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Farmers' perceptions and attitudes towards basmati rice cultivation in western Uttar Pradesh: An empirical study

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Abstract

Basmati rice is an economically important crop in India, contributing significantly to farmers' livelihoods, agricultural exports, and rural development. Farmers' perceptions and attitudes towards its cultivation play a crucial role in influencing production decisions and the adoption of improved cultivation practices. The present study aimed to assess farmers' perceptions and attitudes towards basmati rice cultivation in Western Uttar Pradesh and to examine their relationship with selected socio-economic characteristics. A descriptive research design was adopted, and primary data were collected during 2023-2024 from 244 basmati rice farmers selected through a multistage sampling technique from four major basmati-producing districts. Data were collected using a pre-tested structured interview schedule comprising 15 perception statements and an attitude scale. Descriptive statistics, weighted mean score (WMS), Pearson's correlation coefficient, and other appropriate statistical techniques were employed for data analysis. The findings revealed that the majority of respondents exhibited a medium level of perception (56.56%) and a moderately favorable attitude (58.20%) towards basmati rice cultivation. Farmers perceived higher market prices, profitability, improved productivity, and export potential as the major advantages of basmati cultivation, whereas production risks, inadequate technical guidance, and labor requirements were perceived less favorably. Correlation analysis indicated that education, extension contact, training participation, annual income, productivity, and farming experience were positively and significantly associated with farmers' perceptions and attitudes. The study concludes that strengthening agricultural extension services, enhancing farmers' access to training programs, promoting Farmer Producer Organizations, and improving market and institutional support can foster more favorable perceptions and attitudes, thereby contributing to the sustainable growth and competitiveness of basmati rice cultivation in Western Uttar Pradesh. Producer Organizations, and improving market and institutional support can foster more favorable perceptions and attitudes, thereby contributing to the sustainable growth and competitiveness of basmati rice cultivation in Western Uttar Pradesh.

Keywords: Basmati rice, perception, attitude, farmers, agricultural extension, Western Uttar Pradesh, Pearson's correlation, sustainable agriculture

Introduction

Rice (*Oryza sativa*) is a staple food for about half of the world's population, with the majority living in Asia. Rice meets 23% of global human/capita calorie needs and 16% of *per capita* protein requirements. It also provides a significant source of income for more than 250 million people. More than 90% of the world's rice is cultivated and consumed in Asia, which accounts for 60% of the global population. In a resolution, the United Nations General Assembly designated 2004 as the "International Year of Rice," a designation with enormous implications for food security. Rice is cultivated on 136.642 hectares of land in Asia. India has the world's largest rice-growing area (44.6 million ha) and is the world's second-largest rice producer after China. It is the primary source of nutrition for 65 percent of India's population. It accounts for around 23.3 percent of the country's gross cropped area. It is critical to the country's food grain supply. Rice accounts for 43 percent of the country's total food grain production and 46 percent of its overall cereal production. It covers an area of around 43.70 million hectares in India, with a total production of 112.91 million tons and a yield of 2.4 tons per hectare. It is planted on 5.81 million ha in Uttar Pradesh, with a total yield of 13.27 million tons and a productivity of 2.5 tons per ha. (DAC&FW, 2019).

Western Uttar Pradesh is one of the major basmati rice-growing regions of India because of its fertile alluvial soils, favorable agro-climatic conditions, reliable irrigation facilities, and well-established market linkages (APEDA, 2024)^[2]. Districts such as Saharanpur, Muzaffarnagar, Shamli, Baghpat, Meerut, Bijnor, and Bulandshahar have witnessed a considerable expansion in the cultivation of premium basmati varieties over the past two decades (Sharma *et al.*, 2022)^[18]. The increasing domestic and international demand for premium-quality basmati rice has encouraged many farmers to diversify from conventional rice cultivation towards basmati production, owing to its comparatively higher market prices and export potential (Kumar *et al.*, 2021)^[24]. Despite its economic advantages, basmati rice cultivation is associated with several production and marketing challenges. Farmers frequently encounter fluctuating market prices, rising cultivation costs, pest and disease incidence, labor shortages, climate variability, water scarcity, and stringent quality standards for export markets (Kumar & Meena, 2020; Singh & Yadav, 2019)^[6, 19]. These challenges influence farmers' decisions regarding crop management, investment in improved production technologies, and continued cultivation of basmati rice. Consequently, understanding farmers' perceptions and attitudes towards basmati rice cultivation is essential for designing effective agricultural extension strategies and policy interventions.

Perception refers to farmers' understanding, interpretation, and evaluation of the benefits, risks, and constraints associated with a technology or enterprise, whereas attitude represents their favorable or unfavorable predisposition towards its adoption and continued practice (Ajzen, 1991; Rogers, 2003)^[1, 14]. Positive perceptions regarding profitability, market opportunities, environmental sustainability, and technological feasibility often strengthen favorable attitudes and encourage sustained cultivation (Feder *et al.*, 1985)^[5]. Conversely, negative perceptions stemming from production risks, price uncertainty, or inadequate institutional support may reduce farmers' willingness to invest in the crop (Meena & Singh, 2017)^[8]. Therefore, farmers' perceptions and attitudes play a pivotal role in shaping production decisions and influencing the long-term sustainability of basmati rice cultivation.

Agricultural extension services serve as an important mechanism for enhancing farmers' knowledge, improving access to scientific recommendations, facilitating market-oriented production, and promoting climate-resilient cultivation practices (Swanson & Rajalahti, 2010)^[22]. Extension agencies, research institutions, Farmer Producer Organizations (FPOs), and digital advisory platforms have increasingly focused on disseminating improved basmati production technologies, integrated pest management practices, water-efficient cultivation methods, and postharvest quality management (Singh *et al.*, 2017; Meena *et al.*, 2018)^[20, 9]. However, the effectiveness of these interventions largely depends on farmers' perceptions, attitudes, and willingness to adopt recommended practices (Rogers, 2003)^[14].

Although numerous studies have examined the economics, production technologies, and adoption of improved agricultural practices in rice cultivation (Kumar *et al.*, 2021; Sharma *et al.*, 2022)^[18], comparatively fewer empirical investigations have simultaneously explored farmers' perceptions and attitudes towards basmati rice cultivation in the socio-economic and institutional context of Western Uttar Pradesh. Understanding these behavioral dimensions is essential for identifying the

opportunities and constraints affecting sustainable basmati production and for developing farmer-centered extension programs. Against this background, the present study seeks to examine farmers' perceptions and attitudes towards basmati rice cultivation in Western Uttar Pradesh. The findings are expected to provide valuable insights for agricultural extension professionals, researchers, policymakers, and development agencies in formulating evidence-based strategies to enhance productivity, profitability, and the long-term sustainability of basmati rice cultivation in the region.

2. Literature Review

Basmati rice cultivation has attracted considerable attention from researchers because of its economic significance, export potential, and contribution to rural livelihoods (Singh *et al.*, 2018; Kumar & Singh, 2020)^[21, 6]. Previous studies have primarily focused on production technologies, varietal improvement, profitability, water-use efficiency, export competitiveness, and the adoption of recommended cultivation practices (Chaudhary *et al.*, 2017; Sharma *et al.*, 2019)^[3, 17]. These studies consistently indicate that basmati cultivation offers higher economic returns than conventional rice under favorable market conditions, although profitability is strongly influenced by input costs, market price fluctuations, quality standards, and environmental risks (Kumar *et al.*, 2021)^[24].

Farmers' decisions regarding basmati cultivation are shaped not only by economic considerations but also by their perceptions of production risks, expected returns, market accessibility, institutional support, and the availability of extension services (Rogers, 2003; Meena *et al.*, 2016)^[14]. Positive perceptions of premium prices, export demand, higher incomes, and improved resource-use efficiency encourage farmers to continue cultivating basmati rice (Singh & Yadav, 2019)^[19]. Conversely, concerns about price volatility, pest and disease incidence, labor shortages, climate variability, delayed payments, and strict quality requirements often discourage investment in the crop (Kumar & Meena, 2020)^[6]. Recent evidence also highlights that watersaving rice cultivation practices and premium basmati varieties are increasingly viewed as attractive options due to groundwater depletion and shifting market demand (Sharma *et al.*, 2022)^[18].

Agricultural extension plays a critical role in influencing farmers' perceptions and attitudes by improving access to scientific knowledge, advisory services, quality seed, integrated nutrient and pest management, and market information (Swanson & Rajalahti, 2010; Singh *et al.*, 2017)^[22, 20]. Extension interventions, including demonstrations, farmer training programs, digital advisory platforms, and farmer-to-farmer learning, enhance farmers' confidence in recommended technologies and strengthen their willingness to adopt improved cultivation practices (Meena *et al.*, 2018)^[9]. However, the effectiveness of these interventions varies according to farmers' educational level, farming experience, landholding size, social participation, and institutional linkages (Kumar *et al.*, 2019)^[7]. Behavioral research in agriculture has demonstrated that perception and attitude are important determinants of farmers' decision-making (Ajzen, 1991; Rogers, 2003)^[1, 14]. Farmers who perceive agricultural technologies as profitable, compatible with existing farming systems, and relatively easy to implement generally exhibit more favorable attitudes towards adoption (Feder *et al.*, 1985)^[5]. In contrast, uncertainty about production risks, marketing opportunities, and policy support

may lead to hesitant or negative attitudes, thereby limiting the adoption of improved agricultural practices (Meena & Singh, 2017)^[8].

Although previous studies have examined the economics of basmati production, varietal performance, adoption of Good Agricultural Practices (GAP), and production constraints, relatively limited empirical research has simultaneously analyzed farmers' perceptions and attitudes towards basmati rice cultivation in Western Uttar Pradesh (Kumar *et al.*, 2020)^[6]. Existing studies often emphasize technological or economic dimensions while giving comparatively less attention to behavioral aspects that influence farmers' cultivation decisions. Furthermore, evidence integrating socio-economic characteristics with perception and attitude in the context of one of India's major basmati-producing regions remains inadequate.

3. Materials and Methods

The study was conducted during 2023-24 in four major basmati rice-producing districts of Western Uttar Pradesh. A descriptive research design was adopted. A multistage sampling technique was employed, in which four districts were purposively selected based on the largest area under basmati rice cultivation, followed by the selection of two blocks from each district and two villages from each block. A total of 244 basmati rice farmers were selected through proportionate random sampling. Primary data were collected using a pre-tested structured interview schedule comprising respondents' socio-economic characteristics, 15 perception statements, and 15 attitude statements measured on a five-point Likert scale. Secondary information was collected from published reports and official records.

The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics, including frequencies, percentages, means, and weighted mean scores (WMS), were used to summarize the data. Pearson's correlation coefficient, chi-square test, multiple regression analysis, and Garrett ranking technique were employed to examine relationships and identify the major factors and constraints associated with basmati rice cultivation.

4. Results and Discussion

4.1 Socio-economic Profile of the Respondents

The socio-economic characteristics of respondents provide valuable insights into the background of the farming community and help explain variations in farmers' perceptions and attitudes towards basmati rice cultivation. A total of 244 basmati rice farmers from four major basmati-growing districts of Western Uttar Pradesh participated in the study. The average age of the respondents was 45.47 ± 13.21 years, indicating that the majority were economically active and experienced farmers. The respondents had an average farming experience of 13.95 ± 9.03 years, and an average experience in basmati rice cultivation of 7.45 ± 6.24 years, suggesting that most farmers had considerable practical exposure to basmati production. The average operational landholding of the respondents was 6.23 ± 3.37 acres, reflecting the predominance of small- and medium-scale farming systems in the study area. On average, respondents reported an annual household income of F4, 66, 222±F2, 18, 899, while the mean basmati rice productivity was 15.98 ± 3.51 quintals per acre.

Table 1: Distribution of Respondents Based on Continuous Variables (n=244)

Variable	Mean	Standard Deviation
Age (years)	45.47	13.21
Farming Experience (years)	13.95	9.03
Basmati Experience (years)	7.45	6.24
Landholding (acres)	6.23	3.37
Annual Income (₹)	4,66,222	2,18,899
Productivity (q/acre)	15.98	3.51

With respect to gender, 215 respondents (88.11%) were male and 29 (11.89%) were female, indicating that basmati rice cultivation in the study area is predominantly managed by male farmers. Regarding family composition, 136 respondents (55.74%) belonged to nuclear families, while 108 respondents (44.26%) belonged to joint families.

Table 2: Distribution of Respondents Based on Gender and Family Type (n = 244)

Category	Frequency	Percentage (%)
Male	215	88.11
Female	29	11.89
Nuclear	136	55.74
Joint	108	44.26

Educational attainment varied among respondents, indicating a diverse human capital base. The distribution ranged from illiterate farmers to graduates and above, suggesting that extension interventions should be designed to accommodate varying educational levels to effectively disseminate improved technologies. Institutional participation was found to be moderate. Nearly half of the respondents (49.18%) had received training related to agriculture or basmati rice cultivation, whereas 50.82% had not attended any formal training programs. Similarly, only 37.30% of respondents were members of Farmer Producer Organizations (FPOs), indicating substantial scope for strengthening collective action and institutional linkages. Crop insurance coverage was reported by 40.16% of respondents, while 59.84% had not insured their crops, highlighting the need to improve awareness of and access to agricultural risk-management programs.

Table 3: Distribution of Respondents Based on Institutional Participation (n = 244)

Variable	Category	Frequency
Training Received	Yes	120
	No	124
FPO Membership	Yes	91
	No	153
Crop Insurance Coverage	Yes	98
	No	146

Overall, the socio-economic profile indicates that basmati rice cultivation in Western Uttar Pradesh is undertaken primarily by experienced, middle-aged farmers with moderate landholdings. Although farmers have accumulated considerable production experience, their relatively low participation in formal training programs, FPOs, and crop insurance schemes suggests opportunities to strengthen agricultural extension services and institutional support to enhance the sustainability and profitability of basmati rice cultivation.

4.2 Farmers' Perceptions towards Basmati Rice Cultivation

Farmers' perceptions play a crucial role in influencing their decision-making and continued engagement in basmati rice cultivation. To assess respondents' perceptions, 15 statements covering different dimensions of basmati rice cultivation were

measured on a 5-point Likert scale. The weighted mean score (WMS) was computed for each statement, and statements were ranked accordingly. A higher WMS indicates a more favorable perception.

Table 4: Weighted Mean Score and Ranking of Farmers' Perceptions towards Basmati Rice Cultivation (N = 244)

Perception Statement	Weighted Mean Score (WMS)	Rank
Basmati rice cultivation provides higher market price compared to non-basmati rice	3.09	I
Basmati rice cultivation is more profitable than other crops	3.07	II
Improved basmati varieties enhance productivity	3.07	III
Basmati rice has high export demand	3.06	IV
Basmati rice cultivation improves farmers' income	3.04	V
Availability of quality seeds influences basmati cultivation	3.04	VI
Basmati rice cultivation requires skilled management	3.02	VII
Government support schemes encourage basmati cultivation	3.01	VIII
Basmati rice cultivation is suitable for local agro-climatic conditions	3.00	IX
Basmati rice cultivation involves higher production costs	2.99	X
Pest and disease incidence affects basmati yield	2.93	XI
Market price fluctuations affect basmati cultivation decisions	2.93	XII
Labour requirement is higher in basmati cultivation	2.93	XIII
Lack of timely technical guidance affects basmati production	2.92	XIV
Basmati rice cultivation is risky compared to other crops	2.88	XV

The weighted mean scores ranged from 2.88 to 3.09, indicating that respondents generally exhibited a moderately favorable perception towards basmati rice cultivation. Among the fifteen statements, the statement "Basmati rice cultivation provides higher market price compared to non-basmati rice" obtained the highest weighted mean score (WMS = 3.09), suggesting that respondents strongly recognized the price advantage associated with basmati rice. This was followed by "Basmati rice cultivation is more profitable than other crops" (WMS = 3.07) and "Improved basmati varieties enhance productivity" (WMS = 3.07), indicating that profitability and technological improvements were perceived positively by the farmers.

Similarly, statements related to export demand, income enhancement, and availability of quality seeds also received relatively higher scores, reflecting farmers' awareness of market opportunities and input-related factors influencing basmati cultivation. Conversely, the statement "Basmati rice cultivation is risky compared to other crops" recorded the lowest weighted mean score (WMS = 2.88), followed by "Lack of timely technical guidance affects basmati production" (WMS = 2.92) and "Labour requirement is higher in basmati cultivation" (WMS = 2.93), suggesting comparatively weaker agreement with these aspects. Although these items received relatively lower scores, their values remained close to the neutral point of the scale, indicating that farmers neither

strongly disagreed nor strongly agreed with the corresponding statements.

Overall, the findings suggest that basmati rice farmers in Western Uttar Pradesh possess a generally positive perception of basmati rice cultivation. However, the moderate scores indicate opportunities to strengthen farmers' confidence through improved extension services, capacitybuilding programs, timely technical guidance, market information, and institutional support. Addressing the aspects reflected in the lower-ranked perception statements may further enhance farmers' confidence and encourage wider adoption of improved basmati production practices.

4.3 Farmers' Attitudes towards Basmati Rice Cultivation

Attitude reflects the degree of favorableness or unavoidableness of farmers towards basmati rice cultivation and significantly influences their production decisions and willingness to continue cultivating the crop. In the present study, farmers' attitudes were measured using a structured attitude scale comprising 12 statements rated on a five-point Likert continuum. The weighted mean score (WMS) was calculated for each statement, and the statements were ranked accordingly. A higher WMS indicates a more favourable attitude towards basmati rice cultivation.

Table 5: Weighted Mean Score and Ranking of Farmers' Attitudes towards Basmati Rice Cultivation (N = 244)

Attitude Statement	Weighted Mean Score (WMS)	Rank
Basmati rice cultivation is a profitable farming enterprise	3.18	I
I intend to continue cultivating basmati rice in the future	3.15	II
I am willing to adopt improved technologies for basmati cultivation	3.13	III
Basmati rice cultivation improves my family's economic condition	3.11	IV
I encourage other farmers to cultivate basmati rice	3.09	V
Scientific recommendations improve basmati productivity	3.06	VI
I regularly seek technical information related to basmati cultivation	3.04	VII
Climate-smart practices should be adopted in basmati cultivation	3.02	VIII
Government policies adequately support basmati farmers	2.98	IX
Marketing facilities for basmati rice are satisfactory	2.95	X
Production risks discourage me from expanding basmati cultivation*	2.91	XI
Price fluctuations reduce my interest in cultivating basmati rice*	2.87	XII

Negative statements were reverse coded before calculating the overall attitude score

The weighted mean scores ranged from 2.87 to 3.18, indicating that respondents generally exhibited a moderately favourable

attitude towards basmati rice cultivation. The highest-ranked statement, "Basmati rice cultivation is a profitable farming

enterprise" (WMS = 3.18), suggests that profitability remains the primary motivating factor influencing farmers' attitudes. This was followed by "I intend to continue cultivating basmati rice in the future" (WMS = 3.15) and "I am willing to adopt improved technologies for basmati cultivation" (WMS = 3.13), reflecting farmers' confidence in the long-term economic viability of basmati cultivation and their openness to technological innovations. Statements related to improved household income, recommending basmati cultivation to fellow farmers, and the usefulness of scientific recommendations also received comparatively high scores. These findings indicate that respondents generally perceive basmati rice cultivation as an economically rewarding and sustainable enterprise when supported by appropriate production technologies and extension services.

The comparatively lower scores for statements related to marketing facilities, production risks, and price fluctuations indicate that farmers remain concerned about market uncertainty and production-related challenges. These issues may negatively influence future investment decisions if not addressed through effective policy interventions, market stabilization mechanisms, and strengthened extension support. Overall, the findings reveal that farmers possess a favourable attitude towards basmati rice cultivation, primarily driven by expectations of higher profitability and improved livelihoods. However, strengthening institutional support, improving market infrastructure, minimizing production risks, and enhancing access to timely technical advisory services are essential for sustaining these positive attitudes and promoting long-term adoption of improved basmati cultivation practices.

4.4 Distribution of Respondents According to Overall Perception and Attitude Levels

To obtain an overall understanding of farmers' behavioral disposition towards basmati rice cultivation, the total perception and attitude scores of the respondents were classified into three categories, namely low, medium, and high, using the mean and standard deviation method. The distribution of respondents across these categories provides an overview of prevailing perceptions and attitudes among basmati rice farmers in Western Uttar Pradesh.

Table 6: Distribution of Respondents According to Overall Perception Level (N = 244)

Perception Level	Frequency	Percentage (%)
Low	52	21.31
Medium	138	56.56
High	54	22.13
Total	244	100.00

The classification of respondents based on their overall perception indicates that the majority of farmers (56.56%) belonged to the medium perception category, followed by the high (22.13%) and low (21.31%) perception categories. This suggests that most farmers possessed a reasonably good understanding of the economic, technological, and institutional aspects of basmati rice cultivation. However, the presence of respondents with low perception highlights the need for targeted extension interventions, farmer training programmes, and timely dissemination of technical information to improve awareness and informed decision-making.

Table 7: Distribution of Respondents According to Overall Attitude Level (N = 244)

Attitude Level	Frequency	Percentage (%)
Low	48	19.67
Medium	142	58.20
High	54	22.13
Total	244	100.00

The overall attitude of the respondents revealed that most farmers (58.20%) exhibited a moderately favourable attitude towards basmati rice cultivation, followed by those with high (22.13%) and low (19.67%) attitude levels. A favourable attitude reflects farmers' confidence in the profitability and future prospects of basmati cultivation, whereas comparatively less favourable attitudes may arise from concerns regarding production risks, fluctuating market prices, labour scarcity, and inadequate institutional support. The findings emphasize the importance of strengthening agricultural extension services, improving market linkages, and promoting climate-resilient production practices to reinforce positive attitudes and encourage sustainable basmati rice cultivation.

4.5 Relationship between Selected Socio-economic Characteristics and Farmers' Perception and Attitude towards Basmati Rice Cultivation

To examine the association between selected socio-economic characteristics and farmers' perception and attitude towards basmati rice cultivation, Pearson's correlation coefficient was employed. The analysis helps identify the variables that significantly influence farmers' behavioural orientation towards basmati cultivation.

Table 8: Correlation between Selected Socio-economic Characteristics and Farmers' Perception and Attitude (N = 244)

Independent Variable	Perception (r)	Attitude (r)
Age	0.082	0.065
Education	0.312**	0.298**
Farming experience	0.245*	0.221*
Basmati cultivation experience	0.268**	0.254**
Landholding	0.176*	0.162*
Annual income	0.289**	0.271**
Productivity	0.301**	0.284**
Extension contact	0.356**	0.338**
Mass media exposure	0.274**	0.259**
Social participation	0.198*	0.183*
Training received	0.342**	0.327**
FPO membership	0.221*	0.205*

Significant at 5% level ($p < 0.05$); *Significant at 1% level ($p < 0.01$)

The correlation analysis revealed that selected socio-economic characteristics exhibited varying degrees of association with farmers' perception and attitude towards basmati rice cultivation. Education, extension contact, training received, productivity, and annual income showed a strong positive and highly significant relationship with both perception and attitude, indicating that farmers with better access to knowledge, resources, and institutional support tend to have more favourable views towards basmati rice cultivation. Farming experience, basmati cultivation experience, landholding, social participation, and FPO membership also exhibited positive and significant relationships, suggesting that practical exposure and involvement in social and institutional networks contribute to improved understanding and favourable attitudes. Age, however, showed a positive but non-significant

relationship with both perception and attitude, indicating that age alone does not play a decisive role in shaping farmers' behavioural orientation.

The findings imply that factors such as educational attainment, farming experience, extension contact, training participation, and institutional linkage significantly strengthen farmers' confidence in basmati rice cultivation. Enhanced access to technical knowledge and institutional support can improve farmers' understanding of recommended production practices, increase awareness of market opportunities, and promote positive attitudes towards sustainable cultivation. The observed relationships are consistent with agricultural extension research, which suggests that socio-economic and communication characteristics play an important role in shaping farmers' knowledge, perceptions, and technology adoption behavior. Strengthening extension services, improving access to training, and promoting farmer organizations can therefore facilitate favorable behavioral changes among basmati growers and encourage the adoption of improved cultivation practices.

Summary and Conclusion

The present study examined farmers' perceptions and attitudes towards basmati rice cultivation in Western Uttar Pradesh. A descriptive research design was employed, and data were collected from 244 basmati rice farmers selected through a multistage sampling technique. The study assessed farmers' socio-economic characteristics, perceptions, and attitudes, and examined the relationships between selected socio-economic variables and behavioral dimensions using appropriate statistical tools.

The findings revealed that the respondents were predominantly middle-aged, experienced farmers with moderate landholdings and substantial involvement in basmati rice cultivation. More than half of the respondents (56.56%) exhibited a medium level of perception, while 58.20% demonstrated a moderately favorable attitude towards basmati rice cultivation. Farmers perceived higher market prices, profitability, improved productivity, and export potential as the major advantages of cultivating basmati rice. However, concerns regarding production risks, inadequate technical guidance, labour requirements, and market price fluctuations persisted.

Correlation analysis indicated that education, extension contact, training received, annual income, productivity, and farming experience were positively and significantly associated with farmers' perceptions and attitudes. These findings suggest that access to knowledge, institutional support, and technical advisory services positively influence farmers' behavioural orientation towards basmati rice cultivation.

The study concludes that although farmers generally possess favourable perceptions and attitudes towards basmati rice cultivation, strengthening agricultural extension services, enhancing capacity-building programmes, promoting Farmer Producer Organizations (FPOs), and improving market and institutional support are essential for sustaining farmers' confidence and encouraging wider adoption of improved cultivation practices. Policy interventions focusing on farmer training, timely technical guidance, market intelligence, and risk management mechanisms will contribute to enhancing the profitability, sustainability, and competitiveness of basmati rice cultivation in Western Uttar Pradesh.

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