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Major Research Project Report on CONSUMER BUYING PREFERENCE IN AUTOMOBILE INDUSTRY

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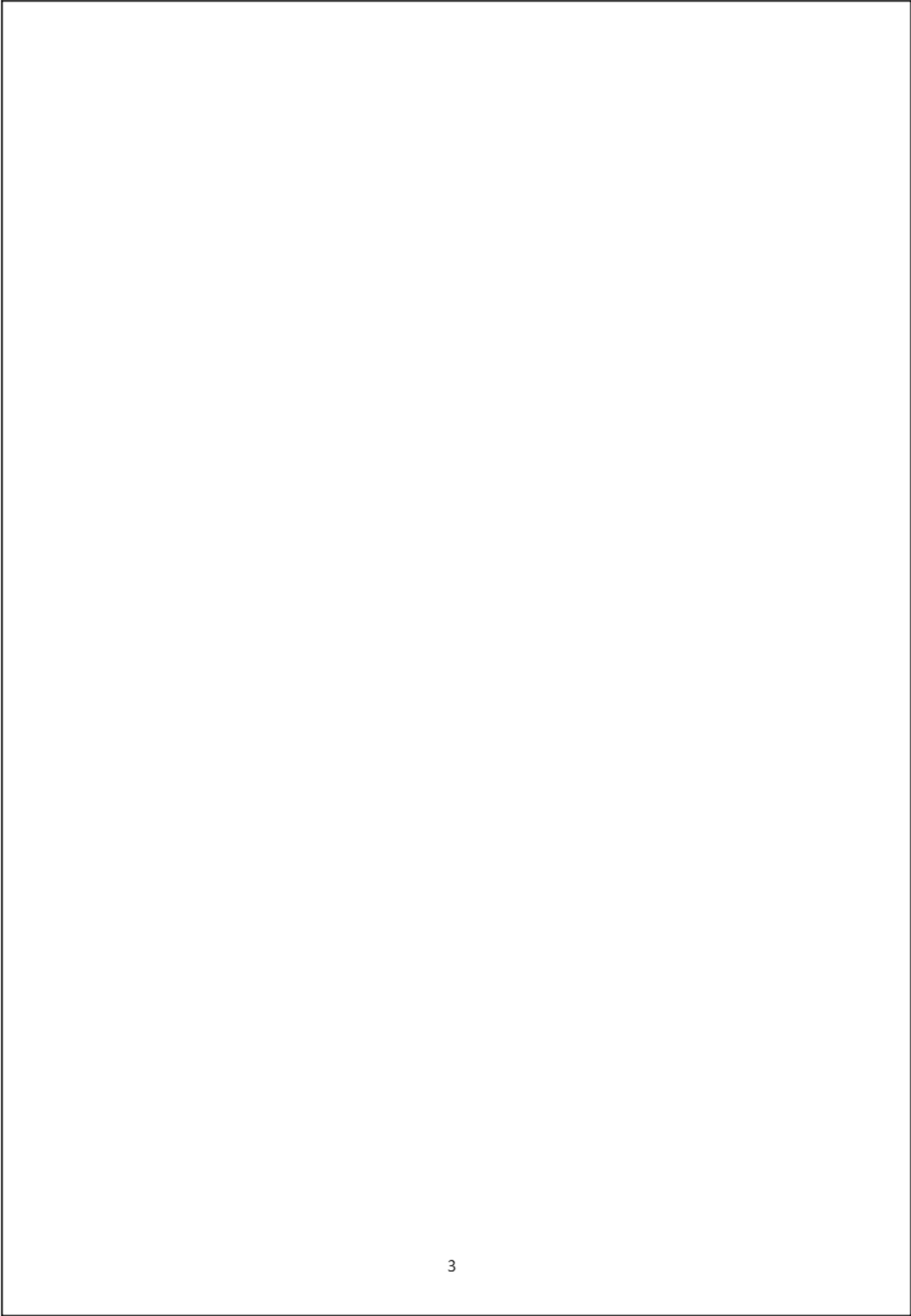
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2020**

CERTIFICATE

The following Major Project Report titled "Consumer Buying Preference In Automobile Industry" is carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of Post-Graduate Degree in Management for which it has been submitted by Ayushi Agarwal(2K19/UMBA/10), Lakshya Tomer(2K19/UMBA/15) and Vaibhav Mishra(2K19/UMBA/24). The information which has been used to complete this report is unique and has not been used or submitted at any other platform or place.



DECLARATION

We ²⁹ hereby declare that this project report titled Consumer Buying Preferences in automobile industry submitted by us and approved by our project guide, Prof. Jagvinder Singh, USME, Delhi Technological University, Delhi, ²⁵ is a bonafide work undertaken by us and it isn't submitted to any college or institution.

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Date: 22nd May 2021

Place:

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Ayushi Agarwal (2K19/UMBA/10)

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EXECUTIVE SUMMARY

This is the time of “GLOBAL WARMING & COVID-19” at present humans are restraining themselves from getting out of their homes, some domains of business are badly affected; one main example is of automobile industry.

The Focus and objective of this report is to comprehend the parts which for the most part influences the buyer choice of the vehicle customer. At present Indian car market is brimming with contenders because of accessibility of public and foreign brands and expansion in number of pre and post-sales assumption among the crowd.

Also pinnacle of comfortable and reliable electric vehicles because of company's like- 'TESLA' seems like due to this the automobile sector is on the border of revolution, so we also tried to see the consumer readiness for this 'BIG TICKET CHANGE'.

With this paper we have attempted to investigate the customer behaviour towards vehicles that convey travelers ¹⁵ in Delhi. The extent of the investigation is restricted to certain significant conduct perspectives like data search and assessment, brand preference and brand loyalty and motivational factors. Understanding the consumer loyalty's for the item will help the car maker in delivering and fostering their items to address client's issues and planning the appropriate promoting programmes and methodologies. Customers search for those separating boundaries, which may help them for exact choice and can be demonstrated as worth to cash suggestion for them. It makes more critical to comprehend and examine the buyer conduct.

Following analysis and statistical tools and techniques has been employed for research:

Descriptive analysis

Primary data is being used to carry out this research.

Making use of questionnaire the primary data is collected, later a detailed analysis was done using tools like MS Excel.

1. Chi –square test

Some hypothesis is made on the major factors which are identified using survey and any significant relationship exist between them or not is studied.

2. Factor analysis

Looking at the questionnaire all the major factors influencing the customer buying behavior is identified which help the manufacturer to design its strategy in accordance to the same. The output showed the strong influence of all the attributes like income of the family, occupation of the person, age and segment on brand on the buying commitment of customer and importance of related group.

INTRODUCTION

Auto industry is quite possibly the most developing and advantage producing industry. Because of ascend in extra cash and simple account accessible around, the deals of the traveler vehicles has seen a huge addition. As the contenders are expanding step by step, new players are venturing into the market with their new developments to draw in the expected clients on the lookout.

The purchasing practice of client can be concentrated by becoming acquainted with about their perception for the vehicles around the market. Essentially it is critical to comprehend what client needs and what is being catered. At the point when a client is happy with the item or administration, he do a verbal exchange for that item and administration to another forthcoming client.

Some Recent Contributions

- Indian car industry is 5th largest automobile market in 2019 with sales upto 3.82 millions unit.
- 7th largest producer of common use vehicles in 2019.
- It has powerful market in domestic demand and exports.
- Number of Automobile exported 4.77 million vehicles in F.Y20, increasing with CAGR of 6.940% b/w F.Y 16-F.Y 20.
- India's automotive industry (including component Developers) is expected to reach Rs16-18 trillion (US\$251-282 billion) by 2026.

Since long Maruti Suzuki has genuinely been the primary apex in the Indian vehicle industry. Additionally, This is to be noticed that there are other numerous major parts in the opposition like Mahindra & Mahindra, Hyundai, Tata motors, Mahindra kia, Mercedes Benz Skoda, Toyota, Volkswagen and others

Time back, most of the Indian auto vehicle producers was using the far off propels. Inside the space of years the circumstance has changed, India's vehicle suppliers are burning-through their own specific advancement and have their own creating units and their own body shops. In view of the creating speed of India's vehicle promote, number of car creators including the overall pioneers began bringing in items that are created in India for their own Nation, due, because of a few components.

Consumer Psychology

In India for the vast majority of the crowd, to buy a vehicle is the second generally significant and costly choice, which comes after the buying a house in priority. First time vehicle purchaser offer auto companies the chance for creating a positive image of brand that unquestionably can be reflected in terms of their sales in impending years since buyers in future can rehash vehicle acquisition. The idea of "purchasing conduct" is the most significant in advertising and has developed throughout the long term. It is the need to comprehend buyer purchasing behaviour as it assumes a significant part while buying items. Human needs are at pace vertical way, assumption are developing.

Customer behaviour is tangled, as Car Purchase infers, an undeniable degree of Social and mental inclusion. Purchaser purchasing conduct, ¹⁷ is a combination of Economical, Technological, Political, Cultural, Demographic and Natural factors just as Customer's own attributes which is reflected by his disposition, inspiration, character, information, insight and the way of life.

It is affirmed fact that if you are satisfied you'll endorse the thing or organization ¹⁰ to others. Verbal exchange and customer devotion expect an essential part in choosing business area acumen about a vehicle. Market insight helps in deciding the accomplishment of ²² an organization along these lines it is crucial for the vehicle producers to measure the "eagerness of existing clients of an item to prescribe it to other people".

Vehicle ² is perhaps the main and expensive buys that an Indian family makes and our task tends to the main inquire that create ease for car producers to reach their customers:

“What makes the perfect car that influence will wilfully purchase?”

Factors to be considered are:

- ⁶ Car price
- Income of consumer
- Features of car
- Car Safety Standard
- Warranty scheme provided
- Finance facility provided

2
Around the day's end, from the spread of decisions offered by different makers under different car segments, of which one of the customer will at last turn the start on and drive.

Customer devotion record: presumably the most improvement thinking in the business world sees that customer associations are best treated as assets, and that productive assessment of these associations can give a manual for improving them.

Customer suppositions are the customer described characteristics of your thing or organization. We cannot satisfy customer just by meeting customer's necessities but by considering the way that these should be met in any case. By any chance if remain less with what customer expect makes them disappoint

. Major ascribes of consumer loyalty can be summed up as:

- Quality of the Product
- Packaging of the product
- On time delivery
- Product Price
- Resolving the complaints responsibly
- Communication along with accessibility and attitudes

Market Characteristics

The auto business of India is among the most noticeable financial area. The Government of India (GOI) has permitted 100% foreign investment in this category. The auto area is among central ventures of the Indian economy. Indian Government give stimulus to the business by permitting nonstop financial advancement since 1991 has opened the door of this industry for some worldwide auto manufacturer. The car market in India is developing per year with the rate of 18%. The Indian vehicle industry has seen a sensational development over the most recent 20 years. This is because of the assembly of a ton of positive components. The business direction of autos has seen a sharp increment since 1990s till 2000. Vehicle industry has significantly profited by a sharp expansion popular and has added additional limit, better innovative work offices and mechanical headway and dispersion arrangement the nation over.

Variables adding to the expanded interest of automotives and the development of Indian auto area. The combination of government approaches, economy's development, individuals' buying power have all added to the amazing development of Indian Auto Industry. A portion of the significant development drivers are clarified beneath.

1. Industrial and agricultural growth helps in boosting Indian auto industry

Mechanical and farming yield increment has resulted in higher GDP and in general development of the whole Indian economy. Higher GDP implies really buying power. Offer on vehicles for home-grown and business utilization have seen highest development.

2. Boost in the road infrastructure increases demand for vehicles

3. Per Capita increase in income resulted in two/four-wheeler sales

Modern development during the 1970s, Information Technology blast during the 1980s and Business Process Outsourcing blast during the 1990s have changed the Indian working class. In this current age can acquire the very degrees of compensation that their folks were procuring following quite a while of work. This has pushed up the interest for having two wheelers & four wheelers. An ascent in per capita pay is likewise by implication liable for boom in retail sector and mechanical blast for buyer durables. Due to these things interest for business vehicle has gone up that has empower proficient circulation.

4. Rapid urbanization changes the face of auto sector

towns and villages having joint families offered approach to movement of the young age people to urban communities for better opportunities. The youthful instructed transients and family units (numerous with twofold pay) have a higher buying power. As of now, the pace of spread of urbanization is 30percent which is probably going to increment by 40per penny in 2030 (UN). Urbanization has advanced infrastructural improvement and it is assessed to spread at a pace of \$500 billion in the following five-six years.

5. Increase in size of middle class and working class population

Since the 1980s, a flooding economy has made large number of new positions in the private area. This has lead to a ton of success in the common laborers and the centre pay families. They can accommodate food, attire and instruction and furthermore can consider claiming extravagances like vehicles.

6. Huge number of options available for purchase of car

Indian shopper in 70s and 80s needed to pick between and Premier Padmini or an Ambassador. Presently there are in any event 123 unique models of vehicles from 30 odd producers accessible. The costs of the reduced vehicles like Tata's Nano have caused the world to sit up and observe the genuinely brilliant value focuses.

7. Easy and attractive financing options

Most nationalized and unfamiliar banks have exceptionally enticing money choices and low loan fees for acquisition of vehicles and bikes. There are specific organizations that money the business vehicles. That has made the fantasy about possessing a vehicle a simple reality.

8. Favourable and supportive Government Policies

9. Aside from a sound developing ¹⁸ economy, Indian Auto Industry has a ton to thank the public authority for the stunning development rates. The Indian government has presented a few industry explicit projects.

Demand Determinants

Determinants of interest for this industry incorporate vehicle costs (which are resolved generally by pay, material and gear expenses) and trade rates, inclinations, the running expense of a vehicle (fundamentally controlled by the cost of petroleum), pay, loan fees, rejecting rates, and item advancement. **Demand Determinants are summarised as:**

a. Exchange Rate

Development in the worth of rupee decides the engaging quality of Indian items abroad and the cost of import for homegrown utilization.

b. Affordability

Development in pay and financing costs decide the reasonableness of new engine vehicles. Permitting unlimited Foreign Direct Investment (FDI) prompted expansion in rivalry in the homegrown market thus, improving vehicles accessible at moderate costs.

c. Product Innovation

Item advancement is a significant determinant as it permits better models to be accessible every year and furthermore energizes assembling of ecological cordial vehicles.

d. Demographics

It is clear that high populace of India has been one of the significant purposes behind enormous size of Automobile Industry in India. Variables that may expand request incorporate rising populace and an expanding extent of youthful people in the populace that will be more disposed to utilize and supplant vehicles.

e. Infrastructure

LITERATURE REVIEW

A Study in Delhi NCR-Consumer Behaviour Towards Passengers Cars

All behaviour of human which goes in making purchase decisions is termed as consumer behaviour. Decisions relating to marketing which are aligned with the needs of the consumer can be easily taken once consumer behaviour is understood. Cultural, personal, socio-economic and psychological are the major factors of consumer behaviour.

More people are now able to afford a car as there is a significant rise in the income. The needs of the consumer have to carefully be identified by the companies to be prevalent in the market. Cars have now become a status symbol with main objective still being transport in metropolitan cities.

27 Factors influencing consumers' car purchasing decision in Indian automobile industry

The various factors considered while making purchase decisions of care were majorly affected by quality, by price, by brand, by utility and by technical considerations. There has been significant relationship between the value perceived by the customer and the decision of purchase. Value perceived by the customer and decision of purchase was majorly impacted by quality, brand, design, price, design and technical considerations.

Perceptual Mapping of SED and Brand Choice to Purchase Car

The study shows that the gender and the choice of brand is not fully related with each other. There was no trace of statistical significance between choice of brand and age; between choice of brand and education; choice of brand and income levels; choice of brand and status of marriage; brand selection influenced by social class. It was observed that choice of brand and place of work (occupation); size of the family and choice of brand is significant statistically.

20 Confirmatory factor analysis: An empirical study of the four- wheeler car buyer's purchasing behaviour

Various factors analyzed which impacts the car purchase intentions after the study were mainly security & safety, quality, technology, value, performance. Although the decision is impacted by various other factors. car manufacturers and dealers of car will be certainly benefitted once they understand the factors which impact cur purchase decision.

28 Car Market and consumer behaviour- A study of consumer perception

24 The results show the companies are currently on peripheral cues in order to maintain their TRM

and to constantly engage with potential and present customers. Companies are working aggressively in the global market with the climate focusing to continuously to work upon quality at all times.

21 A Study on The Purchase Behaviour of Customers of Hatchback Cars in Delhi/NCR Region

There are various determinants of consumer behaviour like demographic, socio-economic, technology and product. With significant increase in disposable income people are surely upgrading with new advanced features while buying hatchback cars. Maruti Suzuki and Hyundai are the brands which attracts most of the customers. Driving, brand, comfort of seats and security are some of the factors which are focused upon by customers while purchasing hatchbacks.

Marketing research by Naresh K. Malhotra & Satyabhusan Dash

Marketing research is an integral part of marketing. This book is helpful in assessing the information need and provide management with significant exact, reliable valid and current information to help in decision making. The book provides extensive help available to learn SPSS and SAS.

METHODOLOGY

The methodology involve, a detailed and extensive literature review of the research papers facts and data influencing car buying preferences and behavior of the customer and popular trends in India. After that a questionnaire was designed so as to know the major factor influencing individual decision while they make their mind for purchasing of cars. Pilot study was done to find out the number of samples required to conduct the research. Questionnaire was designed on Google form and sent through various modes like whatsapp, LinkedIn, e-mail etc. to the respondents.

The Descriptive analysis was used to describe data into comprehensible and understandable form through graph & tables and at last chi-square and factor analysis was done to find out the major factors.

⁶ 5.1 RESEARCH PROCESS

The research process has different distinct and interrelated steps for research analysis. It has a logical and hierarchical ordering. Each step is viewed as a separate process that include various task, steps and specific procedure.

After the questionnaire a pilot study has been conducted based on the result of which sample size determined. After analyzing the result descriptive study had done followed by chi-square test and factor analysis.

5.2 DATA COLLECTION

Primary data has been collected for the study played vital role for the analysis to give a suitable recommendation to the existing problems. Primary data has been collected through the help of questionnaire

5.3 SAMPLING TECHNIQUE

The sampling technique used is Simple random sampling technique to collect the sample. ¹³ A simple random sample is randomly selected subset from a bigger population. In this method, each member has exactly equal chance of being selected i.e. each sample ¹¹ has the same probability of being chosen at any stage during the sampling process. This process and techniques is known as SIMPLE RANDOM SAMPLING

5.4 Calculation of sample size

1. A 90% level of confidence is desired
2. Associated 'Z' value of 90%. confidence interval=1.645
3. Estimating population proportion,
from pilot survey,

Yes=19/21=90.5% , No =2/21=9.5%

i.e 90.5% of respondent are interested in buying a car

2. Determining the sample size of survey using the formula of standard error by proportion..

$$\sigma_{\hat{p}} = \sqrt{\frac{\hat{p}(1 - \hat{p})}{n}}$$

$$N = 92.49$$

N=93 samples approx

2.5 **Reliability Of Constructs**

The reliability of the questionnaire is 0.899, which is quite high which is good. reliability is considered acceptable when Cronbach's alpha meets or exceeds 0.700.

¹⁹ Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.899	0.900	13

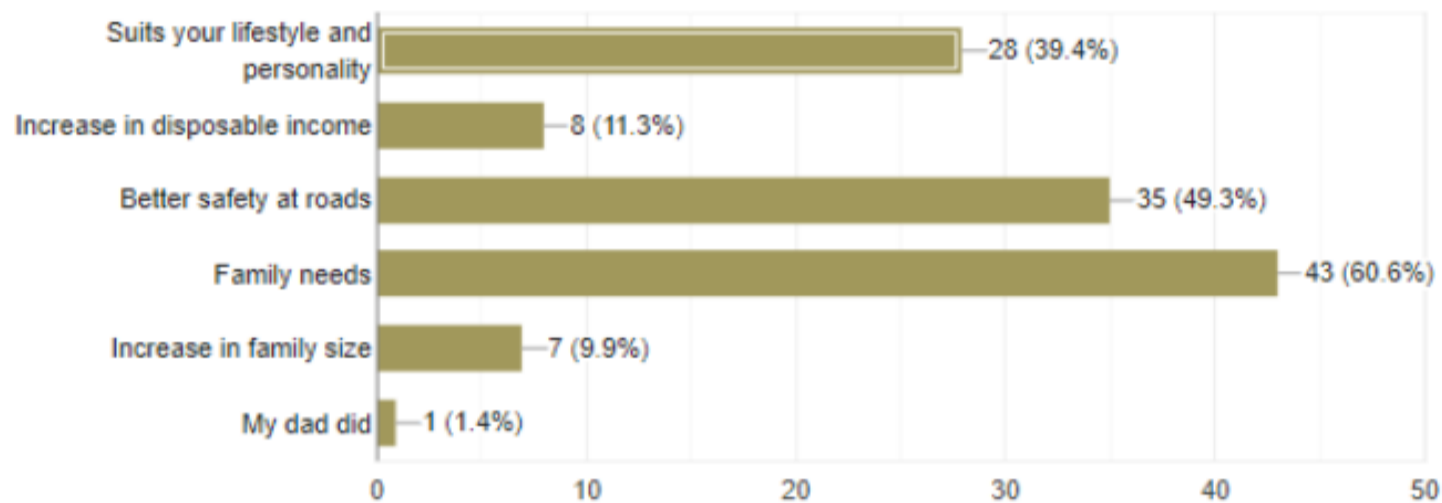
⁵ Cronbach Alpha Criteria	Classification
$a \geq 0.9$	Very good
$0.8 \leq a < 0.9$	Good
$0.7 \leq a < 0.8$	Be acceptable
$0.6 \leq a < 0.7$	Doubtful
$0.5 \leq a < 0.6$	Bad
$a < 0.5$	Not acceptable

DATA ANALYSIS AND DATA INTERPRETATION

The data collected from the questionnaire has been analyzed and interpretations were given

CONSUMER PSYCHOLOGY –PURPOSE OF USE

Q.1 What are the reason behind the first purchase of your car?

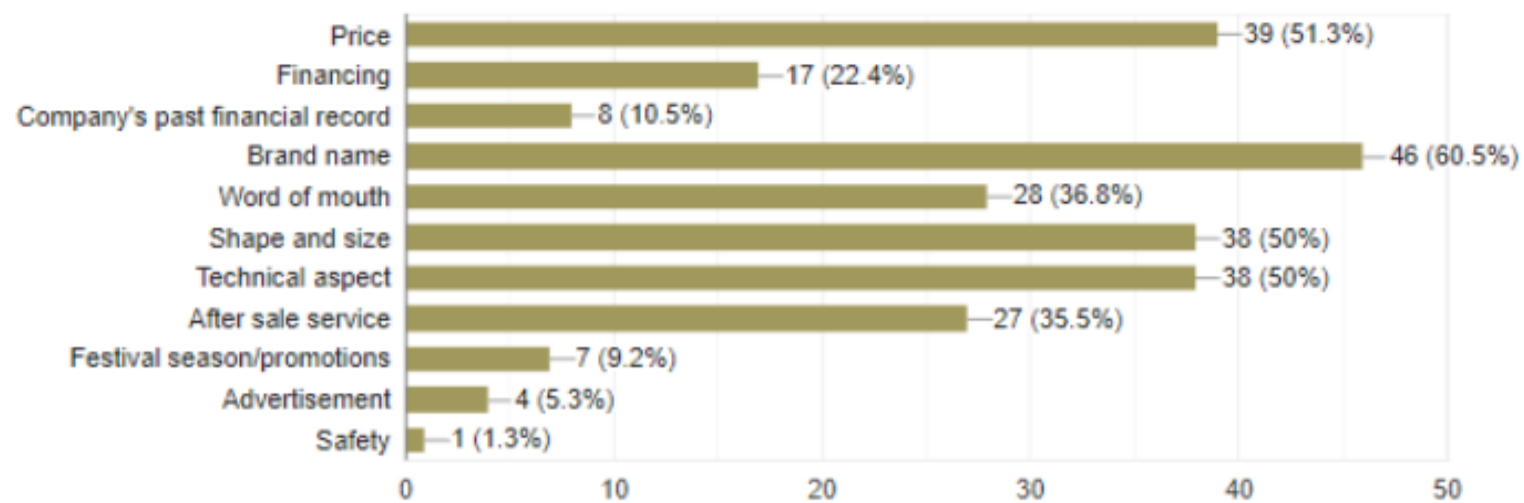


Interpretation:

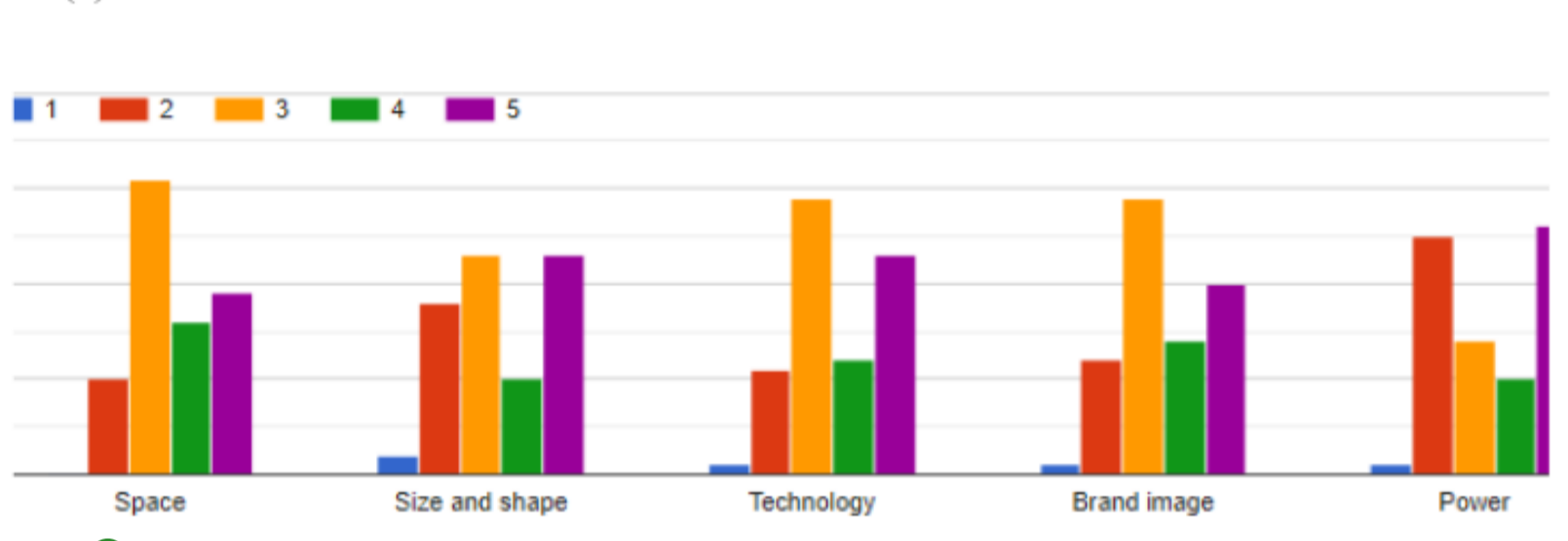
As per the analysis shown, “Family needs” comes out to be the greatest reason for buying a passenger car. The family needs like working members & partners, increasing family size etc. This trend is reflected in the graph shows that car are no more luxury or just a status symbol but a necessary need of today .The second most prominent factor is ‘better safety at roads ‘which is also pointing towards the same attitude change and hence lead to growth in Indian Automobile Industry.

Although increase in disposable income and family size have some percentage share and among least decision affecting concerns

PROMINENT FACTORS MAKING BUYING DECISION



6.2 (a)



6.2(b) ¹⁴ What would look for in your car. 1-least, 5-highest

Interpretation:

Indian market is hard to predict due to complex decision making process of buyers and factors when it comes to buying automobile. Despite the fact that the Indian vehicle sector is one of the quickest developing vehicle markets of the world still the Indian psyche is too complex for the manufacturer to understand. The most prominent reason for buying the car as indicated in the survey are value for money (price) & brand which a car belongs to. 51.3% of the respondents suggested that affordable prices are the prominent factors while purchasing the car, showing the typical Indian customer behavior. These are the reason behind people sticking to a particular price segment until the next substantial rise or increase in the disposable income of the people. Other reason following it are after sale, financing and technical aspects respectively. From Figure:6.2(b) the biggest feature customer look for in their cars come out the fuel efficiency, power & technology. Interior comfort is also playing major role in consumer preferences.

BRAND IMAGE

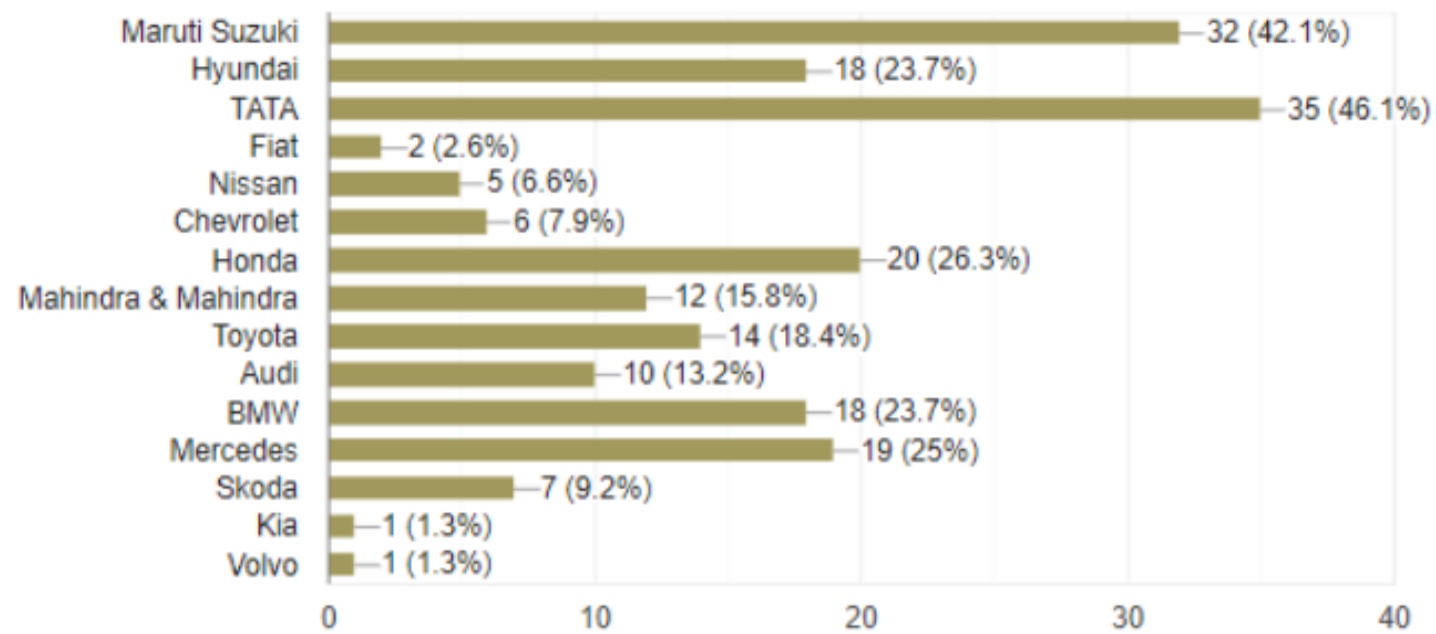


Fig:6.3(a) which brand do you prefer?

Interpretation:

As per the analysis, TATA is the car most preferred by respondents with 46.1% followed by Maruti Suzuki with 42.1%. This is because TATA's is known for its overall image and as a mark of trust. On the other side HONDA & HYUNDAI is at third and fourth position due to reason individuals consider these brand as dependable and reliable which made a decent stage for both the organizations. Mercedes and BMW are the other major players.

But these are the normal conditions when customer preferred 'value for money' and value 'complete package' offered by manufacturer with the money or features offered by other manufacturers, but when they have been asked for their dream car their responses are totally different as shown in below figure

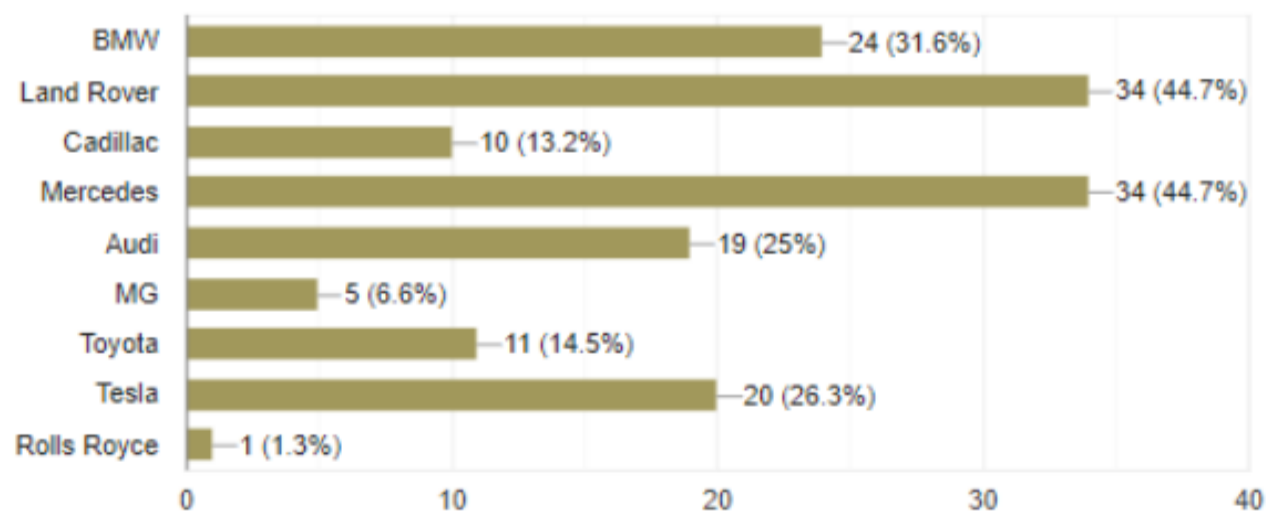


Fig:6.3(b) Which of the following is your Dream Car brand?

When question came for dream car MERCEDES, LAND ROVER & BMW brands topped the

table.

Mercedes, Land rover & Bmw are the car manufacturer whose brand image is widely acceptable by the buyers as they have luxury with performance, after that Audi are having the most vote for their luxury but none of them is Indian manufacturer beside Jaguar which later acquired by TATA.

TESLA is the company, which now getting space among Indian consumer as brand at which customer can rely on. Although there is negligible existence in present vehicle market but there is already a hype created through internet and social media, also due to the visionary 'ELON MUSK' created a solid base at which this giant can enter into the market, cause of concern for other big players of the market. If luxury offered at affordable prices potential customers definitely go for it.

CONSUMER BRAND SWITCHING BEHAVIOUR & CUSTOMER LEVEL OF SATISFACTION

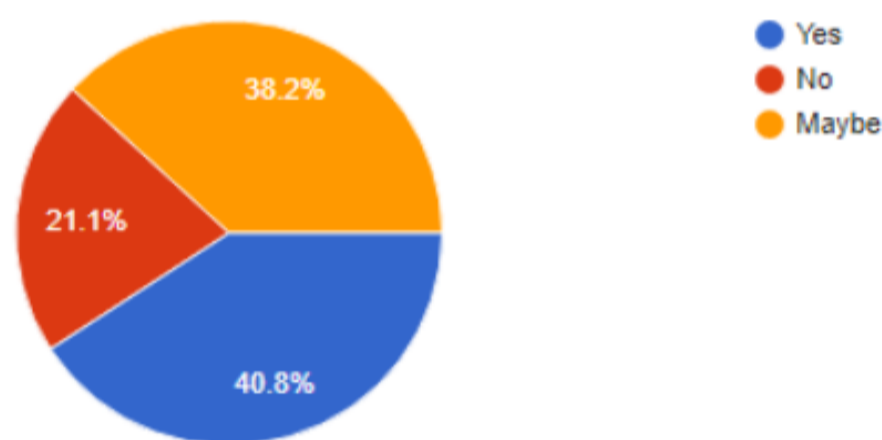


Fig 6.5(a) Would you like switching to another brand with other features

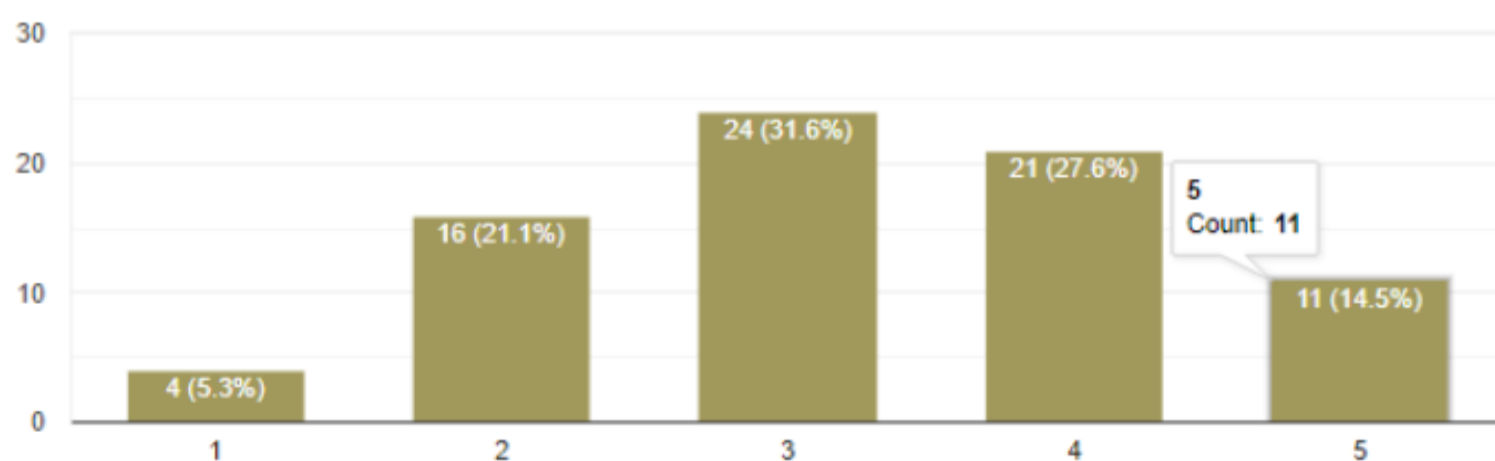


Fig 6.5(b) If yes what is your level of switching?

From the figure 6.5(a) shows that most of the respondents like to switch to another brand and their level of switching is also on high side as evident in Fig:6.5(b) nearly 79% of respondents are on the opinion that they like to change with 32% have high degree of switching ,24% are at

moderate level, so overall 56% people are just looking for good alternatives to change. It actually shows that customers are not much satisfied and were ready to switch as they want to try to new brand and want a fresh look of their vehicle at every purchase.

This is the striking reality of the Automobile industry that “CUSTOMERS BRAND LOYALTY” IS LOW.

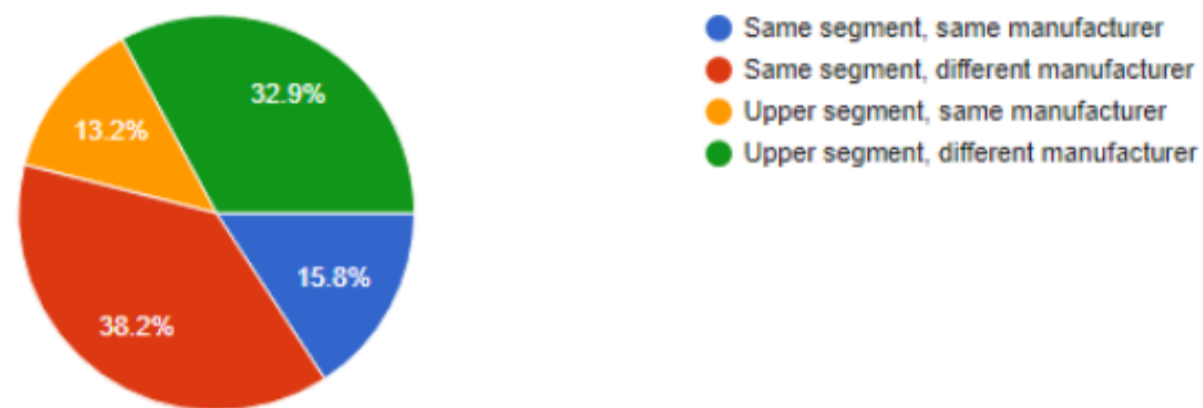


Fig: 6.5(c) Will you buy your car in the

Interpretation:

The analysis shows that most people want same segment & will prefer a different manufacturer. This behavior is in congruence with previous findings where respondents want to change the brands

The reason may be they want different manufacturer because they want fresh looks and feature in the same segment. As the segment change decision most of time dependent on the needs or requirement and condition like family size, parking facilities an individual possess.

CONSUMER CHANGE ADOPTION (CLEAN & RENEWABLE TECHNOLOGIES)

Rate according to your car engine preference 1-least, 5-highest

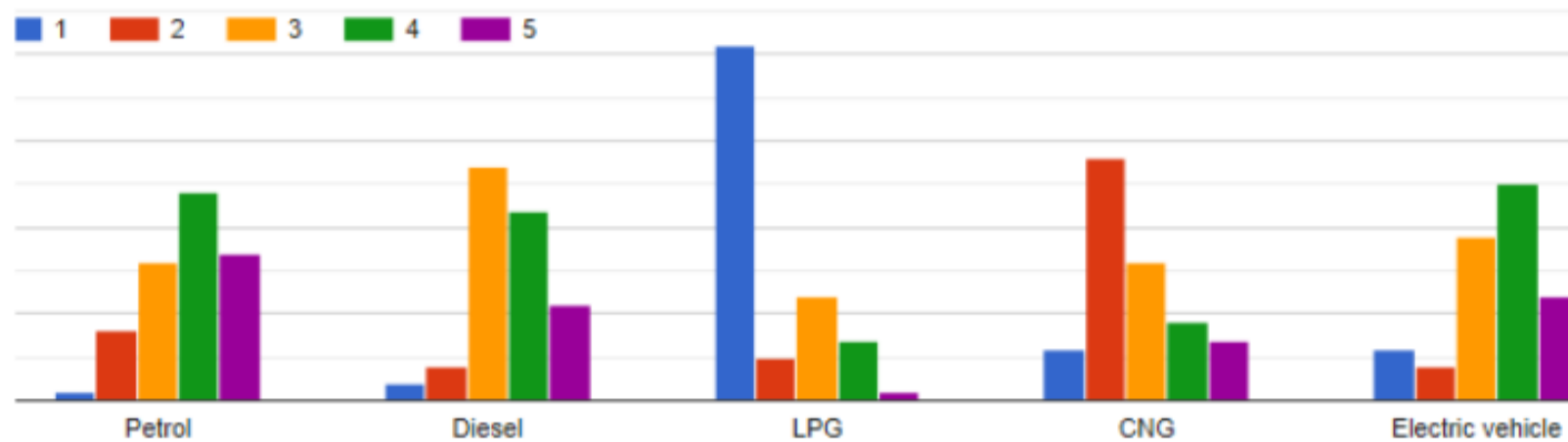


Fig:6.6(a)

From the analysis its evident, although with advent of many new technologies related to car engines but still the petrol & diesel engines is on the prime position when it comes to engine performance.

Interesting fact is that people have sort of aversion from CNG & LPG vehicles and electric vehicle market still in its nascent stages however good responses are there for electric engines. It comes out in research the fact that 'TESLA'(Luxury Electric Car manufacturer) is not liked by any of respondent when the question of "which brand do you prefer" comes, although TESLA got nearly 26% response for being the 'DREAM CAR' and also people do admit electric vehicles perform good when it comes to engine performance.

This fact suggest that at present people are not willing to invest in electric vehicles due to fact that at present their won't be proper infrastructure development for E-vehicles like charging station but people are positive towards the E-vehicles ,which makes it future of car industry. Proper attention and support of the governments is required for infrastructure development and subsidies for incentivizing the e-vehicles.

Also Indian manufacturer should get ready to take grab this upcoming big opportunity and ready to confront the international players in this market

Suggestion: TESLA ENTRY INTO INDIAN MARKET BOOST THE CONSUMER SENTIMENT FOR ELECTRIC VEHICLES

PREFERRED CAR SEGMENTS

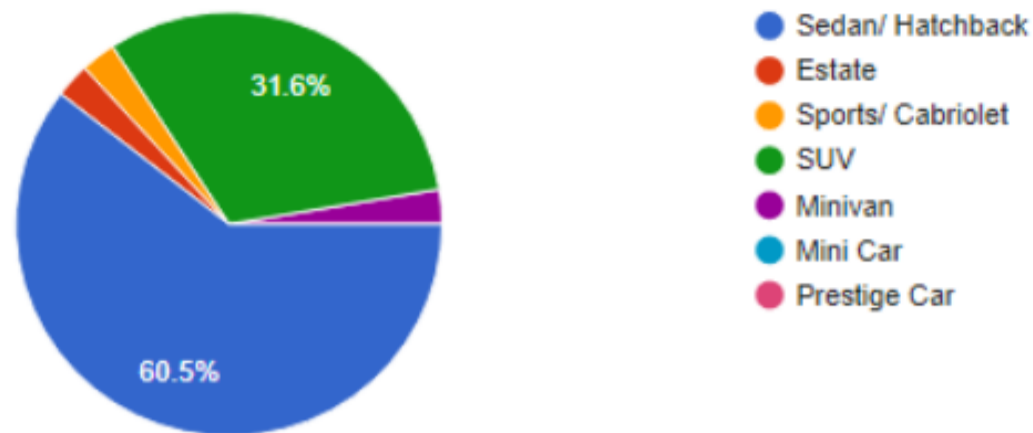


Fig:6.7(a) ¹⁴ Which of these types of cars would you consider driving?

Row Labels	Count of which of these types of car would you consider driving ?
18-24	32
Estate	1
Minivan	1
Sedan/ Hatchback	18
Sports/ Cabriolet	2
SUV	10
25-34	31
Estate	1
Sedan/ Hatchback	21
SUV	9
35-44	5
Sedan/ Hatchback	3
SUV	2
45-54	4
Sedan/ Hatchback	2
SUV	2
55-64	4
Minivan	1
Sedan/ Hatchback	2
SUV	1
Grand Total	76

From our analysis it is evident that Sedan/hatchback segment is the most preferred one especially with city passengers and largest in terms of numbers across all age group followed by SUV which is very helpful for mobility in long distances and difficult terrain.

- Hatchback section is preferred by 56.25% & 67.74% respondents in age group of 18-24 & 25-34 respectively
- SUV segment is also attracting most of the young blood(18-24) by 31.25% as shown in Fig:6.7(b)
- Respondent above age 55 , seems to be divided among the Minivan and SUV

DEMOGRAPHICS

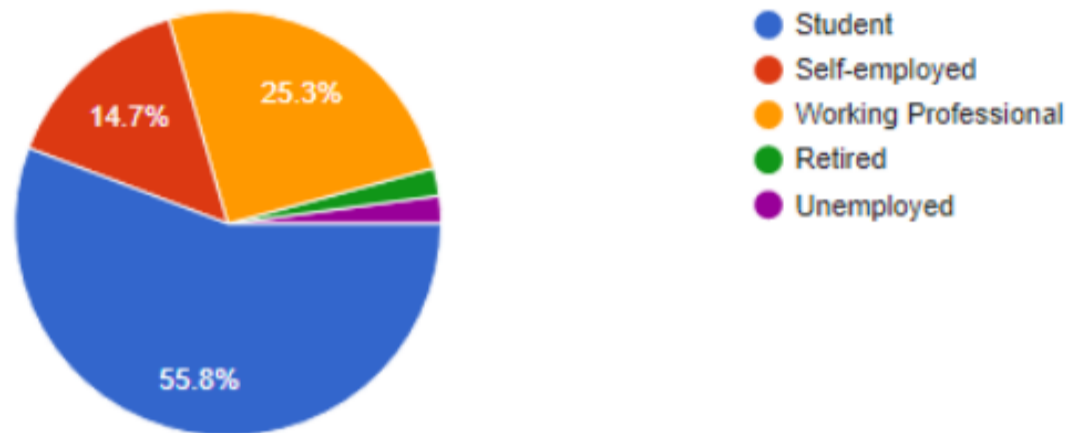


Fig:6.8(a) Which of the following categories best describes your employment status?

Row Labels	Count of which of these types of cars would you consider for driving ?
Retired	1
Sedan/ Hatchback	1
(blank)	
Self-employed	11
Sedan/ Hatchback	7
SUV	4
(blank)	
Student	41
Estate	2
Minivan	1
Sedan/ Hatchback	23
Sports/ Cabriolet	2
SUV	13
(blank)	
Unemployed	
(blank)	
Working Professional	23
Minivan	1
Sedan/ Hatchback	15
SUV	7
(blank)	
Grand Total	76

Fig:6.8(b)

- In students most popular category is of sedan/hatchback & suv both contributing 87.8%
- In working professional segment, Sedan & Suv are equally preferred around 38%.

- In all section whether student, working professional, retired sedan /hatchback section is at top.

Consumer Pricing Consideration

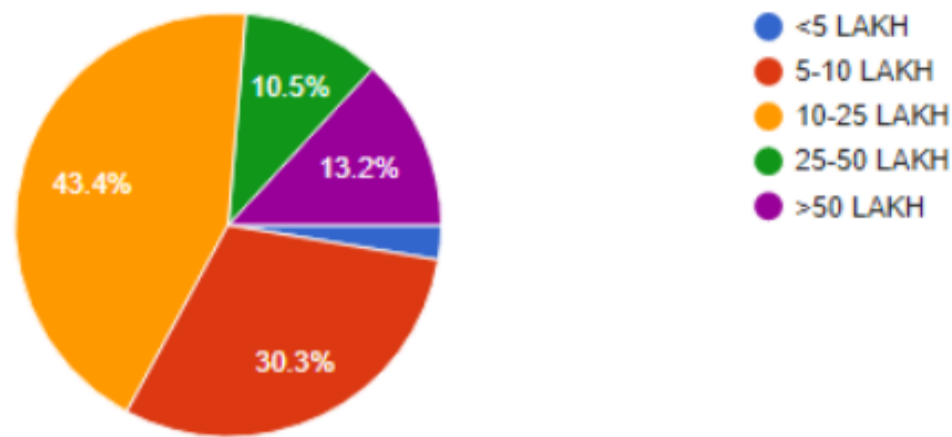


Fig:6.9(a) What is the price range you are considering?

Row Labels	Count of Which brand do you prefer?
<5 LAKH	2
Maruti Suzuki	1
TATA, Skoda	1
>50 LAKH	10
Audi	1
BMW	2
Honda	1
Hyundai, Honda, Toyota, Audi, BMW, Mercedes	1
Mahindra & Mahindra, Mercedes	1
TATA	1
TATA, Chevrolet	1
TATA, Volvo	1
Toyota	1
10-25 LAKH	33
BMW	1
Honda	1
Honda, BMW, Mercedes	1
Hyundai	1
Hyundai, Honda, BMW, Mercedes, Skoda	1
Hyundai, Nissan, Honda, Toyota, Skoda	1
Hyundai, TATA, Chevrolet, Toyota, BMW, Mercedes, Skoda	1
Hyundai, TATA, Mercedes	1
Mahindra & Mahindra	1
Maruti Suzuki	2
Maruti Suzuki, Hyundai	1
26 Maruti Suzuki, Hyundai, Honda, Audi, BMW, Mercedes, Kia	1
Maruti Suzuki, Hyundai, TATA, Fiat, Nissan, Chevrolet, Honda, Mahindra & Mahindra, Toyota, Audi, BMW, Mercedes, Skoda	1
Maruti Suzuki, Hyundai, TATA, Honda, Mahindra & Mahindra, Toyota, Audi, BMW, Mercedes, Skoda	1
Maruti Suzuki, Hyundai, TATA, Nissan, Chevrolet, Honda, Toyota, Audi, BMW, Mercedes, Skoda	1
7 Maruti Suzuki, Hyundai, TATA, Toyota, Audi, Mercedes	1
Maruti Suzuki, TATA	3
Maruti Suzuki, TATA, Honda, BMW, Mercedes	1
Maruti Suzuki, TATA, Mahindra & Mahindra	2
Maruti Suzuki, TATA, Mahindra & Mahindra, Toyota, Audi, Mercedes	1
Maruti Suzuki, Toyota	1
TATA	4
TATA, Honda, BMW, Mercedes	2
Toyota	2
25-50 LAKH	8
Audi	1
BMW	1
Maruti Suzuki, Hyundai, TATA	1
Maruti Suzuki, TATA, Mahindra & Mahindra	1
Mercedes	3
Toyota	1
5-10 LAKH	23
Honda	3
Hyundai	1
Hyundai, Honda, Toyota	1
7 Mahindra & Mahindra	1
Maruti Suzuki	6
Maruti Suzuki, Hyundai, Nissan, Honda	1
Maruti Suzuki, Hyundai, TATA, Chevrolet, BMW	1
Maruti Suzuki, Hyundai, TATA, Fiat, Nissan, Chevrolet	1
Maruti Suzuki, TATA, Audi, BMW, Mercedes	1
Maruti Suzuki, TATA, Honda	1
Maruti Suzuki, TATA, Honda, Mahindra & Mahindra	1
Maruti Suzuki, TATA, Mahindra & Mahindra, BMW	1
TATA	3
TATA, Mahindra & Mahindra	1
(blank)	
(blank)	
Grand Total	76

- 10-25 lakh is most 'value for money' category for consumer considering hatchback other car segment category followed by 5-10 lakh

- In category 5-10,10-25 lakh in both price segment MARUTI SUZUKI is the most preferred car
- In higher price segment, SUV and sports cars are preferred.
- Cars like BMW & MERCEDES are preferred in higher price segment

CHI- SQUARE TEST

Demographic Characteristics Of Consumers

Hypothesis : 1

NULL HPOTHESIS: A significant relationship doesn't exist between age and car brand choices.

Alternate hypothesis: A significant relationship exist between age and car brand choices.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	165.357 ^a	205	.981	.819 ^b	.809	.829
Likelihood Ratio	132.335	205	1.000	.065 ^b	.059	.072
Fisher's Exact Test	327.386			.041 ^b	.036	.047
N of Valid Cases	96					

a. 250 cells (99.2%) have expected count less than 5. The minimum expected count is .01.

b. Based on 10000 sampled tables with starting seed 2000000.

INTERPRETATION: Since, Fisher's exact test is lesser than 0.05 , then the null hypothesis is rejected means age and car brand choices are having significant relationship with each other.

Hypothesis:2

NULL HPOTHESIS: A significant relationship doesn't exist between age and segment.

Alternate hypothesis: A significant relationship exist between age and segments.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	24.005 ^a	25	.519	.418 ^b	.405	.431
Likelihood Ratio	21.581	25	.660	.446 ^b	.433	.459
Fisher's Exact Test	30.986			.334 ^b	.322	.347
N of Valid Cases	96					

a. 30 cells (83.3%) have expected count less than 5. The minimum expected count is .02.

b. Based on 10000 sampled tables with starting seed 1314643744.

INTERPRETATION: Since, Fisher's exact test is greater than 0.05 , then the null hypothesis is not rejected which means age and car segment choices doesn't have any significant relationship with each other.

Societal Characteristics Of Consumer

Hypothesis:3 OCCUPATION VS SEGMENT

NULL HPOTHESIS: A significant relationship doesn't exist between OCCUPATION VS SEGMENT.

Alternate hypothesis: A significant relationship exist between OCCUPATION VS SEGMENT.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	21.514 ^a	25	.664	.412 ^b	.399	.425
Likelihood Ratio	22.876	25	.585	.280 ^b	.268	.291
Fisher's Exact Test	32.885			.354 ^b	.341	.366
N of Valid Cases	96					

a. 29 cells (80.6%) have expected count less than 5. The minimum expected count is .02.

b. Based on 10000 sampled tables with starting seed 112562564.

INTERPRETATION: Since, Fisher's exact test is greater than 0.05 , then the null hypothesis is not rejected which means occupation and car segment choices are doesn't have any significant relationship with each other.

Hypothesis:4 Occupation vs brand

NULL HPOTHESIS: A significant relationship doesn't exist between OCCUPATION VS BRAND.

Alternate hypothesis: A significant relationship exist between OCCUPATION VS BRAND



Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	109.924 ^a	205	1.000	.990 ^b	.988	.993
Likelihood Ratio	106.520	205	1.000	.717 ^b	.705	.728
Fisher's Exact Test	346.875			.676 ^b	.664	.688
N of Valid Cases	96					

a. 250 cells (99.2%) have expected count less than 5. The minimum expected count is .01.

b. Based on 10000 sampled tables with starting seed 92208573.

INTERPRETATION: Since, Fisher's exact test is greater than 0.5 than the null hypothesis is accepted means occupation and car segment choices doesn't have significant relationship with each other.

FACTOR ANALYSIS

1 **Exploratory factor analysis:** The exploratory factor investigation was utilized to decide the different affecting elements of buying the vehicle.

Research Methodology structured questionnaire.

Research Design

The examination is exploratory in nature. The investigation is done to comprehend the purchase behavior of customers. For this reason, structured Questionnaire is utilized and results are interpreted.

Since KMO value comes more than 0.5, thus the sample is adequate and we can run the factor analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.051	58.756	58.756	7.051	58.756	58.756	6.023	50.192	50.192
2	1.489	12.408	71.164	1.489	12.408	71.164	2.429	20.240	70.432
3	1.072	8.935	80.099	1.072	8.935	80.099	1.160	9.667	80.099
4	.692	5.767	85.866						
5	.432	3.599	89.465						
6	.307	2.556	92.022						
7	.243	2.025	94.047						
8	.220	1.833	95.880						
9	.183	1.522	97.402						
10	.134	1.116	98.518						
11	.111	.923	99.441						
12	.067	.559	100.000						

Extraction Method: Principal Component Analysis.

INTERPRETATION: From the above table, in our 12 variables only first 3 components have an Eigen value of at least 1. The other components having low values are not assumed to represent real traits

Principal component matrix

	Component		
	1	2	3
V14	.912	.155	-.091
V15	.871	.265	-.062
V16	.880	.216	.180
V17	.817	.331	.163
V18	.906	.216	-.005
V19	.852	.289	-.071
V20	.933	.127	.02
V21	.515	.293	-.659
V22	.277	.603	.235
V23	.351	.806	-.136
V24	.069	.891	.055
V25	.319	.373	.754

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations

- In component 1, question 1,2,3,4,5,6,7,8 have values greater than 0.5 so they will forming the component 1 ,it is accepted and others are rejected
- In component 2 ,question 9,10,11 have values greater than 0.5 so they will forming the component 2 it is accepted and others are rejected having values less than 0.5
- Component 3 formed by only 1 question 12 have values greater than 0.5 .

Factors Drawn from Factor Analysis

1	2	3
V14	V22	V21
V15	V23	V25
V16	V24	
V17		
V18		
V19		
V20		
V21		

- V14-What would you look for in your car.1-least, 5-highest [Space]
- V15-What would you look for in your car.1-least, 5-highest [Size and shape]
- V16-What would you look for in your car.1-least, 5-highest [Technology]
- V17-What would you look for in your car.1-least, 5-highest [Brand image]
- V18-What would you look for in your car.1-least, 5-highest [Power]
- V19-What would you look for in your car.1-least, 5-highest [Fuel efficiency]
- V20-What would you look for in your car.1-least, 5-highest [Interior Comfort]
- V21-Rate according to your car engine preference 1-least, 5-highest [Petrol]
- V22-Rate according to your car engine preference 1-least, 5-highest [Diesel]
- V23-Rate according to your car engine preference 1-least, 5-highest [LPG]
- V24-Rate according to your car engine preference 1-least, 5-highest [CNG]
- V25-Rate according to your car engine preference 1-least, 5-highest [Electric vehicle]

CUSTOMER CHARACTERIZATION (BASED ON FACTOR ANALYSIS)

The result of factor analysis shows that quality & technology¹ conscious buyers items form a factor while some other factors are performance conscious buyers, customer loyalty formed the second & third respectively.

1. QUALITY CONSOIOUS BUYERS

The first factor, quality & technology⁹ conscious buyers, accounted for the largest proportion, that is, 50.192% of the total explained variance. This factor was defined by eight items and was primarily related to the space, shape and size, Brand image, Power, Fuel efficiency, technology, power and interior comfort.

2. PERFORMANCE CONSOIOUS BUYERS

The second factor is the performance conscious buyers, this factor explained about 20.24%¹ of the total variance and was constructed by 3 items, which were primarily associated with the concept of performance i.e. LPG engine performance, CNG engine performance & Diesel vehicle engine performance of the car

3. ENVIRONMENT & VALUE CONSOIOUS BUYERS

The fourth factor, explained 9.667 % of the variance and was constructed by 1 item which primarily associated with Electric engine performance.

RESULTS

From Descriptive analysis:

Majority of customers are from age group 18-34 years (63%). Biggest reason for buying their first car is family needs, safety on road & modern day lifestyle & personality. This trend is reflected in the graph shows that cars are no more luxury or just a status symbol but a necessary need of today

Most prominent factor affecting the buyers decision are Price & Brand name with 51.3% & 60.5% of the respondents voted respectively. Other important factors are after sale services, financing facility availability.

If we come to brand preference then nearly ,46.1% respondents prefer TATA ,and is clearly the winner in Indian market ,closely followed by the Maruti Suzuki preferred by 42.1% but when we talk about the customer satisfaction and building the brand loyalty most the respondents are not seemed to be satisfied with the current brand around , as the level of switching is high among the customer nearly around 79% of respondent is ready for switching their brand or in state of indecision indicating low “customer loyalty” in automobile industry.

38.2% of respondents don't want to change the segments although they are ready to buy with different manufacturer as the segment change decision most of time dependent on the needs or requirement and condition like family size, parking facilities an individual possess.

32.9% of respondent wants to upgrade their car segment and also their car brand ,only 29% of respondents are those who are satisfied with current brand and want to remain in their present brand , clearly picturing the industry has low customer loyalty.

In car engine performance, customer are not satisfied with the LPG engines performance and CNG engine performance showing less inclination towards the renewable engines. Although there is positive sentiments towards the electric vehicles but due to deficiency of necessary infrastructure for E-vehicles still in brand preference is low

Hatchback section is preferred by most respondents across all the section whether belong to any age groups or the social and economical category.

In students most popular category is of suv and sedan/hatchback car both contributing 87.80 % of the category, similar trends in working professional and self-employed category.10-25 lakh price segment is most considered price range among the consumers followed by 5-10 lakh price range, in category Maruti Suzuki is dominating the market.

CHI-SQUARE RESULTS

S.NO.	HYPOTHESIS	RESULTS
	<u>Demographic Characteristics</u>	
1.	NULL HYPOTHESIS: A significant relationship doesn't exist between age and car brand choices.	NULL HYPOTHESIS REJECTED
2.	NULL HYPOTHESIS: A significant relationship doesn't exist between age and segment.	NULL HYPOTHESIS NOT REJECTED
	<u>Societal Characteristics</u>	
3	NULL HYPOTHESIS: A significant relationship doesn't exist between OCCUPATION VS SEGMENT.	NULL HYPOTHESIS NOT REJECTED
4.	NULL HYPOTHESIS: A significant relationship doesn't exist between OCCUPATION VS segment	NULL HYPOTHESIS NOT REJECTED

FACTOR ANALYSIS RESULTS

The exploratory factor investigation was utilized to recognize the different impacting factors for buying the vehicle. Principal Component examination was employed for extracting the factors. Only the factor possessing latent roots or eigen values larger than one were considered significant; all remaining components with latent roots less than 1 were considered as insignificant and thus rejected.

The extracted factors alongside their eigen values are appeared in table. The factor have been given appropriate names on the basis of characteristic of variables represented in each case.

There are 3 factors each, all of them having eigen value greater than 1 for car's influencing factors.

1. Quality conscious buyers
2. Performance conscious buyers
3. Environment and value conscious buyers

RECOMMENDATION

The factor that have been concluded from the investigation, help us with understanding the purchase behavior of the customer, in this way the top to bottom investigation of these factor is significant for the organization to comprehend and fulfill their client needs. To build up another brand or approach other customer segment and market extension, these factor act as the key points to influence the customers.

1. Customized product for different age group, classes and segments have to be offered.
2. Constant change and Innovation is the key to retain customers otherwise it's difficult to maintain long term relationship.
3. Competitive affordable prices and easy financing options are important to succeed in the industry
4. A strategic alliance with some bank gives boost to sales like SBI with TATA'S ,gives major boost to sale of TATA car
5. 10-25 lakh price range is good to target for new manufacturer with special focus on Hatchback and Sedan segment
6. Proper feedback and after-sales services is important for creating and sustaining long term good relationship.
7. Clean fuel engine is the LPG & CNG engine is considered fuel efficient.
8. Electric vehicles is the NEXT BIG CHANGE in this sector so brands should prepare themselves for it.
9. World's biggest car manufacturing company 'TESLA' (in terms of market capitalization) entered in Indian market in 2021 after which an ecosystem for electric vehicle will be develop but this poses a threat for Indian manufacturer .
10. India is a young country so, special focus on choices and preference for youth has to be given through media campaign and brand endorsement.

CONCLUSION

Consumer conduct is vital for previous and posts buying decisions. For success in the aggressive and competitive market without proper understanding of the customer behavior. ¹² An understanding of the buyers enables a promoter to take advancing decisions which are suitable for its client needs. From the study, there are various major classes of consumer behavior determinants and expectation, namely demographic, socioeconomic, product and technology. Further factorization of buyer's practices under these classes will empower vehicle maker to adjust their practices according to client conduct. Purchaser dynamic is affected by factors like quality, performance and eco friendly features of product. These are the major components based on which a manufacturer can plan strategies in this sector. Also analyzing the relation between age, occupation on the brands purchase and consumer segments helps in customization of product according to the needs of the various groups. Also, knowledge about the customer loyalty help in upgrading and development of products and services help in customer retention and acquisition.

LIMITATION OF THE STUDY

Like every other research, the current study was⁴ faced by certain problem. Some of these problems and limitations faced during the research are as follows:

- Unwillingness shown by the various car owners to participate in the questionnaire and aid the research.
- Problem arises due to lack of budget and time constraints and scope of study.
- The laziness, boredom and faltering concentration that come¹⁰ among the respondents while participating in the detailed survey, in this way prompted the trouble of preventing inadequate surveys
- As the sample collected through simple random sampling .The study respondents were majorly located in the region of Delhi.

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