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Introduction

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CHAPTER NO. 1
INTRODUCTION

1.1 Introduction

Output marketing is an aspect of agricultural marketing which has been dealt with so far. Another equally important aspect is the marketing of agricultural input or farm input. A timely and adequate supply at fair prices of agriculture inputs –Seeds, fertilizers, plant Protecting Chemicals, farm equipments and tools, tractors and diesel oil are of great importance in the production of farm output. The importance of purchased agricultural inputs has significantly increased in the recent past with the technological breakthrough.

The importance of an efficient marketing system for agricultural inputs can be explained as follows:

Farm products are produced in the countryside. The effect of change in production methods can therefore be realized only if the farm inputs reach the farmers in time at the least cost.

The use of modern inputs by farmers largely depends upon the spread of information about them. The marketing system has to perform this function .An efficient marketing system for agri inputs is essential for the development of the input manufacturing and supplying industries in the country.[1]

Similarly, Lots of research has been done on 'Rural Marketing'. Rural Marketing covers only the areas of marketing done for people living in villages i.e. in rural areas.

As per the 2001 census, 72.2% of the population lives in about 638,000 villages. Out of this population, there are 760 million farmers in India by 2001 census. Marketing study should be done on more specific way like if we consider the 72.2 % population living in rural India and their main occupation for living is farming, then the marketing should be targeted to farmers buying behavior than rural customers buying behavior. A specific study on Farmers buying behavior regarding various products is a need of time. As research on rural marketing of Fast Moving Consumer Goods has received lot of focus from marketing researchers, specific research on buying behavior of farmers regarding agricultural inputs need some attention. As

[1] Acharya S.S. & Agarwal N.L. Agricultural Marketing in India, 2009,4th edition, pp.205

on date there are thousands of Agriculture Input companies operating in India. Most of these companies formulate their marketing strategies on the basis of findings of Rural Marketing research which mostly covers the research of Fast Moving Consumer Goods. As these two types i.e. Agri input products and Fast Moving Consumer Goods are different from each other in following manner.

1. The purpose of Use- Fast Moving Consumer Goods is used mostly for personal and family use As against Agri Inputs for farming purpose.
2. Volume of purchase-In case of Fast Moving Consumer Goods volume of purchase is depending on family size mainly. But in case Agri inputs, it depends on size of farm and requirement of farm.

These differences between the two made the researcher to think about this research topic i.e. study of farmers buying behaviour of agri inputs.

Agri input products are as follows-

- Seeds,
- Fertilizers
- Plant Protection Chemicals
- Machineries
- Equipments, Tools
- Tractors
- Diesel and Oil

It is found that information sources play significant role in farmer's buying process. Farmers buying process is dependent on the information they receive from various sources, so researcher also studied the farmer's attitude about reliability of these information sources.

1.2 Statement of Research Problem

Since rural and output marketing received lot of attention from marketing researchers, major part of rural agricultural industry i.e. agricultural input has been left untouched. Farmers, who are the buyers of these agri inputs plays significant role in agricultural marketing and so there buying behavior too. Farmer's buying behaviour at the time of purchasing any other product and at the time of purchasing agri input may differ. His behaviour might be

influenced by various factors. This research attempts to explore those factors which affect farmer's buying behaviour at the time of purchasing agri input.

1.3 Objectives of the Study

The objectives of this study are as follows:

1. To study the farmers buying behavior of agri-inputs
2. To find out the changes if any in farmer's preferences towards buying variables as per farmer's demographic characteristics
3. To find out the farmer's attitude towards various information sources in terms of its reliability.
4. To observe the buying behaviour of farmers and make necessary suggestions.

1.4 Hypotheses of the Study

Present research tests following hypotheses:

1. Farmer's preferences towards buying variables changes with their age.
2. Farmer's preferences towards buying variables changes with their educational qualification.
3. Farmer's preferences towards buying variables changes with their landholdings.

1.5 Research Methodology

Study is about describing the farmers buying behavior. So, for this research, the research design used is 'Descriptive Research design'.

1.5.1 Data Collection

Study requires data regarding farmer's demographic profile, information about seed industry, fertilizer industry and plant protection chemical industry. Conceptual information regarding buying process, seed marketing, fertilizer marketing and plant protection chemical marketing is required for the study.

1.5.2 Data Sources

1. Primary Data

Primary data regarding farmer's demographic profile, farmer's preferences towards information sources, and importance of various factors at the time of purchasing agri-inputs has been collected using structured schedule. Researcher also interviewed some dealers of agri-inputs operating in Satara Taluka, informally to understand their views regarding farmer's buying behavior.

Data collection period for the study is October, 2011 to January, 2012.

2. Secondary Data

Secondary Data regarding seed industry , fertilizer industry and plant protection chemical industry of Satara taluka, Satara taluka's cropping pattern, information regarding buying process, seed marketing, fertilizer marketing and plant protection chemical marketing has been collected through various reference books, magazines, journals and websites,

1.5.3 Instrument for Data Collection

Structured schedule was used to collect the primary data. Schedule is divided in Six parts. First part A focuses on studying the farmer's attitude about reliability towards various information sources. Second part B describes the relative importance, farmers attach to various factors at the time of purchasing agri-inputs. At third part C farmers were asked to give the importance to various factors, they consider while purchasing 'Seed'. Fourth part D describes the various factors, farmers feel important while purchasing 'Fertilizer'. At fifth part E farmers were asked to give relative importance to various factors they consider while purchasing 'Plant protecting chemicals'. Sixth part F consists of questions about respondent's demographic information.

1.5.4 Pilot Study

Pilot study has been conducted in Chinchner Village in Satara Taluka.

Sample size of 35 has been taken for this study. Data has been collected with the help of structured schedule. After the pilot study, schedule was revised. Structured schedule used for pilot study was consisting 5 point rating scale. It was found that respondents were not able to

make distinction between those five preferences. So the schedule was revised with 3 preferences. At part C of the schedule the variables 'Variety' and 'High yield' were separately mentioned. It was observed that respondents selected both the variables and they prefer purchasing high yielding variety, so the variable was merged to 'High yielding variety' At part D of the schedule the variable 'As per the growth' was in the schedule to know the farmers preferences towards it. Later it was removed as farmers do not purchase fertilizers at every growth stage of crop. At part E of the schedule the variable 'Pesticide that do not harm beneficial organism on crop' was removed as no response was obtained to this variable. The variable 'Pesticide that can be applied with available application equipment' was removed as pilot study revealed that majority pesticides are available in liquid form only, so all farmers use it through sprayer.

1.5.5 Variables

For studying the farmers reliability towards various information sources , researcher identified 14 information sources, from which farmers get information regarding purchasing agri-inputs viz, Progressive farmers, Co Farmers, Relatives, Krishi Sevak, Agriculture Service Centers, Taluka Agriculture Office, Agriculture Scientists, Krishi Vigyan Kendra, Agriculture Research Stations, Agriculture Universities, Agricultural Exhibitions, Newspaper, Television, Radio.

There are certain factors which are common while purchasing any agri-input, i.e. Brand, Price, Availability, Credit facility and farmer's relation with dealers.

Some variables changes with the nature of input to purchase. Farmers consider some variables while purchasing 'Seeds' which are different than that of 'Fertilizer' purchasing.

For purchasing seeds, the variables are High yielding seed variety and Purity of seed. In India more than 80 percent of the seed used by farmers is obtained by 'previous year's crop' or from 'fellow farmers'[2]. At The time of purchasing fertilizers, farmers consider following factors, fertilizers that fulfill soil requirements, fertilizers that will match crop type and its nutrient requirements as well as that will help in reducing disease occurrence.

[2] Acharya S.S. & Agarwal N.L. Agricultural Marketing in India, 2009.4th edition, pp.222.

While purchasing 'Plant Protecting Chemicals' following variables plays vital roles viz. checking the label to make sure the pesticide chosen is registered to use both on the pest and the crop, purchasing least toxic pesticide, selecting registered products which don't harm the beneficial organisms in crop.

1.5.6 Sampling

Population for the study was 104423 i.e. No of farmers in Satara Taluka [3].Sample size 200 was determined by convenience sampling method. Validated responses were finalized to 184.

1.5.7 Data Analysis

Data is classified and presented in tables. Analysis is done by mean and standard deviation. Independent sample t-test is used for testing the hypothesis. t test can be defined as a statistical examination of two population means. Independent sample t-test examines whether two samples are different and is commonly used when the variances of two normal distributions are unknown.

Data is analyzed using MS-Excel.

1.6 Scope and Limitation

Scope of the Study

Study has been conducted in Satara Taluka only. Study has focused on studying farmers buying behavior of Agri inputs viz., Seeds, Fertilizers and Plant Protecting Chemicals.

Present study will be helpful for agri-inputs marketers to attract the farmers from Satara taluka more effectively.

Limitation of the Study

Farmer's buying behaviour is qualitative aspect of study and difficult to measure in comparison with all demographic variables. Therefore researcher studied only three major demographic variables viz, Age, Education and Landholding.

[3] As per the information provided by Satara Tahsil Office.

1.7 Significance of the Study

Farmers buying behaviour regarding purchase of specific seed and tractor has been done so far. But farming business needs some other inputs also like fertilizers and plant protecting chemicals. This study tries to find out the farmer's buying behaviour at the time of purchasing these inputs like seeds, fertilizers and pesticides. This study will help marketers of agri-inputs in Satara taluka in targeting their customers more effectively.

1.8 Meaning and Definition of Related Terms

1. Agriculture Marketing
2. Input Marketing
3. Buying Behaviour

1. **Agricultural Marketing**

   Agriculture Marketing comprises of all activities involved in supply of farm inputs to the farmers and movement of agricultural products from the farms to consumers.

   Agricultural marketing system includes the assessment of demand for farm inputs and their supply, post harvest handling of farm products from gate to processing industries and /or ultimate consumers, assessment of demand for farm products and public policies and programmes relating to pricing, purchase and sale of farm inputs and agricultural products. It includes various functions like assembling, transportation, storage, buying, selling, standardization, and grading, processing and sales promotion.[4]

2. **Input Marketing**

   Agricultural inputs can be termed as direct inputs that include water, fertilizers, and pesticides. Indirect inputs include equipment and fuel.[5]

   And the activity of marketing these inputs is termed as Input Marketing

   - Seed Marketing

     Seed marketing should aim to satisfy the farmer's demand for reliable supply of a range of improved seed varieties of assured quality at an acceptable price.

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[4] Talathi, Naik, Jalgaonkar, Introduction to Agrivultural Economics and Agribusiness Mgt., 2008, pp.133.

[5] http://oregonstate.edu/orb/

However, the difficulties of organizing effective seed delivery systems, especially to small-scale farmers, have often been underestimated in comparison with the attention given to other seed industry activities. Historically, more attention and resources have been devoted to the physical aspects of seed production and storage than to the difficult organizational issues involved in managing sales and distribution.

Marketing is one of the most important, yet misunderstood business activities and frequently means different things to different people. To the retailer in the agricultural sector, for example, it is selling seed along with other inputs to the farmer. To the farmer it is simply selling what he produces on his farm. However, whatever the circumstances, a well-defined sequence of events has to take place to promote the product and to put it in the right place, at the right time and at the right price for a sale to be made. Too many people think of marketing solely in terms of the advertising and selling of goods, whereas in reality marketing starts long before the goods exist and continues long after they are sold. Therefore, for the marketing process to be successful:

· the farmer consumer's needs must be satisfied;
· the seed company's objectives must be realised.[6]

3. Consumer Buying Behaviour

The study of how and why people purchase goods and services is termed consumer buying behaviour. The term covers the decision-making processes from those that precede the purchase of goods or services to the final experience of using the product or service. Models of consumer buying behaviour draw together the various influences on, and the process of, the buying decision. They attempt to understand the proverbial 'black box' of what happens within the consumer between his or her exposure to marketing stimuli and the actual decision to purchase.[7]

[6] http://www.fao.org/docrep/V4450E/V4450E02.htm#A%20definition%20of%20seed%20marketing
[7] Kotler et al. (2004) Chapter 7. pp. 242-244. 'Consumer behaviour' and 'A model of consumer behaviour'.

1.9 Chapter Scheme

The research report contains following chapters

Chapter 1 –'Introduction'

Includes, Introduction to the study, research problem, hypothesis, objectives, scope and significance of the study and research methodology followed for the study and literature review. Literature review gives the information about various researches done in the field of farmers buying behaviour.

Chapter 2 –'An Overview of Agri-Input Industry in India'

Signifies the study about Agri- input industry in India. An Overview of Agri- input Industry in India. Profile of Satara taluka.

Chapter 3 –'Conceptual Framework'

Covers the study of concepts used in research. Concepts of Marketing, Agri-Marekting, Input Marketing, Buying Behaviour.

Chapter 4 –'Data Analysis and Interpretation'

Presents the data analysis and interpretation, classification and Tabulation of data, data analysis using statistical tools and software and its interpretation done by the researcher.

Chapter 5 –'Observations and Suggestions'

This chapter presents the observations of data analysis, suggestions and conclusions based on data analysis

At the end of all the chapters, schedule used for data collection and list of references is mentioned.

1.10 Review of the Literature

Introduction

Several researchers have tried to study the buying behaviour of farmers regarding various inputs like, seed, tractor, and fertilizer. But all have done specific research about single input. So researcher tried to study the combined research about farmer's buying behaviour regarding seed, fertilizer and pesticides.

Khushdeep Dharni and Kuljit Singh have done the research on 'Buying Behaviour of Agri input customers of organized rural retail outlets'. Two top and bottom retail outlets on the basis of saof Godrej Aadhaar and Hariyali Kissan Bazaar were included in the study.Random sampling method was used to draw the sample size of 120.Results of study indicates that major items purchased from rural retail outlets included implements, seeds and fertilizer. Quality and trustworthiness were the major reasons for purchasing from the organized rural retail outlets as compared to other options. Price was the most important consideration at the time of purchasing agri inputs followed by packaging and branding. Fair billing and home delivery were considered less important. Research was concluded with, agri inputs remains a price-sensitive market as factors like quality, brand and packaging were considered less important.

Article available online "Farmers' buying behaviour of hybrid cotton seeds in Pollachi Taluka of Coimbatore district, Tamil Nadu" which is published in Indian Journal of Agricultural Economics in July 1, 2000 by Rao, B J Ramamohana; Narayanan, V Venkat The paper attempts to study the buying behaviour of hybrid cotton seeds by the farmers and to assess the brand loyalty of farmers raising hybrid cotton seeds. The study is based on data collected from a random sample of 30 farmers who raised cotton hybrids, selected from three villages in Kinathukkadavu block of Pollachi taluk in Coimbatore district of Tamil Nadu. Conventional percentage analysis was used to draw inferences on education, experience in farming, farm size, etc. Garrett ranking technique was employed to delineate the major factors influencing the buying behaviour of farmers and source of information and awareness. Markov Chain analysis was used to study the brand switching.

Article published online "The identification of factors that influence farmer's buying behaviour of new agricultural tractors." by the Authors: C. A. Bisschoff; A. de; K. Marais M. J. van Reenen.In this article author attempted to study the factors that influence the buying behaviour of farmers of tractor.Eight factors were identified by means of principle various factor analysis. These factors are: Product and service qualities, Operational qualities, Pre-purchase planning, After-sales service, Ergonomics, Ease of operation, Cost of credit and Potential savings. These factors declare a cumulative variance of 55, 65 per cent. Three major groups could benefit from the results. First, the buyers of agricultural tractors since it could increase their level of understanding of the important considerations that are connected to the replacement of old tractors. Secondly, agricultural economists and advisors should be able to increase the quality of their advice if they have a better understanding of tractor buying behaviour. Thirdly, financial institutions ay benefit by a more indepth knowledge why a farmer applies for a loan to buy a new tractor.

A.R.M. Zabid, M.S. Samsinar and M.I. Mansor done the study on 'Farmers Buying Selection Criteria of Agricultural Inputs'. Study has been conducted in Malaysia. The Malaysian farmers' selection criteria of agricultural inputs, attitudes towards selecting the inputs, and the influence of socio-demographic factors in the selection of inputs were examined by using a personal interview with vegetable farmers. It was found that farmers perceived quality as most important criteria in selection of inputs, while advertising was perceived as least important. Vegetable farmers have favourable attitudes towards quality, product availability and fair prices, and less favourable attitudes towards advertising influence. The socio-demographic factors such as income, farm size, geographical distribution, education level, and ethnic group (race) have some influence on farmers' selection criteria of agricultural inputs.

Thomas F. Funk and W. David Downey conducted a study on 'Fertilizer purchasing behavior of Indiana farmers' this study examines the fertilizer buying behavior of Indiana farmers. The main buying behavior dimensions included in the analysis are: type of fertilizer used, importance and availability of services, soil testing, shopping activities, information sources, fertilizer pricing, dealer selection and farmer attitudes. The results provide important

insights into farmer behavior and preferences which can be used to develop more effective marketing programs for fertilizers and related services.

Rohini, A.; Padmanaban, N. R. conducted a study of "Farmers brand and dealer loyalty to pesticides in Coimbatore district." This study was carried out in Coimbatore district, Tamil Nadu, India with 120 sample farmers to analyse the factors responsible for brand and dealer loyalty towards pesticides. The results showed that price of the preferred brand (x_1) and efficiency of the preferred brand (x_2) were significant at one per cent level for brand loyalty. The factor advertisement also influenced the brand loyalty at five per cent level. With regard to dealer loyalty, factors such as credit availability (x_1) and quality of product (x_2) were significant at one per cent level. The study showed that farmers are loyal to pesticide brands and also to pesticide dealers.

Michael Boehlje, Todd Doehring and Steve Sonka conducted a research on "Farmers of the Future: Market Segmentation and Buying Behavior". They used a simple exponential growth/decay and reallocation simulation model for tracking the movement of farms and land among five different farm types and five different buying behavior classifications for the years 2001 to 2016. The model relies on historical trends, computed from USDA Census of Agriculture data, to simulate future possible changes in land allocation and number of farms by farm type. The research concluded that dramatic structural changes are occurring in U.S. and world agriculture. Significant shifts are occurring in both numbers and types of farming operations, and the structural changes of the past are expected to continue if not accelerate. These changes have important implications for the customer base of input supply manufacturers, distributors, and retailers, and increasingly such organizations are attempting to better understand their customer segments and develop marketing strategies to respond to future farmer buying behavior.

In order to generate relevant information about seed demand, the FAO/EC project Strengthening National Seed Production Capacity in Afghanistan (GCP/AFG/018/EC) organized a Survey in May-June 2004, which was carried out by the Coordination of Afghan Relief (CoAR) Survey Unit(formerly called the Afghan Survey Unit) to: (i) examine the seed buying behaviour of farming households with the view to estimate the potential demand for quality seed of major crops; (ii)investigate possibilities for market-oriented seed production; and (iii) examine the nature of prices and farmers' attitudes regarding variety choice and seed use, and explore ways to influence these to promote demand for quality seed. Sam Kugbei and Shahabuddin Shahab presented report about it. Findings of survey reveal that Seed quality shall remain the overriding factor when farmers make the decision to buy or not buy seed. It seems that cheaper pricing will only play a part if quality is assured in the first place. Seed suppliers would have to operate as cost effective as possible so at to compete on price while offering the best quality seed possible.

Feeney, Roberto Berardi, Valeria and Steiger, Carlos presented case study on "Agricultural Input Market Segmentation in Argentina: How do Argentine farmers buy their expendable inputs? The Case of the Seed Industry" in IFAMA Conference, Frankfurt, June 2011. The main goals of this paper was to identify distinctive market segments for argentine farmers purchasing seeds, segmenting farmers into buying characteristics according to their purchasing behavior and in this way provide some answers of how Argentine producers purchase their agricultural inputs. Argentine farmers were segmented in four clusters according to their seed buying behavior: performance, price, balance and convenience segments. While farmers in the performance and balance segments would be business purchasers, the ones in the price segment are cost-oriented. The convenience farmers, on the other hand, are those who prioritize location and convenience in their purchases.

Michael M. Waithaka, Philip K. Thornton, Keith D. Shepherd ,Nicholas N. N diwa presented a research paper on "Factors affecting the use of fertilizers and manure by smallholders: the case of Vihiga, western Kenya". The objective of research was to explore factors influencing fertilizer and manure use at the farm level. The results of this analysis show that the use of both manure and fertilizer in subsistence and semi - commercial systems

in western Kenya are strongly influenced by household factors, suggesting several policy implications. Policy changes are needed that provide incentives and opportunities for off-farm employment in the rural areas. This will reduce the burden on farms and also boost farm incomes in the form of remittances. Results of the analysis suggest that income gained by such employment could further promote the use of high-cost, high-value inputs such as fertilizers.