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Assessing farmers' awareness and socio-economic determinants in the adoption of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Jaunpur District, Uttar Pradesh

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Abstract

This study examines the knowledge level of farmers about the Pradhan Mantri Fasal Bima Yojana (PMFBY) in the Jaunpur district of Uttar Pradesh. A descriptive research design was employed, using a multistage random sampling technique to select 150 farmers for the survey. The study investigates the socio-economic profile of farmers, their sources of information regarding PMFBY, the constraints they face in availing the scheme and the relationship between socio-economic factors and their knowledge level. The findings reveal that a majority of farmers (42%) have moderate knowledge about PMFBY, with limited awareness among 35.33% of respondents. Key sources of information include fellow farmers (45.33%) and government officials (30%). The study identifies significant constraints, including lack of awareness (50%), delayed compensation (40%) and complex documentation (35.33%). Furthermore, the chi-square test shows that education level, landholding size and training participation significantly influence farmers' knowledge, while age does not. The results highlight the need for enhanced extension services and awareness campaigns to improve farmers' understanding and adoption of the PMFBY scheme.

Keywords: Knowledge level, socio-economic factors, farmers, awareness, constraints, extension services, agricultural insurance

Introduction

The Pradhan Mantri Fasal Bima Yojana (PMFBY) is a flagship insurance scheme launched by the Government of India to provide risk coverage to farmers against crop failures caused by natural calamities, pests and diseases (Ministry of Agriculture & Farmers Welfare, 2020) [3]. Despite its significant potential, the scheme's success heavily depends on the awareness, understanding and active participation of farmers (Chauhan & Yadav, 2021) [1]. However, many farmers face challenges in availing the benefits of PMFBY due to various socio-economic factors, including education level, landholding size and access to extension services (Kumar & Sharma, 2020) [2]. Studies have shown that a lack of awareness and delayed compensation are some of the major constraints farmers encounter (Soni & Sethi, 2022) [4], while socio-economic factors such as education and training participation play a significant role in improving their knowledge of the scheme (Verma *et al.*, 2021) [5]. Understanding these socio-economic determinants is essential for enhancing the effectiveness of PMFBY and ensuring better outreach to farmers.

Research Methodology

The present study was conducted to assess the knowledge level of farmers regarding the Pradhan Mantri Fasal Bima Yojana (PMFBY) in Block Sikrara of Jaunpur district, Uttar Pradesh. A descriptive research design was employed to systematically analyze farmers' awareness, perception, and adoption of the scheme. The study area was purposively selected, considering Sikrara's agricultural dependence and

the relevance of PMFBY in mitigating crop loss risks. A total of 150 respondents were selected using a multistage random sampling technique. First, Block Sikrara was divided into different villages, and then two villages from the selected villages were chosen randomly. The villages considered for the study included Majhauri, Shuklamganj, Mirganj, Sihipur, Saidpur, Seethapur, Ibrahimabad, Lal Bazar, Deeh Jahania, and Sikrara. From each selected village, farmers were chosen based on their engagement in agricultural activities and their potential involvement with the PMFBY scheme. A well-structured and pre-tested interview schedule was used to collect primary data. The schedule comprised questions focusing on farmers' awareness of PMFBY, sources of information, benefits perceived, and constraints faced in availing of the scheme. The collected data were analyzed using both descriptive and inferential statistical tools. Frequency, percentage, mean, and standard deviation were used to interpret the knowledge levels, while chi-square tests were employed to examine the relationship between socio-economic factors and knowledge about PMFBY. The study findings are expected to provide insights into policy recommendations for enhancing the effectiveness and outreach of the PMFBY scheme in Block Sikrara, thereby supporting farmers in mitigating agricultural risks.

Results and Discussion

Socio-Economic Profile of Respondents

The socio-economic characteristics of the 150 farmers surveyed in Jaunpur district are presented in Table 1.

Table 1: Socio-Economic Profile of Respondents

Variables	Categories	Number of Farmers (N=150)	Percentage (%)
Age	Young (≤ 35 years)	45	30.00
	Middle (36-50 years)	68	45.33
	Old (> 50 years)	37	24.67
Education Level	Illiterate	30	20.00
	Primary	48	32.00
	Secondary	45	30.00
	Higher Secondary & Above	27	18.00
Landholding Size	Marginal (<1 ha)	60	40.00
	Small (1-2 ha)	55	36.67
	Medium (2-4 ha)	25	16.67
	Large (>4 ha)	10	6.67
Farming Experience	Less than 10 years	40	26.67
	10-20 years	70	46.67
	More than 20 years	40	26.67
Annual Income (Rs)	Low ($< \text{Rs.} 50,000$)	55	36.67
	Medium (Rs 50,000 - Rs 1,00,000)	65	43.33
	High ($>\text{Rs } 1,00,000$)	30	20.00
Training on PMFBY	Attended Training	40	26.67
	Not Attended Training	110	73.33

The majority of farmers (45.33%) belonged to the middle-age category (36-50 years) and 40% were marginal farmers. Only 26.67% had attended training on PMFBY, indicating a gap in awareness and formal education on the scheme.

Age and Awareness of PMFBY

Farmers in the middle age group (36-50 years) were the largest proportion (45.33%) of respondents. This age group is more active in adopting new agricultural technologies and schemes, as observed by Gangadhar (2009) [6], who found that middle-aged farmers were more likely to engage with government programs than younger or older farmers.

Education and Awareness of PMFBY

Education plays a crucial role in farmers' understanding and adoption of agricultural policies. In the present study, 20% of farmers were illiterate and only 18% had higher secondary education. This limited educational attainment could contribute to lower awareness and adoption rates of PMFBY. Similar findings were reported by Krishnamurthy *et al.* (2016) [7], who emphasized that educated farmers tend to have better knowledge of insurance schemes and make informed decisions.

Landholding Size and Insurance Adoption

Most of the respondents (40%) were marginal farmers (<1 ha), followed by small farmers (36.67%). Previous studies, such as Pandit & Basak (2013) [8], found that small and marginal farmers face financial constraints and are less likely to adopt risk-mitigation tools like crop insurance due to lack of proper knowledge and assistance.

Farming Experience and Knowledge Level

Farmers with 10-20 years of experience (46.67%) formed the largest group. This indicates that farmers with moderate experience are more likely to explore risk management strategies, as supported by Hanglem *et al.* (2019) [9], who found a positive correlation between farming experience and knowledge of agricultural policies.

Annual Income and PMFBY Adoption

The majority of respondents (43.33%) had a medium income (Rs. 50,000 – Rs. 1,00,000). Farmers with higher income levels may have better access to information and resources to enroll in PMFBY, as observed in Peer *et al.* (2014) [10].

Training and Awareness Gaps

Only 26.67% of farmers had attended any training on PMFBY, highlighting a significant gap in extension services. Sangada & Deshmukh (2014) [11] found that lack of training was a major constraint in the adoption of insurance schemes, which aligns with the present findings.

Knowledge Level of Farmers about PMFBY

The study found that most farmers had a moderate level of knowledge about PMFBY. The distribution of knowledge levels is shown in Table 2.

Knowledge Level of Farmers About PMFBY

The knowledge level of farmers about Pradhan Mantri Fasal Bima Yojana (PMFBY) was categorized into low, moderate and high levels, as shown in Table 2.

Table 2: Knowledge Level of Farmers about PMFBY

Knowledge Level	Number of Farmers	Percentage (%)
Low	53	35.33
Moderate	63	42.00
High	34	22.67

Most farmers (42%) had moderate knowledge, while only 22.67% had a high level of awareness about PMFBY. The findings indicate that while a significant proportion (42%) of farmers have a moderate understanding of PMFBY, a large percentage (35.33%) still have low knowledge levels and only 22.67% of respondents are highly knowledgeable about the scheme.

Sources of Information About PMFBY

Farmers obtained information about PMFBY from various sources, as shown in Table 3.

Table 3: Sources of Information on PMFBY

Source of Information	Number of Farmers	Percentage (%)
Fellow Farmers	68	45.33
Government Officials	45	30.00
Television/Radio	30	20.00
Social Media	7	4.67

The most common source of information was fellow farmers (45.33%), followed by government officials (30%). The table presents the sources from which farmers obtain information about the Pradhan Mantri Fasal Bima Yojana (PMFBY). The majority of farmers (45.33%) rely on fellow farmers for information, indicating the strong influence of peer-to-peer communication and local networks in spreading knowledge. Government officials are the second most common source, with 30% of farmers turning to them for information, highlighting the role of formal channels like agricultural extension officers and government outreach programs. Television and radio are used by 20% of farmers, suggesting that mass media still plays a significant role in rural areas. Social media, however, is the least utilized source, with only 4.67% of farmers seeking information through these platforms, indicating a limited reach in rural agricultural communities.

Constraints Faced by Farmers in Availing PMFBY

Farmers faced several challenges in accessing PMFBY, as shown in Table 4.

Table 4: Major Constraints in Availing PMFBY

Constraints	Number of Farmers	Percentage (%)
Lack of Awareness	75	50.00
Delayed Compensation	60	40.00
Complex Documentation	53	35.33
Limited Extension Support	38	25.33

Lack of awareness (50%) and delayed compensation (40%) were the most reported issues. The most commonly reported issues were lack of awareness (50%) and delayed compensation (40%). Many farmers were not fully informed about the PMFBY scheme, which limited their ability to access its benefits. Additionally, delays in receiving compensation caused frustration among farmers, affecting their trust in the system. Complex documentation (35.33%) and limited extension support (25.33%) were also significant constraints, indicating that the process of applying for and utilizing the scheme was difficult for many farmers, compounded by insufficient support from extension services.

In summary, awareness gaps and delays in compensation are the primary challenges farmers face in accessing PMFBY, followed by issues related to documentation and the availability of extension services.

Relationship Between Socio-Economic Factors and Knowledge Level

A chi-square test was conducted to examine the relationship between socio-economic factors and farmers' knowledge of PMFBY, as shown in Table 5.

Table 5: Relationship Between Socio-Economic Factors and Knowledge Level

Factor	Chi-Square Value (χ^2)	p-Value	Significance
Education Level	14.56	0.002**	Significant
Landholding Size	10.74	0.005**	Significant
Participation in Training	18.92	0.001**	Significant
Age	3.82	0.148	Not Significant

The results show that education level, landholding size and participation in training have a significant relationship with farmers' knowledge of PMFBY, as all three factors have a p-value less than 0.05 (0.002, 0.005 and 0.001, respectively). This suggests that higher education levels, larger landholdings and participation in relevant training programs positively influence farmers' knowledge of the scheme. On the other hand, age was found to have no significant effect (p = 0.148), indicating that age does not significantly impact the level of knowledge about PMFBY among farmers.

Conclusion

The study concludes that while the Pradhan Mantri Fasal Bima Yojana (PMFBY) holds significant potential for mitigating crop risks, its effective implementation is hindered by several socio-economic factors and constraints faced by farmers. The findings indicate that the majority of farmers in Jaunpur district have moderate knowledge about the scheme, with notable gaps in awareness, especially among illiterate and marginal farmers. The primary challenges include lack of awareness, delayed compensation and complex documentation procedures. Furthermore, socio-economic factors such as education, landholding size

and participation in training programs were found to significantly influence farmers' understanding of PMFBY, while age did not appear to have a significant impact.

To enhance the reach and effectiveness of PMFBY, it is crucial to address these constraints through targeted awareness programs, simplified processes and increased extension support. Expanding training opportunities and improving communication between government officials and farmers can also play a pivotal role in bridging the knowledge gap and promoting greater participation in the scheme. Overall, addressing these issues will contribute to better risk management for farmers and strengthen the overall effectiveness of PMFBY in ensuring agricultural sustainability.

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