Factors Influencing the Purchase of Agricultural Tractors: An Empirical Study

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Abstract: *Consumers make purchase decisions in each and every aspect of their life. Thus studying consumer behaviour becomes more vital. All marketing decisions & activities are based on assumptions about consumer behavior. The following objectives were framed for the paper, to study the factors influencing the purchase of agricultural tractors and to evaluate the most important factors like brand name, subsidy, horsepower, maintenance etc considered for the purchase of agricultural tractors. The study was carried out in Sivaganga district of Tamilnadu state. Descriptive research design has been used in this study. The researcher has used both primary and secondary data for this research. The researcher has collected primary data from the tractor owners who had bought their tractor for service to the dealer point during the study period in sivaganga district. Factor analysis was used to find out the most influencing factors considered by the respondents while making the purchase decision of tractor. It is found as per the ranking given by the respondents subsidy is ranked first and followed by sources consulted, horse power, after sales service, price and brand name respectively are considered for purchase of tractors.*
Key Words: Agricultural Equipments, Tractors, Consumer Behavior, Factor Analysis, Branding, Marketing and Production of Equipments etc.

I. Introduction About The Study:

Consumers make purchase decisions in each and every aspect of their life. Thus studying consumer behaviour becomes more vital. All marketing decisions & activities are based on assumptions about consumer behavior. Consumer behaviour deals with the behaviour that consumer displays in the consumption of goods right from purchasing, using, evaluating & disposing them. In other way, it deals with what they buy, how often they use it when they by it, why they buy it where they buy and how they evaluate it after purchase. Understanding the consumer purchase process is critical to a marketer so as to design the marketing activities effectively.

Each step in the consumer decision making process is highly influenced by both internal and external factors. The internal factors include the individual's own motivation personality, perception, learning attitude and his own past experience in addition to the internal influencing factors, the external factors like the company's marketing efforts, ideas/opinions of friends, relations, family members and reference group members also have profound impact on the purchase decision of individuals.

II. Consumer Behaviour

The study of consumer is the study of how individuals make decisions to spend their available resources (time, money, effort) on consumption - related items. It includes the study of what they buy, why they buy it, when they buy it, where they buy it and how often they use it, how they evaluate after the purchase and the impact of such evaluations on future purchases and how they dispose of it. Consumer behaviour is concerned with the study of factors that influence people's behaviour in a buying situation. Marketers can make better marketing decisions only when they know why and how individuals make their consumption decisions.

III. Buying Decision Process

Consumers engage in a decision process to deal with the marketing environment and make purchases. The consumer goes through a series of logical stages to arrive at a decision when he faces a problem that could be resolved through a purchase. A typical buying process consists of the following five stages:

IV. Problem Recognition

The buying process starts where the buyer recognizes a problem or need. The need may be triggered by internal or external stimuli. Marketers need to identify the circumstances that trigger a particular need.

V.   Information Search

An aroused consumer will be inclined to search for more information. Consumer information sources fall into four groups: Personal Sources: Family, friends, neighbours, acquaintances. Commercial Sources: Advertising, salespersons, dealers, packaging, displays. Public Sources: Mass media, Consumer -rating organization. Experimental Sources: Handling, Examining, using the product.

VI.   Evaluation Of Alternatives

There is no single evaluation process used by all consumers or by one consumer in all buying situations.

VII.   Purchase Decision

In executing a purchase intention, the consumer may make up to five purchase sub decisions: a brand decision, vendor decision, quantity decision, timing decision and payment method decision.

VIII.   Post Purchase Behaviour

After purchasing the product the consumer will experience some level of satisfaction or dissatisfaction. The marketer's job does not end when the product is bought. Marketers must monitor post purchase satisfaction, post purchase actions and post purchase product uses too.

The above said consumer decision making process is influenced by many factors like personal, psychological, social, economic and marketing factors.

IX.   Objectives Of The Study

The following objectives were framed for the paper**:**
- ✓   To study the factors influencing the purchase of agricultural tractors.
- ✓   To evaluate the most important factors like brand name, subsidy, horsepower, maintenance etc considered for the purchase of agricultural tractors.
- ✓

X.   Limitations Of The Study

Like any other social research, this research also has the following inherent limitations:
1. This study is restricted to Sivaganga district only.
2. This study is confined only to the agricultural tractor owners alone. They may not be generalized to other type of tractor consumers.

XI.   Research Methodology

Research Design
    Descriptive research design has been used in this study. The objective of a descriptive study is to answer the 'who, what, where and how' of the subject under investigation.

XII.   Type Of Data Collected

The researcher has used both primary and secondary data for his research.   The researcher has collected primary data from the tractor owners who had brought their tractor for service to the dealer point during the study period in Sivaganga district.

XIII.   Methods Of Data Collection

For the descriptive type of researches, the best - suited research approach is survey method. The researcher has used interview schedule for the purpose of collecting primary data from the farm tractor owners for the study.

XIV.   Sampling Unit

The researcher has chosen the tractor consumers belonging to sivaganga district as the sample unit.

XV.   Sample Size

The sample size for the study is determined as 90.

XVI.   Sample Methodology:

The sampling method used by the researcher in this study is non-probability sampling and the method used is convenient sampling method. This method has been chosen because the respondents belong to farming community and they should be willing to spend sometime to collect data.

XVII. Analysis And Interpretation
Table – 1 Ranking of factors considered for buying tractor by the respondents

Factor	1	2	3	4	5	6	7	Total source	Avg Source	Rank
Price	09	19	21	08	04	-	29	335	3.95	7
Subsidy	53	24	12	1	-	-	-	576	6.4	1
Brand Name	37	31	17	5	-	-	-	550	6.11	2
HP	29	41	15	5	-	-	-	549	6.10	3
Maintenance	21	20	36	5	4	3	1	486	5.4	4
ASS	13	19	23	31	3	1	-	455	5.05	5
RSV	07	11	16	21	33	2	-	382	4.24	6

Source : Primary Data

Interpretation

From the above table it is very clear that subsidy factor is ranked as first in influencing the purchase of tractor, followed by brand name, horsepower of tractor, Maintenance, after sales service, resale value and price respectively.

Factor Analysis

The objective of factor analysis is to summarise a large number of variables into a small number of synthetic variable. Extraction method used is principal computer analysis, rotation method varimax with karsir normalization and rotation concluded in 14 iterations. The following is the table showing the variables and their description.

Table 2.1 variables and their description

Variable	Communality	Description of variables
VAR 00001	0.8824	Availability of spares
VAR 00002	0.7715	Easy reparability
VAR 00003	0.7849	Mechanics reputation
VAR 00004	0.6450	Brand's reputation
VAR 00005	0.7056	Engine
VAR 00006	0.6084	Dealer's reputation
VAR 00007	0.6910	Look of the tractor
VAR 00008	0.5243	References by friends
VAR 00009	0.4811	Performance with regard to agricultural operations
VAR 00010	0.6351	Braking system
VAR 00011	0.6230	promotional offers
VAR 00012	0.7737	Horse power
VAR 00013	0.6624	Resale value
VAR 00014	0.5581	Cost of spares
VAR 00015	0.6761	Loan availability
VAR 00016	0.6857	Service backing
VAR 00017	0.7235	Mileage
VAR 00018	0.2480	Enhanced features.

2.2 Variables and their factor loading's

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
VAR 00001	-0.0466	0.9070	-0.0338	0.2130	0.1050	0.8824
VAR 00002	0.0980	0.8500	0.0328	-0.0189	0.1950	0.7715
VAR 00003	0.1040	0.1890	-0.0494	0.1880	0.8370	0.7849
VAR 00004	0.1670	-0.0200	-0.0775	0.7380	0.2570	0.6450
VAR 00005	0.6030	0.5550	0.0672	-0.0471	-0.1650	0.7056
VAR 00006	0.0549	0.2050	0.1650	0.7310	0.0416	0.6084
VAR 00007	0.6950	0.2650	0.1100	-0.1270	0.3310	0.6910
VAR 00008	-0.0837	0.3570	0.2390	0.2770	0.5060	0.5243
VAR 00009	0.4750	-0.1480	0.1830	-0.0343	0.4460	0.4811
VAR 00010	0.7040	0.0045	0.2560	0.1650	0.2160	0.6351
VAR 00011	-0.0661	-0.0036	0.5860	0.5240	0.0249	0.6230
VAR 00012	0.7970	-0.0784	0.0817	0.2690	-0.2310	0.7737
VAR 00013	0.1740	0.1250	0.7750	0.0161	0.1250	0.6624
VAR 00014	0.2680	-0.0282	0.6680	-0.1970	0.0216	0.5581
VAR 00015	0.0856	-0.0443	0.7270	0.3710	-0.0247	0.6761
VAR 00016	0.4340	0.6400	0.2560	0.1160	0.0935	0.6857
VAR 00017	0.5020	-0.4320	-0.2190	0.2730	0.4030	0.7235
VAR 00018	0.3480	-0.0615	0.0512	0.1600	:0.3080	0.2480
Eigen Value	2.9388	2.7754	2.2522	1.9207	1.7924	

Factor grouping and their description

Factor 1 - Product

V5	Engine
V 7	Look of the tractor
V9	Performance with regard to agricultural operations
V10	Braking system
V12	Horse power
V17	Mileage
V18	Enhanced features

Factor 2 - Spares and Service

V1	Availability of Spares
V2	Easy reparability
V16	Service backing

Factor 3 - Economy

V 11	Promotional offers
V 13	Resale value
V 14	Cost of Spares
V 15	Loan availability

Factor 4 - Reputation

V 4	Brand's reputation
V 6	Dealer's reputation

Factor 5 - Reference group influence

V 3	Mechanic's advice
V 8	References by friends

Hence the above mentioned factors are the most influencing factors which make the consumer to prefer buying a tractor

Friedman Test

Friedman test is used for identifying whether there is any significant difference in the ranks given by respondents about various factors considered for buying tractor.

Ho: There exists no significant difference in the ranks given for various factors considered for buying tractors

Table 3

Factors considered for buying tractor	Mean Rank	Assignrd value
Price	4.83	5
Subsidy	1.19	1
Brand Name	5.55	7
Horse Power	3.52	3
Maintenance	5.18	6
After sales service	4.68	4
Sources consulted before buying tractor	3.04	2
N	90	
Chi-Square	277.542	
df	6	
Asymp. Sig. P Value	.000	
	P <0 .05 Significant Reject Ho	

Source: Primary Data

Inference It is found from the above table as per the ranking given by the respondents subsidy is ranked first and followed by sources consulted, horse power, after sales service, price and brand name respectively. According to the Friedman test results, the respondents ranking with regard to the factors considered for purchase of tractors are significantly different at 5 percent level of significance.

XVIII. Findings From Factor Analysis:

Factor analysis was used to find out the most influencing factors considered by the respondents while making the purchase decision of tractor. The researcher has grouped the factors into various heading as mentioned below.

- **Factor 1**

  Factor 1 is titled on "product" consisting of variables like engine, look of the tractor, performance with regard to agricultural operation, Braking system, horse power, mileage and enhanced features.

- **Factor 2**

  Factor is clubbed under the title "spare and services" which includes availability of spares, easy reparability and service backing.

- **Factor 3**

  Factor 3 is titled an "Economy" and consists of promotional offers, resale value, cost of spares, loan availability.

- **Factor 4**

  Factor 4 consists of brand's reputation and dealer reputation and it has been titled as "Reputation".

- **Factor 5**

  Factor 5 is titled as reference group influence and consists of variables like mechanics advice and references by friends.

Hence these are the factors considered mainly by the consumers while making purchase of Agricultural Tractors in sivaganga district.

XIX. Findings From Friedman Test:

- It is found as per the ranking given by the respondents subsidy is ranked first and followed by sources consulted, horse power, after sales service, price and brand name respectively are considered for purchase of tractors. According to the Friedman test results, the respondents ranking with regard to the factors considered for purchase of tractors are significantly different at 5 percent level of significance.

XX. Conclusion

The research work has given lot of inputs to the researcher with regard to consumer behaviour and the various factors which influence their purchase decision. The researcher has tried his level best to describe the facts that are prevailing in the market. The research output may help the manufacturer, and dealers of tractors an insight about the consumer's perception and it will further help them in promoting their product in a more effective way.

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