

AN EXPLORATORY FACTOR ANALYSIS OF SATISFACTION DRIVERS WITH REFERENCE TO THE MARUTI SUZUKI BRAND

Dr. K. Ramya* and Dr. C.K. Kotravel Bharathi**

*Assistant Professor, Management Science, PSG College of Arts and Science, Coimbatore

**Principal, SRM-Trichy Arts and Science College, Trichy

ABSTRACT

The automobiles market is very dynamic in India as well as in many parts of the world. Irrespective of the tradition, brand image and longevity of service, the manufacturers of automobiles should remain updated on the customers' expectations, perceptions and satisfaction. For updating their reliable marketing information, lots of customer/ market related studies help the companies. This study is an attempt to analyse the customer satisfaction drivers of Maruti Suzuki brand. Especially this article brings in some interesting factor analysis and totally 12 components taken up for this analysis, only the first two components have Eigen values greater than 1. The components 1 and 2 approximately account for 59% of the total variance. So, the researcher shall retain only the first two components.

Keywords: Factor analysis, Satisfaction drivers, Maruti Suzuki

Introduction to the Study

India is the second most populated country in the world and the growth rate of Indian economy is also high as compared to developed countries, which attracts the presence of huge demand in the Automobile Small Car Industry. India is becoming emerging market for worldwide auto giants. For most of the people, purchasing a car is the second most important and expensive decision, next to purchase of a house; for the automotive manufacturers, first-time car buyers give them the opportunity to create positive brand image which definitely could be reflected in next coming years because consumers could make repeat car purchasing. The concept of “**Buying Behavior**” is of prime importance in marketing and has evolved over the years. It is very important to understand consumer buying behavior as it plays a vital role while purchasing products. Day to day human wants are growing, expectation is growing. Car models are no exception to this behavior. Consumer behavior is fairly complex as car purchase implies a high level of social and psychological involvement. Consumer buying behavior is a blend of economic, technological, political, cultural, demographic and natural factors as well as Customer's own characteristics which is reflected by his attitude, motivation, perception, personality, knowledge and lifestyle. This leads to constant modifications of car models and its features in terms of their size, capacity, styling etc. and today we see a new model coming into the market practically every quarter. Market has become very competitive and has become very ‘*important place*’ to study the behavior of consumers and also provides useful insights what a consumer requires in a product in a dynamic environment.

Need for the Study

Customer satisfaction is fundamental to the success of any organization. Without satisfied customers, no business or agency can survive for long. Therefore, in this context, the study on “*customer perception towards MarutiSuzuki brand*” becomes vital. According to the consumer reports' annual car-brand perception survey, consumers perceive each brand in seven categories: quality, safety, performance, value, fuel economy, design/style, and technology/innovation. Combining those factors gives us the total brand-perception. The key word here is “perception”, as influenced by word-of-mouth, marketing and hands-on experience. Often, perception can be a trailing indicator, reflecting years of good or bad performance in a category. It is only through research that a company will be able to study the buying behavior of consumers. With better understanding of customer's perceptions, companies

can determine the actions required to meet the customer's need. They can identify their own strengths and weaknesses, where they stand in comparison to their competitors, chart out the future progress path and improvement. The passenger car market changed very rapidly due to the fierce competition and advance technology, therefore, it requires the automotive manufactures to understand the consumer's preference on time and take fast actions to reflect market changes quickly. So it would be very interesting to know consumer's preference in today's fast-changing passenger car market and how is the customer buying process.

Scope of the Study

The study aims to find out how customers perceive the Maruti Suzuki brand. Satisfied customers will be able to create new customers effectively through their word of mouth. One mistake can have far-reaching effects on future as well as current customers. So it is essential to find out the customer satisfaction and their expectation on Maruti Suzuki brand. If any dissatisfaction exists so that remedial measures can be taken by the company to improve their products and services.

Statement of Problem

Consumer behavior consists of all human behavior that goes in making before and post purchase decisions. One can succeed in the competitive market only after understanding the complex consumer behavior. An understanding of the consumer enables a marketer to take marketing decisions which are compatible with its consumer needs. Due to the emergence of globalization and liberalization there is a stiff competition among the Automobile industries which are focusing attention in capturing the Indian markets and automobiles are no more considered as luxury once, now occupies a part of day-to-day life and has become a necessity. Customers have now changed their attitude that yesterday's luxuries are today's necessities. To be a successful marketer it is absolutely essential to study the perceptions of the prospective buyers and track the drivers of those perceptions.

Objectives of the Study

- To analyze the customer intentions for the purchase of cars.
- To find out the satisfaction drivers, in the perception of the customers.
- To find out the components to be retained by using factor analysis based on satisfaction drivers.
- To analyze the perceived quality of the Maruti Suzuki brand according to the customers of Coimbatore District.

Review of Literature

Balakrishnanmenon, Jagathy Raj V.P (2012), in his paper titled, "**Dominant Partial Least Square Factors of Consumer Purchase Behaviour of Passenger Cars**", the main purpose of this paper is to develop a model with major variables, which influence the consumer purchase behaviour of passenger car owners in the State of Kerala. Though there are innumerable studies conducted in other countries, there are very few thesis and research work conducted to study the consumer behaviour of the passenger car industry in India and specifically in the State of Kerala.

Sagar at al. (2004), in his paper titled, "**Technological Change in the Indian Passenger Car Industry**", discussed, as to how the Indian car industry has advanced technologically, driven by a confluence of factors such as intense competition, demanding consumer preferences, government policies (especially tightening emission standards), and the global strategies of the various players. They elaborate that cars manufactured in India are based on designs, incorporating advanced technologies, that are often comparable with those available globally and Indian car exports are also growing.

Mukherjee and Sastry (1996), in his paper titled, "**Recent Developments and Future Prospects in the Indian Automotive Industry**", discussed that penetration of passenger cars in rural and semi-urban areas is extremely low and could provide fresh markets. They opinion that new entrants will have to deal with uncertainty of demand, different and evolving customer needs, a relatively poor supplier base, a market crowded with competition and industry wide capacity shortages.

As per **Kotwal (2009)**, in his paper titled, "**The Automobile Segment is all Poised for Steady Growth**", he discussed in face off buyers, they now prefer to have cars with the space, comfort and luxury of a mid-size saloon or sedan. With the growing affluence

and technological advancement, there develops a certain maturity in taste, as evidenced by the growing popularity of the Indian Hatchback market.

Prabhjot Singh, Raghu Monga(2012), in his paper “**Project Report On people’s Perception towards Maruti Suzuki Cars**”, the research has been conducted to know the People’s perception towards Maruti Suzuki cars. The study was conducted to know the factors that influence the purchase of Maruti Suzuki cars, also what are the people’s expectations from Maruti Suzuki cars. The problems faced by the consumers with regard to Maruti Suzuki cars were also inquired into and there by their overall satisfaction level was studied. This is a descriptive and exploratory research and mainly primary data is used for the purpose of data collection. The results indicated that people are satisfied with the Maruti cars and it is its fuel efficiency which affects their buying behavior towards Maruti Suzuki. Also there is a lot of scope for Maruti Suzuki cars in India.

Dr. S. Subadra (2010), in her study, “**Consumer Perceptions and Behaviour: A Study with Special Reference to Car Owners in Namakkal District**”, she explains, an effective market communication is imperative for reaching the target audience. So it is important that we study the consumer perceptions and behaviour of the car owners which will give us feedback on how marketing strategies can be worked. Namakkal town in Tamil Nadu State, which is in the southern part of India, has a progressive and growing market for cars. The study throws light on various features that the manufacturers should concentrate on to attract the prospective buyers.

Research Methodology

Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them.

Empirical Study

Empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with the conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. It is necessary to get facts at the firsthand, at their source, and actively to go about doing certain things to stimulate the production or desired information. Here the researcher must set the working hypothesis and should get enough facts for proving or disproving his hypothesis.

Sample Design

Sampling design refers to a definite plan for obtaining a sample from a given population. It refers to the technique or procedure, the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample. i.e. Size of the sample. Sample design is determined before data are collected.

Research Design: Empirical study

Sampling Technique

Sampling Unit

A decision has to be taken concerning a sampling unit before selecting sample. It may be geographical, construction unit or it may be a social unit. Here I have selected the geographical such as Coimbatore district as my sampling unit.

Sample Size

This refers to the number of items to be selected from the universe to constitute a sample. In this research 460 respondents have been selected to get optimum result.

Sampling Technique

The researcher strongly believes that it is always better to randomize the population and to apply random sampling technique to build a strong research process and to produce more reliable results. So the researcher wanted to build a sample frame by collecting the details of car owners from the Maruti dealers in Coimbatore District. Despite the efforts made by the researcher this task failed due to following reasons.

- Reluctance on the part of the dealers to provide the details of the car owners.
- Unable to build a comprehensive sample frame with the partial information collected from few dealers.
- Cars purchased and registered in the several other neighbouring districts are also used in Coimbatore city and other places of Coimbatore district.

Hence the data collected from the dealers from Coimbatore district could not help the researcher in the formulation of sample frame.

Therefore, at a point of time the researcher decided that the random sampling would not be possible. She decided to inevitably go for non-probability sampling design. She was very clear that she should not apply a mere convenient sampling. Hence the researcher decided to adopt Quota sampling technique.

Quota sampling is a non-probability sampling technique wherein the assembled sample has the same proportions of individuals as the entire population with respect to known characteristics, traits or focused phenomenon. In addition to this, the researcher must make sure that the composition of the final sample to be used in the study meets the research's quota criteria.

Quota sampling refers to selection with controls, ensuring that specified numbers (quotas) are obtained from each specified population subgroup (e.g. households or persons classified by relevant characteristics), but with essentially no randomization of unit selection within the subgroups. No population list is used, but a quota, usually based on census data, is drawn up.

The researcher collected various details like male and female ratio as per the 2011 census, car ownership and vehicle population in the district, etc. The 2011 census shows that the male and female ratio in Coimbatore is almost equal. But it was learnt from various sources that only 1/4th of the car owners /car driving population in Coimbatore at present is constituted by the female. Taking this into consideration and based on a prediction that the women population driving cars in Coimbatore may hike by another 7-8% in the years to come, the researcher decided to constitute a quota based on the gender. As the quota sampling can be based on researcher's judgement, it was decided to distribute sample between the two strata male and female in the ratio of 2/3rd and 1/3rd respectively.

FREQUENCY ANALYSIS

TABLE: 1

GENDER OF THE RESPONDENTS					
	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	307	66.7	66.7	66.7
	Female	153	33.3	33.3	100.0
	Total	460	100.0	100.0	

SOURCE: PRIMARY DATA

Interpretation

From the table 1, we come to know that 66.7% of the respondents are male and 33.3% of the respondents of this study are female.

TABLE: 2

AGE OF THE RESPONDENTS					
	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 30	272	59.1	59.1	59.1
	30-40 Years	107	23.3	23.3	82.4
	40-50 Years	52	11.3	11.3	93.7
	50-60 Years	13	2.8	2.8	96.5
	Above 60	16	3.5	3.5	100.0
	Total		460	100.0	100.0

SOURCE: PRIMARY DATA

Interpretation

From the table 2, we come to know that 59.1% of the respondents are below the age group of 30 years, 23.3% of the respondents are between the age group of 30-40 years, 11.3% of the respondents are between the age group of 40-50 years, 3.5% of the respondents are above the age group of 60 years and 2.8% of the respondents are between the age group of 50-60 years.

TABLE: 3

QUALIFICATION OF THE RESPONDENTS					
	Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below SSLC	11	2.4	2.4	2.4
	SSLC	37	8.0	8.0	10.4
	HSC/PUC	36	7.8	7.8	18.3
	Diploma	61	13.3	13.3	31.5
	UG	133	28.9	28.9	60.4
	PG	64	13.9	13.9	74.3
	Professional Degree (Engineering/Medical/Law)	113	24.6	24.6	98.9
	Doctoral Degree	5	1.1	1.1	100.0
	Total		460	100.0	100.0

SOURCE: PRIMARY DATA

Interpretation

From the table 5.1.3, we come to know that 28.9% of the respondents have completed UG degree, 24.6% of the respondents have completed Professional Degree, 13.9% of the respondents have completed PG degree, 13.3% of the respondents have completed Diploma, 8% of the respondents have completed SSLC, 7.8% of the respondents have completed HSC and 2.4% of the respondents are below SSLC.

TABLE: 4

OCCUPATION OF THE RESPONDENTS					
	Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Government Employee	41	8.9	8.9	8.9
	Private Employee	304	66.1	66.1	75.0
	Business	34	7.4	7.4	82.4
	Professional	77	16.7	16.7	99.1
	Others	4	.9	.9	100.0
	Total		460	100.0	100.0

SOURCE: PRIMARY DATA

Interpretation

From the table 4, we come to know that 66.1% of the respondents are private employees, 16.7% of the respondents are professional, 8.9 % of the respondents are government employees, 7.4% of the respondents are doing business and 0.9 % of the respondents belong to the other category.

TABLE: 5

PRIMARY REASON FOR THE RESPONDENTS TO PURCHASE A CAR					
	Primary Reason	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Need	221	48.0	48.0	48.0
	Comfort/Convenience	183	39.8	39.8	87.8
	Status/Prestige	49	10.7	10.7	98.5
	Others	7	1.5	1.5	100.0
	Total	460	100.0	100.0	

SOURCE: PRIMARY DATA**Interpretation**

From the table 5, we come to know that 48% of the respondents purchased car for their basic need, 39.8% of the respondents purchased car for their comfort, 10.7% of the respondents have purchased car for their prestige and remaining 1.5% of the respondents purchased car for other reasons.

TABLE: 6

IMPORTANT CHARACTERISTICS WHEN PURCHASING THE CAR						
Characteristics		Extremely Important	Very Important	Somewhat Important	Not Very Important	Not at all Important
Quality	No	346	107	4	2	1
	%	75.2	23.3	.9	.4	.2
Price	No	205	222	27	6	-
	%	44.6	48.3	5.9	1.3	-
Installation/ First use experience	No	156	221	57	26	-
	%	33.9	48	12.4	5.7	-
Resale value	No	176	225	54	5	-
	%	38.3	48.9	11.7	1.1	-
After sales service	No	192	231	27	4	6
	%	41.7	50.2	5.9	.9	1.3

SOURCE: PRIMARY DATA**Interpretation**

From the table 6, we come to know that the respondents ranked quality as the number one extremely important characteristics during purchase of a car, price as number two, after sales service as number three, Resale value as number four and Installation and first use experience as number five.

TABLE: 7

CRITERIA FOR SELECTING THE PRESENT MODEL					
	Criteria	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Price	77	16.7	16.7	16.7
	Mileage	134	29.1	29.1	45.9
	Maintenance	79	17.2	17.2	63.0
	Look/Aesthetics	51	11.1	11.1	74.1
	Safety features	18	3.9	3.9	78.0
	Company's Service	11	2.4	2.4	80.4
	Space	5	1.1	1.1	81.5
	Comfort	26	5.7	5.7	87.2
	Ready Availability	3	.7	.7	87.8
	Fuel Type	8	1.7	1.7	89.6
	Two or More Option	40	8.7	8.7	98.3
	Others	8	1.7	1.7	100.0
	Total	460	100.0	100.0	

SOURCE: PRIMARY DATA

Interpretation

From the table 7, we come to know that 29.1% of the respondents select the present model due to mileage, 17.2% of the respondents select the present model due to maintenance, 16.7% of the respondents select the model due to the price, 11.1% of the respondents select the present model due to look/aesthetics, 8.7% of the respondents select the model due to two or more options, 5.7% of the respondents select the model due to comfort, 3.9 % of the respondents select the model due to safety features, 2.4% of the respondents select the model due to company's service, 1.7% of the respondents select the model due to fuel type and other options, 1.1% of the respondents select the model due to Space and .7% of the respondents select the model due to Ready availability.

TABLE: 8

DRIVERS OF SATISFACTION							
Drivers of Satisfaction		Highly Satisfied	Satisfied	Neither Satisfied Nor	Dissatisfied	Highly Dissatisfied	Ranking
Exteriors	No	175	248	36	1	-	1
	%	38	53.9	7.8	.2	-	
Interiors	No	132	261	66	1	-	5
	%	28.7	56.7	14.3	.2	-	
Storage and Space	No	107	269	82	2	-	7
	%	23.3	58.5	17.8	.4	-	
Audio/entertainment/Navigation	No	74	290	69	25	2	11
	%	16.1	63	15	5.4	.4	
Seats	No	109	281	59	7	4	8
	%	23.7	61.1	12.8	1.5	.9	
Air-Conditioning	No	105	286	60	3	6	9
	%	22.8	62.2	13	7	1.3	
Driving Dynamics	No	146	264	47	1	2	3
	%	31.7	57.4	10.2	.2	.4	
Engine/Transmission	No	132	281	44	3	-	4
	%	28.7	61.1	9.6	.7	-	
Visibility	No	125	271	57	3	4	6
	%	27.2	58.9	12.4	.7	.9	
Driving Safety	No	114	256	72	14	4	10
	%	24.8	55.7	15.7	3	.9	
Fuel economy	No	140	276	43	-	1	2
	%	30.4	60	9.3	-	.2	

SOURCE: PRIMARY DATA

Interpretation

From the table 8, we come to know that the respondents ranked the main drivers that lead to their satisfaction level are the Exteriors as the number one, Fuel Economy as the number two, Driving Dynamics as the number three, Engine Transmission as the number four and the Interiors as the number five.

FACTOR ANALYSIS

Principal Component Analysis

There are several components and attributes that determine the ultimate satisfaction level of the users of the automobiles. The researcher wanted to test “what are the factors influencing the level of satisfaction and perception of the automobile-users”. Here researcher selected some of the components like interiors, exteriors, seating, driving-comfort, Air-conditioning, safety, efficiency of the engine, fuel-efficiency, etc. Then the Data reduction option was used in the SPSS software for analyzing the factors.

Correlation Matrix

	Exteriors	Interiors	Storage and space	Audio/Entertainment/Navigation	Seats	Air-conditioning	Driving	Engine	Visibility	Safety	Fuel	Service
Exteriors	1.000	.583	.475	.409	.403	.343	.410	.475	.349	.443	.409	.434
Interiors	.583	1.000	.540	.505	.491	.442	.504	.413	.360	.469	.465	.485
Storage and space	.475	.540	1.000	.658	.554	.457	.406	.338	.366	.467	.281	.375
Audio/Entertainment/Navigation	.409	.505	.658	1.000	.645	.546	.406	.352	.462	.485	.197	.312
Seats	.403	.491	.554	.645	1.000	.638	.433	.319	.445	.505	.216	.318
Air- conditioning	.343	.442	.457	.546	.638	1.000	.347	.307	.474	.458	.209	.336
Driving	.410	.504	.406	.406	.433	.347	1.000	.643	.333	.460	.479	.398
Engine	.475	.413	.338	.352	.319	.307	.643	1.000	.472	.504	.423	.356
Visibility	.349	.360	.366	.462	.445	.474	.333	.472	1.000	.640	.278	.233
Safety	.443	.469	.467	.485	.505	.458	.460	.504	.640	1.000	.354	.362
Fuel	.409	.465	.281	.197	.216	.209	.479	.423	.278	.354	1.000	.343
Service	.434	.485	.375	.312	.318	.336	.398	.356	.233	.362	.343	1.000

The above table shows how the selected components and attributes of the Maruti brand vehicles that influence the level of satisfaction of the customers are correlating among themselves. The variables which do not correlate with other variables are to be normally deleted before going for PCA. But, here the researcher has shown all the variables, for an understanding of the level and degree of correlation.

KMO and Bartlett's Test

The KMO test given below is also supporting the inclusion of all variables for PCA.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.898	
Bartlett's Test of Sphericity	Approx. Chi-Square	2612.152
	Df	66
	Sig.	.000

Kaiser's Measure of Sampling Adequacy

Kaiser has described MSAs above .9 as marvelous, above .8 as meritorious, above .7 as middling, above .6 as mediocre, above .5 as miserable, and below .5 as unacceptable. Here the MSA is .898. It is meritorious and very near to marvelous level. It is considerably good. So, no variable need to be dropped before going for PCA.

Communalities		
	Initial	Extraction
Exteriors	1.000	.529
Interiors	1.000	.597
Storage and Space	1.000	.584
Audio/Entertainment/Navigation	1.000	.713
Air – Conditioning	1.000	.627
Driving	1.000	.612
Engine	1.000	.600
Visibility	1.000	.459
Safety	1.000	.564
Fuel	1.000	.613
Service	1.000	.410
Seats	1.000	.714
Extraction Method: Principal Component Analysis.		

The above table shows the Sums of Squared Loadings [SSL] for each variable across factors. Such an SSL is called communality. This is the amount of the variable's variance that is accounted for by the components. The loadings are correlations between variables and components and the components are orthogonal, a variable's communality represents the R^2 of the variable predicted from the components. For our data the communalities are Exteriors .529, Interiors .597, Storage and Space .584, Audio/Entertainment/Navigation .713, Air-Conditioning .627, Driving .612, Engine .600, Visibility .459, Safety .564, Fuel .613, Service .410 and Seats .714.

Deciding the Components to Retain

After the above steps, the researcher wanted to decide how many components to retain. One handy rule of thumb is to retain only components with **Eigen values** of one or more. That is, drop any component that accounts for less variance than does a single variable. Another device for deciding on the number of components to retain is the **Screen test**. This is a plot with Eigen values on the ordinate and component number on the abscissa. Scree is the rubble at the base of a sloping cliff. In a scree plot, scree is those components that are at the bottom of the sloping plot of Eigen values versus component number. The plot provides a visual aid for deciding at what point including additional components no longer increases the amount of variance accounted for by a nontrivial amount.

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.708	47.567	47.567	5.708	47.567	47.567
2	1.315	10.960	58.527	1.315	10.960	58.527
3	.953	7.939	66.466			
4	.661	5.510	71.976			
5	.627	5.223	77.199			
6	.593	4.944	82.143			
7	.500	4.170	86.313			
8	.395	3.290	89.603			
9	.370	3.079	92.683			
10	.330	2.748	95.430			
11	.284	2.369	97.799			
12	.264	2.201	100.000			
Extraction Method: Principal Component Analysis.						

Out of the 12 components taken up for this analysis, only the first two components have Eigen values greater than 1. There is a big drop in Eigen value between component 1 and component 2. On a Scree plot, component 3 through 12 would appear as Scree

at the base of the cliff composed of components 1 and 2. The components 1 and 2 approximately account for 59% of the total variance. So, the researcher shall retain only the first two components.

Conclusion

The factor analysis among all the components is interesting. Mostly the users are satisfied with the components. This study gave the researcher new insights about the pulse of the customers regarding the satisfaction-drivers of Maruti Suzuki car brands.

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