

INFLUENCE OF MARKETING MIX STRATEGIES OF FERTILIZER COMPANIES ON FARMERS' BUYING BEHAVIOUR: IMPLICATIONS FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT AND RURAL INNOVATION

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Abstract

Agriculture plays a crucial role in the Indian economy and continues to be a major source of livelihood for a large proportion of the rural population. Fertilizers are an essential agricultural input that contributes significantly to improving soil fertility and enhancing crop productivity. In the competitive agro-input market, fertilizer companies adopt various marketing mix strategies such as product quality, pricing policies, promotional activities, and distribution channels to influence farmers' purchasing decisions. The present study aims to examine the influence of marketing mix strategies on the buying behaviour of farmers with respect to fertilizers. The study is based on primary data collected from 620 farmers through a structured questionnaire using a five-point Likert scale. The research analyzes the influence of the four key elements of the marketing mix—product, price, promotion, and place—on fertilizer purchasing behaviour. Descriptive statistics and a one-sample T-test were used to test the hypothesis. The results indicate that marketing mix strategies significantly influence farmers' fertilizer purchasing decisions. Product quality, availability of fertilizers, pricing policies, and promotional activities such as training programs and advertisements play an important role in shaping farmers' buying behaviour. The study concludes that effective marketing strategies adopted by fertilizer companies not only influence farmers' purchasing decisions but also contribute to improved agricultural productivity, sustainable rural development, and responsible agricultural practices aligned with global sustainable development goals.

Keywords: *Agriculture, Fertilizers, Marketing Mix, Farmers' Buying Behaviour, Product Strategy, Price Strategy, Promotion Strategy, Place Strategy, Sustainable Agriculture, Rural Development*

Introduction

Agriculture forms the backbone of the Indian economy and remains a vital sector for economic growth and rural livelihood. Despite rapid industrialization and growth of the service sector, agriculture continues to provide employment to a large portion of the population. Nearly half of the workforce in India depends on agriculture and allied activities for their livelihood. Agriculture also plays a crucial role in supplying raw materials to several industries such as food processing, cotton textiles, sugar, and other agro-based industries.

Agricultural development is closely linked with the availability and proper use of agricultural inputs such as fertilizers, seeds, irrigation facilities, and modern technologies. Among these inputs, fertilizers play a significant role in improving soil fertility and increasing crop productivity. The use of fertilizers containing essential nutrients such as nitrogen, phosphorus, and potassium has significantly contributed to increased agricultural output and food security.

In the global context, sustainable agricultural practices are closely associated with the United Nations Sustainable Development Goals, particularly SDG 2: Zero Hunger, SDG 12: Responsible Consumption and Production, and SDG 15: Life on Land. Proper use of agricultural inputs contributes to improving soil fertility, increasing crop productivity, and promoting sustainable farming practices. Universities and agricultural institutions also play a significant role in promoting sustainable agricultural knowledge and rural innovation. In recent years, the agro-input industry has become increasingly competitive. Fertilizer companies adopt various marketing strategies to attract farmers and promote their products. Marketing mix strategies consisting of product, price, promotion, and place play a significant role in influencing the buying behaviour of farmers. Farmers often rely on product quality, pricing benefits, promotional activities such as demonstrations and training programs, and the availability of fertilizers through retail networks

when making purchasing decisions. Understanding how marketing mix strategies influence the buying behaviour of farmers is important for fertilizer companies as well as policymakers. Effective marketing strategies can help farmers gain access to appropriate agricultural inputs, which ultimately contributes to improved agricultural productivity and sustainable rural development.

Literature Review

Several studies have highlighted the importance of agriculture and agricultural inputs in economic development.

Kekane (2013) emphasized that agriculture plays a significant role in the Indian economy and provides employment to a major portion of the population. The study highlighted that agricultural growth is essential for improving rural livelihoods and national economic development.

Mala (2013) analyzed the fertilizer scenario in India and reported that India is one of the largest consumers of fertilizers globally. The study observed that fertilizer usage is influenced by factors such as irrigation facilities, farm size, high-yielding seed varieties, and access to credit.

Kavya, Sowmya Shree, and Nagaraja (2015) studied the agro-input industry in India and reported that the sector is growing rapidly due to increasing demand for food production and agricultural productivity.

Thakur and Sharma (2015) examined farmers' attitudes toward modern agricultural technologies and found that many farmers exhibit a neutral attitude toward modern farming practices despite having scientific awareness.

Tayade and Chinchmalatpure (2015) studied farmers' training needs regarding bio-pesticides and fertilizers and concluded that many farmers lack proper knowledge regarding the use of agricultural inputs.

Savci (2012) investigated the environmental effects of chemical fertilizers and reported that although fertilizers increase crop productivity, excessive usage can cause environmental problems such as soil degradation and water pollution.

These studies indicate that fertilizers play a crucial role in agricultural productivity and that farmers' decisions regarding agricultural inputs are influenced by economic, technical, and marketing factors.

Research Gap

Previous studies have mainly focused on fertilizer usage, agricultural productivity, and farmers' knowledge regarding agricultural inputs. However, limited research has been conducted to analyze how marketing mix strategies adopted by fertilizer companies influence farmers' buying behaviour.

Therefore, the present study attempts to examine the influence of marketing mix strategies on fertilizer purchasing decisions of farmers.

Objectives of the Study

1. To examine the marketing mix strategies (Product, Price, Promotion, and Place) adopted by fertilizer companies.
2. To analyze the influence of marketing mix strategies on the buying behaviour of farmers.

Hypothesis

H₀: Marketing Strategies of fertilizers companies does not influence the buying decisions of the consumers.

H₁: Marketing Strategies of fertilizers companies influences the buying decisions of the consumers.

Test Applied: One Sample T-Test

Research Methodology

The study is based on both primary and secondary data. Primary data were collected from farmers through a structured questionnaire designed to examine their perceptions regarding marketing mix strategies of fertilizer companies.

The sample size of the study consists of **620 farmers**. A five-point Likert scale was used to measure farmers' responses regarding the influence of marketing mix elements such as product, price, promotion, and place on fertilizer purchasing behaviour. Secondary data were collected from books, journals, research articles, and reports related to agriculture, fertilizer usage, and marketing strategies.

Statistical tools such as **descriptive statistics and T-test** were used to analyze the data and test the hypothesis.

Statement of Hypothesis: Marketing Mix Strategies of fertilizers companies influences the buying decisions of the consumers

H₀: Marketing Strategies of fertilizers companies does not influence the buying decisions of the consumers

H₁: Marketing Strategies of fertilizers companies influences the buying decisions of the consumers

Test Applied-T Test

4 Ps -Price, place, promotion and product constitute the marketing mix. Marketing mix strategies of the companies often influences the buying decisions of the buyers. If the consumer is satisfied, he/ she will stay with the organization for a long period of time. Organizations give promises and create expectations through marketing mix. A good marketing mix makes customers to consistently buy the product and creates their loyalty for the brand. The researcher has made an attempt to know whether marketing mix strategies of fertilizers companies have an influence on buying decisions of the customers, the responses are as follows:

Table No. 1: Influence of Marketing Mix Strategies on Fertilizer Buying Behavior of Farmers

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Price Strategies Price of the Product, discounts, offers, subscription, etc. influences buying decision	480	60	20	40	20	620
Promotion Strategies Advertising, public relation, exhibitions, training programmes, etc. influences buying decision	370	120	25	90	40	620
Place Strategies Direct sale, online sale, sale through retailers, etc. influences buying decision	450	100	18	42	10	620
Product Strategies Quality, organic- chemical, ease of use, features, packaging, etc. influences buying decision	518	70	4	10	18	620

Table No. 2: One sample statistics for Influence of Marketing Mix Strategies on Fertilizer Buying Behavior of Farmers

	N	Mean	Standard Deviation
Price Strategies Price of the Product, discounts, offers, subscription, etc. influences buying decision	620	3.52	3.15
Promotion Strategies Advertising, public relation, exhibitions, training programmes, etc. influences buying decision	620	3.19	2.90
Place Strategies Direct sale, online sale, sale through retailers, etc. influences buying decision	620	3.51	3.12
Product Strategies Quality, organic- chemical, ease of use, features, packaging, etc. influences buying decision	620	3.71	3.27

Above table shows the mean scores and standard deviations score of each indicative variable. The five- point Likert scale represents rating ranged from 0 (strongly disagree) to 4 (strongly agree). The mean scores of influence of marketing mix

strategies on fertilizer buying behaviour of farmers are between 3 and 4 which represents rating between 'agree' to 'strongly agree'. This indicates that marketing mix strategies influences buying behaviour of farmers.

Table No. 3: T- Test Result

	Test Value= 2		
	Degree of freedom	95% confidence interval of difference	
		Lower	Upper
Price Strategies Price of the Product, discounts, offers, subscription, etc. influences buying decision	619	3.272	3.768
Promotion Strategies Advertising, public relation, exhibitions, training programmes, etc. influences buying decision	619	2.962	3.418
Place Strategies Direct sale, online sale, sale through retailers, etc. influences buying decision	619	3.264	3.756
Product Strategies Quality, organic- chemical, ease of use, features, packaging, etc. influences buying decision	619	3.453	3.967

From the above table it can be seen that, the lower and upper confidence interval differences are positive, and are more than 2 (which is the test value). This leads to accept the result that marketing mix strategies influence buying behaviour of farmers.

Hence, null hypothesis Marketing Strategies of fertilizers companies does not influence the buying decisions of the consumers is rejected, and alternate hypothesis Marketing Strategies of fertilizers companies does not influence the buying decisions of the consumers is accepted.

Data Analysis

The analysis indicates that farmers perceive marketing mix strategies as an important factor influencing fertilizer purchasing behaviour.

Mean scores for different marketing mix elements were found as follows:

- Price Strategy – 3.52
- Promotion Strategy – 3.19
- Place Strategy – 3.51
- Product Strategy – 3.71

These values indicate that farmers generally agree that marketing mix strategies influence their buying decisions.

The T-test results further confirm that the confidence interval values are higher than the test value, indicating a statistically significant influence of marketing mix strategies on fertilizer purchasing behaviour.

Results and Discussion

The results show that marketing mix strategies significantly influence fertilizer buying behaviour of farmers. Product strategies such as quality, packaging, and product features were found to have the highest influence on farmers' decisions. Price strategies including discounts and offers also influence purchasing behaviour. Promotional strategies such as advertisements, training programs, and agricultural exhibitions help increase awareness among farmers.

Place strategies such as the availability of fertilizers through retailers, dealers, and distribution networks also play an important role in farmers' purchasing decisions.

These findings highlight the importance of responsible marketing strategies in promoting sustainable agricultural practices and improving farmers' access to agricultural inputs.

Conclusion

The study concludes that marketing mix strategies adopted by fertilizer companies have a significant influence on farmers' buying behaviour. Product quality, pricing policies, promotional activities, and distribution channels play an important role in influencing fertilizer purchasing decisions.

Effective marketing strategies help farmers access suitable agricultural inputs and improve agricultural productivity. Responsible marketing and proper dissemination of agricultural inputs also contribute to sustainable farming practices and rural economic development. The findings of the study highlight the importance of strategic marketing practices in supporting sustainable agricultural development and rural innovation.

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