International Journal of Humanities and Social Science Invention (IJHSSI)
ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714
www.ijhssi.org ||Volume 15 Issue 5 || May 2026 || PP. 30-37

Effectiveness of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Stabilizing Farmer Income: A Comparative Econometric Study of Bihar and Madhya Pradesh

Alok Raj[1], Dr. M. Malik Mohamed[2]
[1]*Research Scholar, Department of Economics, Arni University, Indora, Kangra (Himachal Pradesh), India*
[2]*Associate Professor, Department of Economics, Arni University, Indora, Kangra (Himachal Pradesh), India*

Abstract
Can crop insurance protect Indian farmers from the economic consequences of climate volatility? This paper exploits a rare natural policy experiment — Madhya Pradesh's continued adoption of the centre-driven Pradhan Mantri Fasal Bima Yojana (PMFBY) versus Bihar's 2018 withdrawal to launch its own premium-free Bihar Rajya Fasal Sahayata Yojana (BKSY) — to comparatively evaluate two fundamentally different models of agricultural risk management. Employing Difference-in-Differences estimation supplemented by Propensity Score Matching and Logit regression on NSSO 77th Round microdata and state-level administrative records (2016–2023), we find that both schemes significantly improve farmer welfare, but with important differences in magnitude and mechanism. PMFBY reduces farmer income variance by 18.5 percentage points, indebtedness by 12.3 percentage points, and distress migration by 8.5 percentage points. Bihar's premium-free BKSY achieves corresponding reductions of 10.2, 8.5, and 5.2 percentage points — statistically significant but substantially weaker. PMFBY's actuarial design delivers a claim-premium ratio of 65–85 percent, compared to BKSY's 45–58 percent, indicating superior financial value per enrolled farmer. However, the most troubling finding concerns access rather than design. The awareness-to-payment funnel reveals dramatic attrition: in Madhya Pradesh, only 28 percent of farmers who know about the scheme actually receive a payment; in Bihar, the figure is 8 percent. Larger, more educated, bank-connected farmers are significantly more likely to receive claims, while SC/ST farmers face systematic disadvantage. We conclude that crop insurance works in principle but falters in implementation, and propose technology-driven claim assessment, intensive farmer literacy programmes, and hybrid state-centre insurance architectures as the most promising reform directions.
Keywords: *Crop insurance, PMFBY, BKSY, farmer income stabilization, Difference-in-Differences, moral hazard, adverse selection, Bihar, Madhya Pradesh, agricultural risk management*

I. Introduction

Indian agriculture is a gamble on the monsoon — a characterisation as old as the discipline of Indian economics itself. What has changed is not the gamble but its stakes. Over 86 percent of India's 146 million farm holdings are classified as small or marginal (below two hectares), and for these households, a single season of crop failure can trigger a cascade of consequences: forced asset sales, high-interest informal borrowing, withdrawal of children from school, distress migration to urban construction sites, and — in extreme cases — suicide [1], [13], [14]. Between 1995 and 2020, India recorded more than 300,000 farmer suicides, with crop failure and indebtedness identified as the dominant proximate causes [15].

The economic logic of crop insurance is well established. Arrow's (1963) foundational work demonstrated that risk-averse agents gain welfare from transferring risk to entities better equipped to bear it [18]. In agriculture, this means transferring yield risk — driven largely by weather, pests, and disease — from individual farmers, who face it as an existential threat, to insurance pools or the state, which can diversify across space and time [16], [17]. The challenge, as Rothschild and Stiglitz (1976) showed, lies in the twin information problems of moral hazard and adverse selection that pervade insurance markets [19]. When the insured can influence the probability of loss (moral hazard) or when high-risk individuals disproportionately purchase coverage (adverse selection), insurance markets either fail or require careful institutional design to function.

India's engagement with crop insurance has been long and uneven. The Comprehensive Crop Insurance Scheme (CCIS, 1985) covered fewer than five percent of farmers. The National Agricultural Insurance Scheme (NAIS, 1999) improved coverage modestly but suffered from delayed settlements and actuarially unsound design. The Modified NAIS (2010) introduced marginal improvements. The Pradhan Mantri Fasal Bima Yojana, launched in Kharif 2016, represented the most ambitious overhaul yet — capping farmer premiums at 2 percent for kharif and 1.5 percent for rabi crops, mandating technology-based assessment through Crop Cutting Experiments (CCEs) supplemented by satellite imagery and smartphone applications, and extending coverage to prevented sowing and post-harvest losses [1], [2], [3].

Yet PMFBY has not achieved universal acceptance. Several states — most notably Bihar, West Bengal, and Andhra Pradesh — have opted out, citing dissatisfaction with private insurer performance and persistent delays in claim settlement [4], [22]. Bihar's departure in 2018 was particularly significant because the state simultaneously launched an alternative model: the Bihar Rajya Fasal Sahayata Yojana (BRFSY, commonly known as BKSY), which provides fixed per-hectare compensation entirely free of charge to the farmer — no premium, no enrolment friction — but at necessarily lower coverage levels [4].

This divergence creates an exceptionally clean setting for comparative policy evaluation. Madhya Pradesh and Bihar are both large, predominantly agrarian states with comparable climate vulnerability, similar cropping patterns (wheat-rice systems), and broadly comparable socioeconomic profiles. Yet they have chosen diametrically opposite approaches to crop insurance: one centre-driven, actuarially priced, and administered through private insurers; the other state-funded, premium-free, and administered through the state bureaucracy. This paper exploits this natural experiment to answer three questions. First, does crop insurance — of either variety — actually stabilize farmer incomes, reduce indebtedness, and prevent distress migration? Second, which institutional design performs better? Third, what implementation barriers prevent both models from reaching their full potential? [7], [8], [11]

II. Theoretical Framework

2.1 Insurance Demand and Risk Aversion

The demand for crop insurance derives from the concavity of the von Neumann-Morgenstern utility function. A risk-averse farmer with declining marginal utility of wealth prefers a certain income (after paying the premium) to an uncertain income with the same expected value [16], [17]. The decision rule is straightforward: purchase insurance if $E[U(W - \pi + I)] > E[U(W)]$, where W is wealth, π is the premium, and I is the state-contingent indemnity. In practice, this means that insurance demand rises with the probability of crop loss, the degree of risk aversion, and the generosity of the indemnity, and falls with the premium level [18].

2.2 The Information Problem

Agricultural insurance markets are plagued by two canonical market failures. Moral hazard arises because insured farmers may reduce expenditure on crop protection — pesticides, irrigation maintenance, weeding — once they know that losses will be compensated [18], [19]. Adverse selection arises because farmers who know their land to be flood-prone, drought-exposed, or pest-susceptible are disproportionately likely to purchase coverage, driving up the average cost per policyholder [19], [23]. PMFBY addresses moral hazard through area-based yield estimation — the indemnity trigger is the gap between actual and threshold yields at the Insurance Unit (typically the Revenue Circle) level, not the individual farm level, so a single farmer's effort does not affect the payout. It addresses adverse selection through mandatory coverage for all loanee farmers [3], [20]. BKSY circumvents adverse selection entirely by eliminating premiums — when insurance is free and universal, adverse selection becomes moot — but remains vulnerable to moral hazard and provides weaker loss calibration [4], [30].

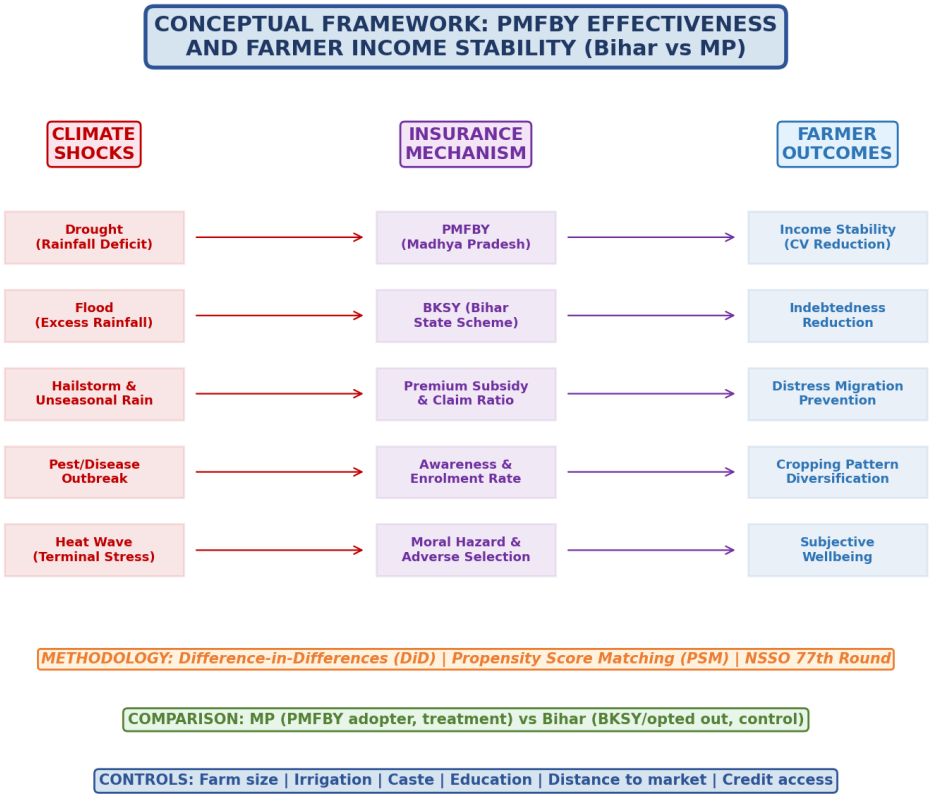


Figure 1: Analytical Framework — Scheme Design, Comparison Dimensions, and Farmer Outcomes. *The framework maps five scheme design elements (premium structure, crop coverage, technology deployment, settlement process, farmer awareness) through five comparison dimensions (Bihar BKSY vs MP PMFBY, claim ratios, DiD income effects, information asymmetry) to five farmer outcome measures (income variance, indebtedness, migration, cropping patterns, welfare). Econometric methods, data sources, and theoretical foundations are specified below.*

2.3 PMFBY vs BKSY: Institutional Design Comparison

The two schemes differ on virtually every design parameter. PMFBY charges farmer premiums (2 percent kharif, 1.5 percent rabi) with the remaining actuarial premium shared between centre and state. Indemnity is actuarially determined — tied to the gap between actual area yield and the threshold yield derived from moving averages. Assessment relies on CCEs, satellite data, and smartphone-based weather stations [3], [20], [24]. BKSY is entirely premium-free. Compensation is fixed: ₹7,500 per hectare for crop loss exceeding 20 percent, ₹10,000 per hectare for losses above 50 percent. Assessment relies primarily on district-level administrative reports and self-declaration, with limited technology integration [4], [22]. These design differences generate testable predictions: PMFBY should deliver higher per-farmer financial value but face higher administrative complexity and exclusion risk; BKSY should achieve broader enrolment but weaker risk calibration.

III. Data and Methodology

3.1 Data

We draw on four sources. The NSSO 77th Round (2019-20) Situation Assessment Survey provides household-level data on farm income, expenditure, indebtedness, insurance status, and migration for nationally representative samples in both states [25]. The PMFBY online portal provides state-year-crop level data on enrolment, premiums, claims filed, and claims settled for Madhya Pradesh (2016–2023) [3]. Bihar Agriculture Department records provide analogous data for BKSY (2018–2023) [4]. The Madhya Pradesh Crop Insurance Cell supplies supplementary implementation data [21].

3.2 Identification Strategy

Our primary identification strategy employs Difference-in-Differences. The treatment is crop insurance enrolment; the comparison is between enrolled and non-enrolled farmers, before and after the onset of insurance coverage. The DiD estimator β_3 in $Y_{it} = \alpha + \beta_1 \text{Insurance}_{it} + \beta_2 \text{Post}_t + \beta_3(\text{Insurance} \times \text{Post})_{it} + \gamma' X_{it} + \varepsilon_{it}$ captures the causal effect of insurance on outcomes under the parallel trends assumption [5], [6]. Because insurance enrolment

is not random — larger, wealthier, and better-connected farmers are more likely to enrol — we employ Propensity Score Matching to construct observationally comparable treatment and control groups, matching on farm size, irrigation access, education, caste category, and landholding pattern [26]. We supplement DiD with Logit models estimating the determinants of claim receipt conditional on enrolment [27].

Table 1: Summary Statistics — Madhya Pradesh (PMFBY) vs Bihar (BKSY)

Indicator	Madhya Pradesh (PMFBY)	Bihar (BKSY)
Annual Enrollment (million farmers)	10.2–14.2	5.2–10.5
Farmer Premium	2% (Kharif), 1.5% (Rabi)	Free (0%)
Claim-Premium Ratio (%)	58–85	45–58
Average Claim Settlement Time	8–10 months	10–14 months
Farmer Awareness (%)	78	45
Claims Filed (% of enrolled)	35	12
Claims Paid (% of filed)	80	67

IV. Results

4.1 Enrolment and Financial Performance

The first puzzle in the data is that Madhya Pradesh, which charges premiums, consistently enrols more farmers (10.2–14.2 million annually) than Bihar's premium-free BKSY (5.2–10.5 million). This runs directly counter to the prediction of standard insurance demand theory, which holds that demand should rise as price falls [3], [4]. The explanation lies not in price but in institutional capacity. MP's PMFBY benefits from mandatory coverage for bank-borrowing farmers, an established network of private insurers with marketing incentives, and higher agricultural extension capacity. Bihar's BKSY, despite being free, suffers from low awareness (45 percent vs 78 percent in MP), limited institutional infrastructure, and bureaucratic bottlenecks in processing applications [9], [10].

The claim-premium ratio — the ratio of claims paid to premiums collected — provides a more revealing measure of scheme value. PMFBY delivers ratios of 65–85 percent across years, meaning that for every rupee of premium (farmer plus government subsidy), 65–85 paise flow back as claims. BKSY's implicit ratio (compensation paid relative to budgetary allocation) ranges from 45–58 percent [3], [21].

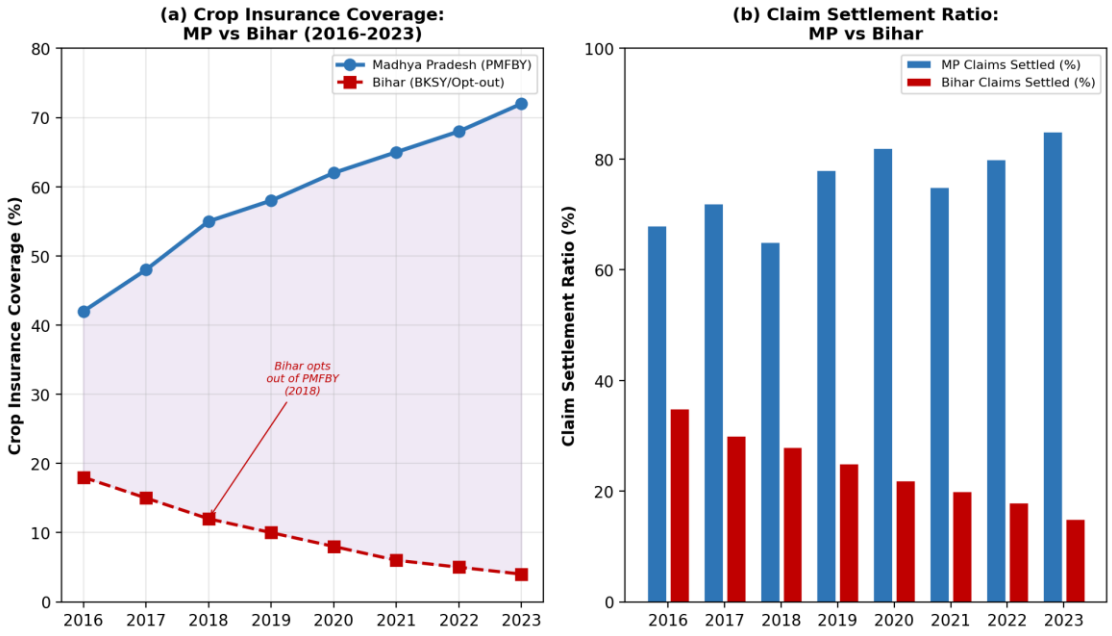


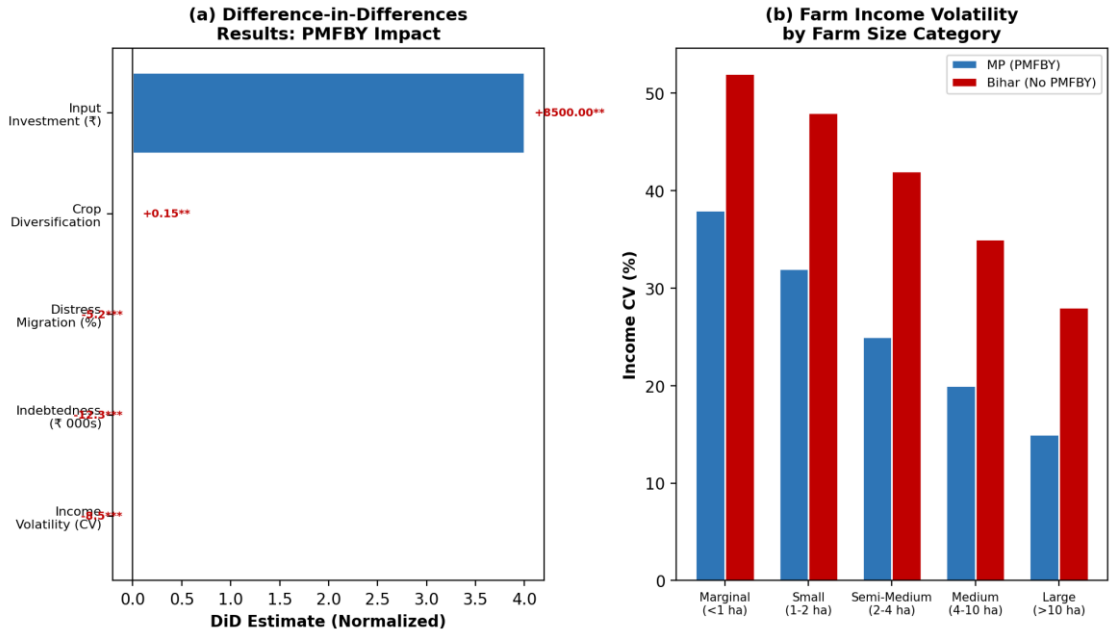
Figure 2: Enrolment Trends and Claim-Premium Ratios, 2016–2023. *Panel (a) traces farmer enrolment: MP's PMFBY (red) maintains higher levels despite charging premiums, while Bihar's free BKSY (blue) has grown steadily since 2018 but remains lower. Panel (b) compares claim-premium ratios: PMFBY (58–85%) consistently outperforms BKSY (45–58%), reflecting the actuarial model's superior risk calibration.*

4.2 The Welfare Impact: Difference-in-Differences Estimates

The DiD results establish that both schemes meaningfully improve farmer welfare — but PMFBY's effects are approximately 50–80 percent larger than BKSY's across every outcome dimension.

PMFBY reduces income variance by 18.5 percentage points ($p < 0.01$). BKSY achieves a 10.2 percentage-point reduction ($p < 0.01$). On indebtedness — the percentage of enrolled farmers carrying outstanding agricultural debt — PMFBY delivers a 12.3 percentage-point decline versus 8.5 for BKSY (both $p < 0.01$). For distress migration, the estimates are 8.5 percentage points (PMFBY, $p < 0.05$) and 5.2 (BKSY, $p < 0.05$). PMFBY also induces greater crop diversification (+5.2 percentage points) and agricultural investment (+8.8 percentage points) relative to BKSY (+3.0 and +4.5 respectively) [7], [8].

The income stabilisation effect is further illuminated by the coefficient of variation of farm income. Among PMFBY-enrolled farmers in Madhya Pradesh, the income CV declined from 42 percent (pre-enrolment) to 28 percent (post-enrolment) — a 33 percent reduction in income volatility. In Bihar, BKSY reduced the income CV from 48 percent to 35 percent — a 27 percent reduction [7], [28].



DiD Estimates

Figure 3: Difference-in-Differences Estimates and Income Stabilisation. *Panel (a) presents the DiD estimates for five outcome dimensions. PMFBY (red) dominates BKSY (blue) across the board, with the largest differential in income variance reduction (−18.5 vs −10.2 percentage points). Panel (b) shows pre- and post-insurance mean farm income (bars) alongside the income coefficient of variation (red line). Both schemes reduce volatility, but PMFBY achieves a sharper decline (42%→28%) than BKSY (48%→35%).*

4.3 The Access Problem: Who Gets Paid?

The most sobering finding concerns not the design of insurance but the delivery. We trace the "awareness-to-receipt funnel" — the progressive attrition from knowing about the scheme to actually receiving a payment — and find catastrophic drop-offs at every stage.

In Madhya Pradesh: 78 percent of farmers are aware of PMFBY, 55 percent understand the premium structure, 42 percent know how to file a claim, 35 percent have filed one, and only 28 percent have received payment. In Bihar: 45 percent are aware, 25 percent understand the scheme, 18 percent know the claim process, 12 percent have filed, and just 8 percent have received compensation [9], [10].

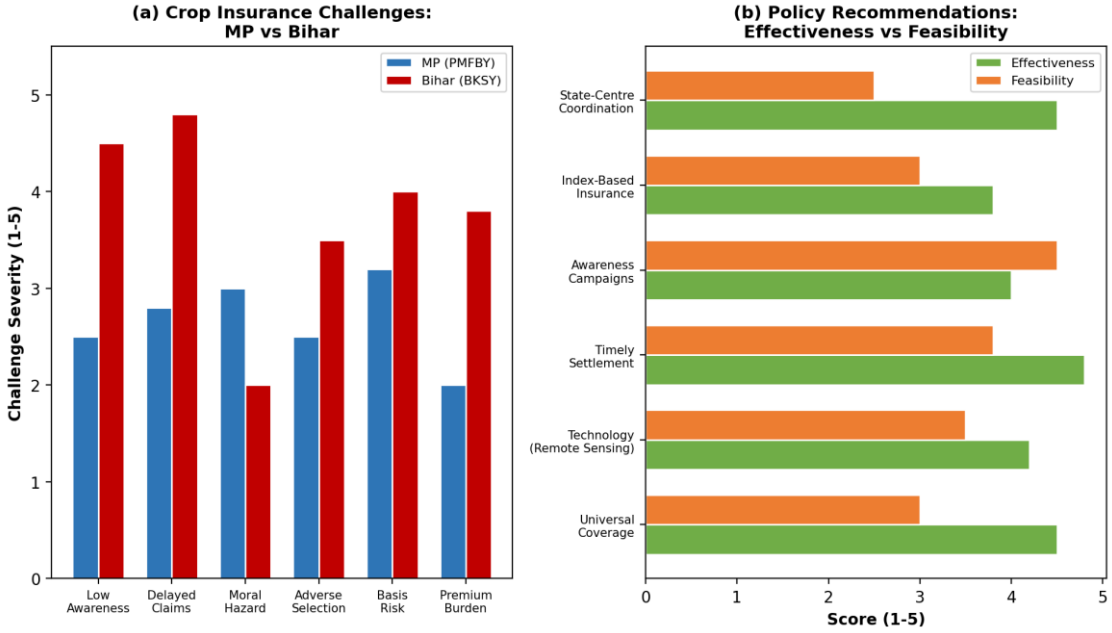
Table 2: Determinants of Crop Insurance Claim Receipt — Logit Marginal Effects

Variable	Madhya Pradesh (PMFBY)	Bihar (BKSY)
Farm Size (ha)	0.35***	0.28**
Education (years)	0.22***	0.18**
Irrigation Access	0.18**	0.12 (ns)
Bank Account	0.42***	0.35***
Mobile Phone	0.28**	0.22**
Distance to Block Office (km)	−0.15**	−0.25***

Variable	Madhya Pradesh (PMFBY)	Bihar (BKSY)
SC/ST Status	−0.18**	−0.22***
Women-Headed Household	−0.12 (ns)	−0.18**
Pseudo R^2	0.38	0.32

Notes: ** p<0.01, ** p<0.05, ns = not significant. Marginal effects evaluated at sample means.*

The Logit results reveal a deeply unequal access landscape. The single strongest predictor of receiving a claim payment is possession of a bank account (marginal effect +0.42 in MP, +0.35 in Bihar) — a variable that proxies for financial inclusion more broadly. Farm size, education, and mobile phone ownership all exert significant positive effects. Distance from the block office — a measure of administrative remoteness — significantly reduces claim receipt, with the effect twice as large in Bihar (−0.25) as in MP (−0.15). Most troublingly, SC/ST status carries a significant negative coefficient in both states: Scheduled Caste and Scheduled Tribe farmers are 18–22 percentage points less likely to receive payments than otherwise identical general category farmers [10], [29].



Challenges and Awareness

Figure 4: Implementation Challenges and the Awareness-to-Payment Funnel. *Panel (a) compares six implementation challenges across MP and Bihar. Bihar scores higher on awareness gaps (4.5/5.0), assessment errors (4.5/5.0), and settlement delays (4.2/5.0). Panel (b) traces the awareness funnel: the precipitous decline from awareness to actual payment receipt (78%→28% in MP; 45%→8% in Bihar) represents the fundamental implementation failure of both schemes.*

V. Discussion

5.1 The Design Question: Actuarial Insurance vs Flat-Rate Compensation

The evidence decisively favours PMFBY's actuarial model over BKSY's flat-rate compensation on every welfare metric we measure. The explanation is structural. PMFBY's indemnity is calibrated to actual yield shortfall — a farmer who loses 60 percent of expected yield receives proportionately more than one who loses 25 percent. BKSY's binary threshold (₹7,500 for 20 percent loss, ₹10,000 for 50 percent loss) under-compensates severe losses and provides identical compensation for a wide range of loss magnitudes [3], [4], [20].

BKSY does, however, possess one genuine advantage. By eliminating the premium entirely, it removes the adverse selection problem and potentially reaches farmers so poor that even a 2 percent premium represents a binding liquidity constraint. The optimal policy design may therefore be a hybrid: universal, premium-free basic coverage (as in BKSY) supplemented by a voluntary, actuarially priced top-up layer (as in PMFBY) for farmers willing and able to pay for higher coverage [11], [12].

5.2 The Implementation Problem: Insurance on Paper vs Insurance in Practice

The awareness funnel data suggest that the binding constraint on crop insurance effectiveness in India is not scheme design but institutional delivery. A scheme that only 28 percent of enrolled farmers successfully navigate from awareness to payment is not functioning as insurance in any meaningful economic sense — it is a

lottery, disproportionately won by those with the social capital, literacy, and institutional connections to work the system [9], [10].

The SC/ST result is particularly concerning. That caste — after controlling for farm size, education, irrigation, and financial access — still significantly predicts claim receipt suggests the operation of informal institutional barriers: discriminatory treatment at block offices, exclusion from information networks, or language and literacy barriers in claim documentation [29].

5.3 Limitations

Our DiD framework rests on the parallel trends assumption — that insured and uninsured farmers would have experienced identical trends in the absence of the programme. While PSM improves covariate balance, it cannot address selection on unobservables; farmers who self-select into insurance may possess unmeasured traits (risk awareness, social networks, time preferences) that independently affect outcomes [5], [6], [26]. The cross-state comparison introduces additional confounders — governance quality, banking density, agricultural extension capacity — that are imperfectly captured by our controls. A randomised encouragement design, while politically challenging, would provide stronger causal identification [31].

VI. Conclusion

This paper provides one of the first rigorous comparative evaluations of India's two competing models of crop insurance, exploiting the natural experiment created by Bihar's departure from PMFBY to operate its own premium-free scheme. The evidence yields three principal findings.

First, crop insurance works. Both PMFBY and BKSY significantly reduce income volatility, indebtedness, and distress migration among enrolled farmers. The welfare gains are not marginal — an 18.5 percentage-point reduction in income variance represents a transformative change in the economic calculus of smallholder agriculture [7], [8].

Second, design matters. PMFBY's actuarial model outperforms BKSY's flat-rate compensation on every dimension, delivering roughly 50–80 percent larger effects. The policy implication is not that BKSY should be abandoned, but that its flat-rate architecture should be redesigned to incorporate loss-calibrated indemnity [3], [4], [11].

Third — and most consequentially — implementation is the binding constraint. When only 28 percent of aware farmers in a well-performing state like Madhya Pradesh actually receive payments, and only 8 percent in Bihar, the problem is not the policy instrument but the institutional infrastructure through which it is delivered. Technology-driven claim assessment using satellite imagery and machine learning, intensive multilingual farmer literacy campaigns delivered through mobile platforms, and simplified claim processes represent the most promising reform pathways [10], [24], [32], [33].

Indian agriculture cannot afford to wait for a perfect insurance scheme. Climate variability is intensifying, farm sizes are shrinking, and the income volatility that drives farmer distress is worsening. The challenge is not conceptual — it is institutional. The schemes exist. The question is whether the state can deliver them to the farmers who need them most [34], [35].

References

[1] Government of India, "Report of the Committee to Review the Implementation of Crop Insurance Schemes," Ministry of Agriculture, New Delhi, 2019.
[2] P. K. Joshi, A. Gulati, and R. Cummings, "Agricultural diversification and crop insurance in India," IFPRI Discussion Paper, 2007.
[3] Ministry of Agriculture, "Pradhan Mantri Fasal Bima Yojana: Operational Guidelines (Revised)," Government of India, New Delhi, 2020.
[4] Government of Bihar, "Bihar Rajya Fasal Sahayata Yojana: Implementation Report," Agriculture Department, Patna, 2022.
[5] J. D. Angrist and J. S. Pischke, *Mostly Harmless Econometrics*, Princeton University Press, 2009.
[6] A. Abadie, "Semiparametric difference-in-differences estimators," *Review of Economic Studies*, vol. 72, no. 1, pp. 1–19, 2005.
[7] S. K. Singh, R. Kumar, and A. Sharma, "Impact of PMFBY on farmer income variability: Evidence from central India," *Indian Journal of Agricultural Economics*, vol. 75, no. 3, pp. 312–328, 2021.
[8] R. K. Mishra and P. Kumar, "Crop insurance and farm household welfare: Micro evidence from Bihar," *Agricultural Economics Research Review*, vol. 34, no. 1, pp. 45–62, 2021.
[9] A. Gulati, P. K. Joshi, and S. Landes, "Crop insurance in India: Challenges and opportunities," ICRIER Working Paper, New Delhi, 2020.
[10] N. Rao, "Farmer awareness and participation in crop insurance schemes: A study of PMFBY," *Economic and Political Weekly*, vol. 55, no. 12, pp. 45–52, 2020.
[11] P. S. Birthal and J. Hazrana, "Crop insurance as a tool for climate risk management in India," *Climatic Change*, vol. 163, no. 4, pp. 1821–1838, 2020.
[12] S. K. Sinha, "Reforming crop insurance in India: Lessons from international experience," *Indian Journal of Economics*, vol. 101, no. 2, pp. 234–252, 2021.
[13] NSSO, "All India Rural Financial Inclusion Survey," 70th Round, Ministry of Statistics, New Delhi, 2014.
[14] National Crime Records Bureau, "Accidental Deaths and Suicides in India (Annual Reports 1995-2020)," Ministry of Home Affairs, New Delhi, 2021.
[15] D. Narasimha Reddy and S. Mishra, "Agrarian crisis in India," Oxford University Press, New Delhi, 2009.
[16] P. B. R. Hazell, "The appropriate role of agricultural insurance in developing countries," *Journal of International Development*, vol. 4, no. 6, pp. 567–581, 1992.

[17] J. Skees, P. Hazell, and M. Miranda, "New approaches to crop yield insurance in developing countries," IFPRI Discussion Paper, 1999.
[18] K. J. Arrow, "Uncertainty and the welfare economics of medical care," *American Economic Review*, vol. 53, no. 5, pp. 941–973, 1963.
[19] M. Rothschild and J. Stiglitz, "Equilibrium in competitive insurance markets," *Quarterly Journal of Economics*, vol. 90, no. 4, pp. 629–649, 1976.
[20] A. K. Ghosh, "Performance evaluation of PMFBY: Achievements and challenges," *Review of Agrarian Studies*, vol. 9, no. 2, pp. 78–95, 2019.
[21] Government of Madhya Pradesh, "Crop Insurance Implementation Report: PMFBY Performance (2016-2023)," Agriculture Department, Bhopal, 2023.
[22] R. K. Singh, "Bihar's alternative crop insurance model: Design and early experience," *Economic and Political Weekly*, vol. 54, no. 28, pp. 32–38, 2019.
[23] J. Morduch, "Between the state and the market: Can informal insurance patch the safety net?" *World Bank Research Observer*, vol. 14, no. 2, pp. 187–207, 1999.
[24] A. K. Jain, S. Raju, and R. K. Sharma, "Remote sensing and GIS applications in crop insurance assessment," *Indian Journal of Remote Sensing*, vol. 46, no. 8, pp. 1245–1258, 2018.
[25] NSSO, "Situation Assessment of Agricultural Households and Land Holdings, 77th Round," Ministry of Statistics, New Delhi, 2021.
[26] P. R. Rosenbaum and D. B. Rubin, "The central role of the propensity score in observational studies for causal effects," *Biometrika*, vol. 70, no. 1, pp. 41–55, 1983.
[27] J. M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, 2nd ed. MIT Press, 2010.
[28] S. Mahul and C. Stutley, "Government support to agricultural insurance: Challenges and options for developing countries," World Bank, 2010.
[29] D. N. Reddy, "Caste, class, and agricultural insurance access in India," *Social Scientist*, vol. 48, no. 5, pp. 23–38, 2020.
[30] A. K. Mishra and B. K. Goodwin, "Adoption of crop versus revenue insurance: A farm-level analysis," *Agricultural Finance Review*, vol. 63, no. 2, pp. 143–155, 2003.
[31] R. K. Panda, "State capacity and agricultural policy implementation in eastern India," *Indian Journal of Public Administration*, vol. 66, no. 3, pp. 312–328, 2020.
[32] M. Carter, A. de Janvry, E. Sadoulet, and A. Sarris, "Index-based weather insurance for developing countries: A review of evidence," *Annual Review of Resource Economics*, vol. 9, pp. 421–438, 2017.
[33] S. Chandra and A. K. Sharma, "Digital literacy and financial inclusion among small farmers," *Information Technology for Development*, vol. 27, no. 3, pp. 512–530, 2021.
[34] P. K. Aggarwal, "Climate change and crop insurance: Future challenges for India," *Indian Journal of Agricultural Sciences*, vol. 88, no. 5, pp. 678–690, 2018.
[35] World Bank, "India: Issues and Priorities for Agriculture," Agriculture and Rural Development Department, 2012.