



DO FARMERS KNOW THEIR SAFETY NET? AWARENESS AND SATISFACTION WITH CROP INSURANCE IN COASTAL ODISHA

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ABSTRACT

Agriculture in coastal Odisha remains highly vulnerable to monsoon rainfall variability, making crop insurance a critical tool for risk management. This study examines whether farmers are aware of and satisfied with crop insurance, focusing on the Pradhan Mantri Fasal Bima Yojana (PMFBY), which is the sole crop insurance scheme implemented in the state. Primary data were collected from 407 paddy cultivators across seven coastal districts of Odisha. A multi-stage purposive sampling approach was used to select districts and villages, and respondents were drawn by simple random sampling from village lists. Awareness was measured with dichotomous and multiple-response items, while satisfaction was assessed through a multi-item Likert scale (Cronbach's alpha = 0.910; KMO = 0.852). Analysis comprised descriptive statistics, cross-tabulations and Chi-square tests to examine associations with socio-economic characteristics. Findings reveal that although awareness is fairly widespread, satisfaction levels present a sharper divide. While farmers are generally satisfied with premiums and payment modes, dissatisfaction is concentrated around claim settlement, coverage adequacy, and service responsiveness. The results confirm that socio-economic disparities significantly influence both awareness and satisfaction, indicating that crop insurance has yet to evolve into an equitable and trusted safety net. Thus, while crop insurance provides a framework for managing rainfall risk, for many farmers in coastal Odisha the promise of a reliable safety net remains only partially realized because operational and informational gaps limit trust and effective use.

KEYWORDS: Pradhan Mantri Fasal Bima Yojana (PMFBY), Crop Insurance, Awareness, Satisfaction, Agriculture Risk Management

INTRODUCTION

Agriculture in coastal Odisha plays a vital role in the state's economy and livelihood, with a large proportion of the population dependent on farming for sustenance and income. The region's agriculture, however, is highly vulnerable to natural hazards, particularly erratic rainfall, cyclones, and floods, which can lead to substantial crop losses and financial instability for farmers. In such a scenario, crop insurance emerges as a critical risk management tool, providing farmers with a safety net to mitigate the adverse effects of unpredictable climatic events. The Government of India has implemented the Pradhan Mantri Fasal Bima Yojana (PMFBY) in 2016 to offer financial protection against crop failure and to strengthen farm incomes against climatic risks. PMFBY is the only operational crop insurance scheme in Odisha, and it aims to extend coverage to both loanee and non-loanee cultivators through subsidised premium rates and an area-based yield assessment system. Understanding how the scheme is communicated and perceived at the grassroots is crucial for assessing whether it effectively serves as a reliable safety net for farmers.

In this context, assessing the level of awareness among farmers regarding crop insurance in coastal Odisha becomes essential. The success of PMFBY in mitigating farmers' risks largely depends on the extent of awareness and understanding of the scheme within the farming community. Understanding the extent to which farmers are aware of PMFBY, the sources of information they use and the gaps in their knowledge are important for improving the program's outreach and effectiveness. This study, therefore, seeks to explore the awareness of crop insurance among farmers in coastal Odisha, while also examining their satisfaction with the scheme's implementation, thereby providing insights into the current status of knowledge and experience as well as potential avenues for strengthening the safety net for vulnerable farming communities.

LITERATURE REVIEW

Akber et al. (2025) analysed the impact of crop insurance adoption on food security using data from the 77th round (2019–2020) of the National Sample Survey Office for Indian farming households. Employing endogenous



switching regression, the study found that insured households experienced higher consumption expenditures and net farm income compared to non-insured households. Specifically, non-insured households would have had 23% higher consumption and 31% higher net farm income if they had adopted insurance, while insured households would have seen decreases of 15% and 26%, respectively, in the absence of insurance. The study also highlighted heterogeneity in benefits, with larger farmers gaining more than smallholders. The authors emphasized the importance of increasing awareness, educating farmers about crop insurance schemes, and strengthening institutional mechanisms to reduce disparities in benefits.

Chapagain et al. (2024) studied 400 farmers in Pokhara and Bharatpur, Nepal, to examine how awareness and risk management perceptions affect satisfaction with agricultural insurance. Using structured questionnaires and statistical analyses, the study found that farmers' awareness was the highest-rated factor, followed by financial and non-financial satisfaction. Although non-financial satisfaction did not fully mediate the relationship between awareness and financial satisfaction, partial mediation existed between risk attitude and financial satisfaction. The authors emphasized that improving awareness and risk management capacity is crucial for enhancing farmers' satisfaction with insurance schemes.

Kumar and Shobana (2024) conducted a systematic review to assess the performance of PMFBY in Tamil Nadu. Drawing upon peer-reviewed articles, government publications, and policy documents sourced from databases such as Google Scholar, JSTOR, and Scopus, along with other secondary data, the study evaluated the implementation, scope, and outcomes of the scheme. The review highlighted that PMFBY has strengthened farmers' financial security and contributed to agricultural development, yet issues such as inadequate awareness, bureaucratic inefficiencies, and uneven regional coverage limit its overall effectiveness.

Diyyala et al. (2023) investigated factors influencing farmers' awareness and perceptions of PMFBY among 350 cotton farmers in Virudhunagar, Tamil Nadu. The study found that while farmers were generally aware of premiums and procedural requirements, negative perceptions persisted regarding delayed claims, inadequate compensation, and high premiums. Probit analysis indicated that education, organizational membership, media exposure, and extension contacts positively influenced awareness. The authors recommended government-led programs to enhance farmers' understanding and promote adoption of crop insurance.

Chakraborty et al. (2023) examined crop insurance awareness among farmers in Cooch Behar district, West Bengal. Using interview schedules and analyzing data through correlation and multiple regression, they found that while farmers were generally aware of crop insurance, their knowledge of its components and implementing agencies was limited. Awareness was largely confined to banks and agricultural departments, with little recognition of other delivery channels, reflecting the gap between availability and actual understanding of the scheme.

Kumar and Rani (2023) evaluated the performance of the PMFBY across Indian states and seasons during 2016–2020. Using simple percentage analysis, the study assessed coverage in terms of loanee and non-loanee farmers, insured area, sum insured, premiums collected, claims settled, and number of beneficiaries. The results revealed that benefits were concentrated in states such as Madhya Pradesh, Rajasthan, Maharashtra, and Uttar Pradesh, while many other regions lagged behind. Although farmer participation has gradually increased, the scheme remains distant from achieving its initial objectives.

Ghimire et al. (2023) examined farmers' awareness and perceptions of agricultural risk management and insurance in Kaski and Chitwan districts, Nepal. Data were collected from 400 policyholders (200 from Bharatpur and 200 from Pokhara) using structured questionnaires with five-point Likert scales. The study found that farmers generally understood agricultural risks and recognized insurance as a useful risk management tool. Trust between farmers and insurance providers were identified as critical for the success of insurance schemes. Economic and claims-related factors influenced awareness and perception more than demographic factors such as age and gender. The authors concluded that while insured farmers and claim recipients demonstrated reasonable awareness of insurance, they often lacked traditional risk management practices, highlighting the need for capacity-building initiatives alongside insurance programs.

Swain and Hembram (2020) examined the adoption of PMFBY in Bolangir district, Odisha, using survey data from 200 households and probit regression analysis. Results showed that higher caste farmers with larger landholdings, higher incomes, indebtedness, and risk aversion were more likely to adopt the scheme, while reliance on non-farm income reduced adoption. Farmers expressed dissatisfaction over delayed compensation, large assessment units, and lack of coverage for individual risks.



Mukhopadhyay et al. (2018) conducted a study in Burdwan district of West Bengal with 701 farmers to identify factors influencing the adoption of PMFBY. Using multinomial logistic regression, they found that gender, income, landholding, and social group participation significantly shaped adoption decisions. Interestingly, female farmers were more likely to access the scheme than males. Peer influence and income level also played a role in shaping participation.

Sundar and Ramakrishnan (2015) studied the awareness, perceived benefits, and satisfaction with crop insurance among 360 paddy farmers in Kunichampet and Mannadipet villages, Puducherry, selected for their large paddy cultivation areas. Respondents were randomly chosen from Market Committee records, with 282 insured and 78 uninsured farmers. The study found that while farmers were generally aware of crop insurance, many expressed dissatisfaction with claim settlement and considered benefits inadequate. ANOVA analysis showed a significant relationship at the 0.01 level between benefits and farmers' age, education, and landholding. The authors highlighted the need for improved outreach and service delivery to enhance the effectiveness of crop insurance schemes.

The review of existing literature highlights that while numerous studies have examined the performance of crop insurance schemes, including the PMFBY, across different states and contexts, recurring challenges such as limited awareness, uneven regional participation, and dissatisfaction with claim settlement persist. Most prior research has focused on adoption factors, benefits, or performance assessment in specific districts or states, often outside coastal Odisha. However, there is limited empirical evidence on farmers' awareness and satisfaction toward crop insurance in the coastal districts of Odisha, where rainfall variability poses significant risks to agriculture. Addressing this gap, the present study seeks to explore the level of awareness and satisfaction of farmers in this region, thereby offering insights into how crop insurance can be strengthened as a risk-mitigation tool.

OBJECTIVES OF THE STUDY

The present study, conducted in coastal Odisha, seeks:

1. To examine the awareness of farmers regarding crop insurance.
2. To evaluate the satisfaction of farmers with crop insurance.

HYPOTHESES OF THE STUDY

H₀₁: There is no significant association between the socio-economic characteristics of the sample farmers and their level of awareness about crop insurance.

H₀₂: There is no significant association between the socio-economic characteristics of the sample farmers and their level of satisfaction with crop insurance.

With these objectives and hypotheses in place, the study proceeds to detail the methodology applied for empirical analysis.

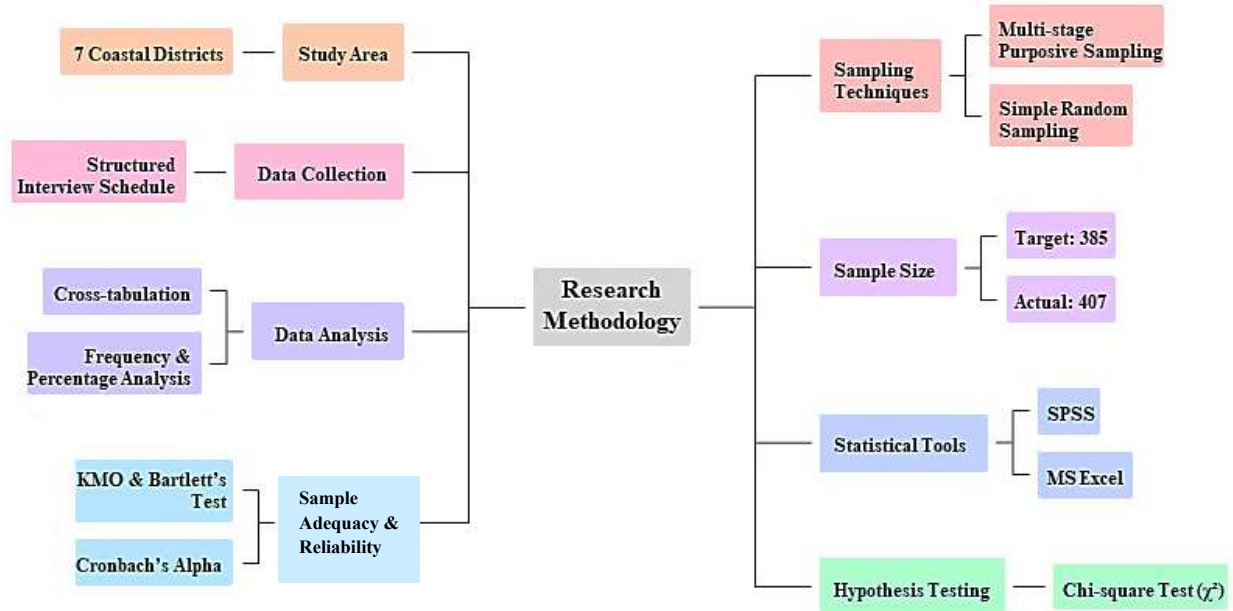
RESEARCH METHODOLOGY

The present study adopts a quantitative research approach to examine the awareness and satisfaction of farmers regarding crop insurance in the seven coastal districts of Odisha namely Ganjam, Khordha, Puri, Jagatsinghpur, Kendrapara, Bhadrak and Balasore (Odisha Coastal Zone Management Authority), where paddy cultivation is a predominant agricultural activity. Primary data were collected through a structured field survey, using personal interviews based on a pre-designed schedule. Farmers' level of satisfaction with crop insurance was measured using a Likert scale across multiple dimensions. A multi-stage purposive sampling method was employed to select the study region. Within each district, villages were chosen purposively based on agricultural activity and accessibility. From these villages, farmers were selected using simple random sampling to ensure unbiased representation and to minimize selection bias at the respondent level. The sampling frame comprised the list of registered farmers in coastal Odisha, as available from the Krushak Odisha Portal, maintained by the Government of Odisha. This portal functions as a comprehensive digital registry, covering all categories of farmers, including those engaged in paddy cultivation. Although a distinct list of paddy farmers was not accessible, state agricultural reports consistently note that paddy (rice) is the predominant crop cultivated across the coastal districts of Odisha (International Rice Research institute (IRRI), 2025). The sample size was determined using Cochran's formula (Cochran, 1977), targeting 385 respondents. However, data were ultimately collected from 407 farmers who participated in the survey.

The collected data were analysed using suitable statistical techniques, including cross-tabulation and frequency and percentage analysis. These analyses were performed using SPSS Version 26 and Microsoft Excel, which facilitated data entry, coding, tabulation, and statistical computation. Face validity was ensured through a pre-test with a small group of farmers, and content validity was confirmed via expert review, with minor revisions incorporated based on feedback. The Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity

assessed sample adequacy and Cronbach’s alpha measured internal consistency. Hypotheses were tested using the Chi-square test (χ^2) to examine associations between socio-economic characteristics of farmers and their awareness and satisfaction levels. To provide a clear overview of the research design, a schematic representation of the methodological framework has been developed and presented as Figure 1.

Figure 1: Pictorial Representation of the Methodological Framework



Source: Author’s own compilation

Building on the methodological framework, the specific independent and dependent variables used in the study are presented in Table 1.

Table 1: Variables of the study

Independent Variables (Socio-Economic Characteristics)	Dependent Variables
Age	Awareness of crop insurance
Gender	Satisfaction with crop insurance
Education	
No. of family members	
Earning members in family	
Experience in cultivation	
Annual income	
Agriculture as a source of household income	
Type of farmer	

Source: Author’s own compilation

Table 1 presents the variables used in the study. The socio-economic characteristics of farmers serve as the independent variables, while awareness and satisfaction with crop insurance constitute the dependent variables. This classification provides the basis for examining the association between farmers’ profiles and their perception and utilization of crop insurance in coastal Odisha.

DATA ANALYSIS, RESULT & DISCUSSION

Reliability and Sample Adequacy

The analysis begins with an assessment of reliability and sampling adequacy to ensure the robustness of the data. Since satisfaction was measured on a Likert scale, its internal consistency was examined using Cronbach’s alpha. The result of $\alpha = 0.910$ indicates excellent reliability. The Kaiser–Meyer–Olkin (KMO = 0.852) and Bartlett’s test of sphericity ($\chi^2 = 1695.191$, $df = 45$, $p < 0.001$) further confirmed the adequacy of the sample and the suitability of the data structure for analysis. As the awareness items were dichotomous/multiple-response in nature, such reliability and adequacy tests were not applicable. These preliminary checks establish that the data are appropriate for the subsequent analyses and hypothesis testing.



District-wise Distribution of Sample Farmers

The district-wise distribution of respondents shows that Ganjam (15.7%) and Puri (15.5%) contributed the largest shares, followed by Balasore (14.5%), Bhadrak (14.3%), and Kendrapara (14%). Khordha and Jagatsinghpur accounted for 13.3% and 12.8% of the sample respectively. This distribution indicates a fairly balanced representation of farmers across the seven coastal districts of Odisha, thereby strengthening the generalizability of the findings.

Socio-Economic Profile of Respondents

The sample comprised predominantly male farmers (62.9%). Age distribution showed a substantial proportion of younger and middle-aged farmers, with 23.8% below 30 years and 23.6% between 31-40 years. Education levels were moderate, with 24.3% graduates and 23.6% completing secondary education. Most households (51.8%) had 3-5 members, and 70.3% relied primarily on agriculture for income. Annual earnings were limited, with 51.6% earning ₹50,000 or less, while 74.9% of households had fewer than three earning members. Farming experience was notable, with 24.8% cultivating for 10-15 years and 23.8% over 20 years. Landholdings were mostly small, with marginal (<1 ha) and small (1-2 ha) farmers comprising 24.6% and 39.6% of the sample, respectively, consistent with state trends of declining land sizes and predominance of smallholders (Directorate of Agriculture & Food Production, Odisha, 2025).

AWARENESS OF CROP INSURANCE

Building on the sample profile, the analysis now turns to farmers’ awareness and familiarity with crop insurance, the schemes they have heard of, and their sources of information.

Table 2: Farmers’ Awareness Level and Sources of Information on Crop Insurance

Question	Response Category	F	%	
Are you aware of crop insurance policy?	Yes	292	71.7	
	No	115	28.3	
How familiar are you with the insurance policy?	Never heard of it	65	16.0	
	Somewhat familiar with it	141	34.6	
	Know how to use it; not using it	88	21.6	
	Currently using it	113	27.8	
Multiple Response Question				
Category	Items ^a	N	Percent (%)	Percent of Cases (%)
Schemes heard of in the context of crop Insurance	Pradhan Mantri Fasal Bima Yojana (PMFBY)	355	74.3	87.7
	Restructured Weather Based Crop Insurance Scheme (RWBCIS)	42	8.8	10.4
	Unified Package Insurance Scheme (UPIS)	25	5.2	6.2
	Varsha Bima	46	9.6	11.4
	Others	10	2.1	2.5
Total		478	100	118
Source of information	Banks/Financial Institutions	152	15.5	37.3
	Fellow Farmers	201	20.5	49.4
	From friends/neighbours	178	18.2	43.7
	Newspaper	151	15.4	37.1
	NGOs	53	5.4	13.0
	T.V	212	21.7	52.1
	Posters/ Propaganda Leaflets	29	3.0	7.1
	Others	3	0.3	0.7
Total		979	100	240.5

a. Dichotomy group tabulated at value 1.

Source: Field Survey; SPSS Output

The analysis indicates that while a large majority of farmers (71.7%) are aware of crop insurance, only 27.8% report themselves as current users, pointing to a significant gap between awareness and adoption. Familiarity levels are uneven. Nearly 35% are only somewhat familiar, about 16% have never heard of it, and around 49% either know how to use it or are already using it. This shows that basic awareness is widespread, but deeper understanding and active use are still limited. Among the schemes, PMFBY dominates awareness, with nearly 88% of respondents mentioning it, while recognition of alternative schemes such as RWBCIS, Varsha Bima and UPIS remains marginal. PMFBY has been the government’s flagship scheme since 2016, receiving stronger policy backing and visibility, which explains why it dominates farmers’ awareness. Information flows are shaped



primarily by mass media and peer networks, as television (52.1%) and fellow farmers (49.4%) emerge as the most common sources, followed closely by friends/neighbours, banks/financial institutions and newspapers. Together, these findings highlight the predominance of PMFBY in the insurance landscape of coastal Odisha and underline the critical role of interpersonal and media channels in shaping farmer awareness.

Association between Socio-Economic Characteristics and Farmers’ Awareness Level

To further examine whether farmers’ socio-economic characteristics influence their awareness of crop insurance, a Chi-square test was conducted. The results are presented in Table 3 in relation to the stated hypothesis.

H₀₁: There is no significant association between the socio-economic characteristics of the sample farmers and their level of awareness about crop insurance.

Table 3: Chi-Square Analysis of the Association between Socio-Economic Variables and Farmers’ Awareness of Crop Insurance

Socio-economic Variable	Pearson Chi-square value (χ^2)	df	p-value (Sig.)	Significance
Age	16.442	4	.002**	Significant
Gender	28.279	1	.000**	Significant
Education	15.885	5	.007**	Significant
No. of family members	10.202	2	.006**	Significant
Earning members in family	16.195	2	.000**	Significant
Experience in cultivation	27.713	4	.000**	Significant
Annual income	29.770	4	.000**	Significant
Agriculture as a source of household income	20.529	1	.000**	Significant
Type of farmer	8.445	4	.077*	Significant

* Significant at the 10% level ($p < 0.10$)

** Significant at the 5% level ($p < 0.05$)

Source: SPSS Output

The Chi-square test results in Table 3 indicate that farmers’ awareness of crop insurance is significantly associated with all of the socio-economic variables considered in the study. Specifically, age, gender, education, number of family members, number of earning members in the family, farming experience, annual income, and agriculture as a source of household income all show a statistically significant relationship with awareness at the 5% level. This suggests that these factors play a meaningful role in determining whether farmers are informed about crop insurance schemes. The type of farmer also shows a marginally significant association at the 10% level, indicating a relatively weaker but still relevant influence. Overall, these results confirm that socio-economic characteristics collectively shape farmers’ awareness of crop insurance. Hence, the null hypothesis (H_{01}) “There is no significant association between the socio-economic characteristics of the sample farmers and their level of awareness about crop insurance.” is rejected.

SATISFACTION WITH CROP INSURANCE

The analysis now turns to farmers’ satisfaction with crop insurance, which was measured using a Likert scale and therefore requires descriptive summarization followed by hypothesis testing.

Table 4: Farmers’ Satisfaction with Crop Insurance

Rating ↓ Parameters	Highly Dissatisfied or Dissatisfied		Neither dissatisfied nor satisfied		Satisfied or Highly satisfied	
	F	%	F	%	F	%
Type of policy	72	33.5	56	26.0	87	40.5
Premium charged for the policy	72	33.5	29	13.5	114	53.0
Mode of paying premium for the policy	64	29.8	40	18.6	111	51.6
Term of insurance of the policy	62	28.8	65	30.2	88	41.0
Risk coverage of the policy	109	50.7	52	24.2	54	25.1
Settlement of claim	130	60.5	28	13.0	57	26.5
Coverage of crops	120	55.8	43	20.0	52	24.2
Accessibility	102	47.4	31	14.4	82	38.2
Cooperation/ responsiveness of staff	100	46.5	32	14.9	83	38.6
Safety and security	103	47.9	28	13.0	84	39.1

Source: Field Survey; SPSS Output



The satisfaction of farmers regarding crop insurance in Table 4 shows mixed results. The most prominent areas of dissatisfaction among farmers are related to the settlement of claims and crop coverage. Nearly half of the respondents also expressed dissatisfaction regarding risk coverage, safety and security, accessibility, and the cooperation/responsiveness of staff, indicating critical aspects that require attention. On the other hand, farmers reported relatively higher satisfaction with the premium charged for the policy and the mode of paying it. For both the type and the term of the insurance policy, a larger proportion of respondents indicated satisfaction compared to dissatisfaction, suggesting moderate approval of these parameters.

Association between Socio-Economic Characteristics and Farmers’ Satisfaction Level

To further examine whether farmers’ socio-economic characteristics influence their satisfaction of crop insurance, a Chi-square test was conducted. The results are presented in Table 3 in relation to the stated hypothesis.

H02: There is no significant association between the socio-economic characteristics of the sample farmers and their level of satisfaction with crop insurance.

Table 5: Summary of Significance of Socio-Economic Variables Influencing Farmers’ Satisfaction with Crop Insurance

Satisfaction Parameter	Socio-Economic Variables								
	Age	Gender	Education	No. of family members	Earning members in family	Experience in cultivation	Annual income	Agriculture as a source of household income	Type of farmer
Type of policy	Not Significant	Significant	Significant	Significant	Significant	Significant	Significant	Not Significant	Significant
Premium charged for the policy	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Not Significant	Significant
Mode of paying premium for the policy	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Not Significant	Significant
Term of insurance of the policy	Significant	Significant	Significant	Significant	Not Significant	Significant	Significant	Not Significant	Significant
Risk coverage of the policy	Significant	Significant	Significant	Not Significant	Significant	Significant	Significant	Not Significant	Significant
Settlement of claim	Significant	Significant	Significant	Not Significant	Not Significant	Significant	Significant	Not Significant	Not Significant
Coverage of crops	Significant	Significant	Significant	Not Significant	Not Significant	Significant	Significant	Not Significant	Significant
Accessibility	Significant	Significant	Significant	Not Significant	Not Significant	Significant	Significant	Not Significant	Significant
Cooperation/responsiveness of staff	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Not Significant	Significant
Safety and security	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Not Significant	Significant

Note: = Significant; = Not Significant

Source: Author’s own compilation

The Chi-square results summary in Table 5 indicate that farmers’ satisfaction with crop insurance is largely influenced by socio-economic variables such as gender, education, farming experience, and annual income, each showing significant associations across all 10 satisfaction parameters. Type of farmer and age follow closely, with 9 significant associations each, while the number of family members and earning members show significance in 6 instances. The weakest predictor is whether agriculture is the main source of household income, with only 2 significant links. Even though most farmers rely on agriculture as their main source of income, this factor does not appear to strongly affect their satisfaction with crop insurance. Satisfaction is more closely related to individual experiences, personal economic stability, and how well the insurance scheme meets their specific risk needs and service expectations, rather than simply their occupational dependence on farming. Among the satisfaction



dimensions, co-operation/responsiveness of staff is most sensitive to socio-economic variables, followed by premium charged and mode of paying premium (8 links each), and type of policy, term of insurance, risk coverage, and coverage of crops (7 links each). Settlement of claims is the least sensitive, associated with only 5 variables. To summarize, the Chi-square test results across socio-economic variables in relation to farmers’ satisfaction with crop insurance are presented in Table 6. The table shows the number of significant associations observed for each variable out of the 10 satisfaction parameters. The decision on the null hypothesis (H_{02}) is based on the number of significant associations ($p < 0.05$):

- If a variable shows significance in 5 or more satisfaction parameters, H_{02} is rejected (indicating significant association).
- If a variable shows significance in less than 5 satisfaction parameters, H_{02} is accepted (indicating no significant association).

Table 6: Summary of Hypothesis Testing: Association between Farmers’ Socio-Economic Characteristics and Their Satisfaction with Crop Insurance

Socio-Economic Variable	No. of Significant Associations (out of 10)	Decision on H_{03}
Age	9	Reject
Gender	10	Reject
Education	10	Reject
No. of family members	6	Reject
Earning members in family	6	Reject
Experience in cultivation	10	Reject
Annual income	10	Reject
Agriculture as a source of household income	2	Accept
Type of farmer	9	Reject

Source: Author’s own compilation

Based on the Chi-square results, the null hypothesis (H_{02}), “*There is no significant association between the socio-economic characteristics of the sample farmers and their level of satisfaction with crop insurance*” is rejected for eight socio-economic variables, as they exhibit significant associations with most of the satisfaction parameters. In contrast, the hypothesis is accepted for the variable ‘agriculture as a source of household income,’ since its association with farmers’ satisfaction is comparatively limited.

CONCLUSION

The present study concludes that while awareness of crop insurance in coastal Odisha is fairly widespread, the depth of understanding and actual participation remains limited. Awareness is not uniformly distributed across the farming community but is significantly influenced by socio-economic characteristics, showing that awareness varies across groups and access to information is uneven. On the satisfaction side, the findings reveal a clear imbalance. Farmers are relatively content with premium-related aspects, but their dissatisfaction is pronounced with claim settlement processes, the adequacy of coverage, and service responsiveness. This suggests that operational shortcomings, rather than cost-related issues, undermine the credibility of the schemes. These findings align with broader evidence that crop insurance schemes have not fully delivered on their risk-reduction objectives, leaving agriculture and allied sectors vulnerable to monsoon variability (Mahapatra & Samal, 2024; Singh & Agrawal, 2020). Hypothesis testing confirms that socio-economic variables significantly influence both awareness and satisfaction, though the degree of influence varies across variables.

These empirical results resonate with prior studies that highlight systemic limitations in India’s crop insurance sector. Structural challenges such as information asymmetry, high transaction costs, and adverse selection reduce the effectiveness of insurance markets, restricting outreach to small and marginal farmers (Mahapatra & Samal, 2024; Panigrahi et al., 2019). The dissatisfaction expressed by farmers in this study mirrors these broader issues, suggesting that the barriers are both institutional and operational. Thus, while crop insurance under PMFBY has made progress, its effectiveness as a rainfall-risk management tool is undermined by gaps in awareness quality, claim settlement efficiency, and service delivery. Addressing these operational weaknesses alongside structural barriers is essential if crop insurance is to serve as a reliable safeguard for farmers in coastal Odisha.

These findings point to the need for strengthening institutional delivery mechanisms and exploring innovative financial instruments that complement existing schemes. Future research could extend this work by assessing the comparative effectiveness of rainfall index based derivatives vis-à-vis traditional crop insurance in addressing rainfall risk, as well as expanding the analysis to other regions and crops to enhance generalizability.



POLICY IMPLICATIONS

The study highlights several directions for policymakers:

1. **Streamline claim settlement** – The study indicates that farmers are particularly dissatisfied with the settlement of claims. Therefore, simplifying the claim process and ensuring timely disbursement of compensation could enhance trust in crop insurance schemes and encourage greater participation among farmers.
2. **Enhance awareness and communication** – Awareness of crop insurance is significantly influenced by socio-economic factors. Implementing targeted awareness campaigns, deploying local facilitators, and improving information dissemination can bridge knowledge gaps and enable more informed decision-making by farmers.
3. **Integrate innovative risk instruments** – Complementing traditional schemes like PMFBY with weather-linked instruments, such as rainfall-index derivatives, can improve risk mitigation by ensuring more localized and timely payouts, thereby addressing gaps in existing coverage mechanisms.
4. **Improve institutional coordination** – Strengthening coordination among banks, insurance companies, and local agricultural agencies can reduce transaction costs, improve monitoring, and expand access to crop insurance, particularly for marginalized and resource-constrained farmers.

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