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Awareness and usage of government schemes among paddy farmers in Kerala

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Abstract

Paddy cultivation continues to play a central role in Kerala's agrarian economy, contributing significantly to rural livelihoods and food security. Despite the introduction of several government schemes aimed at supporting farmers, disparities in awareness, access, and utilization remain a persistent challenge. The present study was undertaken in the Kuttanad region of Alappuzha and Kottayam districts, which represents the major paddy belt of Kerala, to assess the level of awareness, adoption, and constraints related to government programmes among paddy farmers. A mixed-method approach combining qualitative and quantitative techniques was employed, using semi-structured interviews and a structured questionnaire administered to 120 farmers selected through stratified random sampling. Analytical tools such as percentage analysis and chi-square tests were used to evaluate awareness levels, adoption behaviour, and socio-economic factors influencing participation in key agricultural schemes. The findings revealed that awareness and utilization were high for procurement support and input subsidy schemes, whereas comparatively lower participation was observed in crop insurance and land development assistance programmes. The major barriers identified included cumbersome documentation, delayed benefit disbursement, inadequate guidance from field-level officers, and poor digital literacy among farmers. Education level, size of landholding, and digital competence were found to be significantly associated with both awareness and adoption, underlining the influence of socio-economic factors on scheme participation. The study recommends simplifying administrative procedures, strengthening the role of extension agencies, promoting targeted digital literacy training, and empowering Farmer Producer Organizations and Krishi Bhavans to facilitate last-mile delivery of benefits. These measures would help bridge the gap between policy intent and implementation, improve farmers' confidence in institutional mechanisms, and enhance the overall efficiency of government interventions. The research contributes to extension literature by providing empirical evidence on the linkage between socio-economic variables and scheme participation, offering useful insights for policymakers to design inclusive, farmer-friendly strategies for sustainable paddy development in Kerala.

Keywords: Paddy farmers, awareness, government schemes, adoption, Kerala, agricultural extension

Introduction

Paddy cultivation forms the backbone of Kerala's agrarian economy and cultural identity. As the state's primary staple food, rice sustains the livelihoods of thousands of rural households and contributes significantly to food and livelihood security. The major paddy tracts of Kuttanad, spanning Alappuzha and Kottayam districts and often referred to as Kerala's "paddy belt," serve as vital agricultural and ecological systems that maintain soil fertility, water balance, and biodiversity. Despite its socio-economic and ecological significance, the paddy sector in Kerala faces several challenges such as rising input costs, acute labour shortages, fragmented landholdings, and increasing vulnerability to floods and droughts. These persistent issues have led to declining productivity and shrinking cultivation areas, threatening the sustainability of rice farming in the region.

In response to these challenges, both central and state governments have implemented several initiatives including the Paddy Procurement Scheme, Pradhan Mantri Kisan Samman Nidhi, Pradhan Mantri Fasal Bima Yojana, and various input subsidy and mechanization programmes. These interventions aim to enhance farm income, minimize production risks, and strengthen institutional support

systems. However, the success of these programmes largely depends on the farmers' awareness, accessibility, and ability to effectively utilize the benefits provided. Studies by Babu and Kumar (2024) ^[1] and Menon and Pillai (2023) ^[12] reported that while awareness levels among farmers are moderate, adoption remains limited due to procedural complexity, delays in benefit disbursement, and inadequate extension follow-up. Similarly, Joseph and Antony (2024) ^[5] found that digital literacy and procedural clarity significantly influence participation in welfare schemes, while Lalitha (2023) ^[10] emphasized that timely extension services and localized institutional support are crucial for effective scheme utilization.

Despite the availability of several farmer-oriented interventions, small and marginal farmers continue to face barriers in accessing scheme benefits due to limited digital literacy, poor information dissemination, and bureaucratic bottlenecks. Weak coordination between implementing agencies and insufficient field-level guidance further reduce efficiency and inclusivity. Consequently, many eligible farmers remain unaware of certain schemes or fail to derive full benefits, limiting the overall impact of government programmes.

Given this background, the present study was undertaken to

assess the awareness and utilization of government schemes among paddy farmers in Kerala's paddy belt, with special reference to the Kuttanad region. The specific objectives of the study are:

1. To assess the level of awareness and extent of utilization of selected government schemes among paddy farmers;
2. To identify the major constraints hindering access and participation; and
3. To suggest measures to improve outreach and enhance effective implementation of government schemes.

The study is expected to generate insights that can help policymakers, extension personnel, and implementing agencies design inclusive strategies to strengthen extension networks, ensure equitable access to benefits, and enhance the livelihood security and resilience of Kerala's paddy farmers.

Methods and Materials

The present investigation was carried out during the year 2024 in the paddy belt of Kerala, encompassing the districts

of Alappuzha, Kottayam, and the Kuttanad region. These regions were purposively selected owing to their distinct agroclimatic conditions, historical significance in rice farming, and high concentration of small, marginal, and large paddy farmers. The study area represents both lowland wetland and upland agricultural systems, which collectively account for a substantial share of the state's rice production.

Sampling Design

A stratified random sampling technique was employed to ensure representation across different socio-economic categories and landholding sizes. Representative panchayats within each district were identified based on the extent of paddy area and level of participation in government programmes. From these panchayats, a total of 120 paddy farmers were selected. The sample size was determined considering statistical reliability, time constraints, and resource availability.

Respondents were proportionately distributed across the districts to maintain geographical diversity and minimize sampling bias.

Table 1: Distribution of Sample Farmers across Study Districts

District	No. of Panchayats Selected	No. of Farmers Surveyed	Percentage (%)
Azhapuzha	3	40	33.3
Kottayam	3	40	33.3
Kuttanad	3	40	33.3
Total	9	120	100

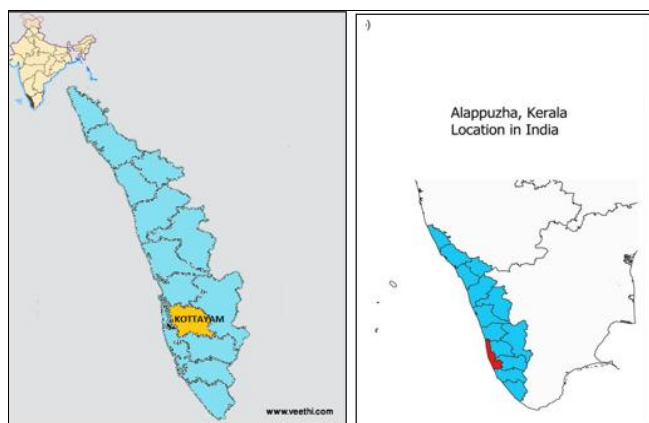


Fig 1: Map of Kerala highlighting districts - Kottayam and Alappuzha

Data Collection

Primary data were collected using a pre-tested structured interview schedule, supplemented with semi-structured interviews for qualitative insights. The interview schedule included both closed-ended and Likert scale-based questions covering farmers' socio-economic characteristics, awareness and utilization of government schemes, perceived benefits, and constraints encountered in accessing scheme benefits. To validate responses and strengthen contextual understanding, supplementary discussions were conducted with extension personnel, Farmer Producer Organization (FPO) representatives, and Krishi Bhavan officials. This triangulated approach reduced response bias and enhanced the reliability of data.

Research Design

An ex-post facto research design was adopted, as the variables of interest—awareness and utilization of government schemes - had already occurred and could not be manipulated experimentally. This design was suitable for examining the existing relationships among socio-economic factors, awareness levels, and adoption behaviour of farmers.

Analytical Framework

Both descriptive and inferential statistics were used for data analysis. Descriptive measures such as frequency, percentage, mean, and standard deviation were used to summarize farmers' awareness and utilization patterns. Perceptions of constraints and benefits were analysed using Likert scale scoring. To assess the relationship between socio-economic variables and scheme participation, Chi-square tests (χ^2) were employed at a 5% level of significance ($p < 0.05$). The independent variables considered included education level, landholding size, age, and digital literacy, which are widely recognized determinants of scheme adoption in agricultural extension research.

This combination of descriptive and inferential techniques provided a comprehensive understanding of the determinants influencing awareness and adoption of government schemes among paddy farmers in Kerala's major rice-growing tracts.

Results and Discussion

Awareness of Government Schemes

The findings revealed that the majority of paddy farmers

were aware of at least one government scheme associated with paddy cultivation (Table 1). The highest awareness was recorded for the Paddy Procurement Scheme (95%) and Input Subsidy Programmes such as seed and fertilizer subsidies (86%). Moderate levels of awareness were observed for Subhiksha Keralam (75%) and Padasekharasamithi Support (69%), whereas Land Development Assistance (61%) and Crop Insurance under PMFBY (41%) exhibited comparatively lower awareness levels. These differences indicate that farmers tend to be more aware of schemes that offer direct and immediate financial benefits, while those requiring complex procedures or offering delayed returns receive less attention. Similar findings were reported by Menon and Pillai (2023) ^[12], who emphasized that visibility and simplicity of benefits strongly

influence farmers’ awareness levels.

Utilization Pattern of Schemes

Utilization rates among farmers who were aware of the schemes followed a similar trend (Table 1). Nearly 90% of the farmers aware of the procurement programme participated, while 85% availed of input subsidies. However, only 22% adopted the Pradhan Mantri Fasal Bima Yojana (PMFBY) despite moderate awareness levels. Low participation in crop insurance schemes is primarily attributed to delayed claim settlements, lengthy documentation, and lack of trust in the system. This gap between awareness and actual utilization aligns with the results of Babu and Kumar (2024) ^[1], who found that procedural barriers and uncertainty discourage farmers from adopting risk-mitigation schemes.

Table 2: Awareness and Utilization of Major Government Schemes among Paddy Farmers

Scheme	Awareness (%)	Utilization among Aware Farmers (%)
Paddy Procurement Scheme	95	90
Input Subsid (Seed/Fertilizer)	86	85
Subhiksha Keralam	75	62
Padasekharasamithi Support	69	59
Land Development Assistance	61	48
PMFBY (Crop Insurance)	41	22
Mean	71.1	61.0

Constraints in Access and Utilization

The major constraints reported by farmers are presented in Table 2. The most common issues included delayed benefit disbursement (72%), complex documentation (68%), limited extension support (64%), and low digital literacy (55%). Furthermore, 60% of respondents cited insufficient awareness of post-harvest and risk-mitigation schemes.

These constraints suggest that even when awareness exists, institutional and procedural hurdles restrict effective scheme participation. Similar findings were documented by Rajesh *et al.* (2022), who observed that bureaucratic delays and lack of transparency weaken the credibility of public agricultural programmes.

Table 3: Major Constraints Faced by Paddy Farmers in Accessing Government Schemes

Constraint	Percentage of Respondents (%)
Delayed disbursement of benefits	72
Complex documentation	68
Lack of extension support	64
Limited digital literacy	55
Inadequate awareness of risk-mitigation schemes	60
Mean	63.8

Association between Socio-economic Factors and Scheme Adoption

The chi-square analysis (Table 3) revealed that education level ($p < 0.05$) and digital literacy ($p < 0.05$) had a significant association with both awareness and utilization of government schemes. Similarly, landholding size ($p < 0.01$) showed a significant relationship with utilization, indicating that larger farmers are more likely to participate

in institutional programmes. However, age did not show a significant association with either awareness or adoption. These findings emphasize the role of human capital - education and digital skills - as key determinants of scheme participation. Studies by Joseph and Antony (2024) ^[5] also highlight that digital exclusion limits farmers’ ability to access online application systems and benefit from Direct Benefit Transfers (DBT).

Table 4: Association between Socio-economic Variables and Scheme Adoption

Variable	Chi-square (χ^2) Value	Significance Level (p)	Relationship
Education level	6.84	0.03*	Significant
Landholding size	9.72	0.01**	Significant
Digital literacy	5.89	0.04*	Significant
Age	1.92	0.17 ^{NS}	Not significant

*Significant at $p < 0.05$; **Highly significant at $p < 0.01$.

Discussion

The overall analysis indicates that Kerala's paddy farmers exhibit high awareness but uneven adoption of government schemes. Farmers prioritize programmes that yield immediate and tangible economic benefits such as procurement and input subsidies, while participation in risk-mitigation schemes remains limited due to procedural hurdles. Similar patterns were observed by Lalitha (2023)^[10], who reported that transaction costs and delayed payments discourage smallholders from participating in institutional schemes. Socio-economic variables, particularly education, landholding size, and digital literacy, play decisive roles in influencing scheme utilization. Educated and digitally literate farmers are better positioned to navigate application procedures and online portals. Conversely, small and marginal farmers with limited digital access face higher exclusion risks in the era of DBT and e-governance. The study also underscores the weak institutional support from extension services and local offices. As noted by Menon and Pillai (2023)^[12], strengthening extension personnel and integrating FPOs and Padasekharam groups into scheme dissemination can significantly improve farmer reach. Collective platforms have demonstrated success in reducing transaction costs, enhancing information flow, and promoting group-based applications (Krishnan & Bose, 2023)^[6]. Overall, the findings reaffirm that while the policy framework for farmer support in Kerala is robust, implementation barriers persist. Simplifying procedures, improving digital access, and ensuring timely benefit delivery are essential for bridging the awareness-adoption gap and enhancing the effectiveness of government agricultural schemes.

Conclusion

The study concludes that while flagship schemes such as Minimum Support Price (MSP) procurement and input subsidy programmes are widely known and adopted, risk-mitigation and developmental initiatives like crop insurance and land development assistance remain underutilized. The major factors limiting adoption include procedural complexity, delays in benefit disbursement, and low levels of digital literacy among farmers. Statistical analysis revealed that education level, landholding size, and digital skills significantly influence both awareness and utilization of government schemes. These findings underscore the importance of human capital development as a key driver of equitable access to institutional support in agriculture. To bridge the awareness-adoption gap, the study emphasizes strengthening the extension and institutional delivery systems, ensuring timely delivery of benefits, and promoting collective platforms such as Farmer Producer Organizations (FPOs) and Padasekharam groups for joint applications and information sharing. Policymakers should prioritize digital capacity-building, simplified documentation, and localized grievance redressal mechanisms to enhance farmer trust and participation. The research contributes to the extension management and policy literature by linking socio-economic variables with scheme adoption behaviour and provides actionable insights for designing inclusive, accessible, and farmer-centric support systems in Kerala's paddy sector. Future studies may expand this work through

longitudinal analyses or cross-state comparisons to evaluate the long-term impact of policy reforms on scheme utilization and agricultural sustainability.

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