P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 9; September 2025; Page No. 236-238

Received: 17-06-2025
Accepted: 19-07-2025

Indexed Journal
Peer Reviewed Journal

A study on adoption behaviour of paddy growers towards recommended cultivation practices in Dakshin Dinajpur district of West Bengal

[1]Ankit Goswami and [2]Syed H Mazhar

[1]Researcher, Department of Agricultural Extension and Communication, Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj, Uttar Pradesh, India

[2]Professor, Department of Agricultural Extension and Communication, Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj, Uttar Pradesh, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i9d.2405

Corresponding Author: Ankit Goswami

Abstract

This study was conducted in the Tapan Block of Dakshin Dinajpur district, West Bengal, to assess the adoption behaviour of paddy farmers towards recommended cultivation practices. A total of 120 farmers were randomly selected and interviewed using a structured questionnaire. Findings revealed that 79.17% of respondents exhibited a moderate level of adoption of recommended practices. However, variations were observed in the adoption levels of individual practices, such as irrigation management, pest control, and the use of improved rice varieties. Furthermore, a significant correlation was found between adoption levels and variables such as education, occupation, and frequency of contact with extension personnel. The study concludes that focused extension strategies and farmer training programs are essential to enhance the adoption of scientific paddy cultivation practices and improve productivity in the region.

Keywords: Paddy cultivation, adoption behaviour, agricultural extension, improved practices, West Bengal, socio-economic factors

1. Introduction

Paddy is a staple food crop in India, particularly in the eastern states such as West Bengal, which ranks as the leading rice-producing state in the country. Despite this distinction, farmers in Dakshin Dinajpur district often rely on traditional and low-input farming methods, resulting in suboptimal yields and economic vulnerability.

Modern and recommended cultivation practices such as:

- Use of high-yielding rice varieties (HYVs),
- Seed treatment,
- Integrated pest and disease management,
- Balanced fertilizer application, and
- Mechanized sowing and transplanting

are available but not uniformly adopted across the region. This inconsistency in practice adoption can be attributed to several factors, including limited awareness, inadequate access to resources, and varying socio-economic backgrounds of the farmers.

This study aims to:

- Examine the level of adoption of recommended practices by paddy growers.
- Identify the key socio-economic factors influencing adoption behaviour.
- Provide insights for policymakers and extension workers to formulate targeted interventions for improving paddy cultivation in the region.

2. Methodology

The study was conducted in the Tapan Block of Dakshin Dinajpur district, West Bengal, using a descriptive survey research design. Four villages—Shalgaon, Chakbhagirath, Jamalpur, and Kardaha—were selected purposively based on the predominance of paddy cultivation.

From these villages, a total of 120 paddy farmers were selected using random sampling techniques. Data were collected through personal interviews using a structured and pre-tested interview schedule.

Measurement of Adoption

Adoption of each recommended cultivation practice was recorded on a three-point continuum:

- Full adoption = 2
- Partial adoption = 1
- Not adopted = 0

The total adoption score for each respondent was calculated by summing the individual scores for all practices.

Variables Studied

Socio-economic variables considered for correlation analysis included:

- Age
- Education
- Occupation

- Farm size
- Annual income
- Extension contact
- Mass media exposure
- Social participation

Statistical tools such as percentage analysis and Pearson's correlation coefficient were used to interpret the data and assess relationships between adoption levels and independent variables.

3. Results and Discussion

3.1 Overall Adoption Level

The overall adoption level of recommended paddy cultivation practices among farmers in Dakshin Dinajpur was categorized into three levels:

- Medium-level adoption was reported by 79.17% of respondents.
- High-level adoption was observed in 17.5% of respondents.
- Only 3.33% of respondents showed low levels of adoption.

These findings suggest that most farmers are adopting recommended practices to a moderate extent, but there is scope to improve adoption intensity through targeted interventions.

3.2 Practice-wise Adoption of Recommended Cultivation Practices

Practice	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)
Land Preparation	50.00	50.00	0.00
Improved Varieties	64.17	35.83	0.00
Seed Rate	50.00	49.17	0.83
Seed Treatment	58.33	39.17	2.50
Ploughing	93.33	5.83	0.83
Sowing Methods	100.00	0.00	0.00
Micronutrient Application	91.67	5.00	3.33
Spacing	87.50	12.50	0.00
Irrigation	75.83	23.33	0.83
Weedicide Application	75.00	12.50	12.50
Pesticide Application	21.67	54.17	24.17
Chemical Disease Management	3.33	58.33	38.33

Insight

Adoption was highest for basic agronomic practices such as sowing methods (100%), ploughing (93.33%), and micronutrient application (91.67%). However, capital- and knowledge-intensive practices, particularly chemical disease management (3.33% fully adopted) and pesticide application (21.67% fully adopted), showed lower levels of adoption. This indicates a need for better education, input accessibility, and support mechanisms to encourage adoption of more technical components of paddy cultivation.

3.3 Correlation with Socio-Economic Variables

Socio-Economic Variable	Correlation Coefficient (r)	Significance
Age	0.955**	Highly Significant
Religion	0.147NS	Not Significant
Caste	0.994**	Highly Significant
Education	1.000**	Highly Significant
Annual Income	0.750**	Highly Significant
Occupation	0.995**	Highly Significant
Housing Pattern	0.951**	Highly Significant
Marital Status	-0.286*	Moderately Significant (Negative)
Landholding	0.866**	Highly Significant
Family Type	0.340*	Moderately Significant
Extension Contact	0.991**	Highly Significant
Mass Media Exposure	0.866**	Highly Significant
Social Participation	0.176NS	Not Significant
Sources of Agricultural Information	0.809**	Highly Significant
Scientific Orientation	0.972**	Highly Significant
Risk Orientation	0.996**	Highly Significant
Economic Motivation	0.644*	Moderately Significant
Progressiveness	0.997**	Highly Significant

Legend

** = Highly Significant ($p < 0.01$)
* = Significant ($p < 0.05$)
NS = Not Significant

Findings

The data shows that adoption behaviour is strongly influenced by variables such as:

- Education (1.000)
- Risk orientation (0.996)
- Progressiveness (0.997)
- Occupation (0.995)
- Extension contact (0.991)

These variables had a highly positive and statistically significant correlation with adoption levels. On the other hand, religion and social participation had no significant influence. Interestingly, marital status had a moderate negative correlation (-0.286), which may reflect social or cultural constraints impacting decision-making.

4. Conclusion

The study reveals that a majority of paddy growers in

Dakshin Dinajpur district exhibit moderate levels of adoption of recommended cultivation practices. Basic agronomic practices like sowing, spacing, irrigation, and use of improved seeds are commonly adopted. However, the adoption of technical practices such as chemical disease and pest management remains limited due to knowledge gaps, lack of inputs, and financial constraints.

There is a strong and positive association between the adoption of scientific practices and factors such as education, extension contact, risk orientation, and progressiveness. To bridge the adoption gap, there is an urgent need to empower farmers with knowledge, skills, and accessible resources.

5. Recommendations

- Strengthen Agricultural Extension Services Enhance outreach through frequent field demonstrations, personalized visits, and farmer advisory sessions.
- Promote Integrated Pest and Disease Management Conduct targeted training programs on IPM and safe chemical use to raise awareness and capacity.
- Provide Subsidized Inputs and Financial Incentives Offer subsidies on micronutrients, certified seeds, herbicides, and farm machinery to reduce input costs.
- Leverage ICT Tools for Dissemination Use mobile-based apps, SMS alerts, and community radio to share real-time information and advisories.
- Encourage Farmer Field Schools (FFS) Promote peer-to-peer learning platforms to foster experiential learning and collective adoption.

References

1. Ghosh A, Saha R. Extension strategies for paddy farming. West Bengal J Agric. 2022.
2. Meena R, Singh P. Socio-economic determinants of technology adoption. J Rural Stud. 2019;28(2):134-40.
3. Reddy R, Rani S. Knowledge and adoption patterns of rice farmers. Andhra Agric J. 2015;62(1):55-60.
4. Sharma N, Verma K, Joshi M. Factors influencing adoption of IPM practices. J Plant Prot Res. 2020;60(3):207-13.
5. Pal R, Das S. Risk orientation and adoption in Eastern India. Agrarian Rev. 2021;47(4):312-9.