



## Awareness on Pradhan Mantri Fasal Bima Yojana scheme among farmers: An empirical analysis

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### Abstract

Crop insurance is an inevitable insurance cover to be purchased by farmers and agricultural producers to guard against the loss of crops due to natural disasters. It ensures the farmers stability of income and acts as a tool to manage their yield. The PMFBY Scheme is in line with the theme of One Nation – One Scheme. It incorporates the best features of the previous schemes and also overcoming the previously existing short comings. Creating and enhancing awareness and knowledge of farmers on the new scheme would helping popularising the scheme among farming community. Thus the study is conducted on comparing the level of awareness about the scheme among farmers with the sample size of 150 respondents comprising of 75 farmers covered under the scheme and 75 farmers not covered under the scheme. The study found that a high level awareness on the scheme is prevailing among farmers who are covered under the scheme when compared to other farmers.

**Keywords:** profile of farmers, PMFBY scheme, level of awareness, insured farmers and uninsured farmers

### Introduction

Agriculture is the largest and most important sector of the Indian economy. Nearly 70 percent of population are depending upon agriculture for their livelihood and employment. Farm agricultural development is essential to overall economic progress. Due to Dependence on weather and biological uncertainties in managing crops, the agriculture production fluctuates in India and thus has direct impact on both the national income and the farmers or the cultivators (Nidhi Shanker, 2018) [1]. Ultimately farmers are the one who are the most vulnerable or the real sufferers of all these inevitable happenings. The common factors affecting agriculture are natural calamities, increasing cost of inputs and low market price (Sundar. J and Lalitha Ramakrishnan 2013) [2]. Crop insurance play a vital role in reducing the financial losses suffered by the farmers due to destruction and failure of crops (Suresh Kumar, D 2011) [3].

Pradhan Mantri Fasal Bima Yojana (PMFBY), was started on 13th January 2016 by the Government of India, a crop insurance scheme for the farmers who are the backbones of the nation with a sole objective of supporting sustainable production in agriculture sector by providing insurance cover to farmers suffering crop loss due to any natural calamities. It has replaced previous two crop insurance schemes i.e. National Agricultural Insurance scheme (NAIS) and Modified National Agricultural Insurance scheme (MNAIS). The scheme is implemented through multi-agency framework by empanelled insurance companies work in association with Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmers welfare, State and Central government, financial institutions and

various government department such as Statistics, Horticulture, Agriculture, Revenue, IT and Panchayat Raj etc. (Rajaram.Y and Chetana B.S 2016) [4].

### Review of related literature

A stable growth of agricultural sector could be achieved through crop insurance. The ignorance of loanee farmers prevented them from creating coverage of their crops under crop insurance (Mani K *et al.*, 2012) [5]. The under utilisation of ICT takes place among farmers regarding use of audiovisual technology, high cost of equipment and lack of expertise (Tanko L *et al.*, 2013) [6]. The farmers perceive that the crop insurance is suitable for large farmers and the extent of risk sharing was very low. In order to achieve effectiveness reach of crop insurance, the service providers have to concentrate on the product innovations and appropriate distribution channel. (Bindiya Kunal Soni 2013) [7]. The insurance personnel insists the farmers to take care to increase the output of crops but it fails to increase the total area under cultivation (Maniklal Adhikary and Tibul Hoque SK, 2016) [8]. The farmers with medium level of farming experience, social participation, source of information and medium level of extension contacts and low level of crops covered under crop insurance scheme and loan availed from bank (Pallavi *et al.*, 2016) [9]. According to Pandaraiah and Sashidar (2015) [10] the gross cropped area, education and social participation of the farmers, income, affordability of premium influence significantly, in creating cover for crops. The superiority of crop insurance is proved in terms of yield and returns advantage. However, there is poor response of farmers to good agricultural practices due to lack of enough awareness among

farmers about its superiority (Menaka S and Mani K, 2016) [11].

**Statement of the problem**

Agricultural Insurance not only covers crops but also includes insurance of seed, cattle, horticulture, plantations, forestry, sericulture, aquaculture, poultry and all such activities which are allied to agriculture. A stable farm income farmers can stabilize their farm income and guard against disastrous effect of losses due to natural could be achieved. The developing countries offer ample scope for agriculture insurance in their economics.

The government of India launched PMFBY scheme in 2016, replacing all the then existing agriculture insurance schemes with comprehensive coverage of risk and benefits. The awareness and knowledge on such insurance is essential among the farmers to create risk cover for Kharif and Rabi crops. The following are the research questions emerged

- What are the features of the PMFBY scheme known to farmers?
- Does the awareness level of the farmers who covered and not covered under the PMFBY scheme vary with their socio economic characteristics?

**Research objectives**

- To assess the level of awareness on PMFBY scheme among the farmers covered and not covered under the scheme and
- To analyze association between the level of awareness on PMFBY scheme and socio economic characteristics of the farmers covered and not covered under the scheme.

**Hypothesis**

- The awareness and knowledge on PMFBY scheme varies with the socio economic condition of the farmers.

**Data source and methodology**

The study is descriptive and empirical in nature. The primary

data for the study id obtained through a structured interview schedule. The secondary data were collected from Government reports, publications, books and journals. The collected primary data were tested for reliability before considering for analysis. The cornbach alpha value of 0.829 was noted. The statistical tools such as percentage, mean, t-test Chi square test were used for data analysis.

The study has been conducted with the farmers of Coimbatore District. Coimbatore is one of the agriculturally advanced districts in Tamil Nadu and surrounded with more agricultural research stations. Thondamuthur block was selected, as the area of the study. Among all the community development blocks in the district and Thondamuthur block was the high credit intensive. Most of rural lending institutions block, insist on crop insurance cover while lending credit. With a view to give representation to all the farmers, totally 150 farmers, consisting of 75 farmers covered under the scheme and 75 farmers not covered under the scheme were selected on a non probability sampling namely convenience sampling method. The list of insured farmers belonging to the Thondamuthur block was obtained through the ICICI Lombard insurance company which served as an empanelled insurance company to implement PMFBY scheme in the study area. From the list of insured farmers, 75 farmers were identified based on their willingness to participate in the interview. In order to bring out the comparative study on the stated objectives, 75 farmers not covered under the scheme were identified from the study area. The study was conducted during May – June 2018.

**Results and discussion**

The sample of data analysis is presented as below

**1. Socio economic profile of the Respondents**

The socio economic profile of the farmers is relevant for marketing of insurance products like crop insurance. The table 1 depicts the socio economic profile of the respondents.

**Table 1:** Socio economic profile of the Respondents

Variables		Farmers covered under the Scheme (n=75)	Percentage	Farmers not covered under the Scheme (n=75)	Percentage
Age(in years)	Up to 30	38	50.67	31	41.33
	30-60	20	26.67	20	33.33
	60&above	17	22.67	24	32
Gender	Male	52	69.33	43	57.33
	Female	23	30.67	32	42.67
Education	School	36	48	35	46.67
	Degree	11	14.67	17	22.67
	Others	28	37.33	23	30.67
Community	OBC	54	72	57	76
	SC/ST	11	14.67	10	13.33
	Others	10	13.33	8	10.67
Farm Income (Per annum)	Up to 3,00,000	35	46.67	42	56
	3,00,000– 6,00,000	18	24	10	13.33
	6,00,000&above	22	29.33	23	30.67
Non Farm Income (per annum)	Up to 75,000	15	20	32	42.67
	75,000 -1,50,000	21	28	16	21.33
	1,50,000&above	16	21.33	17	22.67
	Nil	23	30.67	10	13.33
No. of family	One	37	49.33	42	56

Members participation in farming	Two	21	28	12	16
	None	17	22.67	21	28
Welfare benefits received from schemes of	Government	42	56	52	69.33
	Private	33	44	23	30.67

Source: Primary data

Crop insurance in general, is found to be lower in India. In the sample area too, coverage under PMFBY scheme was found to be not so high. A comparison is made between the farmers insured under PMFBY scheme with that of uninsured farmers in the study area, regarding their socio economic profile, in order to assess their awareness on PMFBY scheme.

Of the insured farmers, major of the respondents (50.67%) were of younger age of up to 30 years, 26.67 percentage of the respondents were between 30 to 60 years of age. As the age advances, the number of respondents who insured crops under PMFBY was declined to 22.67 per cent with their age 60 years and above. The uninsured farmers under PMFBY scheme were 41.33 per cent in the age group of up to 30 years, almost a similar percentage in all the age groups between 30-60 years were 26.67 per cent and 32 per cent were in the age of 60 years and above. Majority of the farmers were male incase of insured (69.33%) and uninsured farmers (57.33%) and the rest were female and most of the respondents had education upto school level. The farmers belongs to other

backward class were majority in both the category and about 14 per cent of the respondents belongs to scheduled caste or scheduled tribes. The government and private organisations are providing welfare benefit either monetary or in nonmonetary forms to farmers through certain schemes about (56 %) of insured farmers and 70 per cent of uninsured farmers benefited from government schemes and 33 per cent of the farmers from private organisations. Most of the respondents of insured farmers (46.67%) uninsured farmers 56 per cent earn from primary occupation of agriculture upto Rs.3,00,000 per annum and a nonfarm income of upto Rs.1,50,000 per annum by insured farmers (48%) and uninsured farmers (64%). At least one member of the family supporting the respondents in farming.

**2. Distribution of respondents based on farming profile**

The distribution of the respondents based on their farming profile is presented in Table 2.

**Table 2:** Distribution of respondents based on Farming Profile

Variables		Farmers covered under the Scheme (n=75)	Percentage	Farmers not covered under the Scheme (n=75)	Percentage
Farming Experience (in years)	5 -8	33	44	19	25.33
	8-10	28	37.33	26	34.67
	Above 10	14	18.67	30	40
Category of farmer	Marginal	11	14.67	13	17.33
	Small	21	28	22	29.33
	Medium	23	30.67	24	32
	Large	20	26.67	16	21.33
Irrigation	Well	26	34.67	31	41.33
	Tube well& Canal	49	65.33	44	58.67
Land Holding (in Hectares)	1	11	14.67	13	17.33
	1-2	21	28	27	36
	3-4	23	30.67	19	25.33
	5& Above	20	26.67	16	21.33
Pattern of Land holding	Area owned	44	58.67	38	50.67
	Leased in	31	41.33	37	49.33
Are you Loanee farmer	Yes	52	69.33	47	62.67
	No	23	30.67	28	22
Area covered under PMFBY (in hectares)	Less than 1	8	10.67	-	
	1-2	38	50.67	-	
	3-4	29	38.67	-	

Source: Primary data

Most of the respondents had at least eight to ten years of experience in farming incase of insured farmers (37.33%) and uninsured farmers (34.67%). The small, medium and large farmers were almost in equal proportion both categories and most of the respondents were either medium or large farmers. Majority of the respondents among insured farmers (57.34%) were holding above three hectares of land and majority of the uninsured farmers (78.66%) were holding upto four hectares

of land. About 59 per cent of the insured farmers owned farm land whereas 50.67 per cent of respondents cultivate in leased land. Majority of the land were irrigated either by well or both tube well and canal. In general, the loanee farmers are encouraged to avail crop insurance in order to bring them under financial inclusion and risk cover. The farmers who created cover for crop loss are loanee farmers (69.33%) whereas the uninsured farmers (50.67%) also availed farm

credit but not insured for crop loss. The insured farmers (50.67%) created crop insurance cover under PMFBY for 1-2

**3. Awareness on PMFBY scheme among the sample respondents**

The PMFBY is a comprehensive risk insurance which protects against all non-preventable risks arising out of natural fire, lightening, flood, droughts, landslide, pests, diseases etc. The sum insured is equal to the scale of finance for that crop as fixed by District Level Technical Committee, which is based on threshold yield and Minimum support price for the crop. Maximum insurance premium payable by the farmer is fixed. On food and oilseed crops, maximum premium is 2 per cent of Sum insured (SI) during Kharif and 1.5 per cent of SI during Rabi season and on horticulture and commercial crops maximum premium is only 5% of SI. The difference between farmers premium and actuarial premium rate as quoted by empanelled insurance company is considered as subsidy which will be shared equally by Central and State government. The scheme can cover all crops for which historical yield data is available. If the claim ratio of any insurance company at national level exceeds 350 per cent of premium collected or 35 per cent of SI whichever is higher,

hectares and 38.67 percent of the respondents created crop loss cover for 3.4 hectares.

then central and State government will share catastrophic loss in the ratio of 1:1. The scheme is operated under area approach. If actual yield of a specific crop is lesser than calculated threshold yield, then all the insured farmers in that area will get insurance claim as per the shortfall and SI. Smart technologies are being adopted to assess loss. Adequate publicity is ensured at village level Melas, print media and sms messages which are to be sent to farmers three months before the starting of coverage period. The respondents were asked to answer the statements pertaining to the key features of PMFBY scheme. Each right answer was assigned with score of one. Based on the total score obtained, the respondent were classified on the basis of the level of awareness on PMFBY scheme with scores 1 as low, 2to3 as medium and 4to5 as high.

A comparison is made between the awareness on PMFBY scheme among insured and uninsured farmers. The table 3 shows the level of awareness of the respondents about PMFBY scheme.

**Table 3:** Level of Awareness on key features of PMFBY Scheme

Variables		Farmers covered under the Scheme			Farmers not covered under the Scheme		
		High	Medium	Low	High	Medium	Low
Age (in years)	Upto30	20 (26.67)	11(14.67)	07 (9.33)	17(22.67)	07(9.33)	09(12)
	30-60	08 (10.67)	06 (8)	05(6.67)	05(6.67)	07(9.33)	08(10.67)
	60&above	08 (10.67)	05 (6.67)	05(6.67)	07(9.33)	06(8)	09(12)
Gender	Male	25 (33.33)	17 (22.67)	10(13.33)	25(33.33)	20(26.67)	13(17.33)
	Female	11 (14.67)	07 (9.33)	05(6.67)	06(8)	05(6.67)	05(6.67)
Education	School	07 (9.33)	13 (17.33)	17(22.67)	14(18.67)	06(8)	16(21.33)
	Degree	08 (10.67)	05(6.67)	05(6.67)	07(9.33)	05(6.67)	06(8)
	Others	05 (6.67)	07 (9.33)	08(10.67)	10(13.33)	06(8)	05(6.67)
Community	OBC	31 (41.33)	10(13.33)	08(10.67)	19(25.33)	18(24)	25(33.33)
	SC/ST	-	2(2.67)	04(5.33)	-	-	2(2.67)
	Others	10 (13.33)	05 (6.67)	05 (6.67)	4(5.33)	4(5.33)	4(5.33)
Farm Income (Per annum)	Up to 3,00,000	14 (18.67)	10(13.33)	11(14.67)	06(8)	08(10.67)	13(17.33)
	3,00,000– 6,00,000	11(14.67)	07(9.33)	04(5.33)	10(13.33)	12(07)	06(8)
	6,00,000&above	08(10.67)	05(6.67)	05(6.67)	09(12)	06(8)	05(6.67)
Non Farm Income (per annum)	Up to 75,000	08(10.67)	10(13.33)	11(14.67)	17 (22.67)	08(10.67)	12(16)
	75,000 -1,50,000	13(17.33)	08(10.67)	05(6.67)	08(10.67)	05(6.67)	09(12)
	1,50,000&above	10(13.33)	05(6.67)	05(6.67)	06(8)	05(6.67)	05(6.67)
No. of family Members Participation in farming	One	10(13.33)	11 (14.67)	16(21.33)	09(12)	11(14.67)	08(10.67)
	Two	11(14.67)	05(6.67)	05 (6.67)	11(14.67)	12(07)	07(9.33)
	None	05 (6.67)	05(6.67)	07(9.33)	06 (8)	06(8)	05(6.67)

Source: Computed data

The younger the age higher the awareness level of the farmers about PMFBY scheme, in both categories. Comparatively male respondents were having more awareness than female respondents based on education attainment of the respondents, low to medium level of awareness about the scheme was prevailing among the respondents with school and college level of education in both the categories. Most of the insured respondents 41.33 per cent and 49.33 per cent of uninsured belonging to OBC community have higher level of awareness about the scheme. The insured as well as uninsured farmers were having annual non farm income above Rs.75, 000 per annum have more awareness about the scheme. The number

of family members assisting the respondents in farming activity has not resulted with high level of awareness among both insured and uninsured farmers.

**4. Association between level of awareness on PMFBY scheme and the socio economic profile of the respondents**

The association between socio economic profile of the respondents and their level of awareness on PMFBY scheme were compared among farmers covered and not covered under PMFBY scheme. In order to test whether any difference in awareness level on PMFBY scheme among the respondents across their socio economic profile is tested by framing the

following null hypothesis.

H<sub>0</sub>: The level of awareness on PMFBY scheme is independent

of the socio economic profile of farmers irrespective of coverage under PMFBY scheme.

**Table 4:** Association between Awareness on PMFBY Scheme and socio economic profile of the Respondents

Variables	Farmers covered under the Scheme			Farmers not covered under the Scheme		
	Chi square	Significance	H <sub>0</sub>	Chi square	Significance	H <sub>0</sub>
Age(in years)	0.993	0.609 <sup>NS</sup>	Accepted	8.099	0.017*	Rejected
Gender	22.189	0.000**	Rejected	0.002	0.996 <sup>NS</sup>	Accepted
Education	10.176	0.038*	Rejected	19.168	0.000**	Rejected
Farm Income(Per annum)	7.852	0.005**	Rejected	1.288	0.525 <sup>NS</sup>	Accepted
Non Farm Income	6.811	0.078 <sup>NS</sup>	Accepted	0.011	0.916 <sup>NS</sup>	Accepted
No.of.Family members	1.830	0.609 <sup>NS</sup>	Accepted	10.944	0.012*	Rejected
Welfare benefit received	8.461	0.033*	Rejected	0.186	0.911 <sup>NS</sup>	Accepted

Source: Computed data

\*Significant at 5% level, \*\* Significant at 1 percent level, NS – Not significant

With regard to awareness of farmers covered under PMFBY scheme, the gender of the respondents and farm income were resulted highly significant. The education attainment of farmers and welfare benefits were resulted as significant at five percent level. The age of the respondents, non-farm income and number of family member supporting the

respondents in farming were resulted in significant. In case of farmers not covered under PMFBY scheme the variables significantly associated with awareness on PMFBY scheme were education, age and family members support in farming activities.

**Table 5:** Test of Similarity of Ranks on Awareness

S. No	Variables	Farmers covered under the Scheme Mean Rank	Farmers not covered under the Scheme Mean Rank
1	Comprehensive risk insurance	6.25	4.49
2	Low insurance premium	7.02	5.37
3	Loss assessment through crop cutting experiments	5.83	3.96
4	Multiple peril crop insurance	4.26	2.02
5	Empanelled insurance companies	7.01	3.65
6	Premium subsidy borne by central and state government	4.18	4.38
7	Operated on Area Approach	5.23	2.91
8	Loss Assessment through Technology	3.91	1.26

Source: Computed data

The similarity in awareness on PMFBY scheme among the respondents were tested in the order of assigning ranks using Kendall’s coefficient higher the value W more will be the similarity, Kendall’s (w) ranges between 0-1. The resulted W for respondents covered under PMFBY scheme is 0.721. It indicates that a moderate level of similarity existing among the respondents in assigning ranks about awareness of features of PMFBY scheme. The Kendall’s w for respondent not covered under PMFBY scheme is 0.499 which indicates that the similarity of awareness about scheme was very low among the respondents.

**Implications of the study**

- The enrollments under PMFBY scheme have improved the awareness level of the farmers about the scheme. The knowledge on key features of the scheme have improved their understanding about the scheme.
- Efforts to be made to bring the farmers under crop insurance cover under PMFBY scheme, in order to improve the awareness about the scheme among farmers who are not covered under the scheme.
- A complete awareness in all the features is not prevailing as expected among the farmers covered under the scheme. An effective dissemination of information is essential in

this regard.

- Imparting knowledge on PMFBY scheme, among both male and female farmers irrespective of the community they belongs to be given importance.
- Education brings significant difference in obtaining high level of awareness about the scheme.
- On considering the age, education and family members support in agriculture the farmers not covered under PMFBY schemes to be given due attention, thereby promotion programme on PMFBY scheme to be initiated.
- Adequate publicity is required among farmers a head of starting of coverage period, by means of sms messages, print media and village mela’s.

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