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CONSUMER BEHAVIOUR TOWARDS AGRICULTURE EQUIPMENTS: A STUDY WITH REFERENCE TO ERODE DISTRICT

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ABSTRACT

India is an agricultural country. Agriculture is the backbone of the Indian economy irrespective of the development in industry technology etc. As Mahatma Gandhi said, "India lives in villages and agriculture is the soul of Indian economy". Nearly two – third of its population depends directly on agriculture for its livelihood. Hence, agriculture is the main stay of India's economy. Agricultural mechanization is one of the great achievements of the 20th century. Agricultural tools, implements and machines help in increasing production, productivity and profitability by enabling timely farm operations and reduction in labour cost. It also increases the utilization efficiency of costly inputs (seeds, chemical, fertilizer, and water) through precise metering and placement, efficient energy utilization and reducing the cost of operations for higher profitability and economic sustainability. Such being the case, it is worth making a study on consumer behavior towards Agriculture equipments to help the manufacturers to place the agriculture equipment especially tractor in market competitively. The study was carried out in Erode district among the farmers who own tractor for their agriculture activities based on the questions related to consumer behavior towards the purchase of tractor.

Keywords: Consumer behaviour, Agriculture equipments, Tractor, farming, farm mechanization and technology.

INTRODUCTION

Agriculture sector is the predominant sector in India and it is the mainstay of the Indian economy. Its farm output ranks second in the world. Agriculture including fisheries and forestry was considered to be one of the largest contributors to the Gross Domestic Product (GDP). Agriculture is critical to the economy as it supports around 52% of the total workforce and agriculture is not only the source of livelihood for a large section of the population but it is also an important sector to the Indian economy from the food security point of view. Now it is in the third position after service sector and industrial sector. The share of agriculture and allied sectors in India's GDP was less than 20% continuously for more than seventeen years and it has reached almost 20 per cent for the first time making it the sole bright spot in GDP performance during 2020-21. (Economic Survey 2020-2021). Agriculture is the only sector which has clocked a positive growth of 3.4 per cent at constant prices in 2020-21 compared to other sectors.

Agriculture sector was given a high priority in the five year plans of the country with the purpose of ensuring self-sufficiency in food grains production. Availability of cheap labour, facilitated by lack of opportunities for labour, helped the agriculture sector to use them to take up the agriculture activities manually. In later days, availability employment opportunities in factories and services in nearby towns and cities, the government's rural employment creation program and rapid urbanization strained the availability of labour for agriculture activities. This situation opened up for the proliferation of technologies resulted in farm mechanisation contributing to higher productivity and greater output and hence, use of tractors form an integral part of farm mechanization. Tractor, one of the farm equipments used for multitude of purposes in agriculture like land reclamation, different crop cultivation activities and operations connected with raising the crops by attaching suitable implements. It also provides necessary energy for performing various crop production operations involved in the production of agricultural crops especially in India where the major operation is agriculture.

Moreover, Tractors enabled timely farm operations and increasing the utilization efficiency of costly inputs (seeds, chemical, fertilizer, and water) through precise metering and placement, efficient energy utilization and reducing the cost of operations for higher profitability and economic sustainability. Thus, it has become an integral part of farm sector and the problems of farmers have been erased by the application of tractor for agricultural activities.

The growth of Indian tractor has become matchless even with countries of long history of tractor manufacturing. It is a typical industry where both imported technology and indigenously developed technology have developed towards meeting the overall national requirements of the country. As per the global spotlight on tractor manufacturers in terms of volume seems to be swinging away from the USA, UK and western and eastern Europe countries towards India where growth in the number of producers and volume of in recent years have been impressive. In India, tractor industry has played a vital role in the development supported by fundamental regulatory changes in the Indian Industrial sector and economic reform programs particularly in the financial sector, which has played a big role in boosting the demand and sustaining a long-term growth in the industry.

Statement of the Problem

In the present world, the speed of technological developments in industrial sector, specifically in tractor industry, intensified global competition on account of globalisation and free regulatory environment questioned the survival of the industry based on its competing ability. Hence, the industry is required to have access to the latest technological findings, reduce the costs and prices, improve product quality and provide qualitative services in relation to the sale of the product tractor and flexible enough and prepare themselves to respond rapidly to competition and market changes. For the purpose, they started designing new improved models of tractors with improved features like ease of operation to suit their changing requirements. This indicates the changed landscape of the industry completely. Consequently, understanding the bases on which consumers make decisions to buy poses another strategic challenge for the tractor manufacturers to ensure supply of suitable product to enable them to have multi use of the product compared to their competitors.

To meet this end, the manufacturers have to understand the buyer behaviour and their attitude towards the product and allied areas related to the purchase of the product. Thus, understanding the purchase process of consumers and their role, reasons for buying, how consumers make buying decisions and preferred payment method is needed to enable them to impress the consumers to enhance the possibility of selling the product

in the market. Based on the understanding, marketers of tractor can plan for the action required and implementing the action to meet the needs and wants of the consumers.

Objectives of the study

- To assess the purchase process of farmers in purchasing tractors
- To find out the reasons for buying tractors and evaluate its relationship with purchase decision of tractors.
- To identify the role of buyers in purchasing tractors

REVIEW OF LITERATURE

Geetha and Jenifer(2014) studied the consumer behavior towards purchase of eco friendly products in Coimbatore and proved that consumers in Coimbatore are aware of environmental problems and green products in the market. **Solanki, et al.(2013)** analyzed the consumer buying behavior towards agriculture inputs in rural area of Bardoli and revealed that the respondents were mainly purchasing the agri inputs from the cooperative societies for the reasons of fairness in billing and credit facilities given to the farmers and ensured that consumers are price-sensitive. **Altundaş ve Demirtola (2004)** found that agricultural mechanization is an agricultural production technology as a complementary element which increases the effectiveness of other agricultural inputs, ensures the economic efficiency and improves the working conditions. **Zeren vd.,(1995)** found that mechanization in agricultural enterprises is implemented at different levels depending on the technical and economical conditions of the enterprise. **Howard and Sheth (1969)** have suggested that consumers make a decision after considering the characteristics of a product such as price, quality distribution, availability and services. **Ingene and Levy (1982)** found that the purchase behavior of customers, who are ready to pay cash, is largely influenced by cash discounts. They obtained cash discounts when purchase is at least of moderate size.

RESEARCH METHODOLOGY Research methodology covers the way to systematically solve the research problem. It refers to the science of studying the different aspects to be done in carrying out the research. In other words it is decision on various steps that are generally adopted by researcher in studying the research problem defined. It includes decision on research design, selection of sample, collection of data and analysis of collected data.

·**Research design:** It is a plan structure to obtain the answer to research questions. In fact research design is a blueprint that is followed in completing the study. The present study used exploratory design as the present study is not build on any previous study so the purpose of the study is to select variables which influence the consumer behaviour towards tractors.

·**Selection of sample:** As it is impossible to contact each and every individual of the population on account of number of limitations like time, money and so on. Therefore, a social science research study is preferably narrowed down to a representative sample to make the study more manageable and convenient. Hence, the present study considered 320 farmers who use tractors for their agriculture activities in Erode district.

·**Collection of data:** The data can be collected from primary and secondary sources. Primary data was collected using Questionnaire which was formulated in a simple language in close end form with multiple choices. Researchers also used secondary data relevant to the study.

Analysis of Data: The data used for the study are classified using percentage analysis and statistical tool and technique like mean, standard deviation and chi-square test were used as appropriate for analysing the data.

Analysis of Demographic Profile of the Respondents

The demographic profile of the tractor owners under the study was presented in table 1. The respondents were asked questions on 'age' (4 items), 'level of education'(5 items), 'marital status' (2 items), 'land holdings' (4 items), annual family income' (4 items), 'segment of the tractor used' (6 items), 'annual use of the tractor' (6 items), and 'frequency of replacement of tractor' (5 items) and the description in terms of consolidated position of the surveyed respondents was given in the following table.

Table 1: Description of Demographic Characteristics of the Respondents

Basis of Classification		Number of Respondents(Percentage)	Total
Age	20-30 Years	38(11.8)	
	30-40 Years	89(27.8)	
	40-50 Years	153(47.9)	
	Above 50 Years	40(12.5)	320
Educational Qualification	No education	58(18.06)	
	School education	186(58.34)	
	Diploma holder	18(5.56)	
	Graduate	36(11.1)	
	Post Graduate	22(6.94)	320
Marital Status	Married	276(86.11)	
	Unmarried	44(13.89)	320
Land Holdings	Less than 3 acres	60(18.75)	
	3-5 acres	104(32.64)	
	5-7 acres	76(23.61)	
	More than 7 acres	80(25)	320
Annual family income	Less than Rs.3 Lakhs	184(57.64)	
	Rs.3-5 Lakhs	96(29.87)	
	Rs.5-7 Lakhs	29(9.02)	
	More than Rs.7 Lakhs	11(3.47)	320

Segment of the Tractor used	Less than 20 HP	38(11.81)	
	21-30 HP	102(31.94)	
	31-40 HP	82(25.69)	
	41-50 HP	68(20.84)	
	51-60 HP	15(4.86)	
	Above 60 HP	15(4.86)	320
Annual Use of Tractor	Less than 60 Days	62(19.44)	
	61-120 Days	105(32.64)	
	121-180 Days	73(22.92)	
	181-240 Days	36(11.11)	
	241-300 Days	24(7.64)	
	301-365 Days	20(6.25)	320
Frequency of Replacement of Tractor	Depends on Condition	151(47.22)	
	Depends on work	78(24.31)	
	Depends on need for HP	47(14.58)	
	Depends on Availability of new model	36(11.11)	
	After 16 seasons	8(2.78)	320

Source: Calculated from Primary Data

Table 1 showed the details of analysis of demographic characteristics of the sample respondents. It was clear that the sample was classified into 4 age groups viz., '40-50 years' '30-40 years' '20-30 years' and 'above 50 years' and '20-30 years'. Among these age groups, respondents with 40-50 years of age formed highest percentage with 47.9%. The respondents' level of education was categorised into 'no education', 'school level', 'diploma level', 'graduate level' and post graduate level and respondents with school level of education constituted highest percentage viz., 58.34.

Majority of the respondents (86.11%) surveyed were married and the balance of 13.89 per cent represented unmarried persons. Nearly one-third (32.64%) of the respondents were holding 3-5 acres of land and others holding 7 acres(25%). Among the surveyed respondents, more than half of them (57.64%) earned annual family income of less than Rs.3 Lakhs. The horse power of the tractors used by the surveyed population ranged 21-30(43.75%).

Regarding usage of tractors, 32.64% used the tractor for 61-120 days per year. Of the total respondents of the study, nearly half of the respondents (47.22%) used to replace the tractors depending on the condition of the tractors. (Table1)

Analysis of Consumer Buying Behaviour

For the purpose of analysing the consumer behaviour in purchasing tractors, a set of ten questions comprising of general aspects including eight items for 'process of tractor purchase and brand choice', four items for 'reasons for buying a tractor'; two items for 'payment method preference' and four statements for 'buyers' role in the tractor purchase decision' have been analysed. The results of such analysis were presented in the following tables from 2-5.

Analysis of Process of Purchase

All the respondents were asked to indicate their participation in different forms during the process of purchase of a tractor. Eight activities were listed as activities involved in the process of brand choice and purchase of a tractor. This was analysed with the help of percentage analysis. The results were given in the following table 2.

Table 2: Analysis of Purchase Process

S.No.	Activities in Purchase Decision	Frequency	Percentage
1.	Purchase decision of tractor	306	95.6
2.	Decision on the budget	270	84.4
3.	Initial choice of brand or model	276	86.2
4.	Contact with dealers	229	71.7
5.	Collecting information about brands and models	233	72.7
6.	Visiting Dealers	284	88.6
7.	Involved in price bargaining	246	76.8
8.	Final decision to buy the tractor	285	89.13

Source: Calculated from Primary Data

The sample respondents were asked to indicate their participation in the purchasing process of tractor and selection of the brand of tractor to be purchased. It was found that more than 95.6 per cent of respondents participated in their purchase decision of tractor, 84.4 per cent actively involved in deciding the budget, 86.2 per cent played their role in choice of the brand or model, 71.7 per cent maintained contact with dealers to get information about the tractor and related issues, 72.7 per cent involved in collecting information about brands and models available in the market and 88.6 per cent made a visit to dealers for the purpose of collecting information related to tractors like availability, price, mode of payment, time of delivery and other related issues in purchasing the tractor. 76.8 per cent of the respondents involved in the process of price bargaining with the dealer and finally 89.13 per cent of the respondents took part in the final decision of buying tractor.

It can be concluded that highest percentage of the respondents(95.6%) participated in the purchase decision of the tractor.

Analysis of Consumer Buyer Behaviour

Attributes related to consumer buyer behaviour under the present study including the reasons to buy a tractor and payment method were analysed using demographic characteristics of the tractor owners. Reasons for buying a tractor by the respondents was analysed with the help of percentage, mean and standard deviation for the behaviour related variables and chi-square test was used to find the relationship between the reasons for buying and purchase of tractor

The results of the analysis of reasons for buying a tractor were presented below in table 3.

Table 3: Analysis of Reasons for Buying a Tractor

Reasons	Mean	SD(%)	SDA(%)	DA(%)	NS(%)	A(%)	SA(%)	χ^2 Value	Asymp. Sig.
Increase in income available	3.06	7.26	58 (18.12)	49 (15.31)	71 (22.19)	104 (32.05)	38 (11.88)	5.029	0.392
To tackle labour shortage	3.51	8.99	18 (5.62)	36 (11.25)	84 (26.25)	128 (40.00)	54 (16.88)	131.28	0.010*
Increase in Land holding	3.29	8.34	20 (6.25)	64 (20.00)	89 (27.81)	96 (30.00)	51 (15.94)	78.966	0.012
Want to rent it out	3.32	7.82	42 (13.12)	56 (17.05)	60 (18.75)	82 (25.63)	80 (25.00)	92.612	0.000*

Source: Calculated from Primary Data

Annotations: * $p \leq 0.01$ (Asymp. Sig. (two-sided)); Mean = Weighted Mean Score; Std. Div. = Standard Deviation; N = Number of respondents; SD = Strong disagreement; D = Disagreement; NS = Not sure; A = Agreement; and SA = Strong Agreement.

Table 3 presented the analysis of reasons for purchasing a tractor by the sample respondents. It was understood that 'tackling labour shortage' (M= 3.51; SD=7.26) with the help of a tractor was the most important reason for buying a tractor by the respondents, next level of importance was given to the intention of earning income by 'renting it out' (M= 3.32; SD=7.826) and it was followed by 'increase in the land holding' (M= 3.29; SD=8.34). The respondents have rated at low level for the reason of purchasing tractor as 'increase in the available income' (M= 3.06; SD=7.26).

It could be concluded that tackling labour shortage was the most important reason for buying a tractor.

The Chi-square (χ^2) test was also used to assess the relation between purchasing a tractor and reasons for buying the same. Results of the χ^2 test revealed that there was significant relationship between tractor buying decision and tackling the problem of labour shortage, earning income to rent out the tractor and increase in land holding. However there was no significant relationship between tractor buying decision and the reason of increase in income available.

Based on information obtained from Table 3, it was inferred that null hypotheses viz, there is significant relationship between tractor buying a tractor and the reasons for buying it in case of tackling labour problem, renting out the tractor and increase in land holding individually and hence were rejected. But in

case of increase in income available, there was no significant relationship and hence accepted. The calculations were made at 99 per cent confidence level and at significance level of 1 per cent.

Table 4: Cross Tabulation of Payment Method

Demographic Profile with its Attributes		Distribution of respondents	Mode of Payment (Percentage)		χ^2 Value	df	Sig.
			Cash(144)	Credit(176)			
Age	20-30 Years	38(11.8)	17(5.27)	21(6.53)	2.614	3	0.433
	30-40 Years	89(27.8)	40(12.49)	49(15.31)			
	40-50 Years	153(47.9)	69(21.6)	84(26.3)			
	Above 50 Years	4(12.5)	18(5.6)	22(6.9)			
	Total						
Educational Qualification	No Education	58(18.06)	26(8.09)	32(9.97)	2.426	4	0.456
	School Education	186(58.34)	84(45.17)	102(13.17)			
	Diploma Holder	18(5.56)	8(2.48)	10(3.08)			
	Graduate	36(11.1)	16(4.93)	26(6.17)			
	Post Graduate	22(6.94)	10(3.15)	12(3.79)			
Total							
Marital Status	Married	276(86.11)	124(38.68)	152(47.43)	0.346	1	0.614
	Unmarried	44(13.89)	20(6.31)	24(7.58)			
Total							

Annual Income	Below Rs.3 L	184(57.64)	83(26)	101(31.64)	36.172	3	0.011
	Rs.3-5 L	96(29.87)	43(13.38)	53(16.49)			
	Rs.5-7 L	29(9.02)	13(4.04)	16(4.98)			
	More than Rs.7 L	11(3.47)	5(1.58)	6(1.89)			
Total							

Source: Calculated from Primary Data

From the above table 4, we could find out the distribution of respondents based on demographic factors and method of payment for the purchase of tractor. It revealed that in all the variables selected viz., age, educational qualification, marital status and annual income more than fifty per cent of the respondents preferred to purchase on credit basis.

The chi-square results for the said variables revealed that there was no significant relationship between respondents' age, educational qualification, and marital status and their preference towards method of payment i.e., cash or credit and the hypotheses were accepted. But in case of income(0.011), there was significant relationship existing between income level and respondents' payment preference was rejected.

Buyers' Role in the Tractor Purchase Decision

Respondents were asked about their role in the tractor purchase decision. Four different situations were presented to them. They were asked to give their opinion in the form of their participation in a particular activity. The results were consolidated using the demographic variables age, educational qualification and income level and presented in the form of table given below.

Table 5: Buyers' Role in the Tractor Purchase Decision

Demographic character	Variable	Number of Respondents(Percentage)			
		I was the only decision maker	I was one of the decision makers and played the decisive role	I was one of the decision makers, but not played the decisive role	Totally decided by others
Age	20-30 Years	8(2.5)	15(4.69)	9(2.81)	6(1.88)
	30-40 Years	14(4.38)	29(9.06)	28(8.75)	18(5.63)
	40-50 Years	25(7.81)	73(22.81)	24(7.5)	31(9.69)
	Above 50 Years	9(2.81)	18(5.63)	8(2.5)	5(1.56)
Total		56(17.5)	135(42.19)	69(21.56)	60(18.76)
Educational Qualification	No Education	8(2.5)	26(8.13)	19(5.94)	5(1.56)
	School Education	14(4.38)	96(30)	51(15.94)	7(2.19)
	Diploma Holder	12(3.78)	8(2.5)	5(1.56)	6(1.88)
	Graduate	6(1.87)	14(4.38)	8(2.5)	7(2.19)
	Post Graduate	6(1.87)	12(3.78)	5(1.56)	5(1.56)
Total		46(14.4)	156(48.79)	88(27.5)	30(9.38)
Annual Income	Below	14(4.38)	92(28.75)	53(16.56)	14(4.38)

	Rs.3 L				
	Rs.3-5 L	12(3.74)	46(14.38)	24(7.5)	9(2.81)
	Rs.5-7 L	8(2.5)	12(3.75)	5(1.56)	5(1.56)
	More than Rs.7 L	8(2.5)	6(1.88)	5(1.56)	7(2.18)
Total		42(13.12)	156(48.76)	87(27.19)	35(10.93)

Source: Calculated from Primary Data

On the basis of their 'age', 'gender' and 'marital status' it was noted that approximately half of the tractor buyers according to the selected variables were taken part decisively in the tractor purchase decision. Moreover, less than 20 percentage of the respondents have taken individual decision, more than twenty percentage of the respondents have played important role but have not taken active part in the decision making process and finally less than ten percentage of the respondents in case of respondents with educational qualification and income level were having no role in taking decisions relating to the purchase of tractor and in case of age category, slightly less than twenty percentage of the respondents had no role to play in tractor purchase decision.

Findings and conclusion

The study assessed that highest percentage of the respondents(95.6%) participated in the purchase decision of the tractor. It was found by the study that tackling labour shortage was the most important reason for buying a tractor.

It was also inferred that there is significant relationship between tractor buying a tractor and the reasons for buying it in case of tackling labour problem, renting out the tractor and increase in land holding individually and hence were rejected and there was no significant relationship between income level and reasons for buying a tractor.

The study revealed that in all the variables selected viz., age, educational qualification, marital status and annual income more than fifty per cent of the respondents preferred to purchase on credit basis and there was significant relationship existing between income level and respondents' payment preference. It was noted that majority of the respondents played decisive role in the purchase decision.

The study concluded that the tractor manufacturers frame strategies to approach the consumer in selling their tractors to get increased sales

LIMITATIONS OF THE STUDY

The present research has the following inherent limitations:

1. This study was restricted to Erode district only.
2. This study was confined only to the farmers owning tractors alone. Hence, the findings may not be generalized to other type of tractor consumers.

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