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An association between socio-economic characteristic and knowledge about rice production technology in District Deoria

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Abstract

Rice, a staple food for over 60% of India's population, has undergone transformative changes in production since independence. Prior to 1947, rice cultivation was largely traditional, with limited irrigation and low productivity. In 1950–51, India produced approximately 20.58 million tonnes of rice with an average yield of 668 kg/ha across 30.81 million hectares. Post-independence, especially following the Green Revolution, rice production surged due to improved irrigation, high-yielding varieties, and mechanization. By 2014–15, output had increased nearly fivefold to 104.86 million tonnes, with yields reaching 2390 kg/ha and cultivated area expanding to 43.86 million hectares. This growth reflects significant policy interventions, technological adoption, and institutional support. The study highlights the evolution of rice production as a marker of agricultural modernization and food security in India.

Keywords: Socio-economic status, Paddy cultivators, Agricultural economy

Introduction

Rice (*Oryza sativa*) is the most widely consumed staple food, sustaining over half of the global population. Its importance goes beyond nutrition, playing a crucial role in food security, poverty reduction, and livelihoods through rice-based agricultural systems. Globally, rice ranks as the third most produced agricultural commodity after sugarcane and maize.

In India, rice is cultivated during both the summer and winter cropping seasons. It serves as the main dietary energy source in 17 countries across Asia and the Pacific, 9 in the Americas, and 8 in Africa. Rice contributes 20% of the world's total dietary energy intake- surpassing wheat at 19% and far ahead of maize at 5%.

Research Methodology

Deoria district has 16 blocks, 1185-gram panchayat, this distric also has 16 Panchayt samitis and 2143 inhibited villages. It has 197,302 (hectare) cultivable land and total geogrphical area is 249,376 (hectare). The total population of deoria district is 3,100,946, as per latest census (2011). The soil type is alluvial loam. The net irrgated area is 71,554 (hectares). Favorable Agro-Climatic Conditions: In Deoria fertile alluvial soils and a subtropical climate with ample monsoon rainfall—ideal for paddy cultivation. Diverse Rice Varieties: Varieties like Pusa Sugandha 2511 and Pusa 44 have shown strong performance in the region, with relatively low technology indices—indicating high feasibility and adaptability to local conditions.

Objectives of the study

To study about socio-economic profile of the improved rice respondents.

Table 1: Socio-economic profile and selected Independent Variable of the respondents in the study.

Sn.	Independent variable	Category	Frequency	percentage
1	Age	Young age (Upto -30)	37	30.8%
		Middle age (Upto 31-36)	69	57.50%
		Old age (Upto 37 & above)	14	11.66%
2.	Education	Illiterate	40	33.33%
		Functionally literate Primary School	43	35.83%
		Higher secondary (up to 12th)	24	20%
		Graduate and above	13	14.4%
3.	Caste	General	13	10.83%

		OBC	72	60%
		SC	17	14.16%
		ST	18	15%
4.	Family type	Joint	88	73.33%
		Nuclear	32	26.66%
5.	Family size	Small (up to 4 member)	72	60%
		Medium (5 to 9 member)	36	30%
		Large (Above 10 members)	12	10%
6.	Land holding	Marginal	58	48.33%
		Small	30	25%
		Medium	24	20%
		Large	8	6.66%
7.	Occupation	Agriculture	73	60.83%
		Agricultural labor	11	9.16%
		Agriculture & Business	36	30%
8.	Annual income	(Below 1 lakh)	54	45%
		Medium (1.5 to 2.5 lakh)	48	40%
		High (Above 2.5 lakh)	18	15%
9.	Housing pattern	Cemented	40	33.33%
		Semi cemented	36	30%
		Kachha	24	20%
		Hut	20	16.66%
10.	Social Participation	Member of two organiation	74	61.66%
		Member of one organization	30	23.33%
		No Participation	16	13.33%
11.	Scientific orientation	Low (up to 10)	56	46.66%
		Medium (11 to 50)	40	33.33%
		High (50 & above)	24	20%
12.	Extension contact	Low (9-13)	38	31.66%
		Medium (14-17)	70	58.33%
		High (18-21)	12	10%
13.	Risk bearing	Low (up to 15)	60	50%
		Medium (16-40)	48	40%
		High (above 40)	12	10%
14.	Farming experience	Low (<7) Low (Up to 8 year)	41	34.16%
		Medium (9 -15 year)	68	56.66%
		High (>15) High (16 year and above)	11	9.16%
15.	Mass media	Television	10	8.33%
		Radio	7	30%
		News paper	8	37%
		Magazine	2	37.5%
		Social media	60	50%

From the table it represented that majority of the respondents had middle age group (57.50%), having education Functionally literate Primary School (35.83%), (60.00%) of respondents belongs to OBC category, (45.83%) of respondents belongs to nuclear family, (26.66%) of respondents belongs to small number of family size, (60.00%), of respondents are marginal farmers (48.33 %),Their main occupation is agriculture (60.83%) and having medium (40.00%) family income, (33.33%) of respondents have Cemented housing pattern, (61.66%) of respondents have two social participation, (9.16%) of respondents have Low level of scientific orientation, (46.66%) of respondents having medium farming experience, (56.66%) of respondents have Low level of risk bearing, (50.00%) having Social media mass media exposure, (50%), (35.83%) of respondents have High level of Knowledge.

Level of knowledge

Table 2: Distribution of respondents on the basis of their knowledge level.

Sr.no	Category	Beneficiaries N= 120	
		Frequency	Percentage
1	Low (up to 15)	37	30.83%
2	Medium (16-40)	40	33.33%
3	High (above 40)	43	35.83%

Farmers' knowledge is the culmination of centuries of observation, experimentation, and innovation by farmers around the world. It encompasses a deep understanding of local ecosystems, crop and animal management, and the social and cultural context in which farming takes place. This knowledge is often passed down through generations, with each farmer adding their own experiences and insights to the collective wisdom. Kummanee *et al* (2019) also found the same results.

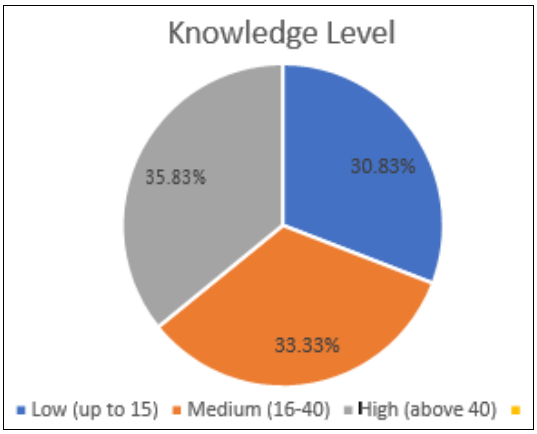

Fig 1: Distribution of respondents on the basis of their knowledge level.

From the depicts the "Knowledge" levels categorized into Low, Medium, and High, with corresponding frequency and percentage values. In the Low adoption category, there are 37 instances, representing (30.83%) of the total. The Medium category has adoption rate, with 40 instances accounting for (33.33%). The High adoption category has highest knowledge level shows 43 instances, making up (35.83%) of the total. This suggests that the majority of the subjects fall into the High adoption category, followed by Medium and Low. Kummanee also found the same results.

Table 3: Correlation studies with various variables with level of Knowledge.

Sr no.	Variables	Correlation coefficient between variables and Knowledge level
1	Age	0.1091
2	Education	0.2654
3	Caste	-0.018
4	Family type	-0.0872
5	Family size	0.0496
6	Land holding	-0.2018*
7	Farming Experience	0.2066*
8	Occupation	-0.0983
9	Annual income	0.2084*
10	Housing Pattern	-0.0043
11	Mass media Exposure	0.1976*
12	Scientific orientation	-0.0566
13	Extension contact	1.2344**

*significant at 0.05 probability level = 0.195, ** significant at 0.01 proabability level=0.254

From the it revels: that the variables like family size, family type and extension contacts were found to have significant and positive relationship with the Knowledge of the respondents, whereas the relationship with the education qualification, mass media exposer caste, scientific orientation have non-significant and had positive correlation ship. But occupation, age, land holding, farming experience, occupation, annual income, housing pattern were found negatively insignificant with respect to Knowledge of the respondent.

Conclusion

From the study concludes that socio-economic factors such as age, education, caste, family structure, landholding, and income significantly influence the adoption of improved Paddy cultivation practices in Rampur Karkhana block of Deoria district. Most farmers were middle- aged, educated up to secondary level, and belonged to OBC communities. A majority had medium landholdings and income, relying primarily on agriculture for livelihood. The adoption level was predominantly medium, influenced by variables like education, farming experience, income, and extension contact. Effective strategies to enhance adoption must focus on strengthening extension services, improving access to information, and addressing socio- economic barriers faced by Paddy cultivators.

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