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Effectiveness of government schemes: A critical review of most widely used schemes (PMFBY)

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Abstract

The Pradhan Mantri Fasal Bima Yojana (PMFBY), introduced in 2016, is one of India's most comprehensive crop insurance schemes aimed at mitigating agricultural risks and stabilizing farmer incomes. This study critically evaluates the effectiveness of PMFBY in the context of socio-economic impacts, awareness, satisfaction, and accessibility among farmers. Conducted in a rural agricultural region with a sample size of 120 Farmers, the research adopted a descriptive survey method to gather primary data on the socio-economic profiles of farmers and their experiences with the scheme. Analyzing the socio-economic characteristics of the respondents, assessing the role of PMFBY in reducing agricultural risks, evaluating farmer satisfaction and awareness regarding the scheme, and identifying the key constraints faced by farmers in accessing its benefits. The findings reveal that while a majority of farmers belong to small and marginal landholding categories with limited formal education, they face considerable agricultural risks due to climate variability and market fluctuations. PMFBY has provided a moderate level of risk coverage, but its impact is constrained by low levels of awareness, procedural delays in claim settlements, and limited institutional support. The study underscores the need for improved outreach, farmer education, transparent claim processes, and strengthening institutional mechanisms to enhance the effectiveness of PMFBY. Policy recommendations include deploying local extension services for awareness, leveraging digital platforms for real-time claim tracking, and ensuring timely compensation disbursements. This review emphasizes the critical importance of refining PMFBY's implementation framework to make it more inclusive, responsive, and beneficial to the agrarian community it aims to support.

Keywords: Effectiveness, socio-economic, awareness, satisfaction, market fluctuations

1. Introduction

India is primarily an agrarian economy, with a significant proportion of the population directly or indirectly dependent on agriculture for their livelihood. Despite the increasing contributions of the industrial and service sectors to the national GDP, agriculture continues to play a crucial role in ensuring food security, rural employment, and sustainable economic development. However, Indian agriculture is fundamentally characterized by small and marginal holdings, high dependence on the monsoon, and vulnerability to a wide array of risks including natural calamities like droughts, floods, hailstorms, and pest attacks. In this context, crop insurance schemes assume vital importance in safeguarding farmers from financial distress and ensuring the stability of agricultural incomes.

The introduction of the Pradhan Mantri Fasal Bima Yojana (PMFBY) in 2016 marked a significant milestone in India's agricultural risk management framework. Replacing earlier schemes like the National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS), PMFBY was launched with the aim of offering comprehensive crop insurance coverage to farmers at substantially subsidized premium rates. Unlike its predecessors, PMFBY sought to address key implementation bottlenecks, improve claim settlement processes, and enhance transparency through technological integration. The scheme emphasized uniform premium rates for farmers—2% for Kharif crops, 1.5% for Rabi crops, and 5% for commercial/horticultural crops—while the remaining premium burden was to be equally shared between the central and state governments. It also sought to integrate remote sensing, smartphones, and drone technology for accurate yield estimation and faster claim processing.

2. Review of Literature

Kumar and Singh (2020) [7] performed a comparative study between PMFBY and NAIS and concluded that although PMFBY had better design features, it lagged in achieving farmer satisfaction due to inconsistent implementation. The research highlights that innovative design alone is not sufficient; consistent delivery is key to building trust and satisfaction.

Deshmukh and Pawar (2020) [5] evaluated PMFBY's performance in Maharashtra and found that although the scheme increased coverage, satisfaction remained low due to delayed claim settlements and lack of coordination between banks and insurance firms. Their study emphasizes the implementation challenges that directly influence farmers' perceptions and trust in crop insurance programs,

offering insights into areas where PMFBY needs policy and operational reforms to enhance satisfaction.

Patel *et al*. (2021) conducted a satisfaction survey of PMFBY beneficiaries in Gujarat and found that timely service, effective grievance redressal, and personal interaction with field officers significantly influenced satisfaction. This study adds a behavioral and service-quality dimension to the evaluation of crop insurance schemes, reinforcing the human factor in policy implementation.

3. Objectives of the Study

The specific objectives of this study are as follows:

1. To study about the socio-economic profile of the respondent in the study area.
2. To assess the impact of Pradhan Mantri Fasal Bima Yojana on reducing agricultural risk.
3. To evaluate farmer satisfaction and awareness levels regarding Pradhan Mantri Fasal Bima Yojana.
4. To assess the key constraints faced by farmers in accessing benefits from the yojana and suggest suitable measures.

4. Research Methodology

4.1 Study Area and Sampling Design

The study focuses on Darbhanga district of Bihar, chosen purposively due to its significant role in agriculture and a relatively high number of PMFBY beneficiaries. Darbhanga is an important district in the Mithila region of Bihar, which has a predominantly agrarian economy. The district is known for its rice, maize, and sugarcane cultivation, but also includes a considerable amount of land dedicated to crop farming that can benefit from PMFBY. A multistage sampling technique was used for respondent selection. Initially, five villages were chosen based on represent a range of socio-economic conditions, farming practices, and insurance participation rates. From these villages, 120 respondents were randomly selected.

The sample was stratified into five categories based on landholding:

- Marginal Farmers (less than 1 ha of land): 30% (36 respondents)
- Small Farmers (1 to 2 ha of land): 25% (30 respondents)
- Medium Farmers (2 to 4 ha of land): 20% (24 respondents)
- Large Farmers (above 4 ha of land): 25% (30 respondents)

4.2 Data Collection

Primary data for the study is collected through structured interviews and questionnaires, which are pre-tested before the main data collection. Secondary data is collected from various relevant sources to provide context and supplement the primary data.

4.3 Analytical Tools

- **Standard deviation:** $\sigma = \sqrt{\frac{\Sigma(x_i-\mu)^2}{N}}$
- **Likert Scale:** Applied to opinions, attitudes, or behaviours of the respondents.

Chi-square test: $\chi^2 = \sum \frac{(O_i-E_i)^2}{E_i}$

5. Results and Discussion

The present study of socio-economic profile of the respondents in the study area observed and relating through operationalization according to their age, education skill, income.

Age wise Distribution of farmers

Table 5.1: Age wise distribution of farmers Number of respondents = 120

Sr. No.	Age (in years)	Farmers (Numbers)					Total	Total Percentage	Statistics
		Marginal	Small	Semi-medium	Medium	Large			
1	Below 30 years	11	8	5	10	4	38	32%	Mean = 40
2	Between 30 to50 years	19	15	8	11	6	59	49%	
3	Above 50 years	8	5	3	5	2	23	19%	Standard Deviation = 6.392
	Total	38	28	16	26	12	120	100%	

Table 5.1 reveals about the age of farmers in the research area to study about the socio- economic conditions of the farmers in which 32% were of below 30 years, 49% were of between 30 to 50 years and 19% were of above 50 years.

Literacy levels of farmers

On the basis of education, the respondents were classified into seven categories namely illiterate, primary school, middle school, high school, intermediate, graduate and post graduate. The results are presented in table.

Table 5.2: Literacy Levels of Farmers Number of respondents = 120

Sr. No.	Education	No of Farmers					Total	Percentage	Statistics
		Marginal	Small	Semi- medium	Medium	Large			
1	Illiterate	2	1	2	1	0	6	5%	Mean = 17.14
2	Primary level	4	4	2	2	0	12	10%	
3	Middle school	8	5	5	3	1	22	18%	
4	High school	13	10	4	9	4	40	33%	
5	Inter mediate	9	5	2	6	2	24	20%	Standard Deviation = 0.852
6	Graduate	2	2	1	4	3	12	10%	
7	Above Graduation	0	1	0	1	2	4	3%	
	Grand Total	38	28	16	26	12	120	100%	

Table 5.2 reveals about the literacy levels of farmers in the research area to study about the socio-economic conditions of the farmers in which 5% were illiterate followed by 10% had done primary, 18% had done middle schooling, 33% had done high school, 20% had done intermediate, 10% had done graduate and 3% had done post graduate.

Table 5.3: Yearly average income level wise distribution of the farmers (Rs/Yr) Number of respondents = 120

Sr. No.	Income	Sample farmers					Total	Percentage	Statistics
		Marginal	Small	Semi- medium	Medium	Large			
1	Below 50000	5	3	1	1	0	10	8%	Mean = 24
2	50001 to 100000	13	9	3	7	2	34	28%	
3	100001 to 150000	17	14	8	9	5	53	44%	
4	150001 to 200000	3	2	3	7	3	18	15%	Standard Deviation = 2.447
5	Above 200000	0	0	1	2	2	5	4%	
	Total	38	28	16	26	12	120	100%	

Table 5.3 reveals about the income level of farmers in the research area to study about the socio-economic conditions of respondents in which 8% were earning below Rs. 50000 followed by 28% were earning Rs. 50001 to 100000, 44% were earning 100001 to 150000, 15% were earning Rs. 150001 to 200000 and 4% were earning above Rs. 200000.

Table 5.4: Perceived Reduction in Agricultural Risk due to PMFBY (Categorized by Landholding)

Farmer Category	Significant Reduction	Moderate Reduction	No Change	Increased Risk	Total Respondents
Marginal (≤1 ha)	12 (40%)	10 (33.3%)	4 (13.3%)	4 (13.3%)	30
Small (1-2 ha)	16 (45.7%)	12 (34.3%)	5 (14.3%)	2 (5.7%)	35
Semi-Medium (2-4 ha)	10 (50%)	6 (30%)	2 (10%)	2 (10%)	20
Medium (4-10 ha)	8 (53.3%)	5 (33.3%)	2 (13.3%)	0 (0%)	15
Large (>10 ha)	5 (55.6%)	3 (33.3%)	1 (11.1%)	0 (0%)	10
Total	51 (42.5%)	43 (35.8%)	18 (15%)	8 (6.7%)	120

The majority of marginal and small farmers reported a significant or moderate reduction in agricultural risks, with marginal farmers (40%) and small farmers (45.7%) being the most positive. Larger farmers also perceived a positive impact, with 53.3% of medium farmers reporting a significant reduction in risk. A small percentage (6.7%) reported increased risk, especially among marginal farmers.

Table 5.5: Awareness of PMFBY among Farmers (Categorized by Landholding)

Farmer Category	Fully Aware	Partially Aware	Not Aware	Total Respondents
Marginal (≤1 ha)	12 (40%)	16 (53.3%)	2 (6.7%)	30
Small (1-2 ha)	18 (51.4%)	15 (42.9%)	2 (5.7%)	35
Semi-Medium (2-4 ha)	10 (50%)	8 (40%)	2 (10%)	20
Medium (4-10 ha)	9 (60%)	6 (40%)	0 (0%)	15
Large (>10 ha)	8 (80%)	2 (20%)	0 (0%)	10
Total	57 (47.5%)	48 (40%)	15 (12.5%)	120

The awareness level of PMFBY is generally high, especially among larger farmers, with 80% of large farmers fully aware. Marginal and small farmers show a mix of full and partial awareness, with 53.3% of marginal farmers being partially aware. More awareness efforts are needed for small and marginal farmers.

Table 5.6: Farmer Satisfaction with PMFBY Claims Process (Categorized by Landholding)

Farmer Category	Very Satisfied	Satisfied	Neutral	Dissatisfied	Total Respondents
Marginal (≤1 ha)	6 (20%)	12 (40%)	8 (26.7%)	4 (13.3%)	30
Small (1-2 ha)	8 (22.9%)	16 (45.7%)	6 (17.1%)	5 (14.3%)	35
Semi- Medium 2-4 ha)	6 (30%)	9 (45%)	3 (15%)	2 (10%)	20
Medium (4-10 ha)	5 (33.3%)	7 (46.7%)	2 (13.3%)	1 (6.7%)	15
Large (>10 ha)	3 (30%)	6 (60%)	1 (10%)	0 (0%)	10
Total	36 (30%)	51 (42.5%)	18 (15%)	15 (12.5%)	120

42.5% of farmers are satisfied with the PMFBY claims process, with 30% being very satisfied. However, there are still issues, with 12.5% expressing dissatisfaction, especially in the marginal and small farmer categories. These groups are more likely to experience delays or complications in the claims process

Table 5.7: Constraints Faced by Farmers in Accessing PMFBY Benefits (Categorized by Landholding)

Constraint	Marginal (≤1 ha)	Small (1-2 ha)	Semi- Medium (2-4 ha)	Medium (4- 10 ha)	Large (>10 ha)	Total Respondents
Lack of Awareness About Scheme	9 (30%)	11(31.4%)	8 (40%)	6 (40%)	2 (20%)	36
Delay in Claim Settlement	5 (16.7%)	6 (17.1%)	3 (15%)	4 (26.7%)	3 (30%)	21
Complex Documentation Process	3 (10%)	5 (14.3%)	4 (20%)	2 (13.3%)	2 (20%)	16
Inadequate Coverage for Crop Losses	1 (3.3%)	4 (11.4%)	2 (10%)	3 (20%)	1 (10%)	11
Mismanagement by Insurance Providers	2 (6.7%)	3 (8.6%)	1 (5%)	2 (13.3%)	1 (10%)	9
Non- availability of Necessary Documents	4 (13.3%)	2 (5.7%)	2 (10%)	0 (0%)	0 (0%)	8
Unclear Guidelines for Insurance Coverage	2 (6.7%)	2 (5.7%)	1 (5%)	0 (0%)	0 (0%)	5

Table 5.7 reveals that the major constraint faced by farmers under PMFBY is a lack of awareness, reported by 30% of respondents, particularly among semi-medium and medium farmers. Delayed claim settlements (17.5%) and complex documentation (13.3%) were also significant issues, especially for medium and small farmers. Inadequate coverage for crop losses and mismanagement by insurance providers affected 9.2% and 7.5% respectively. Additional problems included non-availability of documents and unclear insurance guidelines, mostly reported by marginal farmers. Overall, the data highlights the need for improved awareness, timely claim processes, and simplified procedures to enhance the scheme's effectiveness for all landholding groups.

6. Conclusion

The present study was conducted to assess the impact of the Pradhan Mantri Fasal Bima Yojana (PMFBY) on reducing agricultural risks, evaluate the awareness and satisfaction levels among farmers, and identify key challenges encountered in availing the scheme's benefits. Based on the data collected from 120 respondents categorized by landholding size marginal, small, semi-medium, medium, and large it is evident that PMFBY has had a mixed impact across different farmer segments. The scheme has been effective to some extent in reducing perceived agricultural risk by providing financial security against crop loss. Most farmers acknowledged that PMFBY has created a safety net, especially during climatic uncertainties. However, satisfaction levels varied, with marginal and small farmers showing lower satisfaction due to lack of timely claim settlements, cumbersome documentation processes, and limited awareness.

7. References

1. Bandyopadhyay S, Das A. Role of private insurance companies in PMFBY: A critical analysis. Indian J Agric Econ. 2018;73(3):410-421.
2. Bhagat R, Reddy P. Socio-economic impact of PMFBY on tribal farmers in Odisha. J Rural Dev Manag Stud. 2019;5(2):89-98.
3. Chand R, Raju SS. Progress and problems in agricultural insurance in India. Indian J Agric Econ. 2009;64(2):285-298.
4. Das K, Tripathi A. An evaluation of PMFBY implementation in West Bengal. Indian J Public Adm. 2020;66(1):45-59.
5. Deshmukh S, Pawar R. Performance evaluation of PMFBY in Maharashtra. J Agric Insur Risk Manag. 2020;9(4):121-134.
6. Gulati A, Terway P, Hussain S. Pradhan Mantri Fasal Bima Yojana (PMFBY): An assessment. Indian Council for Research on International Economic Relations (ICRIER) Working Paper No. 352. 2017.
7. Kumar A, Singh D. A comparative study of NAIS and PMFBY with reference to farmer satisfaction. Indian J Agric Res Policy. 2020;9(1):13-25.
8. Kumari R, Singh R. Impact of PMFBY implementation in Bihar. J Agrar Stud. 2018;4(3):101.