



# Conclusive Proof Into Purchase Decisions Of Rural Farmers: Environment Vs Brand Criterion In Choice

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## ABSTRACT

Understanding the sentiments and differentiating the rural consumers from the urban counterparts has been considered a subject of highest relevance by the companies across the time periods. What, where and why would rural consumers purchase the products is not only about demographics but also about the ground reality of differences between what is advertised and what is actually found in the product on ground. This study is an attempt to thus find the factors responsible for repeat purchases of the rural consumers towards specific agri-inputs which are critical in the beginning of the sowing season all the way to harvest season. Price though considered as the important factor in purchase decisions, the scrutiny done about the product, its features also play an important role. Practical demonstration and its actual experience play vital role in repeat purchasing behavior. For the study, 105 responses were considered and evaluated for exposure, consumption patterns, income levels, income flows and the dynamics impacting the behaviour of the rural consumers. This study clearly shows that the amount of various elements' effect on the purchase decision-making process differs from product to product. In the purchase of seeds and chemical fertilizers, the product's brand is usually regarded as one of the most significant characteristics, but in the purchase of pesticides, the brand is regarded as the third most important factor after efficacy and price. In purchasing decisions for seeds and pesticides, fellow farmers are seen as highly essential, followed by Agro-input dealers.

**Keywords:** Customer clusters, Agri-inputs, Online shopping, Consumer buying behavior

## I. INTRODUCTION

India is one of the world's top two producers of crops such as paddy, wheat, sugarcane, groundnut, vegetables, fruits, and cotton. Agriculture is the backbone of the Indian economy. It is the primary source of income and accounts for 17% of the country's GDP. As a result, the function of marketers has evolved to include a variety of promotional activities to raise brand recognition and influence customer purchasing decisions to retain as well as acquire new audiences to grow sales and market share. Increasing basic infrastructure, improved education levels, the greater network connection has improved transportation linkages to cities and highways, electricity reaching remote sections of villages, and communication mediums have altered in rural India. Howard and Sheth (1969) found that consumers make decisions based on product qualities such as price, quality distribution, availability, and services. Kotler (1973) proposed five models for evaluating consumer behavior. He claimed that economic cues, prices, and incomes were most important to the Marshallian man. Because of the rendered warning in the past, Pavlovian man responded in a habitual rather than thorough manner. The same action would be triggered by certain combinations of stimuli. Motives and imaginations that take place in Freudian man's internal world heavily impacted his decisions. Mohanan (1980) found that the choice of insecticide for use in the fields was mostly influenced by previous customer experience. Quality and timely delivery were other significant considerations. We are seeing an increase in technology use in rural regions, as well as in the case of agricultural inputs, as internet access rises. Prasad and Rawal (2004) analyzing the shifts in the agri-input consumer behavior found that as rural lifestyles has significantly changed with direct proportion with disposable income and thus companies involved in production of fast-moving consumer goods,

consumer durables, farm machinery, two-wheelers, and other agri-inputs have made lot of attempts to promote their products mainly to the rural segments which remained unviable to enter before. Rural markets account for more than half of the company's overall sales. In today's world, a rural client seeks value for money. Increased literacy and media exposure have raised awareness, and young people are beginning to purchase agricultural inputs. Understanding customer behavior and creating value propositions should be the emphasis of emerging marketing strategy. Customer purchase habits for agricultural supplies have shifted in recent years. As the size of families shrinks, the number of nuclear families grows. As a result, young people are now making purchases. This is because the young individuals are found to be better educated and exposed. It is very evident from the past that, community decision-making is very important factor even today. Convincing the panchayat leaders helps gain confidence of the entire village. The new generation of decision-makers are found to be more open to new ideas and are not price sensitive as believed.

In India, there are a lot of small and marginal farmers. They typically buy Agri inputs on credit from cooperative agents, so they don't have a choice of brands and must rely on the recommendations of the commission agent. Young decision-makers, on the other hand, want to buy branded items from private Agri input dealers and online eCommerce platforms. Private retail shops are gaining popularity. The reference groups for small and marginal farmers are large and middle-class farmers. On the producing side, farmers seek a crop that offers them the security of a consistent and predictable return. Organic and bio sources of plant nutrition are increasingly being used to make organic food that commands a premium price. There has been a significant movement in consumer rights awareness. Customers are no longer afraid to demand quality or performance through unethical commercial tactics. While few customers were aware of these rights a decade ago, the number of consumers requesting replacement or return of defective/spurious/sub-standard items is on the rise. This demonstrates that consumer rights are becoming more well-known. Padmanabhan (1998) found that the price and efficiency of agricultural inputs have a major impact on client brand loyalty. Because if we look at the distribution hierarchy, private dealers are the major source of information on plant protection and the consumers are depended on them more. Every rural customer has a unique experience either experienced or shared which is often used in purchasing a product. If consumers reaction and experiences do not match with the product performance, then it is very difficult to gain the lost confidence. Sharma (1997) concluded that when purchasing a product, quality and brand are valued more than the price which was not felt few years back in the rural segments. Thus, the key aspects to be kept in mind is that, farmers choice is based on knowledge and expertise they've gained through centuries. Technology often cannot over rush the experiences faced by the farmers. In every industry, high-precision GPS systems, smart sensors, cellphones, and a variety of IT applications combining high-tech engineering are becoming prevalent. These technological advancements have an impact on a farmer's socioeconomic, personal, and psychological purchasing behavior. So, can the purchasing of goods or services through the internet, which can be crudely be known as online shopping, sustain and grow in the rural markets is the important question often asked. With the introduction of the internet, India has witnessed a revolution in the online shopping sector, with a large number of Indians opting to purchase online. Kalwani et al. (1990) constructed and tested a model of consumer brand choice that included the mediating construct of customer pricing expectations. The ORG Survey (2011) indicated that popular commodities which accounted for 45 percent to 50 percent of the rural market comprised of washing soaps, cleaning products, toiletries, and food and beverages etc. Most importantly, cosmetics and toiletries, had increased significantly during a five-year period. It was evident from the study that, rural customers lack the biases that keep their urban counterparts from adapting to change which is small, dispersed and thus inaccessible in nature. Arndt (1976) suggested that the challenges that individuals face is understanding the consumer behaviour. In all the studies observed, cognitive, emotional, and behavioural aspects are found the primary factors in understanding the rural-urban divide (Lavidge and Steiner, 1961). The cognitive part considers developing awareness and knowledge, while the affective is concerned with developing feelings and attitudes. The behavioural section is concerned with intention as well as actual behaviour, Dharni & Singh, (2011) examine the changes observed mainly due to key factors such as cause of variable usage, frequency of purchase, price, perceived risk in purchasing, and complexity of items, farmers' search activities and information sources have changed.

## II. PROBLEM STATEMENT:

The goal of the study was to figure out why rural customers and farmers, in particular, behave differently when purchasing agricultural inputs than they do when purchasing household durables and consumables. Farmers, as consumers of agricultural inputs, have been observed to act differently than customers of other consumable items. Furthermore, the nature of Agri-input needs is "derived" and "complementary," and is reliant on the product's Agro-economic potential, which causes purchasers of Agri-inputs to behave differently. Unfortunately, few published papers explain how farmers purchase agricultural inputs. Consumer researchers and journals have generally overlooked farmers' purchasing decisions, even though it is important in terms of frequency, economic value, and strategic significance.

### III. OBJECTIVES OF THE STUDY:

The main objectives of the study are as follows:

1. To study the factors that influence rural customers' purchasing behavior and how these factors influence purchasing decisions.
2. To study the process of Brand Recognition and Awareness among Rural Consumers

### IV. DATA COLLECTION AND DATA METHODOLOGY

#### DATA COLLECTION

For the study, primary data was collected using telephonic interviews and using structured questionnaire for gathering information. The research is a descriptive Research. In order to examine the factors that influence rural audiences' purchasing behavior while purchasing agricultural inputs data was collected using customers data who have atleast purchased the agri-products online. In terms of data gathering, we followed and encompassed three primary methods of data collection namely case study, survey, and observational method. This helps in providing us with a wide range of information and has aided in the development of a comprehensive research approach. This approach in our study has helped in making data-collection quick and simple. There is also the benefit of collecting data in the respondent's natural setting, which makes it simpler for the responder to be truthful in their responses. A total of 105 farmers responses were collected from the states of Karnataka, Maharashtra, Telangana, Andhra Pradesh. Simple Random Sampling method was followed using the database made available for this study.

#### DATA METHODOLOGY

The structured questionnaire consisted of 23 statements which were first examined for reliability test using Cronbach alpha. The cronbach alpha is the most widely used index for determining internal consistency (kerlinger, 1986). As observed in literature, the cronbach alpha of greater than 0.6 would be acceptable. The high alpha value would confirms the homogeneity of the items comprising them and indicates acceptable level of reliability. In order to reduce the dimensions of the data, factor analysis was conducted. Exploratory factor analysis (EFA) is a technique for data exploration and to determine the structure of factors to be analyzed. The sole purpose of running a factor analysis is to minimize the number of variables "while the amount of information in the analyses maximized". Factor analysis seeks to identify underlying (latent) variables that are reflected in the observed variables (manifest variables). Factor analysis thus groups the variables with similar characteristics together. In this case, items are reduced to common interrelated and meaningful dimensions with a very small amount of information loss. As we know, there are different methods that are used to conduct a factor analysis. We in the study, use Principal Component Analysis (PCA) method for extraction and varimax rotation method for rotated component. Eigen values of 1 was used in identifying the factors. Before proceeding for the factor analysis, appropriateness of factor analysis needs to be assessed. Two tests are performed to ensure that the data is suitable for factor analysis:

- i. The Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and
- ii. The Bartlett's test of sphericity

Rotated Component Matrix was used to show the loading of each variable on each of the extracted factors. The items with loadings higher than 0.60 were considered. High loadings signify that the variable can be assigned to that particular factor. The responses were later analyzed using standard techniques of descriptive statistics and cross-tabulation.

### V. DATA ANALYSIS & INTERPRETATION

The data of 105 customers was collected and the responses were recorded. In order to examine the responses of the customers towards online purchases, initially descriptive statistics was conducted using various demographics factors. According to the results, a brief summary is provided herewith. The average age group of Online Agri input buyers was between 25 to 55. Majority of respondents were male and the data might be biased. Considering educational level of the respondents, it was observed majority of respondents were educated and between 12<sup>th</sup> and Graduation. Majority of the Online agriculture input buyers are young progressive farmers. Majority of respondents have land holding size between 5 to 10 acres. Majority of respondents have other revenue sources other than agriculture. Majority of the respondents are at the distance of 20+ to the nearest market to buy agricultural inputs. In order to examine the score consistency, reliability was tested. The cronbach alpha is the most widely used index for determining internal consistency (kerlinger, 1986). As observed from Table-1, the cronbach alpha is 0.899. The high alpha value in all five subscales confirms the homogeneity of the items comprising them and indicates acceptable level of reliability.

**Table 1: Reliability Statistics**

Reliability Statistics	
Cronbach's Alpha	N of Items
.619	27

As observed from Table-2, Kaiser-Meyer-Olkin (KMO) and Bartlett Test measure the strength of the relationship among the variables. KMO value greater than 0.6 can be considered as adequate (Kaiser and Rice, 1974) for a satisfactory factor analysis to be done. The KMO measure is 0.844 in the study. Bartlett's test is another indication of the strength of the relationship among the variables. As observed in Table-5b, we fail to accept the null hypothesis at 5 percent level of significance as the Bartlett's test of sphericity is significant. Thus, we can infer that, the correlation matrix is not an Identity matrix.

**Table-2: KMO and Bartlett Test results**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	559.936
	df	45
	Sig.	.000

With the Principal Component analysis, we were able to retain three factors depending on the Eigen values and variance explained. We know that, Eigen value represents the total variance explained by each factor. As observed in the literature, the factors with an Eigen value of one or more was extracted and the results are shown in Table-3.

**Table 3: Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.348	53.479	53.479	5.348	53.479	53.479	3.201	32.014	32.014
2	.960	9.598	63.077	.960	9.598	63.077	2.165	21.649	53.663
3	.868	8.675	71.752	.868	8.675	71.752	1.809	18.089	71.752
4	.725	7.246	78.998						
5	.590	5.902	84.900						
6	.422	4.217	89.116						
7	.354	3.538	92.655						
8	.323	3.229	95.884						
9	.255	2.548	98.432						
10	.157	1.568	100.000						

Extraction Method: Principal Component Analysis.

As observed in Table-4, the three factor solution accounted for 71.752 percent of the variance. Total variance explained (71.752 percent) by these three factors exceeds the 60 percent threshold commonly used in social sciences to establish satisfaction with the solution (Hair et al., 1995). From the rotated component matrix, the variables were substantially loaded into 3 key components/factors. Based on the variables loaded on each component, we labeled them as follows:

Factor 1: Brand visibility

Factor 2: Brand success

Factor 3: Brand affordability

**Table-4: Total Variance Explained**

Rotated Component Matrix <sup>a</sup>	Component		
	1	2	3
Price			.826
Germination percentage		.570	
Variety			.769
Disease resistance		.854	
Brand		.777	
Packaging material and colour	.783		
High Productivity	.649		
Fellow Farmers	.779		
Agro-Input Dealers	.858		
Sales Person	.622		

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 5 iterations.

To relate the factors obtained with the buying decision process of respondents, cross tabulation was done with the key variables. The result of the analysis is shown in Table-5. It can be observed that the majority of farmers (63.75%) consider pesticide efficacy to be highly essential when purchasing pesticides, whereas many (57.50%) consider price to be the second most significant consideration. Brand, according to 48.75 percent of farmers, is the third most significant factor that influences pesticide purchasing decisions. Interestingly, a lesser number of farmers (21.25 percent, 6.25 percent, 8.75 percent, and 13.75 percent, respectively) felt that product features such as package size, ease of application, impact on the human body, packaging material, and color of a product are highly significant. According to Table 1, the majority of farmers (68.75%) said that their purchase choice process for pesticides is influenced by their fellow farmers. Agro-input Dealers are additional key actors that impact farmers' pesticide purchasing decisions, and the vast majority of farmers (57.50 percent and 65.00 percent, respectively) say salespeople and scientists have little influence on their pesticide purchases.

**Table 5 Factors affecting buying decision process**

Factors affecting buying decision process		Extremely important	important	Not important	Total
Products' attributes	Price	46 (57.50)	24 (30.00)	10 (12.50)	105 (100.00)
	Germination percentage	39 (48.75)	20 (25.0)	21 (26.25)	105 (100.00)
	Size of packing	17 (21.25)	27 (33.75)	36 (45.00)	105 (100.00)
	Ease of application	5 (6.25)	11 (13.75)	64 (80.00)	105 (100.00)
	Effectiveness	51 (63.75)	26 (23.50)	3 (3.75)	105 (100.00)
	Packaging material and color	11 (13.75)	24 (30.00)	45 (56.25)	105 (100.00)
Influence of communication channels	Fellow Farmers	55 (68.75)	22 (27.50)	3 (3.75)	105 (100.00)
	Agro-Input Dealers	22 (27.50)	42 (52.50)	16 (20.00)	105 (100.00)
	Sales Person	9 (11.25)	25 (31.25)	46 (57.50)	105 (100.00)

From factor analysis it is evident that, brand matters in case of buying habits of agri inputs. But more importantly to what extent was the need of the study. Consider the sources used to buy these products as shown in Table 6. It is observed from the table that 44.8% of the respondents Search Online, 26.7% through App and 19% through Local markets, 9.5% were through other means which may be through wholesale markets, sole selling agents etc. As per the results, there has been an increase in people searching online for Agri inputs.

**Table-6. Sources used to Buy Agri Inputs**

	Frequency	Valid Percent	Cumulative Percent	Total
Search Online	47	44.8	44.8	44.8
On the App	28	26.7	26.7	71.5
Local markets	20	19	19	90.5
Others	10	9.5	9.5	100
Total	105	100	100	

As observed in Table-7, It is apparent that a larger product selection is driving rural consumers to shop for items online. Another element that influences rural consumers to buy products via internet shopping is low prices and limited time. Discount offers and various types of deals also influence them to buy goods through online shopping. As a result, we may conclude that individuals have access to a diverse selection of items, as well as product alternatives.

**Table-7 Various features attracting respondents to Buy online**

	Frequency	Percent	Valid Percent	Cumulative
Greater selection of products	31	29.5	29.5	29.5
Saves time	29	27.6	27.6	57.1

Discount / Offers / Deals	30	28.6	28.6	85.7
Availability of product which are not available in the rural market	15	14.3	14.3	100
Total	105	100	100	

### FINDINGS AND SUGGESTIONS

Farmer have a steady demand for agricultural products, but they are forced to buy from merchants owing to credit or loans. Agriculture continues to lack enough supply of high-quality seeds, insecticides, agricultural tools, and other services at a fair price. The psychological demands of the conventional consumer are not met due to the lack of "touch and feel" element. Customers can only "see" the soft copy of the goods on the computer screen, but they cannot touch or feel it. No access to high-speed internet Many communities still lack access to a reliable internet connection, making it difficult for them to shop online. Farm inputs and Agri-services are delivered inefficiently and infrequently. When it comes to seed and pesticide purchases, other farmers are viewed as the most important factor, followed by Agro-input merchants. Communication channels tend to have less impact on fertilizer purchases since few firms are well-known among farmers. As a consequence, selecting a choice is much easier.

Agriculture's technical information systems must include local knowledge, interact with regional and worldwide systems, and maintain connections with policymakers. For such systems, more infrastructure and trained human resources are required. Rural communication infrastructure, including communication and telecommunication, should be upgraded so that rural consumers and marketers can communicate effectively. The government should build infrastructure in rural regions, like roads and railroads, so that items may readily reach rural consumers. Rural customers must be taught on topics such as product usage, obtaining product information, consumer legislation, and consumer rights, among others. Marketers should work to earn the confidence of rural customers by delivering high-quality items. The distribution system should be efficient, which implies that items should reach the final customer as quickly as possible at the lowest feasible cost.

### CONCLUSION OF THE STUDY

This study clearly shows that the amount of various elements' effect on the purchase decision-making process differs from product to product. In the purchase of seeds and chemical fertilizers, the product's brand is usually regarded as one of the most significant characteristics, but in the purchase of pesticides, the brand is regarded as the third most important factor after efficacy and price. In purchasing decisions for seeds and pesticides, fellow farmers are seen as highly essential, followed by Agro-input dealers. The significance ascribed to the choice to acquire the product, the perceived importance of the product, and lack of understanding about the product all influenced the number of information exchanges for the procurement of seldom purchased inputs. Farmers' traits affected their purchasing decisions, and this influence was particularly pronounced in cases when Agri-inputs were purchased often. The education and agricultural experience of the farmers were the two most important factors influencing their purchasing decisions in both categories of inputs. Most Agri-inputs were shown to be positively linked with all aspects of the farmers' buying process, including purchase decision time, number of information sources consulted, number of suppliers examined, and number of interactions with suppliers. The study also reveals that, while all inputs can be placed on a continuum of having the least expensive to the most extensive buying process (based on the combined effect of all elements of the farmers buying process), their relative positions may differ when the extensiveness is studied on different individual elements of the buying decision process and the farmers' characteristics. And, as a result, such disparities point to the impact of additional factors on farmers' purchasing decisions that were not included in the study's preliminary findings. These findings point to the necessity for more research into this understudied topic. The study's findings can also provide important clues to Agri-inputs companies about their customers' behavior, allowing them to rethink their marketing approach for growing countries like India.

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