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## Socio-personal and psychological profile of farmers with reference to crop diversification in Chhattisgarh plains

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### Abstract

Crop diversification is a sustainable strategy for ecological sustainability, agricultural development, income growth, poverty alleviation, and employment. It improves food security, nutrition, income growth, and income alleviation. The present research had been conducted with the objective to study the personal, socio-economic and psychological characteristics of farmers. Exploratory research design has been followed in the study. The Maximum irrigated and rainfed ecosystem respondents belonged to the age range of 36 to 55 years, majority belonged to other backward classes in the irrigated ecosystem, and the majority of rainfed ecosystem respondents belonged to scheduled tribes. The majority of respondents in the irrigated ecosystem were found to be primary school educated, while those in the rainfed ecosystem were found to be high school educated. Both ecosystem respondents used to reside in medium-sized families and semi pucca houses and had 16 to 60 years of farming experience with members of one organization. The majority of respondents in both ecosystems have a medium level of economic motivation, a medium level of scientific orientation, a medium level of risk-taking capacity, and a medium level of attitude towards modern agriculture.

**Keywords:** Crop diversification, socio-economic, psychological profile, irrigated and rainfed ecosystem

### Introduction

Crop diversification is a crucial aspect of agriculture, aiming to maximize profit through complementary relationships, substitution, and price ratios for competitive products. It also minimizes risk in farming, making it a strong case for farm/crop diversification in India. In India, crop diversification involves shifting from less remunerative crops to more remunerative ones, influenced by market infrastructure development and price-related supports. Higher profitability and production stability also contribute to crop diversification. To meet goals, challenges, and threats without lowering risk, diversification involves leveraging new opportunities from advancements in technology, markets, and policy changes. Crop diversification is a crucial aspect of agriculture, maximizing profits by optimizing complementary and supplemental relationships, and reducing risk. It is driven by increased profitability, production resilience, and stability, and is influenced by market infrastructure and price-related supports. India's need for farm/crop diversification is supported by factors such as market infrastructure and price-related support. Crop diversification is a crucial aspect of agriculture diversification in India, aiming to maximize profits by optimizing complementary relationships, equating substitution and price ratios, and minimizing risk. This shift from less remunerative crops to more remunerative ones is driven by market infrastructure development and price-related supports, resulting in increased profitability, production resilience, and stability.

### Material and Methods

This study was conducted in four districts of the Chhattisgarh Plains agro-climatic zone during the years 2019–20. Janjgir-Champa and Dhamtari are irrigated, while Korba and Gariyaband are rainfed. These districts were chosen for this investigation based on the highest percentage of irrigated and rainfed areas. Two representative blocks from each of the selected districts were identified. Thus, a total of 8 (2x4) blocks were considered for the study. Two representative villages from each of the selected blocks were identified for the study in this way, a total of 16 (8 x 2) villages were considered for the study. From each selected village, 20 respondents were selected randomly for the study.

In this way, a total of 320 farm families were considered respondents for this study on the basis of irrigation availability. Accordingly, 160 farmers have been assured of irrigation availability, and 160 farmers practicing rainfed farming were selected as respondents in order to study their socio personal and psychological characteristics.

The variables are 'Education', Family size, Family type, House type, Farming experience, Social participation, were taken into consideration in the study. The psychological variables like Economic motivation, scientific orientation, Risk taking capacity and attitude towards modern agriculture were administered to the respondents. The responses for positive items were scored as 5, 4, 3, 2, and 1, while, for negative items the scores were reversed in the order of magnitude, respectively. Scores obtained for each statement were summed up to get the score of each individual respondent. As a result, the respondents were divided into three categories according to following manner:

Mean ( $\bar{x}$ )  $\pm$  S.D. (Standard Deviation)

**Table 1:** Distribution of respondents according to the Socio- Personal and psychological characteristics

S. No.	Variables	Categories	Irrigated Ecosystem		Rainfed Ecosystem	
			F	%	F	%
1.	Education	Illiterate	09	5.62	14	8.75
		Primary school	46	28.75	31	19.37
		Middle school	35	21.88	26	16.25
		High school	40	25.00	39	24.38
		Higher secondary	19	11.87	37	23.13
		Graduate & Above	11	6.88	13	8.12
2.	Family size	Small (up to 4 members)	51	31.88	35	21.88
		Medium (5 to 8 members)	101	63.12	116	72.50
		Large (above 8 members)	08	5.00	09	5.62
3.	Family type	Nuclear	109	68.13	84	52.50
		Joint	51	31.87	76	47.50
4.	House type	Kutch house	20	12.50	31	19.37
		Semi pucca house	77	48.13	80	50.00
		Fully Pucca house	63	39.37	49	30.63
5.	Farming experience	Up to 15 years	35	21.87	30	19.38
		16 to 30 years	95	59.38	93	58.12
		Above 30 years	30	18.75	37	22.50
6.	Social participation	No membership	10	6.25	21	13.12
		Member of one organization	120	75.00	131	81.88
		Member of more than one organizations	14	8.75	4	2.50
		Office bearer	12	7.50	3	1.88
		Public leader	4	2.50	1	0.62
7.	Economic motivation	Low (Up to 35 score)	32	20.00	53	33.12
		Medium (36 to 41 score)	85	53.13	76	47.50
		High (Above 41 score)	43	26.87	31	19.38
8.	Scientific orientation	Low (Up to 21 score)	47	29.37	52	32.50
		Medium (22 to 26 score)	85	53.13	83	51.87
		High (Above 26 score)	28	17.50	25	15.63
9.	Risk taking capacity	Low (Up to 17 score)	09	5.62	23	14.37
		Medium (18 to 23 score)	130	81.25	121	75.63
		High (Above 23 score)	21	13.13	16	10.00
10.	Attitude towards modern agriculture	Low (Up to 33 score)	19	11.87	27	16.87
		Medium (34 to 44 score)	127	79.38	123	76.88
		High (Above 44 score)	14	8.75	10	6.25

F – Frequency, % - percentage

Members or more. On the other hand, in the rainfed ecosystems, more than 75% (72.50%) of the farmers had 5 to 8 family members, as opposed to 21.88% who had 4 or fewer and 5.62% who had more than 8 family members.

It was demonstrated that more over half of the families in the categories of rainfed and irrigated agriculture producers

## Results and Discussion

### Socio-personal and psychological condition of farmers

The bulk of responders (28.75%) from Table 1, an irrigated ecosystem, only had an elementary education. This was followed by graduate level or higher (6.88%), illiterate (5.62%), middle school (21.88%), higher secondary (11.87%), and high school (25.00%). Similar findings were made regarding the rainfed ecosystem, where 24.38 percent of respondents had finished high school, compared to higher secondary (23.13%), elementary school (19.37 percent), middle school (16.25 percent), illiterate (8.75 percent), and graduate and above (8.12%) levels of education. The majority of villages offer elementary and secondary educational facilities, but one must travel to a metropolis for higher education.

According to the data, (63.12%) of farmers in irrigated ecosystems had families of five to eight members, compared to (31.88%) of farmers with families of four or fewer members and barely (5.00%) of farmers with families of eight.

(68.13%) were nuclear families. In contrast, combined families accounted for (47.50%) of farmers in the rainfed ecosystem and (31.87%) in the irrigated ecosystem. These conclusions are further supported by Beck (2019) [1].

In the case of an irrigated ecosystem, the majority of respondents (48.13%) owned semi-pucca houses, followed by

39.37% of those with fully-pucca homes, while 12.50% of them owned Kutcha homes. The majority of respondents (50.00%) had a semi-pucca house in the rainfed habitat, followed by 30.63% who had a fully-pucca house and 19.37% who had a Kutcha house.

In the case of an irrigated ecosystem, 59.38% of respondents had between 16 and 30 years' worth of farming experience, 21.87% had up to 15 years' worth, and 18.75% had more than 30 years. Similar results were found for a rainfed ecosystem, where 58.12% of respondents had between 16 and 30 years of farming experience, 22.50% had more than 30 years, and 19.38% had less than 15 years. This could be the cause of the aforementioned developments. Undoubtedly, one of the most significant aspects affecting the respondent's propensity to accept, consider, and use modern technologies on their farms is their experience farming.

In the case of an irrigated ecosystem, the majority of respondents (75.00%) were members of one organisation, followed by 8.75% who were members of several organisations, 7.50% of whom were office bearers, and 6.25% of whom did not belong to any organisations at all. 2.50 percent of the population holds public leadership positions. In a rainfed ecosystem, the majority of respondents (81.88%) were members of one organisation, followed by 13.12% who were not involved in any organisations, 2.50% who were members of multiple organisations, and 1.88% who were office holders. The population's participation in public leadership is 0.62 percent.

The majority of respondents from the irrigated ecosystem (53.13%) displayed a medium level of economic drive, while 26.87% of them exhibited a high level. An irrigated environment survey indicated that 20% of respondents had low levels of economic motivation. In contrast, the majority of respondents (47.50%) with regard to the rainfed ecosystem had a medium degree of economic incentive, followed by a low level (33.12%) and a high level (19.38%). It can be inferred that both groups of farmers displayed a median level of economic drive in this way.

That a medium level of scientific orientation was shared by 51.87 percent of respondents from rainfed ecosystems and 53.13 percent of respondents from irrigated ecosystems. While a high level of scientific orientation was reported by 32.50 percent of respondents from rainfed ecosystems and 29.37 percent of respondents from irrigated areas. While just 15.63% of respondents from rain-fed regions and 17.50% of those from irrigated ecosystems were found to have a high level of scientific orientation, respectively, respectively.

Demonstrates data on risk taking. 81.25 percent of respondents reported a medium degree of risk-taking capacity in an irrigated ecosystem, compared to 13.13 percent who had a high level and 5.62 percent who had a low level. Similar results were found for rainfed environments, where 75.63% of participants had a medium risk-taking ability, 14.37% had a low risk-taking capacity, and 10% had a high risk-taking capacity.

According to the data, 79.38 percent of respondents in the irrigated ecosystem and 76.88 percent of respondents in the rainfed ecosystem had a medium level of attitude towards modern agricultural practices, respectively. Next, 11.87 percent and 16.87 percent of respondents in the irrigated ecosystem and 8.75 percent and 6.25 percent of respondents in the rainfed ecosystem had low levels and high levels of attitude, respectively.

## Conclusion

In conclusion, the study revealed that majority of the irrigated and rainfed ecosystems were found to be educated in majority respondents had primary school and high school level education respectively. Both the responders from the ecosystems that were irrigated and those that were rainfed were members of nuclear families with a medium-sized family unit. The majority of respondents from both groups were found living in semi-pucca-style homes. The majority of respondents who worked in irrigated and rainfed ecosystems had between 16 and 30 years of farming experience. The majority of responders from ecosystems with irrigation and rainfall participated in one social group. The majority of respondents from the rainfed and irrigated ecosystems participated at a medium level.

Most responders from rainfed and irrigated ecosystems displayed a moderate level of economic motivation. Both responders' levels of scientific inclination were moderate for ecosystems. The majority of respondents from the rainfed and irrigated ecosystems said they would rather take a moderate amount of risk. Most responders from rainfed and irrigated ecosystems had a moderate view towards current farming methods in crop diversification

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