



# CONSUMER BEHAVIOUR ANALYSIS OF FARMERS IN PURCHASING AGRI-INPUT PRODUCTS: A STUDY OF KOTHARI AGRITECH PVT. LTD

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## ABSTRACT

*This study investigates the consumer behaviour of farmers in purchasing agri-input products with specific reference to Kothari Agritech Pvt. Ltd. in the Rayachoti region of Andhra Pradesh, India. A structured questionnaire was administered to 217 farmers through convenience sampling, and the collected data were subjected to percentage analysis, Pearson correlation, and multiple linear regression using SPSS. Findings indicate that the surveyed farming community is predominantly young, has limited formal education, and operates on sub-acre landholdings. Product quality and brand reputation are the primary purchase-influencing factors, while company field representatives and peer farmers are the dominant channels for product awareness. The regression model ( $R^2 = 0.489$ ,  $F = 28.597$ ,  $p < .001$ ) identifies quality preference ( $\beta = .282$ ), product quality meeting expectations ( $\beta = .236$ ), and promotional offers ( $\beta = .174$ ) as statistically significant predictors of overall farmer satisfaction. The study concludes that quality assurance, expanded credit facilities, intensified field engagement, and well-structured promotional schemes are the most critical levers for improving customer satisfaction and market penetration for Kothari Agritech Pvt. Ltd.*

**KEYWORDS:** Consumer Behaviour; Agri-Input Products; Farmer Purchasing Behaviour; Kothari Agritech; Satisfaction; Pearson Correlation; Regression Analysis; Andhra Pradesh.

## I. INTRODUCTION

Agriculture forms the economic foundation of rural Andhra Pradesh, where a substantial portion of the population derives its livelihood from crop cultivation. In this agrarian landscape, the availability and judicious use of quality agri-input products — including fertilizers, seeds, pesticides, and micro-irrigation systems — are central to achieving sustainable productivity gains. As the agri-input sector grows increasingly competitive, companies must develop a nuanced understanding of the behavioural dynamics that govern farmers' purchasing decisions.

Consumer behaviour in agricultural markets is shaped by a complex interplay of economic, social, and informational factors. Unlike urban consumers, farmers rely heavily on informal networks — local dealers, peer farmers, and field representatives — for product evaluation and decision-making. Price sensitivity, brand trust, and post-purchase satisfaction collectively determine loyalty and repeat purchase behaviour. Kothari Agritech Pvt. Ltd., a regional agri-input company operating in Andhra Pradesh, supplies fertilizers, seeds, pesticides, and drip irrigation products to the farming community in the Rayachoti region of Kadapa District. Despite its growing market presence, there is a lack of systematic empirical data on how farmers perceive and evaluate the company's offerings.

This study addresses this knowledge gap through a structured survey of 217 farmers, employing percentage analysis, Pearson correlation, and multiple linear regression to examine awareness levels, purchase-influencing factors, satisfaction determinants, and improvement expectations. The findings offer actionable insights for Kothari Agritech Pvt. Ltd. and are of relevance to policymakers and agricultural extension agencies engaged in strengthening rural agri-input supply chains.

## II. LITERATURE REVIEW

Academic research on agri-input purchasing behaviour has grown considerably over the past two decades. Desai and Shah (2019) examined capital agri-input buying among 150 farmers in Gujarat and found that price (mean = 4.30), product quality



(4.13), and brand image (4.09) were the leading purchase criteria, while credit access and post-sale service received significantly lower ratings. Their findings underscore the primacy of product-level attributes over ancillary financial arrangements in purchase decisions.

Haidery, Kundu, and Sarkar (2021) investigated agri-input buying behaviour among 120 paddy farmers in Chhattisgarh during the COVID-19 pandemic, using qualitative methods. They found that progressive farmers, family members, and key opinion leaders were the most influential reference groups, collectively cited more often than formal sales channels. This highlights the enduring importance of interpersonal influence in rural purchasing contexts.

Balakrishnan (2010) demonstrated through case studies of ITC Limited's e-Choupal programme and Hindustan Lever Limited's contract farming initiatives that structured corporate engagement in agricultural markets — when equitably designed — can improve input access and farmer productivity. However, unilateral dependence on corporate buyers can compromise smallholder bargaining power.

Chavda, Marviya, and Savaliya (2016) surveyed 100 farmers in Junagadh District and reported that product quality and reliability dominated purchase considerations (89%), followed by package size (86%) and price (82%). A regression equation linking farm income to input expenditure produced an  $R^2$  of 0.9018, confirming a highly significant positive relationship. Taken together, the reviewed studies establish quality, price, and social influence as the core determinants of agri-input purchasing, while highlighting the structural role of dealer proximity and credit access — themes that the present study examines empirically within a specific micro-market context.

The theoretical framework draws on Howard and Sheth's (1969) multi-attribute buyer behaviour model, which emphasises that consumers evaluate a constellation of product signals — quality, price, availability, and service environment — before arriving at a decision. Kotler's (1973) typology of buyer models further explains price-sensitive behaviour through the Marshallian economic model, brand loyalty through Pavlovian conditioning, and peer-driven choices through Veblenian social orientation. The present study extends these classical frameworks to the agricultural input market of rural Andhra Pradesh.

### III. OBJECTIVES OF STUDY

- To identify and analyse the key factors (price, quality, brand reputation, dealer influence, and credit facility) affecting farmers' agri-input purchase decisions in the Rayachoti region.
- To measure the level of farmer awareness regarding products offered by Kothari Agritech Pvt. Ltd. through percentage analysis.
- To evaluate farmer satisfaction levels towards agri-input products and services using Likert-scale rating methods.
- To assess the impact of promotional activities, advisory services, and field visits on farmers' buying behaviour.
- To provide data-driven marketing recommendations to Kothari Agritech Pvt. Ltd. for improving sales performance and customer retention.

**Null Hypothesis ( $H_0$ ):** There is no significant relationship between purchase decision factors (price, quality, brand reputation, dealer recommendation, product availability, and promotional offers) and the overall satisfaction of farmers with Kothari Agritech Pvt. Ltd. products.

**Alternative Hypothesis ( $H_1$ ):** There is a significant relationship between purchase decision factors and the overall satisfaction of farmers with Kothari Agritech Pvt. Ltd. products.

### IV. RESEARCH METHODOLOGY

#### A. Research Design

This study employs a descriptive and analytical research design. The descriptive component systematically characterises farmers' demographic profiles, awareness levels, and purchase patterns, while the analytical component tests hypotheses about the determinants of satisfaction through statistical modelling.

#### B. Sample and Data Collection

A convenience sample of 217 farmers from the Rayachoti region of Andhra Pradesh was surveyed during the data collection period. Primary data were collected through structured, face-to-face questionnaire interviews covering demographic characteristics, farm details, cropping patterns, product awareness, purchase frequency, decision-influencing factors,



satisfaction ratings, and improvement expectations. The questionnaire comprised dichotomous questions, multiple-choice items, and 5-point Likert-scale rating questions. Secondary data were sourced from published academic literature, government agricultural reports, and company materials.

### C. Statistical Tools

Data were analysed using SPSS (Statistical Package for Social Sciences). Three principal techniques were employed:

- Percentage Analysis — to summarise the distribution of categorical and demographic responses.
- Pearson Correlation Analysis — to measure the strength and direction of linear relationships between nine purchase decision variables and overall satisfaction (r-values at 0.01 significance level, 2-tailed, N = 217).
- Multiple Linear Regression Analysis — to determine the collective and individual predictive impact of seven independent variables on the dependent variable of overall satisfaction. Model fit was evaluated through R<sup>2</sup>, adjusted R<sup>2</sup>, F-statistic, and standardised Beta coefficients.

## V. RESULTS AND DISCUSSION

### A. Demographic and Socio-Economic Profile

The age distribution of the 217 respondents reveals a notably young farming population: 35.0% of participants are below 25 years, and 28.6% fall within the 36–45 age bracket. This challenges the conventional perception of farming as an ageing occupation and suggests that Kothari Agritech's communication strategies should increasingly target digitally aware, brand-conscious younger decision-makers.

Educational attainment is predominantly low: 36.4% have primary-level education and 26.7% are illiterate, together accounting for over 63% of the sample. Only 18.9% hold graduate qualifications. This profile necessitates visual, demonstration-based communication in local languages, as text-heavy or technical messaging would be inaccessible to the majority segment.

An overwhelming 87.6% of respondents cultivate less than one acre of land, confirming the dominance of marginal farming in the Rayachoti area. Per-season input expenditure is consequently modest for most farmers, making affordability and small-pack availability critical elements of Kothari Agritech's product strategy.

**Table I: Key Demographic and Behavioural Indicators**

Variable	Category / Finding	Percentage (%)
Age	Below 25 years (largest group)	35.0
Education	Primary level (most prevalent)	36.4
Farm Size	Below 1 acre	87.6
Most Purchased Input	Fertilizers	30.9
Primary Awareness Channel	Company representatives	39.2
General Product Awareness	Aware of Kothari products	58.5
Purchase Frequency	Seasonal (dominant pattern)	36.9

### B. Purchase Decision Factors

Product quality emerged as the dominant purchase decision criterion, cited by 31.3% of respondents. Brand reputation followed at 26.7%, dealer recommendations at 20.7%, and price at 15.7%. Credit facility ranked last at 5.5% in direct comparison; however, it topped the list of expected improvements from the company (30.0%), revealing a gap between current access and farmer preferences. On the Likert scale, 46.1% agreed or strongly agreed that price plays a central role in their decisions, though quality was ranked higher in direct comparison — indicating that farmers are price-sensitive but not price-driven.

Regarding brand comparison, 87.6% of farmers report comparing brands at varying frequencies (always: 29.0%; sometimes: 58.5%), confirming an active, competitive marketplace where Kothari Agritech must maintain visible product differentiation. Company field visits positively influence purchase decisions for 44.2% of farmers, while 61.3% are aware of the company's promotional schemes, and 74.2% indicate that these schemes influence their purchasing behaviour at least occasionally.

### C. Satisfaction Levels

The overall satisfaction landscape presents a near-equal three-way distribution: 36.0% of respondents are satisfied or very satisfied, 35.0% are dissatisfied or strongly dissatisfied, and 29.0% remain neutral. This near-parity underscores that the company has not yet established decisive customer experience leadership. Recommendation intent is moderately positive, with



40.6% willing to recommend Kothari products to other farmers and a further 35.5% potentially willing to do so — representing a substantial base of prospective brand advocates.

#### D. Pearson Correlation Analysis

All nine purchase-decision variables exhibit statistically significant positive correlations with overall farmer satisfaction (all  $p < .01$ ,  $N = 217$ ), leading to conclusive rejection of the null hypothesis.

**Table II: Pearson Correlation Coefficients with Overall Satisfaction (N = 217)**

Variable	r	Sig. (2-tailed)
Quality preference (high quality even at higher price)	.606**	.000
Product quality meets expectations	.590**	.000
Promotional offers motivate more purchase	.565**	.000
Brand reputation influences buying decision	.558**	.000
Price plays a major role in purchase decision	.551**	.000
Company field visits influence buying decision	.540**	.000
Pricing is reasonable	.531**	.000
Product availability is convenient	.512**	.000
Dealer recommendation influences purchase	.447**	.000

\*\* Correlation is significant at the 0.01 level (2-tailed).

The strongest correlation is observed for quality preference ( $r = .606$ ), indicating that farmers who prioritise quality over price tend to be substantially more satisfied with Kothari Agritech products. Product quality meeting expectations ( $r = .590$ ) and promotional offers ( $r = .565$ ) also show strong associations, confirming the centrality of actual product performance and well-designed incentives in the satisfaction equation. Dealer recommendation shows the weakest correlation ( $r = .447$ ), suggesting that while dealer advice shapes the purchase decision, it has a weaker direct connection to post-purchase satisfaction.

#### E. Multiple Linear Regression Analysis

Multiple linear regression was conducted with overall satisfaction as the dependent variable and seven purchase-related factors as independent variables.

**Table III: Regression Model Summary and ANOVA Results**

R	R <sup>2</sup>	Adj. R <sup>2</sup>	F-statistic	Sig.
.699	.489	.472	28.597	.000

**Table IV: Regression Coefficients**

Variable	B (Unstd.)	Beta (Std.)	t	Sig.
(Constant)	.424	—	2.145	.033
Quality preference (high quality even at higher price)	.281	.282*	3.460	.001
Product quality meets expectations	.223	.236*	3.009	.003
Promotional offers motivate more purchase	.175	.174*	2.351	.020
Price plays major role in purchase decision	.118	.121	1.626	.105
Brand reputation influences buying decision	.100	.102	1.314	.190
Dealer recommendation influences purchase	-.099	-.105	-1.473	.142
Product availability is convenient	.007	.008	.102	.919

\* Statistically significant at  $p < .05$  level.

The model achieves  $R = .699$  and  $R^2 = .489$ , indicating that the seven predictors collectively account for 48.9% of the variance in overall farmer satisfaction — a robust result for a social-science study of this nature. The adjusted  $R^2$  of .472 confirms stability after correction for the number of predictors. The ANOVA F-statistic of 28.597 ( $p < .001$ ) validates the overall model. Three variables emerge as statistically significant individual predictors: quality preference ( $\beta = .282$ ,  $p = .001$ ) is the strongest driver, confirming that farmers with a higher quality orientation perceive Kothari Agritech's products more favourably. Product quality meeting expectations ( $\beta = .236$ ,  $p = .003$ ) is the second predictor, underscoring that actual performance must align with communicated claims. Promotional offers ( $\beta = .174$ ,  $p = .020$ ) constitute the third significant predictor, establishing that well-structured incentive schemes have a genuine, independent positive effect on satisfaction. Price importance, brand reputation, dealer recommendation, and product availability do not achieve individual significance in the multivariate model, suggesting that their effects are partly mediated by the three significant predictors.



## VI. FINDINGS

- The farming community in Rayachoti is predominantly young (35.0% below 25 years), has limited formal education (63.1% primary or illiterate), and operates on marginal landholdings (87.6% cultivate below one acre).
- Fertilizers are the most frequently purchased agri-input (30.9%), followed by seeds (23.0%) and pesticides (20.7%).
- Product quality is the most influential purchase factor (31.3%), followed by brand reputation (26.7%) and dealer recommendations (20.7%). Credit facility is the lowest-ranked current driver but the highest-rated expected improvement (30.0%).
- Company field representatives (39.2%) and peer farmers (31.3%) are the dominant channels for product awareness, confirming the primacy of interpersonal communication in this market.
- Overall satisfaction is mixed: 36.0% satisfied, 35.0% dissatisfied, and 29.0% neutral — indicating a significant conversion opportunity.
- Pearson correlation confirms that all nine purchase decision variables are significantly positively correlated with satisfaction (all  $p < .01$ ), with quality preference recording the strongest coefficient ( $r = .606$ ).
- The regression model ( $R^2 = .489$ ,  $F = 28.597$ ,  $p < .001$ ) identifies quality preference ( $\beta = .282$ ), product quality meeting expectations ( $\beta = .236$ ), and promotional offers ( $\beta = .174$ ) as the three statistically significant individual predictors of farmer satisfaction.
- The null hypothesis is decisively rejected; purchase decision factors collectively and significantly determine farmer satisfaction with Kothari Agritech Pvt. Ltd.

## VII. CONCLUSION

This study provides a systematic empirical analysis of consumer behaviour among 217 farmers in the Rayachoti region of Andhra Pradesh with reference to Kothari Agritech Pvt. Ltd. The farming community examined is predominantly young, educationally constrained, and operates on very small landholdings — characteristics that shape a market environment where trust, personal relationships, and peer influence play an outsized role in purchase decisions.

The statistical analysis establishes that farmer satisfaction is most powerfully determined by perceptions of product quality, the effectiveness of promotional incentives, and the congruence between product claims and actual field performance. The regression model's explanatory power of 48.9% for overall satisfaction is substantial for a social-science study and validates the centrality of these factors in strategic planning.

For Kothari Agritech Pvt. Ltd., the study recommends: (i) prioritising quality assurance and transparent product labelling to raise satisfaction scores; (ii) introducing flexible credit facilities and seasonal repayment plans to address the most urgently requested improvement; (iii) expanding the field representative network and increasing visit frequency during pre-sowing periods; (iv) designing promotional campaigns — including seasonal discounts, bundled offerings, and loyalty rewards — timed to crop cycles; and (v) investing in structured dealer training programmes to enhance the quality and consistency of dealer-level recommendations. From a broader perspective, policymakers and agricultural extension agencies should strengthen farmer education programmes centred on scientific input management and promote timely subsidy delivery for marginal landholders. Future research should consider expanding the geographic scope, adopting longitudinal designs, and incorporating qualitative methods to capture the evolving dimensions of farmer purchasing behaviour in digitalising rural markets.

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