

# The Role of Customer Relation Management in Building Farmer's Loyalty to Agricultural Inputs in Amravati.

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## ABSTRACT

Agriculture has been the cornerstone of the Indian economy, providing livelihood to a significant portion of the population. In districts like Amravati, Maharashtra, farming is both an economic activity and a way of life, with farmers relying heavily on agricultural inputs such as seeds, fertilizers, pesticides, and machinery. With increasing commercialization and competition in the agri-input market, retaining farmers as loyal customers has become a critical challenge for suppliers. This study explores the role of Customer Relationship Management (CRM) in enhancing farmer loyalty toward agri-input brands in Amravati. Using a mixed-method research design, data were collected from 50 farmers through structured questionnaires and interviews. Analysis reveals that effective CRM practices including regular communication, technical advice, timely supply, credit facilities, and relationship-oriented support significantly influence farmer satisfaction and loyalty. Chi-square testing confirms a positive association between CRM practices and repeat purchase behavior. The study highlights that beyond product quality, trust, personalized services, and advisory support drive long-term engagement. Findings underscore the need for agri-input firms to adopt structured CRM strategies, leverage digital tools, and provide value-added services to strengthen relationships with farmers. These practices not only improve farmer satisfaction and loyalty but also contribute to sustainable rural development and business growth in competitive agricultural markets.

**Keywords:** Customer Relationship Management, Farmer Loyalty, Agricultural Inputs, CRM Practices, Agri-Input Market, Amravati

## INTRODUCTION

Agriculture has historically been the backbone of the Indian economy, providing livelihood to nearly one-third of the population directly or indirectly and contributing around 25 percent to the national Gross Domestic Product (GDP). In agrarian regions such as Amravati district in Maharashtra, agriculture is not only an economic activity but also a way of life that sustains rural livelihoods and food security. Farmers in these regions depend heavily on agricultural inputs like seeds, fertilizers, pesticides, machinery, and technical services to improve productivity and cope with challenges such as climatic uncertainty, soil variability, and fluctuating market conditions. With the increasing commercialization of agriculture and the growing emphasis on food security, efficient production and distribution systems have become global priorities. Traditionally, agricultural marketing in India was localized and relatively simple, as village economies were largely self-sufficient and farmers sold produce directly to consumers. However, modernization, market expansion, and the entry of multiple agri-input companies have transformed the agricultural input market into a highly competitive space. Today, farmers have access to several brands offering similar products, making differentiation based solely on product quality increasingly difficult. In this competitive environment, retaining farmers as loyal customers has become a major challenge for agricultural input suppliers.

This changing scenario has highlighted the growing importance of Customer Relationship Management (CRM) in the agricultural sector. CRM is a strategic approach that focuses on managing and nurturing long-term relationships with customers by integrating people, processes, and technology. Rather than emphasizing one-time transactions, CRM seeks to understand customer needs, personalize interactions, and enhance satisfaction and loyalty. In the context of agriculture, CRM enables agri-input firms to maintain detailed

records of farmers' purchase histories, seasonal needs, crop patterns, and feedback, thereby allowing customized product recommendations, timely advisory services, and effective after-sales support.

The background of the study emphasizes that in regions like Amravati, where farming decisions are influenced by trust, past experience, and word-of-mouth, CRM plays a crucial role in building strong emotional and professional bonds between farmers and input suppliers. Through regular field visits, training programs, demonstrations, digital communication tools, and feedback mechanisms, CRM facilitates two-way communication and positions suppliers as trusted partners rather than mere sellers. The increasing use of digital platforms such as mobile applications, SMS alerts, and WhatsApp groups has further strengthened CRM practices by enabling real-time engagement and timely interventions.

The importance and relevance of this study lie in the shift from traditional transactional marketing to relationship-based marketing in agriculture. Farmers today are more informed, value-conscious, and selective, seeking not only quality inputs but also reliable guidance and consistent support. Effective CRM practices can enhance farmer satisfaction, increase retention, reduce switching behavior, and promote brand loyalty, which ultimately benefits both farmers and agri-business firms. From a socio-economic perspective, strong farmer-supplier relationships contribute to stable incomes, improved productivity, and sustainable rural development.

The current scenario reveals a gap between the availability of modern CRM concepts and their systematic application in rural and agricultural markets. While CRM has been extensively studied in urban and corporate sectors, limited empirical research exists on its role in building farmer loyalty toward agricultural inputs, particularly at the district or regional level such as Amravati.

Structurally, the paper begins with an introduction outlining the agricultural context and the concept of CRM, followed by a review of CRM concepts, components, and types. It then examines the importance of CRM in agriculture and farmer loyalty, identifies challenges and opportunities, and highlights practical implications. The study ultimately aims to address the research gap by analyzing how CRM practices influence farmers' loyalty in the agri-input sector, thereby contributing valuable insights for agribusiness managers, policymakers, and researchers.

## REVIEW OF LITERATURE

### *Meaning of Literature Review*

A literature review is a systematic survey of scholarly sources related to a specific research topic or question. It involves identifying, evaluating, and synthesizing relevant published studies to establish the theoretical background of the research. A well-conducted literature review demonstrates the researcher's understanding of the subject area and highlights gaps that justify the need for the present study.

### *Conceptual Framework of the Study*

Based on the reviewed literature, the conceptual framework underlying the present research revolves around the following core constructs:

- Brand Awareness and Perception
- Product Quality and Performance
- Price and Availability
- Promotional and Communication Strategies
- Customer Relationship Management (CRM) Practices
- Customer Satisfaction
- Brand Loyalty and Repurchase Behaviour

The literature suggests that CRM practices, communication channels, and product performance significantly influence farmer satisfaction, which in turn leads to brand loyalty and repeat purchase behaviour. Several studies also indicate that trust, advisory services, and relationship quality act as mediating factors in long-term loyalty, especially in agri-input markets.

### *Review of National Studies*

A substantial body of Indian research has focused on farmers' brand preference and loyalty toward agricultural inputs such as seeds, fertilizers, pesticides, and machinery.

**Kaliraj et al. (2020)** examined agrochemical brand preference among farmers in Southern Tamil Nadu and found that brand perception, cost-effectiveness, and quick results significantly influenced purchase decisions. Similarly, **DhanyasiRibka et al. (2020)** studied pesticide preferences among tomato farmers in Andhra Pradesh and highlighted the importance of correct pesticide usage, investment reduction, and product loyalty.

Studies by **Senthil Kumar (2020)** and **Mohanty & Senthil Kumar (2017)** applied Data Envelopment

Analysis (DEA) to measure farmer satisfaction and brand loyalty toward fertilizer brands, emphasizing the role of rising input costs, subsidy reduction, and the need for customer retention strategies.

Seed-related studies by **Kowsalya et al. (2022)**, **Ranju Nagesia (2024)**, **Patel Pranay Chandubhai (2022)**, **Bala Krishna et al. (2020)**, and **Abhishek Tomar & Nitin Barker (2025)** consistently reveal that yield performance, quality, trust, and past experience outweigh price considerations in farmers' brand selection and loyalty decisions.

CRM-focused national studies by **Dr. N. Sathya Sonia (2022)**, **Asai Mani & Narmadha (2025)**, and **Chethan et al. (2024)** emphasize that CRM is not merely a technological tool but a strategic approach essential for enhancing customer satisfaction, engagement, and long-term loyalty in sectors such as agricultural machinery, dairy, and agri-tech services.

Furthermore, studies on buying behaviour (**Ajay Jain & Rakesh Rathore, 2023**; **Niraj Kumar & Sanjeev Kapoor, 2017**) reveal that Indian farmers rely heavily on personal experience, advisory services, and quality perceptions when making agri-input purchase decisions.

#### **Review of International Studies**

International literature complements Indian findings by highlighting the evolving role of technology, supply chain integration, and relationship quality in agricultural markets.

**Shyu (2023)** analyzed consumer satisfaction and loyalty in Alibaba's Fresh Hema model and found that convenience, green logistics, and digital engagement significantly enhance customer loyalty in modern agri-value chains. Similarly, **Goranda (2021)** demonstrated that CRM indirectly influences consumer loyalty through customer satisfaction in agri e-commerce platforms.

**Le Thi Dieu Hien and Jonghwa Kim (2024)** examined relationship quality and loyalty between farmers and agribusiness companies in Vietnam's rice industry, concluding that trust, fair pricing, and contractual flexibility are critical for sustaining long-term partnerships. **Chayana Kerdpitak (2021)** also found that CRM strategies significantly impact customer satisfaction and business performance in Thailand's rice sector.

These studies collectively indicate that relationship management, digital integration, and service quality are becoming increasingly important in agricultural marketing across global contexts.

#### **Research Gaps Identified**

Despite extensive research, several critical gaps emerge from the reviewed literature:

1. Limited integrated studies combining brand preference, CRM practices, and farmer loyalty within a single conceptual framework.
2. Insufficient focus on region-specific studies in emerging agricultural markets, particularly at the micro or district level.
3. Most Indian studies emphasize product attributes, while relationship-based factors such as trust, communication, and after-sales service remain underexplored.
4. Comparative studies between traditional agri-input markets and technology-enabled agri-services are scarce.
5. Very few studies examine the mediating role of customer satisfaction between CRM practices and brand loyalty among farmers.

The review of literature clearly indicates that brand preference, customer satisfaction, CRM practices, and loyalty are closely interlinked in the agricultural input sector. While substantial research exists at both national and international levels, gaps remain in integrating these variables within a comprehensive framework. Addressing these gaps provides a strong justification for the present study and contributes to both academic knowledge and practical implications for agri-business firms.

### **RESEARCH METHODOLOGY :**

#### **RESEARCH DESIGN**

A descriptive and Explanatory research design will be employed.

- Descriptive Design: This will help in understanding the current CRM practices adopted by agri-input suppliers and the existing loyalty patterns among farmers.
- Causal (Explanatory) Design: Since the study also aims to determine whether CRM practices *cause* or *influence* farmers' loyalty, a causal design is appropriate. It helps establish cause-and-effect relationships between variables.

This combination allows the researcher to first describe the current scenario (what CRM methods are in use, how loyal farmers are, etc.) and then analyze the impact of CRM practices on loyalty, using statistical tools.

The study follows a mixed research design that integrates both qualitative and quantitative approaches to gain a comprehensive understanding of farmers' awareness and adoption of Customer Relationship Management (CRM) strategies for building loyalty. The population of the study consists of farmers in Amravati district who use agricultural inputs such as seeds, pesticides, fertilizers, and machinery. The estimated population size is 50, and the same number of farmers is selected as the sample size to ensure complete coverage. To achieve representativeness, a multistage stratified random sampling method is adopted, considering variations in landholding size, crop patterns, and levels of interaction with agro-input suppliers across different talukas of the district.

Primary data form the core of the study and are collected directly from farmers through structured questionnaires and, where required, in-depth interviews. These tools capture farmers' perceptions, experiences, and opinions regarding CRM practices followed by agricultural input suppliers. Secondary data are used to support and contextualize the study and are sourced from academic journals, books, research papers, company reports, government publications, and relevant websites.

For data analysis, both quantitative and qualitative techniques are employed. Descriptive statistics such as percentages, averages, and frequency distributions are used to analyze survey data with the help of SPSS and Excel. Qualitative interview data are examined using content analysis to identify key themes. Additionally, SWOT analysis is applied to assess the strategic strengths and weaknesses of selected agri-input companies.

## RESEARCH OBJECTIVES

1. To study the concept and importance of Customer Relationship Management (CRM) in the agricultural input sector.
2. To analyze the current CRM practices used by agricultural input suppliers in Amravati
3. To examine the factors that influence farmers' loyalty towards specific input suppliers
4. To assess the impact of CRM strategies on farmers' satisfaction and long-term relationships with suppliers.

## HYPOTHESIS:

### 1) Alternative Hypothesis (H1):

H1: Effective Customer Relationship Management (CRM) has a significant positive impact on farmer loyalty toward agricultural input brands in Amravati.

### 2) Null Hypothesis (H0):

H0: Customer Relationship Management (CRM) has no significant impact on farmer loyalty toward agricultural input brands in Amravati.

## DATA ANALYSIS AND INTERPRETATION

TABLE 1: Demographic Profile & CRM Interaction

Variable	Category	Percentage
Age Group	20–30 years	22%
	31–50 years	58%
	Above 50 years	20%
Landholding Size	Below 5 acres	64%
	5–10 acres	22%
	Above 10 acres	14%
Importance of Regular Contact (CRM)	Important / Very Important	80%
	Neutral / Not Important	20%
Frequency of Communication	Weekly / Monthly	62%
	Occasionally / Never	38%

Interpretation of Table 1: Demographic Profile & CRM Interaction

The data shows that a majority of farmers (58%) belong to the economically active age group of 31–50 years, indicating their strong involvement in farming decisions. Most respondents (64%) are small and marginal farmers owning less than 5 acres of land, making them highly dependent on suppliers for credit, guidance, and timely inputs. A significant 80% of farmers consider regular contact by distributors as important, highlighting the relevance of CRM practices. Furthermore, 62% of farmers receive communication on a weekly or monthly basis, indicating moderate adoption of CRM activities by suppliers.

Table 2: CRM Benefits, Loyalty & Satisfaction

Factor	Percentage
<b>Benefits from Distributor Relationship</b>	
Timely supply	76%
Credit facility	68%
Technical advice	62%
Better product quality	58%
<b>Factors Influencing Loyalty</b>	
Product quality	78%

<b>Credit availability</b>	72%
<b>Personal relationship</b>	66%
<b>After-sales service</b>	60%
<b>Price</b>	54%
<b>Loyalty &amp; Satisfaction Indicators</b>	
<b>Likely to continue with same supplier</b>	76%
<b>Satisfied / Very satisfied</b>	64%
<b>Feel valued by dealer (Always/Often)</b>	74%

### Interpretation of Table 2: CRM Benefits, Loyalty & Satisfaction

The table reveals that timely supply (76%) and credit facility (68%) are the most valued benefits arising from good distributor relationships, followed by technical advice (62%) and product quality (58%). Farmer loyalty is largely driven by relationship-oriented factors such as product quality (78%), credit availability (72%), and personal relationships (66%), rather than price alone. High satisfaction levels are evident, as 64% of farmers are satisfied or very satisfied, while 76% express willingness to continue with the same supplier. Additionally, 74% of farmers feel valued by their dealers, indicating strong trust and emotional attachment developed through effective CRM practices.

**Table 3: Expected Services & Statistical Result**

Aspect	Result
<b>Expected CRM Services</b>	
<b>Crop advisory</b>	74%
<b>Flexible payment</b>	70%
<b>Field visits</b>	66%
<b>Timely delivery</b>	62%
<b>Soil testing</b>	54%
<b>Statistical Test Applied</b>	Chi-Square Test
<b><math>\chi^2</math> value</b>	9.84
<b>p-value</b>	0.021
<b>Decision</b>	Null hypothesis rejected
<b>Inference</b>	CRM has significant impact on farmer loyalty

### Interpretation of Master Table 3: Expected Services & Statistical Result

Farmers expect value-added CRM services such as crop advisory (74%), flexible payment options (70%), and field visits (66%), showing that CRM is perceived as a long-term support system rather than merely a sales function. The Chi-square test results ( $\chi^2 = 9.84$ ,  $p = 0.021$ ) confirm a statistically significant association

between CRM practices and farmer loyalty. Since the p-value is less than 0.05, the null hypothesis is rejected, proving that effective CRM practices significantly influence farmers' loyalty.

### Overall Interpretation

The findings clearly indicate that strong CRM practices enhance farmer satisfaction, trust, and long-term loyalty. Relationship-based services, timely support, and regular communication play a critical role in strengthening distributor-farmer relationships in the agricultural input market.

### Findings and Discussion

- Demographics and Landholding:** The majority of respondents (58%) are in the productive age group of 31–50 years, indicating active involvement in farming decisions. Most farmers (64%) are small and marginal landholders, highlighting the significance of personalized CRM strategies such as credit facilities and advisory support.
- Importance of CRM Practices:** Around 80% of farmers consider regular contact with distributors as important or very important, emphasizing that continuous communication is a critical driver of trust and relationship building in agri-input markets.
- Benefits of Distributor Relationships:** Farmers recognize multiple advantages from good distributor relationships: timely supply (76%), credit facilities (68%), technical advice (62%), and better product quality (58%). This demonstrates that CRM provides both functional and knowledge-based benefits, strengthening loyalty beyond mere product features.
- Communication Frequency:** Over 60% of farmers interact with their suppliers at least monthly, suggesting moderate adoption of CRM practices in Amravati. This aligns with global studies highlighting that regular engagement is key to customer retention.
- Factors Influencing Loyalty:** Product quality (78%), credit availability (72%), and personal relationships (66%) are primary drivers of loyalty. Price alone is less significant (54%), reinforcing the idea that relationship-based factors outweigh cost considerations in farmer decision-making.
- Satisfaction and Trust:** About 64% of farmers are satisfied with their current suppliers, and 74% feel valued by their dealers either always or often. These findings show that CRM enhances emotional attachment, trust, and long-term loyalty.

7. **Expected Services:** Farmers seek value-added services such as crop advisory (74%), flexible payments (70%), and field visits (66%), indicating that effective CRM extends beyond product supply to holistic farmer support.

8. **Statistical Evidence:** The chi-square test ( $\chi^2 = 9.84$ ,  $p = 0.021$ ) confirms a significant association between CRM practices and farmer loyalty, leading to the rejection of the null hypothesis.

### Comparison with Previous Studies:

The findings are consistent with national studies (Kaliraj et al., 2020; Sathya Sonia, 2022) showing that trust, service quality, and relationship management significantly influence farmer loyalty. International studies (Le Thi Dieu Hien & Kim, 2024; Goranda, 2021) similarly emphasize CRM's role in sustaining long-term partnerships through satisfaction and engagement.

### Implications:

The study highlights the need for agri-input firms to adopt structured CRM strategies focusing on regular communication, personalized services, and value-added support. By addressing farmers' functional and emotional needs, suppliers can enhance loyalty, reduce switching behavior, and foster sustainable rural development. Practically, this underscores that CRM in agriculture is not only a marketing tool but a strategic mechanism for improving productivity, satisfaction, and rural livelihoods.

### CONCLUSION

The study concludes that effective CRM practices significantly influence farmer loyalty in the agricultural input sector of Amravati. Beyond product quality, trust, personal relationships, credit facilities, timely delivery, and advisory services are key determinants of loyalty. CRM strengthens both functional and emotional bonds, resulting in higher satisfaction, reduced switching behavior, and long-term engagement. While moderate adoption of CRM practices exists, there is potential to enhance frequency, personalization, and value-added services to further strengthen farmer loyalty. Overall, CRM emerges as a strategic differentiator, benefiting both farmers through risk reduction and productivity support, and suppliers through sustained loyalty and business growth.

### SUGGESTIONS AND RECOMMENDATIONS

1. **Enhance Communication:** Suppliers should increase regular, structured communication through field visits, calls, SMS alerts, and

WhatsApp groups to maintain continuous engagement with farmers.

2. **Provide Advisory Services:** Offering crop-specific technical guidance, pest management tips, and soil testing will position suppliers as trusted partners rather than mere product sellers.

3. **Flexible Credit and Payment Options:** Since credit availability strongly influences loyalty, flexible and transparent financing options should be offered to small and marginal farmers.

4. **Training and Demonstrations:** Organizing training programs, product demonstrations, and awareness camps can improve product utilization and strengthen trust-based relationships.

5. **Leverage Digital CRM Tools:** Maintaining detailed farmer databases, purchase histories, and feedback digitally will help in personalizing services and ensuring timely interventions.

6. **Relationship-Oriented Sales Practices:** Dealers should focus on empathy, responsiveness, and trust-building rather than only on sales targets to foster long-term loyalty.

7. **Value-Added Services:** Farmers value crop advisory, field visits, and timely delivery over price alone. Suppliers should incorporate these services to enhance satisfaction and retention.

Implementing these strategies can help agri-input firms build stronger, long-lasting relationships with farmers, leading to increased loyalty, higher satisfaction, and sustainable growth in competitive agricultural markets.

### LIMITATIONS OF RESEARCH

The study will be limited to some factors, the limitations for the study are

#### 1. Short Duration of the Study

The study was conducted within a very short period of time, which limited the researcher's ability to collect data over an extended duration. Due to time constraints, in-depth analysis and repeated observations were not possible. A longer study period could have helped in gaining more comprehensive insights and understanding changes in respondents' opinions over time. Hence, the findings may reflect only a limited snapshot of the situation.

#### 2. Reliability and Accuracy of Responses

The study is based on primary data collected from respondents, and therefore its accuracy depends on the honesty and understanding of the participants. Some respondents may have provided biased, incomplete, or socially desirable answers instead of accurate information. In certain cases, respondents may not have

fully understood the questions, which could have affected the reliability of their responses and influenced the overall results of the study.

### 3. Lack of Cooperation from Respondents

Another limitation of the study is the possibility of limited cooperation from some respondents. A few participants may have been unwilling to share information openly or may have responded casually without giving proper attention to the questions. This lack of full cooperation could have impacted the quality of data collected and, consequently, the validity of the study findings.

### 4. Small Sample Size

The sample size for the study is limited to 50 respondents, which is relatively small. Due to this limitation, the results of the study may not accurately represent the entire population. A larger sample size would have allowed for more diverse opinions and increased the reliability and generalizability of the findings. Therefore, the conclusions drawn from this study should be interpreted with caution.

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