to analyse the Attitude of farmers towards PMFBY programme.

Thus, the final scale consisting 44 statements for determining the attitude of farmers towards PMFBY programme was developed with options Strongly Agree, Agree, undecided, Disagree and Strongly Disagree.

The developed scale was used to assess the attitude of farmers towards PMFBY programme by 32 farmers (each 16 from Kuratahalli and Mylandahalli villages) of Chintamani taluk of Chikkaballapura district. The data thus collected were analysed and are presented below.

RESULTS AND DISCUSSION

Attitude of Farmers towards PMFBY Programme

Data collected from the 32 PMFBY beneficiary farmers in the non-sample area were tabulated using percentage and frequency and the results are depicted in Table 4.

TABLE 4

Overall Attitude of the Farmers towards PMFBY programme (n=32)

Attitude category	Number	Per cent
Less favourable	8	25.00
Favourable	10	31.20
More favourable	14	43.80
Total	32	100.0

It is observed from Table 4 that nearly half (43.80%) of the farmers had a more favourable attitude towards PMFBY programme followed by nearly one third (31.20 %) of farmers who had favourable and one fourth (25.00%) of the respondents had less favourable attitude, respectively.

The probable reason for three forth of the of farmers having a more favourable and favourable attitude towards PMFBY programmemay be due to the farmers had more awareness and had knowledge about the PMFBY programme, also they were actively participating in this programme and getting insurance amount for their crop losses.

Dimensions wise Attitude of Farmers towards PMFBY Programme

Dimension-wise analysis of the attitude of farmers under PMFBY programme in Chikkaballapura district was done and the results pertaining to six dimensions of the attitude phenomenon viz., Providing insurance coverage, Implementation, Management and mitigation of risk in farming, Bringing stability in farming, Adoption of advanced agricultural practices and Claim and Settlement are depicted in Table 5 and discussed below.

It is observed from Table 5 that Adoption of advanced agricultural practices was ranked first followed by Claim and Settlement, Management and mitigation of risk in farming, Implementation, Bringing stability in farming and Providing insurance coverage.

TABLE 5

Dimensions wise attitude of farmers towards PMFBY programme (n=32)

Dimensions	Mean attitude score	Rank
Providing insurance coverage	4.13	V
Implementation	4.25	IV
Management and mitigation of risk in farming	4.27	III
Bringing stability in farming	4.25	IV
Adoption of advanced agricultural practices	4.89	I
Claim and Settlement	4.31	II

The PMFBY programmemight have increased the confidence level of farmers to take up diversified farming activities and adopting innovative agriculture practices in their farm. This could be attributed for

the highest ranking by the dimension - Adoption of advanced agricultural practices of the attitude scale.

The attitude scale developed in the study is found to be reliable and valid. Hence, it can be used in future by the researchers on PMFBY programme to analyse the attitude of farmers towards PMFBY programme. Since majority of the farmers had least favourable to favourable levels of attitude towards PMFBY the state departments need to give more publicity of the programme features and maintain transparency in its implementation for more participation and more favourable attitude about this programme.

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