

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 6; June 2026; Page No. 220-228

Received: 22-04-2026

Accepted: 28-05-2026

Indexed Journal

Peer Reviewed Journal

An empirical study on buying behaviour of chilli seed farmers in Guntur District of Andhra Pradesh

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DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i6c.3688>

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Abstract

The present study examines the buying behaviour of chilli seed farmers in Guntur district of Andhra Pradesh, a key chilli-producing region with a highly active seed market. Based on primary data collected from 100 farmers through structured interviews, supported by secondary sources, the study analyses socio-economic characteristics, seed preferences, and factors influencing purchase decisions. The findings show that most farmers are middle-aged, with moderate education, income, and small to medium farm sizes, and they mainly depend on private dealers for seed purchase due to accessibility and trust. Yield emerges as the most important factor, followed by disease resistance and price, indicating that farmers prioritize performance and reliability over cost. The Buying Behaviour Index reveals a moderate level of 100 decision-making among farmers, while correlation and regression analysis indicate that education, income, and farm size positively influence buying behaviour, whereas age has a negative effect. Overall, the study concludes that farmers' seed purchasing decisions are shaped by performance expectations, economic conditions, and access to reliable information, highlighting the need for better awareness and timely availability of quality seeds to improve decision-making and productivity.

Keywords: Chilli seeds, buying behaviour, farmers, yield preference, seed quality, brand selection, agricultural decision-making

Introduction

Chilli is one of the most important spice crops in India, playing a central role in both daily food consumption and the country's export economy. It is widely used across households, food industries, and processing units, making it a crop of both cultural and economic significance. India's dominance in chilli production is well recognized globally, and within the country, Andhra Pradesh holds a leading position. In particular, Guntur district has emerged as a major hub for chilli cultivation and trade, supported by favourable climatic conditions, suitable soils, and a well-established market system.

Guntur is not just a production centre but also a key marketplace that influences chilli prices and trade flows across regions. The presence of a large number of farmers, traders, and input suppliers has created a highly competitive agricultural environment. In such a setting, seeds become one of the most critical inputs, as they directly determine crop performance, quality, and profitability. For farmers, selecting the right seed is not a routine decision but a crucial investment that can significantly impact their livelihood.

In earlier times, farmers depended mainly on traditional seed varieties or reused seeds from previous harvests. These practices were relatively simple and required less external dependence. However, with the advancement of agricultural technology and the entry of private seed companies, the scenario has changed considerably. Today, farmers are exposed to a wide range of hybrid seed varieties, each

promoted with specific benefits such as higher yield, better resistance, and improved market quality. This expansion of choices has increased opportunities but has also made the selection process more demanding.

The buying behaviour of chilli farmers has evolved along with these changes in the seed market. Farmers are no longer passive buyers; instead, they actively evaluate different options before making a purchase. Their decisions are shaped by a combination of practical experience, expected returns, and perceived risks. Among all factors, yield potential remains the most important consideration, as it directly influences income. Farmers naturally prefer seeds that have a proven record of producing good output under local conditions.

Along with yield, resistance to pests and diseases is another critical factor guiding farmers' choices. Chilli crops are highly vulnerable to various pests and diseases, which can drastically reduce productivity. Therefore, farmers tend to select seeds that can withstand such challenges and ensure a stable harvest. This reflects a risk-avoidance approach, where farmers aim to minimize uncertainty and protect their investment by choosing reliable seed varieties.

Economic aspects also play a significant role in shaping buying behaviour. Many farmers, especially those with small and medium landholdings, face financial limitations. For them, the cost of seeds is an important consideration. However, their decision is not based solely on price; rather, they look for a balance between cost and expected

performance. Farmers are often willing to pay a higher price if they believe the seed will deliver better results, showing that value and reliability matter more than just affordability. Another important dimension of buying behaviour is the influence of information sources. Farmers rarely depend only on advertisements or company claims. Instead, they rely heavily on trusted sources such as local dealers, fellow farmers, and personal observations. Seeing the performance of a seed in nearby fields or hearing about others' experiences creates a strong sense of confidence. This informal flow of information plays a major role in shaping preferences and guiding purchase decisions.

The role of seed dealers is particularly significant in this process. Dealers act as a bridge between companies and farmers by providing information, recommending products, and ensuring availability. Many farmers depend on dealers not only for purchasing seeds but also for advice and credit facilities. This close interaction builds trust and often influences repeat purchases, making dealers a key factor in the overall buying behaviour of farmers.

With the increasing availability of hybrid seeds, farmers have become more aware and selective in their approach. They compare different brands, evaluate their performance, and make decisions based on multiple criteria. Socio-economic factors such as education, income, and farm size further influence this behaviour. Farmers with better education and resources are generally more capable of analysing options and adopting improved technologies, while others may depend more on external guidance.

Timely availability of seeds is another crucial factor affecting purchasing decisions. Since sowing operations follow a strict schedule, farmers cannot afford delays. Even if they prefer a particular brand, they may be forced to choose an alternative if their preferred seed is not available at the right time. This highlights the importance of efficient supply systems and proper distribution channels in maintaining farmer satisfaction and loyalty.

In addition, past experience plays a strong role in shaping future buying behaviour. Farmers tend to continue using seed brands that have performed well in previous seasons. On the other hand, negative experiences such as poor germination or low yield often led to dissatisfaction and discourage future purchases. This continuous evaluation based on results makes farmers' behaviour dynamic, as they adjust their choices according to outcomes.

In this evolving agricultural environment, understanding the buying behaviour of chilli seed farmers becomes highly essential. Their decisions are influenced by a complex interaction of performance expectations, economic conditions, social influences, and market factors. Therefore, the present study aims to explore these behavioural patterns in depth by identifying the key factors influencing seed purchase decisions, analysing farmers' preferences, and examining how socio-economic and market conditions shape their overall decision-making process.

Materials and Methods

Objective: To study the buying behaviour of chilli seeds among farmers

Study Area

The study was conducted in Guntur district of Andhra Pradesh, one of the major chilli-producing regions in India.

The district was purposively selected due to its extensive area under chilli cultivation, well-developed seed market, and active participation of farmers in adopting different seed varieties. The presence of both public and private seed distribution systems makes it an ideal location for analysing farmers' seed purchasing behaviour.

Research Design

The study followed a descriptive and analytical research design based on primary data collected from farmers. The design aimed to systematically examine the socio-economic characteristics of farmers, their seed purchasing patterns, and the factors influencing their buying behaviour.

Sampling Procedure

A multistage sampling technique was adopted to ensure adequate representativeness of the study population and to minimize sampling bias. In the first stage, Guntur district of Andhra Pradesh was purposively selected due to its prominence in chilli cultivation, well-established seed market, and active participation of farmers in the adoption of improved seed varieties. In the second stage, two mandals, namely Guntur East and Pedakakani, were selected based on the higher concentration of chilli-growing farmers and their significant contribution to the district's chilli production. In the third stage, a total of six villages were identified and selected, with three villages chosen from each mandal to ensure balanced geographical representation. In the final stage, chilli-growing farmers were selected from each village using simple random sampling. A list of farmers was obtained with the help of local sources, and respondents were randomly chosen to avoid selection bias. Approximately 16–17 farmers were selected from each village, resulting in a total sample size of 100 respondents. This sampling procedure ensured that farmers from different socio-economic backgrounds, farm sizes, and levels of farming experience were adequately represented, thereby improving the reliability and generalizability of the study findings within the study area.

Data Collection

Primary data for the study were collected through structured personal interviews using a carefully designed and pre-tested questionnaire. The questionnaire was developed to capture comprehensive information related to farmers' seed purchasing behaviour and was divided into several sections. These included socio-economic characteristics such as age, education, income, and farm size; awareness of chilli seed brands; seed preferences and purchasing patterns; factors influencing buying decisions; sources of seed purchase; brand preference and switching behaviour; and constraints faced during seed purchase. This structured approach ensured that all relevant aspects of buying behaviour were systematically covered.

Prior to the main survey, the questionnaire was pre-tested on a small group of farmers outside the selected sample area to assess its clarity, relevance, and reliability. Based on the feedback obtained during pre-testing, necessary modifications and refinements were made to improve the quality and comprehensibility of the instrument. This process helped in minimizing ambiguity and ensuring that the questions were easily understood by respondents.

All interviews were conducted in the local language (Telugu) to facilitate better communication and to ensure accurate and reliable responses. A uniform interview schedule was followed throughout the survey to maintain consistency in data collection and to reduce interviewer bias. Personal interaction with respondents also enabled clarification of doubts and improved the overall quality of responses.

In addition to primary data, secondary data were collected from various credible sources to support and contextualize the findings of the study. These sources included agricultural department reports, publications from research institutions, peer-reviewed journals, and official government documents. The secondary information was used to supplement the primary data, provide background context, and strengthen the overall analysis and interpretation of results.

Survey Period

The field survey was conducted during the 2025–2026 agricultural. This period was chosen as it coincided with active decision-making stages related to seed purchase.

Data Processing and Quality Control

To ensure the reliability and accuracy of the collected data, a systematic data processing and quality control procedure was followed. Immediately after each interview, the responses were carefully cross-checked and verified to identify any recording errors or inconsistencies. Completed questionnaires were thoroughly reviewed, and incomplete or ambiguous responses were scrutinized to ensure clarity and correctness. Wherever necessary, minor missing values were addressed using logical imputation methods, based on related responses and consistency checks, to maintain the integrity of the dataset.

Subsequently, the data were coded and entered into a structured database for analysis. During this stage, data cleaning procedures were carried out to identify and correct any erroneous entries, outliers, or inconsistencies. Duplicate entries and irrelevant responses were removed to avoid distortion in results. The dataset was then standardized and validated to ensure uniformity in variable coding and measurement scales.

These rigorous data processing and quality control measures helped in maintaining internal consistency, minimizing errors, and enhancing the overall reliability and validity of the study findings.

Analytical Tools and Techniques

The collected data were analysed using appropriate statistical tools to achieve the objectives of the study. The analytical techniques employed are described below.

1. Percentage Analysis

Percentage analysis was used to classify farmers based on their socio-economic characteristics and to present distribution patterns in a simple, clear, and interpretable manner.

2. Mean Score Analysis (Likert Scale)

A five-point Likert scale was used to evaluate the importance of various factors influencing seed purchase

decisions. Mean scores were calculated for each factor and ranked accordingly to identify the most influential determinants of buying behaviour.

3. Buying Behaviour Index (BBI)

The Buying Behaviour Index (BBI) was developed to measure the overall decision-making level of farmers regarding seed purchase. The index was constructed using multiple behavioural indicators such as awareness, information seeking, evaluation, and purchase practices. Each response was assigned a score, and the total score was computed for each respondent. Based on the overall score, respondents were classified into low, medium, and high categories using appropriate cut-off values.

4. Cross-Tabulation Analysis

Cross-tabulation analysis was used to examine the relationship between farm size and source of seed purchase. This method provided insights into variations in purchasing behaviour across different categories of farmers.

5. Correlation Analysis

Karl Pearson's correlation coefficient was used to analyse the relationship between buying behaviour and selected socio-economic variables, namely age, education, income, and farm size. This helped in identifying the direction and strength of association between variables.

6. Multiple Linear Regression Analysis

Multiple linear regression analysis was employed to assess the combined influence of independent variables on buying behaviour.

The model is expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

- Y = Buying Behaviour Index
- X_1 = Age
- X_2 = Education
- X_3 = Farm Size
- X_4 = Income
- β_0 = Intercept
- $\beta_1, \beta_2, \beta_3, \beta_4$ = Regression coefficients
- ε = Error term

The model was used to determine the direction and magnitude of the influence of each independent variable on buying behaviour.

Buying Behaviour Index (BBI): Formula and Scoring

BBI Formula

$$BBI = \frac{\sum_{i=1}^n S_i}{n}$$

Where:

- S_i = Score obtained for the i -th behavioural indicator
- n = Total number of indicators
- BBI = Average score representing overall buying

behaviour

Selection of Indicators

The BBI was constructed using the following behavioural dimensions:

- Awareness of seed brands
- Information seeking behaviour
- Evaluation of seed attributes
- Comparison among alternatives
- Purchase decision-making ability
- Post-purchase evaluation
- Brand loyalty and repeat purchase

Scoring Procedure

Each indicator was measured using a five-point Likert scale, as shown below:

Response Category	Score
Very Low	1
Low	2
Medium	3
High	4
Very High	5

The total score for each respondent was obtained by summing the scores across all indicators and was then used to classify respondents into behavioural categories.

Ethical Considerations

The study adhered to standard ethical guidelines. Participation of respondents was entirely voluntary, and farmers were informed about the purpose of the study before data collection. Informed consent was obtained before conducting interviews. The identity and personal information of respondents were kept confidential and anonymous, and the collected data were used strictly for academic and research purposes.

Limitations of the Study

While the present study provides useful insights into the buying behaviour of chilli seed farmers in Guntur district, certain limitations warrant acknowledgement.

The study was confined to a single district, which may limit the generalizability of the findings to other regions with different agro-climatic conditions, market structures, and socio-economic environments. Farmers' behaviour may vary significantly across states and regions, and therefore the results cannot be universally applied without caution.

The sample size of 100 respondents, although adequate for statistical analysis, represents only a small proportion of the farming population. A larger sample covering more villages and mandals could provide more comprehensive and representative results.

The study relied primarily on cross-sectional data collected at one point in time. Since farmers' buying behaviour is dynamic and influenced by seasonal variations, market fluctuations, and changing experiences, the findings may not fully capture long-term behavioural patterns.

Another limitation is that the study is based on self-reported data obtained through personal interviews. There is a possibility of response bias, as farmers may not always accurately recall or may provide socially desirable answers

regarding their purchasing decisions.

The analysis mainly focused on selected socio-economic variables such as age, education, income, and farm size. Other important factors, such as psychological aspects, risk perception, marketing influence, and climatic uncertainties, were not examined in depth, which could also play a significant role in shaping buying behaviour.

In addition, the study gives limited attention to the role of digital platforms and emerging technologies in seed purchasing decisions. With the increasing penetration of smartphones and online marketplaces, future studies could explore how digital access influences farmers' behaviour.

Despite these limitations, the study provides valuable insights into the key factors influencing chilli seed purchasing decisions and serves as a useful base for further research in this area.

Results

Table 1: Distribution of Farmers by Age

Age Group (Years)	No. of Farmers	Percentage (percent)
Young (< 35)	30	30percent
Middle (35–50)	45	45percent
Old (> 50)	25	25percent
Total	100	100percent

The table shows that the majority of chilli seed farmers (45 percent) belong to the middle-age group (35–50 years), indicating that farming decisions are largely taken by experienced and economically active individuals. Young farmers constitute (30 percent), suggesting moderate youth participation, while older farmers (25 percent) represent a smaller proportion. This distribution indicates a balanced mix of experience and adaptability in farming practices, with middle-aged farmers likely playing a dominant role in adopting new seed technologies.

Table 2: Educational Status of Farmers

Education Level	No. of Farmers	Percentage (percent)
Illiterate	20	20percent
Primary	30	30percent
Secondary	35	35percent
Higher Education	15	15percent
Total	100	100percent

The table reveals that most farmers (35 percent) have secondary education, followed by primary education (30 percent). Only 15 percent have higher education, while 20 percent are illiterate. This suggests that the majority of farmers possess basic to moderate literacy, which can influence their ability to understand improved seed technologies and market information. Higher education levels are relatively low, which may limit advanced decision-making but still allows for moderate adoption of innovations.

Table 3: Farm Size Classification

Farm Size	No. of Farmers	Percentage (percent)
Small (<2 ha)	50	50percent
Medium (2–5 ha)	35	35percent
Large (>5 ha)	15	15percent
Total	100	100percent

Half of the farmers (50 percent) are small-scale farmers, indicating that chilli cultivation is predominantly carried out on small landholdings. Medium farmers account for 35 percent, while large farmers represent only 15 percent. This highlights the importance of affordability and accessibility of seeds, as small farmers may have limited financial capacity to invest in costly inputs.

Table 4: Annual Income of Farmers

Income Level (₹)	No. of Farmers	Percentage (percent)
Low (<1 lakh)	30	30percent
Medium (1–3 lakh)	50	50percent
High (>3 lakh)	20	20percent
Total	100	100percent

The majority of farmers (50 percent) fall under the medium-income category, indicating moderate economic stability. Low-income farmers account for 30 percent, which may restrict their purchasing power, while only 20percent belong

to the high-income group. This suggests that pricing of seeds plays a crucial role in influencing buying behaviour.

Table 5: Source of Purchase

Source	Frequency	Percentage (percent)
Private Dealers	60	60percent
Cooperatives	20	20percent
Government	10	10percent
Online	10	10percent
Total	100	100percent

Private dealers are the dominant source (60 percent) for purchasing chilli seeds, indicating their strong market presence and accessibility. Cooperatives (20 percent) and government agencies (10 percent) play a smaller role, while online purchasing is still emerging (10 percent). This reflects farmers' preference for easily accessible and trusted local suppliers.

Table 6: Factors Influencing Purchase

Factor	Mean Score	Rank
Yield	4.6	I
Disease Resistance	4.3	II
Price	4.0	III
Brand Reputation	3.8	IV
Availability	3.5	V

Yield is the most influential factor (Rank I), showing that farmers prioritize productivity. Disease resistance (Rank II) is also highly important, reflecting concern for crop

protection. Price ranks third, indicating cost sensitivity, while brand reputation and availability are relatively less influential but still relevant in decision-making.

Table 7: Buying Behaviour Index (BBI)

Category	Score Range	Number of Farmers	Percentage (%)	Interpretation
Low	7 – 16	20	20%	Limited awareness and poor decision-making
Medium	17 – 26	50	50%	Moderate awareness and decision-making ability
High	27 – 35	30	30%	High awareness and strong decision-making ability
Total	—	100	100%	—

The results indicate that a majority of farmers (50%) fall under the medium category of buying behaviour, reflecting a moderate level of awareness, evaluation, and decision-making ability in seed purchase. A considerable proportion (30%) belongs to the high category, suggesting that a segment of farmers is well-informed and capable of making rational and independent decisions based on performance and reliability. However, the presence of 20% of farmers in the low category highlights gaps in awareness and access to information, indicating the need for strengthened extension services, better information dissemination, and improved access to quality inputs to enhance overall decision-making among farmers

Table 8: Farm Size vs Purchase Source

Farm Size	Private	Cooperative	Government
Small	35	10	10
Medium	20	8	3
Large	10	2	2

Small farmers predominantly rely on private dealers, while medium and large farmers show slightly more diversified

sources. Government agencies have minimal reach across all categories. This indicates unequal access to institutional supply channels.

Table 9: Correlation Analysis

Variable	r Value
Age	-0.25*
Education	0.48**
Farm Size	0.36**
Income	0.52**

Education, farm size, and income have a positive and significant relationship with buying behaviour, indicating that better-resourced farmers make more informed decisions. Age has a negative relationship, suggesting younger farmers are more adaptive to new seed choices.

Table 10: Regression Analysis Model Summary

R	R ²	Adjusted R ²	Std. Error
0.745	0.555	0.538	0.421

ANOVA

F Value	Significance
25.72	0.000

Coefficients

Variable	B	t-value	Sig
Age	-0.210	-2.47	0.015
Education	0.365	3.96	0.000
Farm Size	0.280	2.55	0.012
Income	0.410	3.42	0.001

The results of the statistical analysis, as presented in Table 9 and Table 10, provide clear evidence on the factors influencing the buying behaviour of chilli seed farmers. The correlation analysis (Table 9) shows that education ($r = 0.48^*$), income ($r = 0.52^*$), and farm size ($r = 0.36^*$) have a positive and statistically significant relationship with the Buying Behaviour Index (BBI), indicating that farmers with higher education levels, better income, and larger landholdings tend to make more informed and rational purchasing decisions. Among these variables, income exhibits the strongest positive association with buying behaviour, followed by education and farm size. In contrast, age ($r = -0.25$) shows a negative and significant relationship, suggesting that younger farmers are relatively more adaptive and inclined toward improved seed purchasing practices compared to older farmers.

The multiple linear regression results (Table 10) further confirm these relationships by analysing the combined effect of socio-economic variables on buying behaviour. The model demonstrates a moderate explanatory power, with an R^2 value of 0.555, indicating that approximately 55.5 percent of the variation in buying behaviour is explained by the selected independent variables. The Adjusted R^2 value of 0.538 further supports the robustness of the model. The overall regression model is statistically significant, as indicated by the F-value of 25.72 ($p < 0.01$), confirming that the included variables jointly have a meaningful impact on buying behaviour.

With respect to individual coefficients, education ($B = 0.365$, $p < 0.01$) and income ($B = 0.410$, $p < 0.01$) are found to be the most influential predictors, both showing positive and highly significant effects on buying behaviour. This implies that an increase in education and income levels leads to a substantial improvement in farmers' decision-making ability. Farm size ($B = 0.280$, $p < 0.05$) also shows a positive and significant effect, indicating that farmers with larger landholdings are more likely to adopt better purchasing practices due to higher investment capacity and expected returns. On the other hand, age ($B = -0.210$, $p < 0.05$) has a negative and significant influence, reinforcing the observation that older farmers are relatively less responsive to new seed options and tend to rely more on traditional practices.

Overall, the results clearly indicate that buying behaviour is significantly influenced by socio-economic factors, with income and education playing a dominant role. The findings highlight a shift toward more informed and performance-oriented purchasing decisions, particularly among younger, educated, and economically stronger farmers.

Discussion

The analytical results of the study provide a comprehensive understanding of the socio-economic profile of farmers, their seed purchasing behaviour, and the key factors influencing their decisions.

The distribution analysis indicates that a majority of farmers (45%) belong to the middle-age group, followed by young (30%) and older farmers (25%), suggesting that decision-making is largely concentrated among economically active individuals. In terms of education, most respondents possess secondary (35%) and primary education (30%), while only a small proportion (15%) have higher education, indicating moderate literacy levels among farmers. Farm size distribution reveals that chilli cultivation is predominantly practiced by small (50%) and medium farmers (35%), highlighting the importance of affordability in input decisions. Similarly, income distribution shows that 50% of farmers fall under the medium-income category, reflecting moderate economic capacity.

The analysis of purchase sources shows that private dealers dominate the seed market (60%), followed by cooperatives (20%), government agencies (10%), and online sources (10%). This indicates that accessibility, trust, and advisory support provided by private dealers play a crucial role in influencing farmers' purchasing decisions.

The mean score analysis of factors influencing seed purchase reveals that yield (4.6) is the most important factor, followed by disease resistance (4.3) and price (4.0). Brand reputation (3.8) and availability (3.5) are relatively less influential, indicating that farmers prioritize performance-related attributes over brand image.

The Buying Behaviour Index (BBI) classification shows that 50% of farmers fall under the medium category, while 30% and 20% belong to high and low categories, respectively. This suggests that most farmers exhibit a moderate level of awareness and decision-making ability, with scope for improvement through better information and extension services.

Cross-tabulation results indicate that small farmers predominantly depend on private dealers, while medium and large farmers show slightly more diversified purchasing sources. The limited role of government agencies across all farm categories suggests the need for strengthening institutional supply systems.

Further, correlation analysis reveals that education ($r = 0.48$), income ($r = 0.52^{**}$), and farm size ($r = 0.36^{**}$) have a positive and significant relationship with buying behaviour^{**}, whereas age ($r = -0.25^*$) shows a negative relationship. This indicates that younger, educated, and economically better-off farmers are more likely to make informed purchasing decisions.

The regression analysis confirms these findings, with the model explaining 55.5% of the variation in buying behaviour ($R^2 = 0.555$). The model is statistically significant ($F = 25.72$, $p < 0.01$). Among the predictors, income ($B = 0.410$) and education ($B = 0.365$) have the strongest positive influence, followed by farm size ($B = 0.280$), while age ($B = -0.210$) has a negative effect. These results indicate that socio-economic factors play a crucial role in shaping farmers' seed purchasing behaviour.

Overall, the analytical results demonstrate that farmers' buying behaviour is influenced by a combination of

performance expectations, economic capacity, and access to information, with a clear trend toward more informed and rational decision-making among better-resourced farmers.

The findings of the present study are broadly consistent with both earlier and recent research on farmers' buying behaviour, while also reflecting certain region-specific characteristics. The predominance of yield and disease resistance as the most influential factors in seed selection aligns with the findings of Paghdar *et al.* (2024) ^[12], who reported that productivity and performance attributes are the primary drivers of farmers' purchasing decisions. Similarly, Ashrit and Joshi (2024) ^[13] and Jain and Rathore (2023) ^[15] observed that farmers increasingly prioritize functional benefits of agricultural inputs over price considerations. This pattern is also evident in the present study, where price, although important, ranks below performance-related factors such as yield and resistance.

The study further indicates that chilli seed buying behaviour is shaped by a combination of agronomic, economic, and socio-economic factors. The dominance of private dealers as the primary source of seed purchase highlights the importance of accessibility, timely availability, and advisory support in influencing farmers' decisions. This finding is consistent with previous studies that emphasize the critical role of local dealers in rural input markets. However, the relatively limited use of institutional channels such as cooperatives and government agencies suggests gaps in their outreach and effectiveness, which have also been noted in similar research contexts.

The results from correlation and regression analysis demonstrate that education, income, and farm size have a positive and significant influence on buying behaviour, while age shows a negative association. These findings are in agreement with Zaman *et al.* (2025) and Gyamfi *et al.* (2024), who reported that better-educated and economically stronger farmers are more likely to adopt improved technologies and make informed purchasing decisions. The negative relationship between age and buying behaviour further supports the findings of Ashrit and Joshi (2024) ^[13], indicating that younger farmers tend to be more receptive to innovation, whereas older farmers often rely on traditional practices.

The Buying Behaviour Index results reveal that a majority of farmers fall under the medium category, indicating a moderate level of awareness and decision-making ability. This finding is comparable with Jain and Rathore (2023) ^[15], who observed that farmers generally exhibit moderate involvement in purchasing decisions, influenced by both personal experience and external sources of information. This suggests that while farmers are gradually becoming more informed and selective, their decision-making process is still evolving and remains influenced by multiple factors.

Although the regression model explains a considerable proportion of variation in buying behaviour, it does not capture all possible influences, indicating the role of other unobserved factors such as psychological, environmental, and market-related variables. Therefore, the findings should be interpreted with caution, particularly in light of the study's limited geographic scope and sample size.

Overall, while the results are largely in line with existing literature, the study contributes to the understanding of farmer behaviour in a competitive seed market by

highlighting the combined influence of socio-economic characteristics and performance expectations. The findings point toward a gradual shift toward more informed and performance-oriented purchasing behaviour, particularly among younger, educated, and economically better-positioned farmers, although disparities remain across different farmer groups.

Summary

The present study was conducted to examine the buying behaviour of chilli seed farmers in Guntur district of Andhra Pradesh, a region recognized for its extensive chilli cultivation and active seed market. The analysis was based on primary data collected from 100 farmers through structured interviews, supported by relevant secondary information. The study focused on understanding farmers' socio-economic background, seed preferences, and the major factors influencing their purchasing decisions.

The results indicate that the majority of farmers fall within the middle-age group, suggesting that experienced individuals play a key role in decision-making related to seed purchase. At the same time, the presence of younger farmers reflects a growing adaptability towards new technologies and practices. In terms of education, most farmers possess basic to moderate levels of literacy, which enables them to understand and adopt improved seed varieties to a certain extent.

The study also shows that chilli cultivation is largely dominated by small and medium farmers. This highlights the importance of affordability and accessibility of seeds, as these farmers often operate under financial constraints. Most respondents belong to the medium-income category, indicating that farmers maintain a careful balance between investment and expected returns while making purchasing decisions.

It was observed that private dealers serve as the primary source of seed purchase for a majority of farmers. Their easy accessibility, availability of products, and advisory support make them a preferred choice over institutional sources such as cooperatives and government agencies, which have relatively limited reach.

With regard to factors influencing buying behaviour, yield emerged as the most important consideration, followed by disease resistance and price. This clearly reflects that farmers are primarily focused on achieving higher productivity and minimizing risk. Although cost is a factor, farmers are willing to invest more in seeds that promise better performance and reliable outcomes. Other factors such as brand reputation and availability also influence decisions, though to a lesser extent.

The Buying Behaviour Index indicates that most farmers fall under the medium category, showing a moderate level of awareness and decision-making ability. While some farmers demonstrate strong decision-making skills, others still depend on external guidance and information.

Further analysis reveals that socio-economic factors significantly influence buying behaviour. Education, income, and farm size show a positive relationship with decision-making ability, indicating that better-resourced farmers tend to make more informed and confident choices. In contrast, age shows a negative relationship, suggesting that younger farmers are more open to trying new seed

varieties and adopting modern practices.

Regression analysis further confirms that these variables collectively influence buying behaviour and explain a substantial portion of variation in farmers' decisions. Overall, the study highlights that chilli seed purchasing behaviour is shaped by a combination of performance expectations, economic conditions, and access to information.

Conclusion

The findings of the study clearly indicate that the buying behaviour of chilli seed farmers is mainly driven by performance-related factors. Yield and disease resistance are the most critical considerations, as they directly influence productivity and income. Farmers prefer seeds that offer consistent performance and reduce the risk of crop failure, reflecting a practical and result-oriented approach.

Although price is an important factor, it does not dominate decision-making. Farmers are willing to invest in quality seeds if they are confident about the expected returns. This shows that farmers focus more on long-term benefits rather than short-term cost savings. The strong preference for private dealers further highlights the importance of accessibility, trust, and timely availability in influencing purchase decisions.

The study also emphasizes the role of socio-economic characteristics in shaping buying behaviour. Farmers with higher education, better income levels, and larger farm sizes are more capable of evaluating different options and making informed decisions. On the other hand, farmers with limited resources may face challenges in accessing information and selecting the most suitable seed varieties.

Another key observation is that farmers' buying behaviour is not static but continuously evolves based on their experiences. Positive outcomes from previous crops encourage repeat purchases, while negative experiences such as poor germination or low yield lead to changes in brand preference. This highlights the importance of consistent seed performance in maintaining farmer trust and loyalty.

The moderate level of buying behaviour observed among most farmers suggests that there is still scope for improvement. Enhancing farmers' awareness, strengthening extension services, and ensuring the availability of quality seeds at the right time can help improve decision-making and adoption of better seed varieties.

In conclusion, chilli seed buying behaviour is influenced by a combination of agronomic, economic, and social factors. A better understanding of these factors can support the development of effective seed distribution systems, improve farmer satisfaction, and contribute to increased productivity and sustainable agricultural growth.

Future Research

The present study provides a focused understanding of chilli seed buying behaviour among farmers in Guntur district; however, future research can broaden its scope by covering additional chilli-growing regions. Expanding the geographical area would help in comparing behavioural patterns under different farming conditions, market structures, and levels of access to seed resources. Such comparative studies can offer a more comprehensive

understanding of how regional variations influence farmers' decision-making processes.

Further research can also emphasize a larger and more diverse sample to capture wider variations in socio-economic conditions. Since factors such as education, income, and farm size were found to influence buying behaviour, future studies can explore these variables in greater depth, particularly in relation to how they shape awareness, evaluation of seed quality, and adoption of improved varieties over time.

Another important direction for future research is to examine the role of information sources and farmer experience in greater detail. Farmers largely depend on dealers, peer influence, and field observations while making purchasing decisions. Understanding how these sources build trust and affect brand preference and switching behaviour over multiple cropping seasons can provide valuable insights into long-term decision patterns.

In addition, future studies can focus on the impact of seed availability and distribution systems on farmers' choices. Since timely access to seeds plays a critical role in purchase decisions, analysing the efficiency of supply channels and their influence on farmer satisfaction would be beneficial. Linking buying behaviour with actual productivity and income outcomes can further strengthen the practical relevance of such research and contribute to improving decision-making and agricultural performance.

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