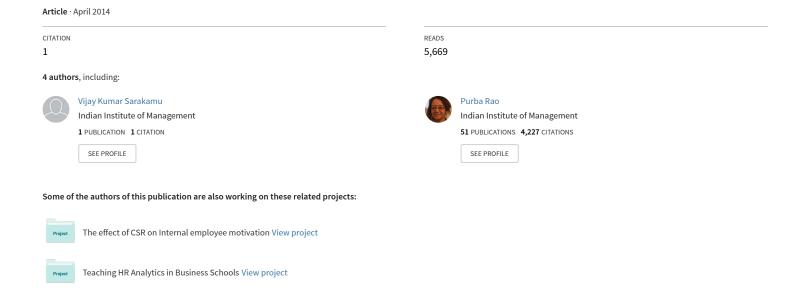
Analysing Consumer Purchase Decision in Indian SUV Market – Special focus on Success of Brand X Success Introduction to SUV Market





Analysing Consumer Purchase Decision in Indian SUV Market – Special focus on Success of Brand X Success

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Abstract

In India, Sports Utility Vehicle (SUV) market is one of the most quickly growing markets these days in the automobile sector due to changing customer perceptions towards purchasing the four wheelers. In this growing market, a Company Alaunched its compact SUV Brand X in India, which is doing extremely well in urban India and has won many awards.

This paper is based on an empirical research conducted to study the consumer buying behaviour while purchasing SUVs by identifying the importance ratings assigned to various attributes while selecting a SUV and also analyse the reasons for success of Brand X by identifying the satisfaction levels expressed by its existing users over different attributes and identifying the Gap between importance ratings and the current satisfaction ratings. The research used primary data from a questionnaire survey and data analysis methods such as consumer Gap Analysis, Multivariate Factor and Cluster analysis.

Keywords: Factor Analysis, Cluster Analysis, Gap-Analysis

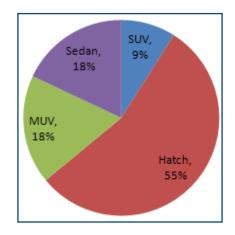
Introduction to SUV Market

In India, Sports Utility Vehicle (SUV) market is one of the most quickly growing markets these days in the automobile sector due to changing customer perceptions towards purchasing the four wheelers. In this growing market, Company A launched its compact SUV Brand Xin India in a price range around Rs. 8 lakhs.

Market overview- From Literature Review

Despite the downtrend in overall car sales for the past few months, SUV segment is booming and growing at a steady rate. In India, SUV market is around 10% of the total car market. This number goes up to 25% market share when both SUVs and MUVs (multi utility vehicles) are clubbed together. This segment, with its price ranging from Rs. 5 lakh- Rs. 1 crore, is growing at approximately 16% annually with sales of around 367,000 units in 2012.

Figure 1: Sales Distribution of Cars Based on Body style for December 2012



Source: www.bhp.com

Brand X- Detailed Story

Brand X has become the number 1 SUV in India accounting for 80% of Company A's sales in India. Selling 5000 units every month for the past 12 months, its sales



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have been consistent and had bet all SUVs. Brand X is doing extremely well in urban India and has won many awards.

Success factors of Brand X- From literature review

At around Rs. 8 lakh (Ex-showroom price, Delhi), it is one of the cheapest SUVs in the market. It created a completely new segment- compact sports utility vehicles. Even at this price it comes with all accessories. Experts say thatBrand X has the best blend of all features and has the best combination of pricing, design, engine and offroad capabilities. The most important success factor was space. Brand X is very spacious in its design. The boot has got a massive cargo space of 475 litres, best in the class.

Unlike its competitors whose engines are above 2000 cc, Brand Xis run by a 1500 cc engine. Moreover, Brand X has a diesel engine. This gives Brand X an edge over competitors in efficiency measured in terms of kilometres per litre (kpl). As Brand X was the only SUV with best combination of fuel-efficient diesel engine at an attractive price, Indian customers embraced it. The brand image has played a major role in boosting its sales. Company A has its own brand image and it is one among the top ten automakers in the world. Such a global reputation has helped them gain credibility in India. Many customers say that Company A's aftersales service is much better than other companies that entered market along with it. Aftersales service plays a very important role in attracting the customers.

Purchase Influencers

The main factors which influence customers' buying behaviour of SUVs are discussed in detail below. Basically they are divided into buyer and vehicle factors.

Internal (Buyer) factors are those traits of the buyer, like lifestyle and attitude, which persuades him to buy an SUV. **External (Vehicle) factors** are those properties and features of an SUV which drive customer's purchase decision. Price of an SUV, design, space and off-road capability are few of the external factors.

Buyer Factors

Attitude

Attitude of the person plays a major role in influencing his/her decision in buying SUVs. For e.g. those who enjoy travelling are more likely to buy SUVs or sedans. Those who want to commute to office on a daily basis would love a small car or sedan. People who have freedom to travel anywhere with unlimited budget choose to buy SUVs or sports cars or luxury cars. Some people show concern over environmental pollution. They do not prefer SUVs as they occupy space causing traffic jams, burn more fuel and they obscure view of small car drivers on the road. They are most likely to buy small cars (hatchbacks).

Personality

The personality factors influence the car buying behaviour. A study conducted over four types of personalities supports the claim. Adventure seekers and aggressive persons would love to drives SUVs. Calm persons and loners prefer minivans and small cars. Some believe that the SUVs project them as more confident than peers. In such cases thereis a chance that they opt for SUVs.

Lifestyle

A study on lifestyle factors categorizes people into four types- status seekers, workaholic, family/community oriented and frustrated. Status seekers intend to show-off to the peers or the society. They show themselves to be different and unique. They believe SUVs and luxury cars are status symbols and they are more likely to drive SUVs. Some status seekers, who already have a car, buy SUVs as their second car to project a better image among peers. On the other hand frustrated people are less likely to drive SUVs and prefer small cars. Family oriented people rarely consider SUVs, though their main requirement is a spacious car due to budget constraints and they might end up buying a minivan.

Demographics

The most important factors that define car buying behaviour are based on demographics.





- a. Age: The age factor plays pivotal role in this. The studies show that the SUVs are preferred by younger people. Normally, people in the age group of 25-40 form the major part of SUV customers, while this goes up to 50 years for MUVs. Older people above 50 years prefer small cars or luxury cars, depending on their income level.
- b. Sex: It is a clear differentiating factor of SUV buyers. Most of the customers are males in this segment. Men are more aggressive and prefer flashy things compared to women. Though the trend is slowly changing, males still form the major chunk of SUV buyers and users. Females do not like to buy SUVs because they feel SUVs are for malesas depicted by promotions as well and they prefer small cars or sedans.
- c. Education: SUV owners overrepresented among highly educated people. Education has positive association with types of vehicles. Hence, it plays a minor role in influencing the buyer's decision.
- d. Income levels: Buying an SUV or a luxury car is a characteristic indication of high income and lifestyles. The individuals with higher household incomes are more likely to choose SUVs and luxury cars. As already mentioned, few people with high incomes buy an SUV as their second car to use it for particular occasions such as weekend drives. Income is positively associated with the purchasing behaviour of luxury cars and SUVs.
- e. Occupation and Marital Status: Occupation and marital status play a negligent role in decision making of an SUV buyer. It's the need or lifestyle more than the occupation and marital status that drives the behaviour of customers. Some cases of occupation, for e.g. politicians prefer an SUV over any type of
- f. Size of the family: Size of the family is a very great influencer. Since SUVs come with more seating and luggage space, families with more people would prefer SUVs. It is found that the SUV driver group has higher proportion in larger households with children. Children sometimes influence parents'choice in buying SUV as they are more spacious and have more glass area that makes them enjoy the surroundings while travelling.

Vehicle Factors

SUVs have sturdy design suitable for off-road abilities. They can do better even around bad roads, hilly terrains and snow. Generally, SUVs are equipped with engines of higher power and torque. Higher power increases the performance of the vehicle. Customers feel fun to drive SUVs and they drive it for better experience. They come with better safety features. Sturdy design and tall seating make occupants feel safer while driving. SUVs are more spacious compared to any other form of car. Both in seating and luggage space, they hold more luggage and have better carrying capacity. SUVs come with different seat configurations providing options for the customers.

On the contrary, due to heavy design and bigger engine capacities, SUVs are less fuel efficient compared to normal sedan cars. They are also bulky and need more parking space. Sometimes they might result in traffic jams due to their bigger size. Generally, SUVs are expensive because they are big and have heavier design with more capabilities. Price is one of the major factors in a country like India for purchasing an SUV. Sometimes, government policies also affect the price. For e.g. in India, SUVs with more than four meters in length or engine capacity of more than 1500 cc or with ground clearance of 170mm attract an extra excise duty of 30%. This increases the onroad price of the SUV shifting the burden finally to the customers.

Decision Problem

Our decision problem is to study the consumer buying behaviour while purchasing SUVs (in general) by identifying the importance assigned to various attributes (features) while selecting a SUV and analyse the reasons for success of Brand X by identifying the satisfaction levels expressed by its existing users over different attributes and identifying the gaps between importance ratings and the current satisfaction ratings.

The problem also includes carrying out factor analysis to identify the salient features and cluster analysis to identify the right customerprofiles for SUV manufactures to target in future, to boost their sales.







Main Research Objectives

The main research objectives are outlined as below

- 1. To analyse the buying behaviour of customers while purchasing SUVs
- 2. To find the effect of different parameters like price, length of SUV, brand image, etc. on the purchase decisions.
- 3. To identify features not valued by the customers (insignificant features), if any, which may be eliminated to create more value for money.
- 4. To find out the most important parameters (purchase drivers) that led to the success of Brand X.
- To carry out factor analysis to identify the salient features and cluster analysis to identify the right customer profiles for SUV manufactures to target in future, to boost their sales.

Methodology

Identification of Factors that Influence the SUV Buying Behaviour

For the purpose of identification of factors (features) of SUV that result in its purchase by the customers, we initially came up with the features offered by some of the popular brands in the market (from literature review and websites of the popular SUVs). We researched the features offered by the following brands to obtain the final set of features that are to be used in the questionnaire.

- Brand X
- Ford Ecosport
- Toyota Innova
- Tata Safari
- Mahindra XUV 500
- Mahindra Scorpio
- Force One
- Skoda Yeti
- Premier Rio
- Ssang Yong Rexton

Data Collection

Through a quantitative survey (by floating a structured questionnaire - consisting of mostly close ended questions), we tried to obtain the primary data from both the existing and potential SUV buyerswhich is analysed to answer our decision problem.

We aimed to get at least 75 responses after discarding errors that arise due to incomplete responses, etc. This data will be analysed to develop a profile a typical customers' requirements and expectations.

Screeners

Apart from this, the screener questions screen the respondents to check the following conditions.

- The first screener (Question 1 in the questionnaire) allows only those respondents with age greater than 18 years to fill the survey. Since children with age less than 18 years may not be fully aware of the features of SUVs, we will not be able to get proper insights.
- The second screener (Question 2 in the questionnaire) allows only those respondents who take final decision or play a significant role in decision making while buying SUV to fill the survey. Since others will have no role in decision making, we will not be able to get proper insights.
- The third screener (Question 1 under "Brand X Specific Questions" in the questionnaire) will allow only those respondents who own aBrand Xto respond.

The Questionnaire-SUV buyer behaviour survey, is provided in the Appendix.

Data Cleaning

Initially, we planned to obtain around 150 responses in total for our analysis. However, we could manage to get around 108 completed. Apart from this, the final completed responses with relevant data are 77 as the remaining 31 members either got screened out in the first 2 screener questions itself or filled the questionnaire partially.





Table 1: Analysis of importance

Importanc	e rating-G	Importance rating-Gap Analysis	8														
	Brand image	Design and looks of the SUV	Price of the SUV	Price of Fuel Ter	chnolo	Power Pulling capacity BHP and Engine capacity	Overall of Perform of ance	Offroad ability	Driving experien ce	Driving Purpose Seat Value fexperien of usage configur money ce ation, legroom AC etc	Seat configur ration, legroom	ō	Aftersale Ease of service Mainten availabil ance ity	-	Safety of Dimensi the ons of passeng the SUV ers Airbags ABS etc		Availabil ity of fuel options Diesel Petrol
Mean	5.805195	5.805195 6.311688 5.831169 5.948052 6.350649	5.831169	5.948052	6.350649	6.25974	6.441558	5.675325	6.194805	6.25974 6.441558 5.675325 6.194805 5.662338 6.064935 6.233766 6.402597	6.064935	6.233766		6.207792	6.467532	5.909091	5.311688
Standard	0.121281	0.08524	0.129938	0.129271	0.088208	0.101934	0.077322	0.11312	0.109431	0.14628	0.124478	0.124478 0.112293	0.089159	0.089159 0.101825	0.097095	0.133543	0.169697
Median	9	9	9	9	9	7	7	9	9	9	9	9	7	9	7	9	9
Mode	9	7	9	7	7	7	7	9	7	9	9	7	7	7	7	7	9
Standard	1.064239	1.064239 0.747975 1.140205 1.134345 0.774023	1.140205	1.134345	0.774023	0.894465	0.678495	0.992625	0.960249	1.283605	1.09229	0.985368 0.782367	0.782367	0.89351	0.852001	1.171839	1.489081
Sample Va		1.132604 0.559467 1.300068	1.300068	1.28674		0.800068	0.800068 0.460355	0.985304	0.985304 0.922078	1.647642	1.193096		0.97095 0.612098	0.79836	0.725906	1.373206	2.217362
Kurtosis	5.087758	0.790271	4.119072	1.597781	1.45813	1.016542	-0.45756	1.574207	1.092763	1.778612	4.100735	1.465874	0.819366	-0.11076	1.767496	1.90828	0.69233
Skewness	-1.74974	-0.97135	-1.51811	-1.2286	-1.22984	-1.10863	-0.82067	-0.79318	-1.22854	-1.25313	-1.81075	-1.42232	-1.19071	-0.88086	-1.59991	-1.33041	-0.9979
Range	9	3	9	2	3	4	2	5	4	9	5	4	3	3	3	5	9
Minimum	1	4	1	7	4	3	5	2	3	1	2	3	4	4	4	2	1
Maximum	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Sum	447	486	449	458	489	482	496	437	477	436	467	480	493	478	498	455	409
Count	<i>LL</i>	77	<i>LL</i>	<i>LL</i>	77	77	77	77	77	77	77	77	77	77	77	77	77
t value																	
cut off 4	14.88437	14.88437 27.11986 14.09258 15.06956 26.64891	14.09258	15.06956	26.64891	22.16871	31.57664	14.81014	20.05661	31.57664 14.81014 20.05661 11.36405 16.58876 19.89228 26.94733 21.68225	16.58876	19.89228	26.94733	21.68225	25.41371	14.29566	7.729613
Ist value Signi-			Signi-	Signi-		Signi-	Signi-	Signi-		Signi-	Signi-		Signi-	Signi-	Signi-	Signi-	Signi-
> 1.65	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant	ficant





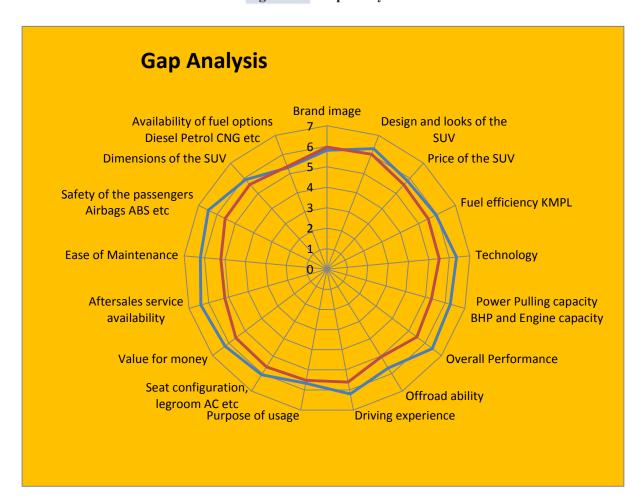


Table 2: Analysis of Satisfaction BrandX

Renault Sa	Renault Satisfaction rating-Gap Analysis	rating-Gap	Analysis														
	Brand image	Design and looks of the SUV	Price of the SUV	Fuel Ter efficienc gy y KMPL	gy gy	Power Over Pulling Perfo capacity ance BHP and Engine capacity	all rrm	_		Purpose Seat of usage confi ation legro AC et	Seat configur of the configuration	Value for money	Value for Aftersale Ease of anoney Safety of anoney Dimension and anoney Availabil ance availabil Saseng The SUV Juel and and anone ity ers Airbags Diesel ABS etc Petrol CNG etc	Mainten and ance	Safety of the passeng ers Airbags	Dimensi ons of the SUV	Availabil ity of fuel options Diesel Petrol
Mean	5.962963	6.018519	5.962963 6.018519 5.574074 5.518519	5.518519	5.5	5.296296	5.5	5.037037	5.5 5.037037 5.611111 5.518519 5.611111	5.518519	5.611111	5.574074	5.574074 5.185185 5.203704 5.555556	5.203704	5.555556	5.592593	5.37037
Standard	0.139789	0.136059	0.170505	0.134119	0.136723	0.143894		0.144186 0.171243	0.135869	0.148932 0.133272	0.133272		0.150939 0.187062 0.159444	0.159444	0.151089	0.138673	0.157052
Median	9	9	9	9	9	5	5.5	5	9	9	9	9	5.5	5	9	9	5
Mode	7	9	9	9	9	9	5	9	9	9	9	9	9	4	9	9	9
Standard	1.027232	0.999825	1.252949	0.98557	1.004706	1.057402		1.059548 1.258375	0.998426	1.094424 0.979346	0.979346	1.10917	1.374623	1.171672	1.110272	1.019036	1.154095
Sample Va	1.055206	0.999651	1.569881	0.971349	1.009434	1.118099		1.122642 1.583508	0.996855		1.197764 0.959119	1.230259	1.889588	1.372816	1.232704	1.038435	1.331936
Kurtosis	-0.63575	3.902061	1.901333	-0.41014	-0.0385	-0.4028		0.953021	-0.79057 0.953021 -0.90988 0.891424 -0.20302	0.891424	-0.20302	1.303967	-0.54311	-0.37725	-0.9376	-0.51528	0.239043
Skewness	-0.68298	-1.56721	-1.10084	-0.36043	-0.46367	-0.33277	-0.14825	-0.72103	-0.31863	-0.81129	-0.51145	-1.05554	-0.52789	-0.19393	-0.31708	-0.31627	-0.55039
Range	3	2	9	4	4	4	4	9	3	5	4	5	5	5	4	4	5
Minimum	4	2	1	3	3	3	3	1	4	2	3	2	2	2	3	3	2
Maximum	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Sum	322	325	301	298	297	286	297	272	303	298	303	301	280	281	300	302	290
Count	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54



Figure 2: Gap Analysis



And for the second half i.e. that Brand X specific questions, there are around 54 complete and full responses with remaining 23 persons being screened out at the 3rd screener which asks about the awareness about Brand X. The significant dropouts and partial filling of the survey could be because of the following reasons —

- Cumbersome questionnaire: As there are 17 attributes for which we are tried to obtain the customer perceptions, the questionnaire became lengthy resulting in the dropouts.
- Screener questions: As we have screener questions at the beginning and also at the middle of the survey (for getting responses about Brand X in particular), many of the respondents might have been screened out at those places resulting in the lesser number of responses. This resulted in still lesser number of responses for the questions on Brand X in particular as the screener question is like 'Have you heard of Brand X?'

Modeling/Data Analysis

Gap Analysis

The survey was conducted to assess different attributes that influence the SUV purchase decision (in selecting a SUV Model from the perspective of consumers). The list of attributes is mentioned below:

- 1. Brand image
- 2. Design and looks of the SUV
- 3. Price of the SUV
- 4. Fuel efficiency (KMPL)
- 5. Technology
- 6. Power- Pulling capacity (BHP) and Engine capacity
- 7. Overall Performance of the SUV
- 8. Off-road ability
- 9. Driving experience
- 10. Purpose of usage







- International Journal of Business Analytics and Intelligence
- 11. Comfort Seat configuration, legroom, AC etc.
- 12. Value for money
- 13. After-sales service availability
- 14. Ease of Maintenance
- 15. Safety of the passengers- Airbags, ABS etc.
- 16. Dimensions of the SUV
- 17. Availability of fuel options- Diesel, Petrol, CNG etc.

Analysis of Importance

The respondents have rated all the features on an importance scale of 1 to 7 (1 being "Not at all Important" to 7 being "Extremely Important"). This data is used to carryout importance analysis with mean rating being "4". All the attributes for which t value is greater than 1.645 are considered to be significant.

The importance analysis revealed all the 17 attributes were considered important by the respondents while making a decision to purchase a SUV.

Analysis of Satisfaction

The respondents who replied "Yes" (1) to the question "Do you own a Brand X?" were asked to rate their current level of satisfaction with respect to Brand X over the 17 attributes on an importance scale of 1 to 7 (1 being "Not at all Important" to 7 being "Extremely Important").

Radar Chart

The level of importance and level of satisfaction are compared for gap analysis. The radar chart below shows the gaps in customers' expectations and current satisfaction offered by Brand X SUV.

The blue line indicates the importance rating.

The red line indicates BrandX ratings.

Observations

- As evident from the analysis of importance, customers are considering all 17 attributes as significantly important while making a SUV buying decision.
- Analysis of actual satisfaction shows that other than

- brand image Brand X is rated either equal or below expectation by the people who are currently using it.
- However, the gap between the expectation and the actual satisfaction of Brand X is less than 1 point scale over 15 attributes except "After Sales Service (1.217 points difference)" "Ease of Maintenance (1.004 points difference)" which has an importance index of 6.2% & 6.02% respectively.

This explains the main reason for current success of Brand X in Indian SUV market as it is almost satisfying the customers over 15 out of 17 attributes.

Factor Analysis

Factor Analysis is performed on the independent variables to club the highly correlated variables into a single factor. Factors are linear combination of one or more independent variables in the group sharing same theme. For this project, factor analysis is done using SPSS software. Number of variables influencing the purchasing decision of the buyer in buying SUV is 17.

- Variables Used: Brand Image; Design & Amp –
 Looks of the SUV; Price of the SUV; Fuel efficiencyKMPL; Technology; Power pulling capacity BHP
 and Engine capacity; Overall performance; Offroad ability; Driving experience; Purpose of usage;
 Comfort-seat-configuration legroom; AC etc; Value
 for money; After-sales service availability; Ease of
 maintenance; Safety of the passengers Airbags etc;
 Dimensions of the SUV; Availability of fuel options
 Diesel-Petrol-CNG
- Varimax Rotation is used to increase the loading strength of the variables on the factor
- Extraction method used for this analysis is Principle component analysis. Looking at the components matrix, it is very difficult to determine which variable loads heavily on which factor. In order to avoid the confusion, all the coefficients with value less than 0.5 are suppressed.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measur Adequacy.	re of Sampling	.638
Bartlett's Test of Sphericity	Approx. Chi-Square	567.331
	Df	136
	Sig.	.000









Table 4: Rotated Component Matrix^a

			Compor	ient		
	1	2	3	4	5	6
Brand image						.833
Design &Amp Looks of the SUV						.764
Price of the SUV				.825		
Fuel efficiency KMPL				.756		
Technology	.531					
Power Pulling capacity BHP and Engine capacity			.717			
Overall Performance			.862			
Off-road ability			.747			
Driving experience		.679				
Purpose of usage		.709				
Comfort seat configuration legroom AC etc.		.838				
Value for money	.717					
Aftersales service availability	.811					
Ease of maintenance	.778					
Safety of the passengers Airbags ABS etc.					.832	
Dimensions of the SUV		.706				
Availability of fuel options Diesel, Petrol, CNG etc.	.637					

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Using the Rotation component matrix, six factors are identified and list of attributes are shown in Table 5.

Table 5: List of Attributes

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
After sale service	Driving experience	Power pulling capacity	Price of the SUV	Safety of the passengers Airbags ABS etc	Brand Image
Availability of fuel options	Purpose of Usage	Overall performance	Fuel Efficiency KMPL		Design and looks of the SUV
Ease of maintenance	Comfort-seat configuration, legroom AC	Off-road ability			
Technology	Dimensions of SUV				
Value for money					

From the results shown in Table 3,

- 1 We can see that the KMO measure of this test is 0.638 which is greater than 0.6
- 2. The significant value of the test is also less than 0.05

Conclusion: Hence the factor analysis is valid and the results are as shown in Table 4.

The interpretation and naming of these factors is as follows:

Factor 1: Vehicle – Maintenance

This factor includes the features that are related to the post purchase options. A person who has given higher rating to these variables is happy if that vehicle/SUV has best post purchase service and high technological features.

Factor 2: Experience

This factor consists of features that are related to comfort and ease of driving. It measures the user experience and







Table 6: Total Variance Explained

Component		Initial Eigenvali	ues	Extraction	Sums of Squar	ed Loadings	Rotation S	Sums of Square	ed Loadings
	Total	% of Variance	Cumulative	Total	% of	Cumulative	Total	% of	Cumulative
			%		Variance	%		Variance	%
1	5.058	29.751	29.751	5.058	29.751	29.751	2.767	16.275	16.275
2	2.015	11.855	41.606	2.015	11.855	41.606	2.733	16.074	32.349
3	1.741	10.241	51.847	1.741	10.241	51.847	2.334	13.730	46.079
4	1.348	7.931	59.778	1.348	7.931	59.778	1.585	9.325	55.404
5	1.211	7.126	66.904	1.211	7.126	66.904	1.495	8.792	64.196
6	1.017	5.985	72.889	1.017	5.985	72.889	1.478	8.693	72.889
7	.905	5.321	78.210						
8	.660	3.884	82.094						
9	.605	3.556	85.650						
10	.528	3.105	88.755						
11	.459	2.703	91.457						
12	.421	2.477	93.934						
13	.331	1.946	95.881						
14	.245	1.441	97.321						
15	.183	1.075	98.396						
16	.166	.977	99.373						
17	.107	.627	100.000						

Extraction Method: Principal Component Analysis.

comfort while driving the vehicle.

Factor 3: Performance

This factor measures the performance related parameters while purchasing a SUV vehicle. Power pulling capacity, off-Road ability of the car, overall performance etc. load on this factor.

Factor 4: Life time cost

Both the attributes - price and fuel efficiency tell about the monetary value that customer looks while purchasing a vehicle. Price of the car is the initial investment for the customer, mileage tells us about future operating expenditure. Price conscious people will give higher rating, if it gives good mileage.

Factor5: Safety

Only one variable, safety of the passengers is loaded on this factor. The questionnaire was designed specifically to gauge the customer's inclination towards safety equipment installed in the vehicle.

Factor 6: Aesthetics and Brand

Many customers go by brand and aesthetics; both the variables loaded on this factor. Brand value of the SUV highly correlates with the design and looks of the vehicle.

The SPSS output table from the factor analysis is as follows:

From the results shown in Table 6,

- 1. We can see that the total variation explained by the six factors is 72.889% which is > 50%
- 2. Eigen value for each factor is greater than 1.

Observation

Hence from the factor analysis, all the 17 attributes are grouped into 6 salient factors which together explain a total variance of 72%

Cluster Analysis

Here, respondents are grouped based on their demographics and similarities in their preferences towards selecting







Table 7: Communalities

	Initial	Extraction
Brand image	1.000	.762
Design & Des	1.000	.789
Price of the SUV	1.000	.791
Fuel efficiency KMPL	1.000	.788
Technology	1.000	.541
Power Pulling capacity BHP and Engine capacity	1.000	.774
Overall Performance	1.000	.802
Offroad ability	1.000	.622
Driving experience	1.000	.671
Purpose of usage	1.000	.763
Comfort seat configuration legroom AC etc	1.000	.753
Value for money	1.000	.718
Aftersales service availability	1.000	.753
Ease of Maintenance	1.000	.712
Safety of the passengers Airbags ABS etc	1.000	.793
Dimensions of the SUV	1.000	.710
Availability of fuel options Diesel Petrol CNG, etc.	1.000	.650

Extraction Method: Principal Component Analysis.

Table 8: ANOVA

	Clu	ıster	Error			
	Mean Square	df	Mean Square	df	F	Sig.
Profession	13.502	2	.892	74	15.142	.000
Family Size	.716	2	.366	74	1.957	.149
Income	.311	2	.512	74	.608	.547
Age	.015	2	.013	74	1.179	.313
Gender	.004	2	.107	74	.037	.964
Education	1.258	2	.252	74	4.992	.009
REGR factor score 1 for analysis 1	8.538	2	.796	74	10.723	.000
REGR factor score 2 for analysis 1	2.174	2	.968	74	2.245	.113
REGR factor score 3 for analysis 1	4.863	2	.896	74	5.430	.006
REGR factor score 4 for analysis 1	9.700	2	.765	74	12.682	.000
REGR factor score 5 for analysis 1	2.871	2	.949	74	3.024	.055
REGR factor score 6 for analysis 1	12.226	2	.697	74	17.551	.000

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

a SUV model. Through this analysis, we grouped the whole respondents into three clusters.

Procedure followed:

1. For this analysis, we considered all the demographic variables collected through our survey and six fac-







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tors that are obtained from the above factor analysis

- 2. Steps followed in the SPSS
 - a. K-Means
 - b. No of clusters -3
 - c. ANOVA Table: to verify the significance factor

Initial ANOVA result is shown in Table 8.

From the ANOVA table, we can see that Income, Age, Gender, regression factor 5 (safety factor), Family size variables are insignificant.

- So, first we removed the statistically insignificant factor "Income" and re-ran the same analysis.
- In the next step, we removed the variable Age and re-ran the same analysis

After following similar iterations for multiple times, we arrived at the final ANOVA table shown in Table 9.

Table 9: ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Profession	40.745	2	.155	74	262.272	.000
Income	1.543	2	.479	74	3.222	.046
REGR factor score 4 for analysis 1	2.089	2	.971	74	2.152	.123
REGR factor score 6 for analysis 1	13.704	2	.657	74	20.869	.000
REGR factor score 3 for analysis 1	3.418	2	.935	74	3.657	.031

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Table 10 (a): Cases in Each Cluster

Number of Case.	s in ea	ch Cluster
Cluster	1	25.000
	2	27.000
	3	25.000
Valid		77.000
Missing		.000

Table 10 (b): Final Cluster Centers

	Cluster		
	1	2	3
Profession	2	4	2
Income	2	1	2
REGR factor score 2 for analysis 1	.28241	06837	07804
REGR factor score 4 for analysis 1	40273	47661	.50997
REGR factor score 6 for analysis 1	-1.20081	.24730	.36196







Cluster Profiling

After mapping on Likert scale, the cluster profiles are as below

Observation

Hence from the cluster analysis, all the respondents are profiled into 3 clusters with the below demographics and exhibit the below mentioned behaviour.

Cluster 1 includes respondents who are full-time employed; have an income in the range of Rs. 8-20 lakhs; consider features related to driving experience, comfort, etc. as important; consider features related to fuel efficiency, initial price, etc. as less important and consider features related to design, looks and brand, etc. as not important while making a decision to purchase a SUV.

Cluster 2 includes respondents who are students; have an income less than Rs. 8lakhs; consider features related to driving experience, comfort, etc. as less important; consider features related to fuel efficiency, initial price, etc. as less important and consider features related to design, looks and brand, etc. as important while making a decision to purchase a SUV.

Cluster 3 includes respondents who are full time employed; have an income in the range of Rs. 8-20 lakhs; consider features related to driving experience, comfort, etc. as less important; consider features related to fuel efficiency, initial price, etc. as very important and consider features related to design, looks and brand, etc. as less important while making a decision to purchase a SUV.

Conclusion

Following conclusions can be drawn from the project study.

1) From the gap analysis, it is evident that customers consider all 17 features as significantly important while making a SUV buying decision. Brand X is rated either equal or below expectation on 16 out of 17 features (except Brand image) by the people who are currently using it. However, the gap between the expectation and the actual satisfaction of Brand X is less than 1 point scale

over 15 attributes except "After Sales Service" and "Ease of Maintenance". This explains the main reason for current success of Brand X in Indian SUV market as it is almost satisfying the customers over 15 out of 17 attributes.

- 2) From the factor analysis, all the 17 attributes are grouped into 6 salient factors namely Vehicle Maintenance, Experience, Performance, Life time cost, Safety, and Aesthetics &Brand which together explain a total variance of 72%.
- 3) From the cluster analysis, all the respondents are profiled into 3 clusters and among 6 demographic variables (including age). Only profession and income are found to be significant in influencing the SUV purchase decision.
- 4) Part-time employees, people running own business and people with household income greater than Rs. 20 lakhs are less significant in purchasing SUVs.
- 5)Among the 6 salient factors, only Experience, Life time cost, and Aesthetics &Brand are found to be significant in influencing the SUV purchase decision.

Appendix

The Survey Questionnaire

Introduction

Welcome to this online survey. We are interested in understanding your opinion on compact Sports Utility Vehicles (SUV) to analyse how people decide on buying a particular SUV.

Your responses will be kept completely confidential and will only be available in aggregate form – none of your responses will be linked directly to you in any way. We would appreciate your candid and honest answers to the survey questions.

The survey will take about 10 minutes to complete.

Thank you for your valuable time!

QUESTIONS

1. What is your age?







Less than 18 years	1
18-50 years	2
Above 50 years	3

[Continue the survey only if 2 or 3 is selected. Or else exit the survey]

2. What is your involvement in the purchase decision making related to SUV in your household?

I will not involve in the purchase decision	1
I have little involvement in the purchase decision	2
I have significant influence in the purchase decision	3
I will make the final decision	4

[Continue the survey only if 3 or 4 is selected. Or else exit the survey]

3. Using the scale below, please indicate the level of importance you attach with each of the attributes listed below while considering SUV brands for purchase.

Not Important Very					Very important	
1	2	3	4	5	6	7

4. How important are the following parameters to you?

Feature	Importance
Brand image	
Design and looks of the SUV	
Price of the SUV	
Fuel efficiency (KMPL)	
Technology	
Power- Pulling capacity (BHP) and Engine capacity	
Overall Performance of the SUV	
Off-road ability	
Driving experience	
Purpose of usage	
Comfort - Seat configuration, legroom, AC etc.	
Value for money	
After-sales service availability	
Ease of Maintenance	
Safety of the passengers- Airbags, ABS etc.	
Dimensions of the SUV	
Availability of fuel options- Diesel, Petrol, CNG etc.	

Brand X – Specific Questions

1. Do you own a Brand X?

Yes	1
No	2

[Continue the survey only if 1 is selected. Or else exit the survey]

2. Using the scale below, please rate Brand X on a scale of 7 based on your experience.

Not Satisfied Very Satisfied					Very Satisfied	
1	2	3	4	5	6	7

Feature	Importance
Brand image	
Design and looks of the SUV	
Price of the SUV	
Fuel efficiency (KMPL)	
Technology	
Power- Pulling capacity (BHP) and Engine capacity	
Overall Performance of the SUV	
Off-road ability	
Driving experience	
Purpose of usage	
Comfort - Seat configuration, legroom, AC etc.	
Value for money	
After-sales service availability	
Ease of Maintenance	
Safety of the passengers- Airbags, ABS etc.	
Dimensions of the SUV	
Availability of fuel options- Diesel, Petrol, CNG etc.	

Demographics

1. Please select your gender.

Male	1
Female	2

2. Which of the following best describes your highest level of education?

School	1
Graduate	2
Post Graduate	3









3. Which of the following best describes your profession?

Own business	1
Full time employed	2
Part time employed	3
Student	4

What is your annual household income?

Less than 8 lakhs	1
8-20 lakhs	2
More than 20 lakhs	3

4. What is your family size?

Less than 4 people	1
4-7 people	2
More than 7 people	3

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