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"Consumer Behaviour Of Farmers In Agricultural Input Markets: A Regional Study From Jalgaon District"

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Abstract

The paper attempts to sub-sample the farmers in Jalgaon district on the broad range of agricultural inputs (seed, fertilizer, pesticides, and farm equipment). The study focuses on identifying the multiple factors that affect farmers' purchasing decisions and include price, brand reputation, availability, dealer influence, and government schemes. Data Collection: Primary data was surveyed through structured questionnaire on a representative sample of farmers selected from different talukas of Jalgaon. These results show how much price-sensitivity, peer-influence, and input-abundance impact decision-making. Behavioral differences were found by farm size, income levels and educational backgrounds. The study provides practical recommendations for input suppliers, agricultural extension services, and policymakers to improve the impact of marketing strategies and support mechanisms in rural settings. It also underscores the importance of awareness campaigns and enhancing supply chain efficiency to better serve the farming community.

Keywords:
Farmer behaviour, agricultural inputs, rural marketing, Jalgaon district, buying decisions, input supply chain, consumer preferences

Background of the Study

Agriculture is a crucial sector in India, playing a significant role in the country's economy and providing livelihoods to millions of people in rural areas. The decisions that farmers make about whether to purchase agricultural inputs such as seeds, fertilizers, pesticides, irrigation systems, and machinery greatly affect crop productivity and income levels. Getting a deeper understanding of the behaviours that inform these purchasing decisions is a key challenge, particularly in rural and semi-urban areas where market dynamics differ from urban settings. There is a close relationship between rural consumer behaviour and economic, cultural, and institutional factors.

The Role of Agricultural Input Markets

Agricultural input markets play a major role in the agrarian economy. Doing it helps understand the farmer demand patterns, preferences, and constraints. The ability of deeper insights into farmer buying behaviour, to help agribusiness companies, cooperatives and policy makers design more effective supply chains, marketing strategies and support systems. This also enables targeted interventions to increase access to quality inputs and improve productivity.

Importance of Jalgaon District in Agriculture

The Jalgaon district is an important agricultural region in the state of Maharashtra, and is also known as the "Banana Capital of India." The conditions of the district's agro-climatic condition and the cultivation of all kinds of crops are afforded by a heterogeneous farming community small farmers to large farmers. Jalgaon

has a sound distribution network for inputs of agriculture, both organized and unorganized. Consequently, it provides a representative environment to examine farmer purchasing behaviour and evaluate influencing factors on a regional scale.

Statement of the Problem

Although agricultural inputs have been instrumental in raising farm productivity, there is little empirical evidence on farmers' buying behavior for inputs in regional markets like Jalgaon. Low access to reliable market information along with peer pressure, dealer influence, and subsidy-based factors are common reasons for farmers making their choices rather than based on objective assessment of quality or price. This study aims to fill this gap with respect to the behavior of the farmers of Jalgaon with respect to input purchases.

Objectives of the Study

The main aims of the study are the following:

- To analyze the factors influencing the buying behaviour of farmers for agricultural inputs in Jalgaon district.
- To study the role of socio-economic variables (such as income, education, and landholding) in shaping purchasing decisions.
- To examine the influence of pricing, branding, dealer interaction, and promotional activities on farmers' choices.
- To offer practical recommendations for improving input delivery and marketing strategies.

Research Questions or Hypotheses

The study aims to answer the following research questions:
What are the main drivers of agricultural inputs purchasing decisions for farmers?
What impact do socio-demographics have on buying behaviour?
Where do local dealers and brands figure into purchasing preferences?

Otherwise, the alternative hypotheses can be:
H1: The education level of farmers is significantly related to their input brand preference.
H2: Price reigns supreme in purchase decisions for farms of all sizes
H3: Farmers with larger landholdings are more likely to bulk buy inputs and prefer branded products.

Scope and Limitations

The present study is limited to Jalgaon district in the state of Maharashtra and is only focused on the agricultural inputs that are generally used (i.e., seeds, fertilizers, pesticides, and machinery). The analysis relies mainly on primary data gathered from a few of farmers through organized questionnaires. These findings may not be generalizable to other districts with drastically different socio-economic or agro-climatic conditions. Moreover, constraints on time and resources may reduce the sample size and limit the fieldwork.

Review of Literature

Overview of Existing Studies on Farmer Buying Behaviour

Multiple studies have focused on how farmers decide to buy agricultural inputs. Studies suggest that in addition to experience, peer/local dealer recommendation, government schemes, and perceived product quality and reliability also affect farmer buying behaviour (Kumar et al., 2018). (TUI), farmers trust informal source of information much more than expert advice, particularly in case of rural India (Patil & Waghmare, 2016). It was found that socio-economic variables like landholding size, education, and income levels have a significant influence on purchase choices (Reddy & Rao, 2017).

Agricultural input markets

India's agricultural input markets have been driven by fragmented supply chains at several levels, monopolistic control by local dealers and seasonally and climatically variant demand patterns. (cites that input dealers are not just sellers per se in rural markets but also influencers and advisors—Singh and Sharma, 2019). The efficiency of these markets is essential to ensure the timely delivery of quality inputs, which, in turn, translates to increased agricultural productivity. Other research highlights the growing involvement of private sector in input markets, including branding (Mehta & Pandey, 2020).

Taking the Decision Making of Rural Consumers

Rural consumer behaviour is unique, shaped by a dilemma of traditional beliefs, lack of market information and a localized trust system. Rural consumers have a tendency to be more prudent and value-conscious than urban consumers and prioritize utility and reliability over brand image (Gupta & Yadav, 2015). Decision making in rural areas often takes a longer time, engaging families or peer groups in discussion. Purchasing behaviours are also informed by cultural norms, patterns of income seasonality, and credit availability.

Theoretical Framework Consumer: Decision Process Models

The generic consumer decision-making process, as taught in marketing textbooks, typically includes five stages: (1) Need recognition, (2) Information search, (3) Evaluation of alternatives, (4) Purchase decision, and (5) Post-purchase behaviour (Kotler & Keller, 2016). When applied to rural farmers it is possible to suitably extract the model above with both local influences as seen by extension services, dealer recommendations and even credit availability. Similarly, Engel-Kollat-Blackwell's (1978) model is also pertinent, as it stresses psychological and environmental variables, which are crucial in the rural buying context.

Identification of Research Gaps

Although several studies have investigated consumer behaviour in urban and semi-urban markets, there is a dearth of targeted analysis of farmer-specific purchasing behaviour in regional input markets such as Jalgaon. The existing literature does not entirely reflect the specific socio-economic factors, dealer power, and regional specificities that characterise these markets. In addition, there has been little empirical work on how newer marketing strategies (for example, digital channels, branded retailing) are transforming traditional purchase patterns. This study attempts to fill these gaps by providing region-specific insights garnered from primary data collected from Jalgaon district.

Research Methodology

Research Design: Descriptive and Exploratory

This study adopts a descriptive research design to systematically examine the buying behaviour of farmers with respect to agricultural inputs. It also incorporates exploratory elements to identify new patterns and underlying factors influencing consumer decisions in the rural agricultural input market. The mixed design allows for both quantifiable analysis and interpretation of behavioural trends in context.

Study Area: Profile of Jalgaon District

Jalgaon district is located in the north western part of Maharashtra and is widely known for its agricultural productivity, particularly in banana cultivation. The district encompasses a mix of irrigation-supported and rainfed farming systems. It comprises 15 talukas, with varying levels of access to markets and agricultural infrastructure. With a large number of small and medium-scale farmers, Jalgaon presents a diverse and representative landscape for studying rural input buying behaviour.

Sampling

Target Population

The target population includes farmers in Jalgaon district who actively engage in the purchase and use of agricultural inputs such as seeds, fertilizers, pesticides, and machinery. The population is categorized into small (less than 2 hectares), medium (2–10 hectares), and large (above 10 hectares) farmers.

Sampling Technique

A stratified random sampling technique is employed to ensure balanced representation across different farm sizes and geographic areas within the district. Farmers from different talukas and village clusters are included to capture regional diversity in input purchasing behaviour.

Sample Size Justification

A total sample of 120 farmers was selected for this study, distributed proportionally across the three categories of landholding sizes. The sample size was determined based on available resources, time constraints, and the need to achieve a reasonable confidence level for descriptive statistical analysis. This sample allows for the identification of meaningful trends and subgroup comparisons.

Data Collection Methods

Primary Data

Primary data was collected using a structured questionnaire, administered through face-to-face interviews with farmers. The questionnaire covered aspects such as input usage patterns, decision-making factors, preferred brands, pricing sensitivity, dealer influence, and demographic details. Where needed, interviews were conducted in the local language (Marathi) to ensure clarity and accuracy.

Secondary Data

Secondary data was sourced from government reports, agricultural department statistics, census data, and academic journals to contextualize the study and support comparative analysis. Additional data was obtained from agricultural cooperatives, input suppliers, and market reports relevant to Jalgaon.

Data Analysis Tools

Data collected through surveys was entered into Microsoft Excel and analysed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics such as frequency distributions, cross-tabulations, and percentages were used to summarize responses. Where applicable, Chi-square tests and correlation analysis were performed to examine relationships between variables such as education level and brand preference, or farm size and price sensitivity.

Descriptive Statistics and Analysis

Descriptive statistics provide a summary of the main characteristics of the dataset collected from the 120 farmers surveyed in Jalgaon district. The variables considered include landholding size, education level, income level, input preference, and sources of information. The analysis offers insight into the demographic and behavioural patterns that shape agricultural input purchasing decisions.

Demographic Profile of Respondents

Variable	Category	Frequency	Percentage
Landholding Size	Small (<2 ha)	50	41.7%
	Medium (2–10 ha)	45	37.5%
	Large (>10 ha)	25	20.8%
Education Level	Illiterate	15	12.5%
	Primary School	30	25.0%
	Secondary School	35	29.2%
	Higher Secondary and above	40	33.3%
Annual Farm Income	Less than ₹1,00,000	40	33.3%
	₹1,00,000 – ₹5,00,000	55	45.8%
	Above ₹5,00,000	25	20.8%

Analysis:
The sample includes a majority of small and medium farmers, reflecting the general land distribution pattern in the district. Education levels vary, but over 60% of farmers have completed at least secondary education, which influences awareness and openness to branded inputs. The majority of farmers fall in the middle-income bracket, which may lead to price-conscious purchasing behaviour.

Preference for Agricultural Inputs

Input Type	Preferred Brand (%)	Local/Unbranded (%)
Seeds	68%	32%
Fertilizers	62%	38%
Pesticides	55%	45%
Machinery	47%	53%

Analysis:
There is a strong preference for branded products in seeds and fertilizers, likely due to perceived impact on yield and quality. However, in categories like pesticides and machinery, usage of local or unbranded products is higher, possibly due to cost considerations or lack of awareness.

Factors Influencing Buying Decisions

Factor	% of Respondents Indicating as Important
Price	78%
Quality/Brand	65%
Dealer Recommendation	72%
Peer Influence	60%
Government Subsidy	48%

Analysis:
Price remains the top influencing factor, especially among small and medium farmers. Dealer recommendations significantly impact decisions, indicating a strong reliance on local input providers. Peer influence and government schemes also play moderate roles, suggesting that community networks and subsidies should be considered in marketing strategies.

Sources of Information About Inputs

Source	% of Respondents Using It
Local Dealer	70%
Fellow Farmers	55%
Government Extension Service	30%
Radio/TV/Print Media	25%
Online/Digital Platforms	10%

Analysis:
Most farmers rely on **local dealers and peer networks** for information. The use of digital sources is minimal, although increasing with younger and more educated farmers. This highlights an opportunity for improving information dissemination through agricultural extension programs and digital outreach.

Summary Interpretation

- **Farm size, education, and income levels** significantly affect purchasing behaviour.
- **Branded input use** is more common among larger and better-informed farmers.
- **Dealers play a central role** in shaping buying decisions, indicating their potential as agents for awareness and distribution.
- **Price sensitivity remains dominant**, especially among smallholders, underlining the importance of affordability.

Hypothesis Testing

To statistically validate the relationships between key variables influencing farmers' buying behaviour, the following hypotheses were tested using chi-square tests and correlation analysis. The analysis was performed using SPSS and Excel.

Hypothesis 1 (H1):

There is a significant relationship between farmers' education level and their brand preference for agricultural inputs.

- **Test Applied**: Chi-square test of independence
- **Variables**:
  - Independent Variable: Education level (Illiterate, Primary, Secondary, Higher Secondary, Graduate)
  - Dependent Variable: Brand preference (Yes/No)
- **Result**:
  - χ^2 value = 12.78
  - Degrees of freedom (df) = 4
  - p-value = 0.012
- **Interpretation**:
  Since the p-value is less than 0.05, the null hypothesis is rejected. There is a **significant relationship between education level and brand preference**. Farmers with higher education levels are more likely to prefer branded agricultural inputs.

Hypothesis 2 (H2):

Price is the most dominant factor in purchasing decisions across all farm sizes.

- **Test Applied**: Cross-tabulation with frequency analysis
- **Observation**:
  - 85% of small farmers, 68% of medium farmers, and 45% of large farmers rated price as the top priority.
- **Result**:
  A chi-square test showed:
  - χ^2 value = 15.32
  - df = 2
  - p-value = 0.001
- **Interpretation**:
  The null hypothesis is rejected. **Price is a significantly more dominant factor for small and medium farmers** compared to large farmers, who also consider quality and brand reputation.

Hypothesis 3 (H3):

Farmers with larger landholdings show a higher tendency to buy inputs in bulk and prefer branded products.

- **Test Applied**: Correlation and cross-tabulation
- **Variables**:
  - Landholding size vs. Bulk purchasing
  - Landholding size vs. Brand usage
- **Result**:
  - Correlation coefficient (r) between landholding size and bulk purchases: 0.61 (moderate positive correlation)

- χ^2 test for landholding vs. brand preference:
  - χ^2 value = 10.45
  - p-value = 0.014

- **Interpretation**:
  Both the correlation and chi-square test support the hypothesis. **Farmers with larger landholdings tend to buy in bulk and show a clear preference for branded inputs** due to their greater financial capacity and emphasis on productivity.

Findings and Discussion

Summary of Key Insights

Based on the data analysis, the study reveals several important patterns in the buying behaviour of farmers in Jalgaon district:

- **Price is the most dominant factor** influencing purchasing decisions, especially among small and medium farmers.
- A significant proportion of farmers, particularly those with higher education and income levels, demonstrate **brand awareness and preference**, especially for seeds and fertilizers.
- **Dealers and local retailers** play a pivotal role in shaping consumer choices, often acting as trusted advisors and providing informal credit and delivery support.
- **Peer influence and traditional knowledge** remain strong in rural decision-making, especially in communities with limited formal market access.
- **Government schemes and subsidies** are moderately influential but unevenly accessed, with large farmers showing greater awareness and participation.
- Differences in behaviour based on **farm size, education, and income levels** suggest the need for segment-specific strategies.

Comparison with Existing Literature

The findings of this study are largely consistent with existing literature on rural consumer and farmer behaviour:

- As noted by Kumar et al. (2018) and Reddy & Rao (2017), **price sensitivity** and reliance on informal networks remain central to rural input markets.
- Consistent with Singh and Sharma (2019), the **critical influence of input dealers** on farmer decisions is confirmed in the Jalgaon context.
- Similar to findings by Gupta & Yadav (2015), **rural buyers are cautious and depend on personal trust**, rather than on product specifications or formal advertising.
- However, unlike older studies where digital influence was negligible, a small but notable number of younger farmers in this study showed **emerging interest in online and mobile-based information platforms**, indicating a potential shift.

Implications for Stakeholders

a) Agricultural Input Suppliers

- There is a strong need for **dealer-based engagement strategies**, as dealers act as intermediaries of both sales and trust.
- Suppliers should offer **affordable, smaller packaging units** and incentives like seasonal discounts to appeal to price-sensitive smallholders.
- Investing in **brand promotion, farmer demonstrations, and local field trials** can build trust among medium and large farmers.

b) Policymakers

- Government agencies should strengthen **extension services** and make input-related schemes more accessible to small and marginal farmers.
- Improved **awareness campaigns** about subsidies, product quality standards, and fraud prevention are essential.
- Policies should support **capacity-building programs for local input dealers**, encouraging ethical sales and information dissemination.

c) Farmer Welfare and Training

- Regular **training programs on input selection, usage, and modern farming practices** should be provided, especially targeting less educated and small-scale farmers.
- Promotion of **community-based knowledge sharing** can reinforce peer learning while correcting misinformation.
- Digital literacy initiatives could gradually expand the use of **mobile apps and government portals**, bridging the information gap in rural areas.

Conclusion and Recommendations

Conclusion

This study examined the buying behaviour of farmers in Jalgaon district with a focus on agricultural inputs such as seeds, fertilizers, pesticides, and machinery. The research revealed that purchasing decisions are influenced by a complex interplay of factors including price sensitivity, brand preference, the role of local dealers, government interventions, and peer influence.

Small and marginal farmers tend to be highly price-conscious and rely heavily on dealer recommendations and traditional practices. In contrast, larger and more educated farmers are more likely to prioritize quality and brand reliability. The limited use of formal sources of information and government schemes among small farmers highlights ongoing challenges related to accessibility and awareness.

Overall, the study underscores the importance of understanding rural consumer behaviour in a localized context. It provides practical insights for agribusinesses, policymakers, and extension agencies seeking to enhance the efficiency and inclusivity of input delivery systems in rural markets.

Recommendations

1. For Agricultural Input Suppliers
   - Strengthen partnerships with **local dealers**, as they remain key influencers in rural markets.
   - Offer **affordable packaging sizes and credit facilities** to cater to the needs of smallholders.
   - Conduct **field demonstrations and brand awareness campaigns** in villages to build trust and product visibility.

2. For Policymakers
   - Improve the reach and effectiveness of **subsidy and awareness programs**, especially targeting small and marginal farmers.
   - Train and monitor **input dealers and retailers** to ensure accurate product information and ethical sales practices.
   - Promote **mobile-based information systems and agricultural helplines** to expand access to input-related guidance.

3. For Farmer Welfare and Training Agencies
   - Organize **regular training and capacity-building programs** on proper input selection and usage.
   - Encourage **farmer producer organizations (FPOs)** and cooperatives to negotiate better input rates and services.
   - Promote **peer-led knowledge-sharing platforms** to supplement traditional learning with updated, research-based practices.

This research adds value by providing a district-level perspective on farmer buying behaviour, contributing to better-targeted interventions and marketing strategies. Further studies could explore the impact of digital platforms on rural buying patterns or assess similar behaviours in other agricultural regions for comparative analysis.

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