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RELATIONSHIP BETWEEN PROFILE CHARACTERISTICS AND ATTITUDES OF TRIBAL AND NON-TRIBAL RICE FARMERS TOWARD SUSTAINABLE RICE FARMING

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ABSTRACT

This study in Wayanad district, Kerala, aimed to explore the profile characteristics of tribal and non-tribal rice farmers and their attitudes toward sustainable rice farming. One panchayat from each Agro-Ecological Unit (AEU) with significant rice cultivation and tribal populations was selected, with 180 respondents (30 tribal and 30 non-tribal farmers from each panchayat) chosen randomly. Thirteen personal and social characteristics were analysed as independent variables. Both groups generally fell into the medium category for variables such as extension participation, information-seeking behaviour, achievement motivation, deferred gratification, rational orientation, and innovative proneness. A simple correlation was identified between the selected profile characteristics and the attitudes of tribal and non-tribal rice farmers towards sustainable rice farming. The study found that tribal farmers' attitudes towards sustainability positively correlated with their age, farming experience, extension participation, achievement motivation, and deferred gratification, but were inversely related to factors like educational status, occupational status, annual income, family size, information-seeking behaviour, market orientation, rational orientation, and innovative proneness. For non-tribal farmers, positive attitudes toward sustainability were linked to age, farming experience, deferred gratification, rational orientation, and innovative proneness. However, an inverse relationship was observed with educational status, occupational status, annual income, information-seeking behaviour, achievement motivation, and market orientation.

Keywords : *attitude, sustainability, tribal rice farmerstools among the dairy farmers.*

INTRODUCTION

Sustainable agriculture practices aim to achieve social and economic equity by balancing environmental well-being with economic profitability. These practices meet both current and long-term needs for food, fiber, and other resources while conserving natural resources and protecting ecosystems. According to Drost *et al.* (1996), farmers who adopt sustainable agriculture practices do so to be good stewards of the soil, reduce water pollution, produce quality food with fewer chemicals, and minimize health risks to farm families and livestock. Agriculture is the oldest occupation among the tribal people of Kerala, particularly in Wayanad district, which has the highest concentration of tribal communities alongside a significant non-tribal population. Wayanad's economy is predominantly agrarian, with a rich history of rice cultivation. For most tribal communities in Wayanad, rice farming has traditionally been the primary occupation. The attitudes of both tribal and non-tribal farmers toward sustainable rice farming are crucial for maintaining rice cultivation in the region. With this context in mind, the research study focused on examining the relationship between the profile characteristics and attitudes of tribal and non-tribal rice farmers towards sustainable rice farming in Wayanad district.

OBJECTIVES

(1) To study the profile characteristics of tribal and non-tribal rice farmers

(2) To study the relationship between the profile characteristics and attitude of tribal and non-tribal rice farmers towards the sustainable rice farming

METHODOLOGY

The study was conducted in Wayanad district, Kerala, known for its significant tribal population. The district is divided into three Agro-Ecological Units (AEUs): Northern High Hills (AEU 15), Wayanad Central Plateau (AEU 20), and Wayanad Eastern Plateau (AEU 21). One panchayat from each region, with the largest rice cultivation area and substantial tribal population was selected. A total of

180 respondents, including 30 tribal and 30 non-tribal rice farmers from each panchayat, were randomly selected. The study used an ex-post-facto research design, examining respondent profiles across thirteen variables, measured using appropriately modified scales. Data was analysed using frequency, percentage, and correlation coefficient (r).

RESULTS AND DISCUSSIONS

Profile characteristics of tribal and non-tribal farmers

This has been attempted to get a clear picture on the various socio-personal and psychological characteristics of tribal and non-tribal rice farmers. The findings are presented in Table 1.

Table 1: Distribution of tribal and non-tribal rice farmers according to their profile characteristics

Sr. No	Variable	Category	Tribal farmers n=90		Non-tribal farmers n=90	
			Frequency	Per cent	Frequency	Per cent
1	Age	Young (<35 years)	5	5.56	7	7.78
		Middle aged (35-55 years)	37	41.11	68	75.56
		Aged (>56 years)	48	53.33	15	16.67
2	Educational Status	Illiterate	53	58.89	0	0.00
		Primary school	20	22.22	11	12.22
		Middle school	12	13.33	20	22.22
		High school	5	5.56	47	52.22
		Higher Secondary school	0	0.00	9	10.00
		Graduation	0	0.00	2	2.22
		Post graduation & above	0	0.00	1	1.11
3	Occupational Status	Farming as sole occupation	87	96.67	64	71.11
		Farming + Agricultural labour	0	0.00	5	5.56
		Farming + Business	0	0.00	15	16.67
		Farming+ Service	3	3.33	6	6.67
4	Farming experience	Low (< 8 years)	0	0.00	8	8.89
		Medium (9-16 years)	0	0.00	52	57.78
		High (>17 years)	90	100.00	30	33.33
5	Annual income	Lower	77	85.56	9	10.00
		Lower middle	13	14.44	42	46.67
		Middle	0	0.00	39	43.33
		Upper middle	0	0.00	0	0.00
6	Size of family	Small (Up to 4 members)	8	8.89	11	12.22
		Medium (5-6 members)	28	31.11	60	66.67
		Large (7-9 members)	38	42.22	19	21.11
		Very large (> 9 members)	16	17.78	0	0.00
7	Extension Participation	Low	4	4.44	25	27.78
		Medium	74	82.22	42	46.67
		High	12	13.33	22	24.44
8	Information seeking behaviour	Low	13	14.44	22	24.44
		Medium	68	75.56	52	57.78
		High	9	10.00	16	17.78
9	Achievement motivation	Low	15	16.67	13	14.44
		Medium	60	66.67	63	70.00
		High	15	16.67	14	15.56

Sr. No	Variable	Category	Tribal farmers n=90		Non-tribal farmers n=90	
			Frequency	Per cent	Frequency	Per cent
10	Market orientation	Low	37	41.11	19	21.11
		Medium	35	38.89	56	62.22
		High	18	20.00	15	16.67
11	Deferred Gratification	Low	15	16.67	15	16.67
		Medium	62	68.89	61	67.78
		High	13	14.44	14	15.56
Sr. No	**Variable**	**Category**	**Tribal farmers n=90**		**Non-tribal farmers n=90**	
			Frequency	**Per cent**	**Frequency**	**Per cent**
12	Rational orientation	Belief in stars and not in scientific recommendations	0	0.00	0	0.00
		Belief in stars and scientific recommendation	90	100.00	67	74.44
		Belief only in scientific recommendations	0	0.00	23	25.56
13	Innovative proneness	Low	23	25.56	13	14.44
		Medium	54	60.00	66	73.33
		High	13	14.44	16	17.78

(1) Age

The data revealed that 53.33% of tribal rice farmers were in the aged category, 41.11% were middle-aged, and only 5.56% were young. The results are aligned with the study conducted by Sachana (2015). In contrast, 75.56% of non-tribal rice farmers were middle-aged, with 16.67% in the aged group. The figures show that majority of the tribal and non-tribal farmers belonged to the aged and middle-aged categories respectively, which could be due to the reluctance of the youth for taking up of farming jobs and their common perception that farming is not a profitable livelihood option.

(2) Educational status

The data showed that 58.89% of tribal farmers were illiterate, with 22.22% having primary education, 13.33% up to middle school, and 5.56% completing high school. In contrast, 52.22% of non-tribal farmers had a high school education. Societal illiteracy among tribes leads to issues like lack of awareness, poor future planning, and parents' inability to guide their children's education, as supported by Gafoor and Madhu's (2008) study. Tribes often focus on traditional jobs, neglecting female education, with young girls oriented towards family life early.

(3) Occupational status

The data revealed that 96.67% of tribal farmers had farming as their sole occupation, with only 3.33% combining it with other services. None were agricultural labourers. Similarly, 71.11% of non-tribal farmers relied solely on farming, while 16.67% combined it with business, and 6.67% had farming as a secondary occupation alongside service jobs. Most rice farmers, being older and traditionally engaged in farming, owned large paddy areas, making farming their primary livelihood.

(4) Farming experience

All tribal farmers had over 17 years of experience in traditional rice cultivation, while 57.78% of non-tribal farmers had 9-16 years of experience. The results are similar with the study conducted by John *et al.* (2020). Tribal farmers view farming as a cultural practice, often starting from childhood, which likely accounts for their extensive experience.

(5) Annual income

It was found that 85.56% of tribal farmers fell into the lower income category, while 46.67% of non-tribal farmers were in the lower-middle category. None had high annual incomes. This finding is in similar with Chuadhari *et al.* (2022). Most tribal farmers grow rice primarily for personal consumption, selling only a small portion, leading to lower income. In contrast, non-tribal farmers focus on commercial cultivation, experimenting with new crops and practices, resulting in higher incomes. However, they noted

that the high cost of cultivation reduces the profitability of rice farming.

(6) Size of family

The data showed that 42.22% of tribal farmers had large families with seven to nine members, and 31.11% had medium-sized families, aligning with Ranganathan (2015). Among non-tribal farmers, 66.67% had five to six members. Family size belongs to a large family in which there is good coordination between family members (Das and Mohapatra, 2023). Tribal farmers' preference for joint family living, with multiple families in a household under a leader called *'Moopan,'* explains their larger family sizes. When the number of members in a family increases, separate sheds are built. But still, they remain as a part of the same household. The joint family setup strengthens tribal customs and values. In contrast, non-tribal farmers prefer nuclear families for better privacy and financial stability, consistent with findings by Sarada *et al.* (2007) and Kumar (2009).

(7) Extension participation

The data showed that 82.22% of tribal farmers had medium extension participation, with 13.33% at high and 4.44% at low levels. Among non-tribal farmers, 46.67% had medium participation, with nearly equal percentages at high and low levels. Tribal farmers regularly attended training programs, demonstrations, and meetings, often organized by various institutions and *Padashekara Samities*. Agricultural exhibitions and Krishi melas, occasionally held by agricultural departments, NGOs, and *Kudumbashree*, also engaged them. Non-tribal farmers also attended these events occasionally. Many of them felt that the extension system was not effectively promoting sustainable rice cultivation, as extension personnel were often occupied with official duties and less available in the field.

(8) Information seeking behaviour

The majority of tribal (75.56%) and non-tribal (57.78%) farmers exhibited medium levels of information-seeking behaviour. Both groups frequently accessed Krishibhavans for farming-related information, including soil testing, subsidies, and fertilizers. Most farmers visited Krishibhavans to learn about incentives, aligning with Bhanu and Vishnupriya's (2021) findings. Literacy among non-tribal farmers enabled them to use newspapers, television, and mobile apps for timely information on cultivation, pests, weather, market prices, and government schemes. There is a need for institutional awareness programs to help tribal farmers stay informed about new technologies and policies. Better education and mass media exposure improve information access.

(9) Achievement motivation

The data showed that 66.67% of tribal farmers and 70% of non-tribal farmers had medium levels of achievement motivation. This psychological variable affects goal-setting and effort levels. Higher achievement motivation drives individuals to complete tasks and achieve goals. Tribal farmers often prefer contentment over striving for more, resulting in less emphasis on modernization. In contrast, non-tribal farmers, motivated by new opportunities, frequently migrate, and utilize available resources and technologies to improve their lives.

(10) Market orientation

Market orientation refers to how focused farmers are on selling their produce for profit. The data shows that 41.11% of tribal rice farmers had low market orientation, as they weren't profit-driven in rice cultivation. In contrast, 62.22% of non-tribal farmers had medium market orientation, aiming to capitalize on market opportunities for better economic security.

(11) Deferred Gratification

Nearly equal percentages of tribal (68.89%) and non-tribal (67.78%) farmers had a medium level of deferred gratification, indicating their willingness to delay immediate rewards for greater long-term benefits. The results are similar with the study conducted by Manjuprakash and Gowda (2020), Rohan and Vinaya (2022).

(12) Rational orientation

This reflects the balance between traditional beliefs and scientific practices in farming. The data revealed that every tribal farmer believed in both stars and scientific recommendations, but prioritized lunar signs, celebrating festivals based on them. In contrast, a quarter of non-tribal farmers relied solely on scientific methods, valuing their role in boosting farm productivity and resource allocation.

(13) Innovative proneness

The data suggests that non-tribal farmers are more innovative than tribal farmers, likely due to their interest in new practices and technologies. Education fosters progressive thinking and a positive attitude towards change, making non-tribal farmers more open to adopting new farming techniques. To boost innovation among tribal farmers, indigenous farming techniques should be introduced to promote sustainable development. The similar findings have been reported by Mulyono (2021) Pandey et al. (2023), Kapur et al. (2023) and Patel and Patel (2022).

Relationship between the profile characteristics and attitude of tribal and non-tribal rice farmers towards the sustainable rice farming

Table 2: Correlation analysis of profile characteristics of tribal and non tribal rice farmers with respect to attitude towards sustainable rice farming

Sr. No	Variables	Tribal farmers n=90	Non-tribal farmers n=90
		r- value	r- value
X_1	Age	0.144*	0.129*
X_2	Educational status	-0.187*	-0.194*
X_3	Occupational status	-0.141*	-0.125*
X_4	Farming experience	0.123*	0.112*
X_5	Annual income	-0.184*	-0.176*
X_6	Size of family	-0.129*	-0.012 NS
X_7	Extension participation	0.198*	0.160*
X_8	Information seeking behaviour	-0.161*	-0.152*
X_9	Achievement motivation	0.110*	-0.154*
X_{10}	Market orientation	-0.161*	-0.191*
X_{11}	Deferred gratification	0.192*	0.173*
X_{12}	Rational orientation	-0.112*	0.123*
X_{13}	Innovative proneness	-0.194*	0.185*

*Significant at 0.05 level of probability
NS = Non-significant

A quick glance of the data in Table 2 gives an idea about the results of simple correlation between the selected profile characteristics and attitude of tribal and non-tribal rice farmers towards the sustainable rice farming.

It was observed that the attitude of tribal farmers exhibited a positive correlation with their age, farming experience, extension participation, achievement motivation, and deferred gratification at a five percent level of confidence. As tribal farmers age and gain more farming experience, they tend to develop a deeper concern for the environment and society, which in turn fosters a more positive attitude toward the sustainability of farming practices. Additionally, factors such as active participation in extension activities, a strong desire for excellence and personal achievement, and the ability to delay immediate rewards in favour of long-term benefits were found to significantly contribute to their positive attitude towards sustainable farming.

Conversely, the study revealed that certain characteristics such as higher educational status, diverse occupational engagements, increased annual income, larger family size, proactive information-seeking behaviour, strong market orientation, rational orientation, and a tendency toward innovation were inversely related to the farmers' attitude towards sustainability. The augmentation of these variables tends to cultivate a negative attitude toward environmental considerations among tribal farmers, steering them away from their traditional practices, thereby jeopardizing the sustainability of rice farming in their communities.

Regarding non-tribal farmers, it was found that their attitude towards sustainability exhibited a positive correlation with factors such as age, farming experience, deferred gratification, rational orientation, and innovative proneness. As these farmers age and accumulate more experience in farming, they tend to develop a more rational approach to their agricultural practices and show a greater willingness to adopt innovative techniques, both of which contribute to a positive attitude toward sustainability. However, an inverse relationship was identified with variables such as educational status, occupational status, annual income, information-seeking behaviour, achievement motivation, and market orientation. This inverse relationship may stem from the fact that non-tribal farmers with higher levels of education and income, along with a strong market orientation and drive for personal achievement, often prioritize profit maximization. This profit-oriented mindset can lead to the commercialization of farming practices, where economic gains take precedence over environmental concerns, resulting in a diminished focus on sustainable agricultural practices. The pursuit of immediate financial rewards and the emphasis on market-driven decisions may cause these farmers to overlook the long-term environmental impacts of their farming methods, thereby compromising sustainability.

CONCLUSION

Thirteen personal and social characteristics of tribal and non-tribal rice farmers were selected as independent variables for the study. Key variables such as extension participation, information-seeking behaviour, achievement motivation, deferred gratification, rational orientation, and innovative proneness were found to be in the medium range for both groups. However, it was noted that most tribal rice farmers fell into the low category for market orientation. This is likely because they do not view rice cultivation as a profit-driven activity; rather, they consider rice an integral part of their cultural heritage. As a result, tribal farmers are less focused on commercial gains. In contrast, most non-tribal rice farmers are profit-oriented, which has led them to adopt more commercial farming practices, often with less consideration for environmental sustainability.

POLICY IMPLICATION

Empowering both tribal and non-tribal farmers for sustainable rice farming by transforming their attitudes through essential knowledge and technical training, enabling them to make rice cultivation ecologically sustainable, economically viable, and environmentally responsible. Tribal rice farmers should be encouraged to adopt a market-oriented approach by emphasizing the importance of rice cultivation and profitability. Raising awareness about marketing opportunities at local, national, and international levels, along with providing necessary transportation and technical support, will enable better market access.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

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