Project Report

"DISCRIMINANT ANALYSIS BASED ON PARAMETERS INFLUENCING THE PURCHASE OF A PASSENGER CAR IN NAGPUR CITY''

Submitted to

G.S. College of Commerce & Economics

Nagpur

In partial fulfillment for the award of the degree of

Bachelor of Business Administration

Submitted by

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Under the Guidance of
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G.S. College of Commerce & Economics, Nagpur

Academic Year 2021 - 2022

<u>CERTIFICATE</u>

This is to certify that **"AYUSH GUPTA** "has submitted the project report titled

"(DISCRIMINANT ANALYSIS BASED ON PARAMETERS INFLUENCING THE PURCHASE OF A PASSENGER CAR IN NAGPUR CITY)", towards partial fulfillment of **BACHELOR OF BUSINESS ADMINISTRATION** Degree examination. This has not been submitted for any other examination and does not form part of any other course undergone by the candidate.

It is further certified that he/she has ingeniously completed his/her project as prescribed

By Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Prof. KAMLESH THOTE   **Dr. SONALI GADEKAR**

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Place: NAGPUR
Date:

DECLARATION

I here-by declare that the project with title "DISCRIMINANT ANALYSIS BASED ON PARAMETERS INFLUENCING THE PURCHASE OF A PASSENGER CAR IN NAGPUR CITY'' has been completed by me in partial fulfillment of BACHELOR OF BUSINESS ADMINISTRATION degree examination as prescribed by Rashtrasant

Tukadoji Maharaj Nagpur University, Nagpur and this has not been submitted for any other examination and does not form the part of any other course undertaken by me.

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AYUSH GUPTA

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Place: NAGPUR

Date:

<u>ACKNOWLEDGEMENT</u>

With immense pride and sense of gratitude, I take this golden opportunity to express my sincere regards to Dr.N.Y.Khandait, Principal, G.S. College of Commerce & Economics, Nagpur.

I am extremely thankful to my Project Guide Prof. KAMLESH THOTE for his/her guideline throughout the project. I tender my sincere regards to Co-ordinator, Dr. SONALI GADEKAR for giving me outstanding guidance, enthusiastic suggestions and invaluable encouragement which helped me in the completion of the project.

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I would like to thank all those who helped me in making this project complete and successful.

                                        AYUSH GUPTA

Place: NAGPUR

Date:

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CHAPTER I: INTRODUCTION

India became the fourth largest auto market in 2019 displacing Germany with about 3.99 million units sold in the passenger and commercial vehicles categories. India is expected to displace Japan as the third largest auto market by 2021 ending.

The two-wheeler segment dominates the market in terms of volume owing to a growing middle class and a young population. Moreover, the growing interest of the companies in exploring the rural markets further aided the growth of the sector.

India is also a prominent auto exporter and has strong export growth expectations for the near future. In addition, several initiatives by the Government of India and major automobile players in the Indian market are expected to make India a leader in the two-wheeler and four-wheeler market in the world by 2020. India is the 4th largest passenger car manufacturer country at present.

1.1 Market Size
Domestic automobiles production increased at 2.36% CAGR between FY16-20 with 26.36 million vehicles being manufactured in the country in FY20. Overall, domestic automobiles sales increased at 1.29% CAGR between FY16-FY20 with 21.55 million vehicles being sold in FY20.

Two wheelers and passenger vehicles dominate the domestic Indian auto market. Passenger car sales are dominated by small and mid-sized cars. Two wheelers and passenger cars accounted for 80.8% and 12.9% market share, respectively, accounting for a combined sale of over 20.1 million vehicles in FY20.

Passenger vehicle (PV) sales stood at 3,10,294 units in October 2020, compared with 2,71,737 units in October 2019, registering a 14.19% growth. As per the Federation of Automobile Dealers Associations (FADA), PV sales in November 2020 stood at 2,91,001 units, compared with 2,79,365 units in November 2019, registering a 4.17% growth.

Overall, automobile export reached 4.77 million vehicles in FY20, growing at a CAGR of 6.94% during FY16-FY20. Two wheelers made up 73.9% of the vehicles exported, followed by passenger vehicles at 14.2%, three wheelers at 10.5% and commercial vehicles at 1.3%.

EV sales, excluding E-rickshaws, in India witnessed a growth of 20% and reached 1.56 lakh units in FY20 driven by two wheelers.

Premium motorbike sales in India recorded seven-fold jump in domestic sales, reaching 13,982 units during April-September 2019. The sale of luxury cars stood between 15,000 to 17,000 in the first six months of 2019.

1.2 Investments
In order to keep up with the growing demand, several auto makers have started investing heavily in various segments of the industry during the last few months. The industry has attracted Foreign Direct Investment (FDI) worth US$ 24.53 billion between April 2000 and June 2020, according to the data released by Department for Promotion of Industry and Internal Trade (DPIIT).

Some of the recent/planned investments and developments in the automobile sector in India are as follows:

- In November 2020, Mercedes Benz partnered with the State Bank of India to provide attractive interest rates, while expanding customer base by reaching out to potential HNI customers of the bank.
- Hyundai Motor India invested ~Rs. 3,500 crore (US$ 500 million) in FY20, with an eye to gain the market share. This investment is a part of Rs. 7,000 crore (US$ 993 million) commitment made by the company to the Tamil Nadu government in 2019.
- In October 2020, MG Motors announced its interest in investing Rs. 1,000 crore (US$ 135.3 million) to launch new models and expand operations in spite of the anti-China sentiments.
- In October 2020, Ultraviolette Automotive, a manufacturer of electric motorcycle in India, raised a disclosed amount in a series B investment from GoFrugal Technologies, a software company.
- In September 2020, Toyota Kirloskar Motors announced investments of more than Rs 2,000 crore (US$ 272.81 million) in India directed towards electric components and technology for domestic customers and exports.
- During early September 2020, Mahindra & Mahindra singed a MoU with Israel-based REE Automotive to collaborate and develop commercial electric vehicles.
- In April 2020, TVS Motor Company bought UK's iconic sporting motorcycle brand, Norton, for a sum of about Rs. 153 crore (US$ 21.89 million), making its entry into the top end (above 850cc) segment of the superbike market.
- In January 2020, Tata AutoComp Systems, the auto-components arm of Tata Group entered a joint venture with Beijing-based Prestolite Electric to enter the electric vehicle (EV) components market.
- In December 2019, Morris Garages (MG), a British automobile brand, announced plans to invest an additional Rs. 3,000 crore (US$ 429.25 million) in India.
- Audi India planned to launch nine all-new models including Sedans and SUVs along with futuristic E-tron EV by end of 2019.
- MG Motor India planned to launch MG ZS EV electric SUV in early 2020 and have plans to launch affordable EV in the next 3-4 years.
- BYD-Olectra, Tata Motors and Ashok Leyland will supply 5,500 electric buses for different state departments.

1.3 SOME BASIC INTRODUCTION TO THE TOP RUNNING PASSENGER CAR BRANDS IN NAGPUR CITY

1.3.1 Maruti Suzuki India Limited (MSIL), a subsidiary of Suzuki Motor Corporation, Japan, is India's largest passenger car maker. Maruti Suzuki is credited with having ushered in the automobile revolution in the country. The Company is engaged in the business of manufacturing and sale of passenger vehicles in India. Making a small beginning with the iconic Maruti 800 car, Maruti Suzuki today has a vast portfolio of 16 car models with over 150 variants. Maruti Suzuki's product range extends from entry level small cars like Alto 800, Alto K10 to the luxury sedan Ciaz. Other activities include facilitation of pre-owned car sales fleet management, car financing. The Company has manufacturing

facilities in Gurgaon and Manesar in Haryana and a state of the art R&D centre in Rohtak, Haryana.

The Company, formerly known as Maruti Udyog Limited, was incorporated as a joint venture between the Government of India and Suzuki Motor Corporation, Japan in February, 1981. Presently, Suzuki Motor Corporation owns equity of 56.2%. The Company's shares are traded on the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE).

1.3.2. TATA MOTORS LIMITED

1.3.2. TATA MOTORS LIMITED is an Indian multinational automotive manufacturing company headquartered in Mumbai, India. It is a part of Tata group, an Indian conglomerate. Its products include passenger cars, trucks, vans, coaches, buses, sports cars, construction equipment and military vehicles. Tata Motors entered the passenger vehicle market in 1988 with the launch of the Tata Mobile followed by the Tata Sierra in 1991, becoming the first Indian manufacturer to achieve the capability of developing a competitive indigenous automobile. In 1998, Tata launched the first fully indigenous Indian passenger car, the Indica, and in 2008 launched the Tata Nano, the world's cheapest car. Tata Motors acquired the South Korean truck manufacturer Daewoo Commercial Vehicles Company in 2004 and purchased Jaguar Land Rover from Ford in 2008.

Tata Motors is listed on the BSE (Bombay Stock Exchange), where it is a constituent of the BSE SENSEX index, the National Stock Exchange of India, and the New York Stock Exchange. The company is ranked 265th on the *Fortune Global 500* list of the world's biggest corporations as of 2019.[6]

On 17 January 2017, Natarajan Chandrasekaran was appointed chairman of the company Tata Group. Tata Motors increases its UV market share to over 8% in FY2019

1.3.3 Hyundai Motor India Limited (HMIL)

1.3.3 Hyundai Motor India Limited (HMIL) is a wholly owned subsidiary of Hyundai Motor Company (HMC). HMIL is the second largest car manufacturer and the number one car exporter since inception in India. It currently has nine car models across segments – SANTRO, GRAND i10, GRAND i10 NIOS, ELITE i20, AURA, XCENT, VERNA, ELANTRA, VENUE, CRETA, TUCSON and KONA Electric. HMIL's fully integrated state-of-the-art manufacturing plant near Chennai boasts advanced production, quality and testing capabilities. It is a South Korean multinational automotive manufacturer headquartered in Seoul. Hyundai Motor Company was founded in 1967. Currently, the company owns 33.88 percent of Kia Corporation, and also fully owns two marque including its luxury cars subsidiary, Genesis Motor, and electric vehicle subsidiary, Ioniq. Those three brands altogether comprise the Hyundai Motor Group.

Hyundai operates the world's largest integrated automobile manufacturing facility in Ulsan, South Korea which has an annual production capacity of 1.6 million units. The company employs about 75,000 people worldwide. Hyundai vehicles are sold in 193 countries through 5,000 dealerships and showrooms

1.3.4. The Honda Motor Company, Ltd.

1.3.4. The Honda Motor Company, Ltd. It is a Japanese public multinational conglomerate manufacturer of automobiles, motorcycles, and power equipment, headquartered in Minato, Tokyo, Japan.

Honda has been the world's largest motorcycle manufacturer since 1959, reaching a production of 400 million by the end of 2019, as well as the world's largest manufacturer of internal combustion engines measured by volume, producing more than 14 million internal combustion engines each year. Honda became the second-largest Japanese automobile manufacturer in 2001. Honda was the eighth largest automobile manufacturer in the world in 2015.

Honda was the first Japanese automobile manufacturer to release a dedicated luxury brand, Acura, in 1986. Aside from their core automobile and motorcycle businesses, Honda also manufactures garden equipment, marine engines, personal watercraft and power generators, and other products. Since 1986, Honda has been involved with artificial intelligence/robotics research and released their ASIMO robot in 2000. They have also ventured into aerospace with the establishment of GE Honda Aero Engines in 2004 and the Honda HA-420 HondaJet, which began production in 2012. Honda has two joint-ventures in China: Dongfeng Honda and Guangqi Honda.

In 2013, Honda invested about 5.7% (US$6.8 billion) of its revenues in research and development. Also in 2013, Honda became the first Japanese automaker to be a net exporter from the United States, exporting 108,705 Honda and Acura models, while importing only 88,357.

1.3.5. <u>Kia Motors Corporation</u> was founded in May 1944 and is Korea's oldest manufacturer of motor vehicles. From humble origins making bicycles and motorcycles, Kia has grown – as part of the dynamic, global Hyundai-Kia Automotive Group – to become the world's fifth largest vehicle manufacturer.

Today, Kia produces more than 1.4 million vehicles a year at 14 manufacturing and assembly operations in eight countries. These vehicles are sold and serviced through a network of more than 3,000 distributors and dealers covering 172 countries. The Corporation has more than 40,000 employees and annual revenues of more than US$17 billion.

1.4 <u>ROAD AHEAD</u>

The automobile industry is supported by various factors such as availability of skilled labour at low cost, robust R&D centres, and low-cost steel production. The industry also provides great opportunities for investment and direct and indirect employment to skilled and unskilled labour.

Indian automotive industry (including component manufacturing) is expected to reach Rs. 16.16-18.18 trillion (US$ 251.4-282.8 billion) by 2026.

1.5 <u>FACTORS THAT AFFECT THE PURCHASE OF A PASSENGER CAR</u>

1. <u>Brand and Price</u>

For the majority of us, our dream car isn't our daily driver. That is because not all automotive creations can be called affordable. Buying a car is a financial commitment which requires weeks and at times months of planning. So, when it comes of signing the cheque, one is bound to think twice and get choosy.

Usually, the first priority for all prospective car buyers in our country is deciding the budget. It is not uncommon for an individual to consult friends and family before deciding the budget. In majority of the cases, the budget is flexible and gets extended by around Rs 20,000 to Rs 50,000. This happens as after visiting the showroom one tends to reason that going for a higher trim is more sensible as it will be more feature loaded. Buyers take into account the various benefits being offered by the showroom like cash discount, exchange bonus, free extended warranty, lower insurance premium and so on.

Along with the price, the brand of the vehicle is equally important. In our competitive market, very few automobile brands have managed to taste success. Understandably, every brand is perceived differently by buyers. Before choosing a brand, one evaluates the brand in terms of its market reputation, reliability, build quality, technological innovations, ownership issues and so on.

2. Styling (Looks and Design)

Yes, styling is subjective and what appeals to one be might be repulsive for another. Fact is nowadays cars are used to flaunt success, make a style statement and are considered to be an extension of our personality. So prospective buyers want their car to stand out in a crowd. They are not interested in a safe design which 'pleases all and offends none'.

3. Fuel Economy and Performance

It is true that every human being is unique and has different expectations from their vehicle. However, the one common bit that strings all Indian car buyers together is their obsession for good fuel economy. Yes, times are tough, money doesn't grow on trees and every penny saved is every penny earned. But then why not avoid buying a car in the first place and save a bagful of cash? Guess, we Indians love to have our own cake and eat it too. Typically, every car owner in our country has been asked at least once by their boss, colleagues, neighbour, society chairman, building watchman and even the toll booth attendant 'kitna deti hai?'. Heck, even India's largest car manufacturer advertises themselves as makers of most fuel-efficient vehicles. Our obsession with mileage may not change, but over the years buyers are beginning to prefer a blend of performance as well as efficiency. Cars like the Swift petrol and diesel, Vento/Rapid diesel and Duster 110PS have shown that is possible to deliver on both counts.

4. Space

For existing car owners looking to upgrade, this is one of the key deciding factors. For first-time buyers as well, their buying decision is governed by how much room or interior space the car offers. If the boot is spacious and can accommodate large bags and suitcases, then it is an added advantage.

Hatchbacks have comparatively low space than SUV's and Sedans. So, space is an important factor while purchasing a car.

5. Comfort And Safety Features

Irrespective of whether one is buying a smartphone, a washing machine or a car, they are keen to find out what features it offers. A longer list of features not only enhances the value for money appeal of the car. Buyers prefer features like a touchscreen infotainment system with good quality speakers and tweeters, steering-mounted audio controls, electrically adjustable wing mirrors and reverse camera. These features make one's life behind the wheel a lot easier. Increasingly, car

buyers in India are also taking into consideration the standard safety features before making a decision. This is also one of the main reasons why the top trims of most models are being preferred over the base versions.

6. Ground Clearance

Unfortunately, in our country, a good road is rare to find while bad roads are a harsh reality. Our roads are full of potholes and undulations. A bigger problem arises during monsoons when not only newer potholes emerge by the dozen but also the existing ones become big enough to be called craters. Now, even if you skilfully manage to avoid them, our poorly constructed, illegal and absurdly tall speed breakers will definitely end up scraping your car's underbelly and the exhaust system. For example, Honda Civic. One of the key reasons why buyers shied away from the Honda Civic was its low ground clearance which restricted it to well-paved city roads. Buyers prefer to go for a crossover or compact SUV over premium hatchbacks and sedans primarily because their high ground clearance makes it easy to tackle our roads without worrying about breaking something.

7. Aftersales And Service Costs

Buying a car is only the first step. The actual ownership process begins when you start using it. That's when the wear and tear starts happening and eventually some parts will need to be replaced. Just because you can afford to buy a particular make and model doesn't necessarily mean that you can afford to run it. For example, you can buy a used 2008 BMW 3 series petrol for under Rs 10 lakh, which seems like a reasonable amount to shell out for a car. However, a regular service at the authorised workshop will set you back by around Rs 80,000 to Rs 1,00,000. Also, if some mechanical part needs to be replaced, then the bill will increase by few lakh.

8. Resale Value

Yes, a car is a depreciating asset and one cannot get away from that fact. However, there is still some money to be saved if one chooses wisely. In our country some makes and models depreciate much less than others. Some of the not-so-popular makes and models tend to lose as much as 25 per cent of their value in the first year of ownership. For example, Hyundai and Maruti models typically lose only 15 per cent of their value in the first year. So if your existing car hasn't depreciated much, you can give it to the dealership as a down payment for a new car.

9. Family Requirements

Very rarely does it happen that we end up buying a car for ourselves. Mostly we end up buying what the wife or kids or extended family members, or all of them wanted. So their requirements need gets factored into the decision making process. Car manufacturers have realised this. And that's why their adverts now tend to focus on the entire family and show how it will keep everyone happy. A pick-up truck might be your dream vehicle, but if your family members find it too cumbersome to climb into, it will remain a dream buy.

PURCHASE DECISION:-

Fig.1.1

The consumer decision process also called the buyer decision process, helps markets identify how consumers complete the journey from knowing about a product to making the purchase decisi on. Understanding the buyer buying process is essential for marketing and sales. The consumer or buyer decision process will enable them to set a marketing plan that convinces them to purchase the product or service for fulfilling the buyer's or consumer's problem.

The consumer decision process is composed of problem recognition, search, evaluation, and purchase decision. Post-purchase behaviour is the result of satisfaction or dissatisfaction that the consumption provides. The buying process starts when the customer identifies a need or problem or when a need arises. It can be activated through internal or external stimuli**.**

1.Problem or Need Recognition

This is the first stage of the Consumer Decision Process in which the consumer is able to recognize what the problem or need is and subsequently, what product or kind of product would be able to meet this need. It is oftentimes recognized as the first and most crucial step in the process because if consumers do not perceive a problem or need, they generally will not move forward with considering a product purchase. A need can be triggered by internal or external stimuli. Internal stimuli refers to a personal perception experienced by the consumer, such as hunger, thirst, and so on. For example, an elderly, single woman may feel lonely so she decides that she wants to purchase a cat. External stimuli include outside influences such as advertising or word-of-mouth. For example, a consumer who just moved to Minnesota may not realize he needs a heavy winter coat until he sees a store advertising for it, which triggers the need in his mind. According to Maslow's theory, when a human being ascends the levels of the hierarchy having fulfilled the

needs in the hierarchy, one may eventually achieve self-actualization. Maslow eventually concluded that self-actualization was not an automatic outcome of satisfying the other human needs. Human needs as identified by Maslow:

- At the bottom of the hierarchy are the "Basic needs or Physiological needs" of a human being: food, water, sleep and sex.

- The next level is "Safety Needs: Security, Order, and Stability". These two steps are important to the physical survival of the person.

- Once individuals have basic nutrition, shelter and safety, they attempt to accomplish more. The third level of need is "Love and Belonging", which are psychological needs; when individuals have taken care of themselves physically, they are ready to share themselves with others, such as with family and friends.

- The fourth level is achieved when individuals feel comfortable with what they have accomplished. This is the "Esteem" level, the need to be competent and recognized, such as through status and level of success.

- Then fifth is the "Cognitive" level, where individuals intellectually stimulate themselves and explore.

- Finally, there is the "Aesthetic" level, which is the need for harmony, order and beauty.

2. Information Search

Information Search is a stage in the Consumer Decision Process during which a consumer searches for internal or external information. Information search is considered the second of five stages that comprise the Consumer Decision Process. During this stage, a consumer who recognizes a specific problem or need will then likely be persuaded to search for information, whether it be internally or externally. This is also when the customer aims to seek the value in a prospective product or service. During this time, the options available to the consumer are identified or further clarified. Information search can be categorized as internal or external research:

Internal research refers to a consumer's memory or recollection of a product, oftentimes triggered or guided by personal experience. This is when a person tries to search their memory to see whether they recall past experiences with a product, brand, or service. If the product is considered a staple or something that is frequently purchased, internal information search may be enough to trigger a purchase.

External research is conducted when a person has no prior knowledge about a product, which then leads them to seek information from personal sources (e.g. word of mouth from friends/family) and/or public sources (e.g. online forums, consumer reports) or marketer dominated sources (e.g. sales persons, advertising) especially when a person's previous experience is limited or deemed inefficient.

3. Evaluating Alternatives

During the evaluation of alternatives stage, the consumer evaluates all the products available on a scale of particular attributes. Evaluation of alternatives is the third stage in the Consumer Buying Decision process. During this stage, consumers evaluate all of their product and brand options on a scale of attributes which have the ability to deliver the benefit that the customer is seeking. The brands and products that consumers compare – their evoked set – represent the alternatives being considered by consumers during the problem-solving process. Sometimes known as a consideration set, the evoked set tends to be small relative to the total number of options available. When a consumer commits significant time to the comparative process and reviews price, warranties, terms and condition of sale and other features it is said that they are involved in extended problem solving.

Unlike routine problem solving, extended or extensive problem solving comprises external research and the evaluation of alternatives. Whereas, routine problem solving is low-involvement, inexpensive, and has limited risk if purchased, extended problem solving justifies the additional effort with a high-priced or scarce product, service, or benefit (e.g., the purchase of a car). Likewise, consumers use extensive problem solving for infrequently purchased, expensive, high-risk, or new goods or services. In order for a marketing organization to increase the likelihood that their brand is part of the evoked set for many consumers, they need to understand what benefits consumers are seeking and specifically, which attributes will be most influential to their decision-making process. It is important to note that consumers evaluate alternatives in terms of the functional and psychological benefits that they offer. The company also needs to check other brands of the customer's consideration set to prepare the right plan for its own brand. During this stage, consumers can be significantly influenced by their attitude as well as the degree of involvement that they may have with the product, brand, or overall category. For example, if the customer involvement is high, then he or she will evaluate several brands, whereas if it's low, he or she may look at only one brand. In low involvement buying, the activity is usually frequent, habitual to a certain extent and there is generally little difference between the brands.

No strong attachment exists between the buyer and the brand. Promotions are simple and repetitive. Conversely, high involvement buying involves products with many differences. The behavior is more complex and the research is more detail oriented. Ultimately, consumers must be able to effectively assess the value of all the products or brands in their evoked set before they can move on to the next step of the decision process.

4. Purchase Decision

During the purchase decision stage, the consumer may form an intention to buy the most preferred brand or product. The purchase decision is the fourth stage in the consumer decision process and when the purchase actually takes place. During this time, the consumer may form an intention to buy the most preferred brand because he has evaluated all the alternatives and identified the value that it will bring him. According to Philip Kotler, Keller, Koshy and Jha (2009), the final purchase decision, can be disrupted by two factors:

1. Negative feedback of others and our level of motivation to comply or accept the feedback. For example, after going through the need recognition, information search, and alternative evaluation stages, one might choose to buy a Nikon D80 DSLR camera, but a close

photographer friend might share negative feedback, which could drastically influence personal preference.

2. The decision may be disrupted due to a situation that one did not anticipate, such as losing a job or a retail store closing down.

During this stage, the consumer must decide the following:

- From whom they should buy, which is influenced by price point, terms of sale, and previous experience with or awareness of the seller and the return policy.

- When to buy, which can be influenced by the store atmosphere or environment, time pressures and constraints, the presence of a sale, and the shopping experience.

- This is also a time during the which the consumer might decide against making the purchase decision. Alternatively, they may also decide that they want to make the purchase at some point in the near or far future perhaps because the price point is above their means or simply because they might feel more comfortable waiting.

5. Post-Purchase Behaviour

Post-purchase behaviour is when the customer assesses whether he is satisfied or dissatisfied with a purchase. Post-purchase behaviour is the final stage in the consumer decision process when the customer assesses whether he is satisfied or dissatisfied with a purchase. How the customer feels about a purchase will significantly influence whether he will purchase the product again or consider other products within the brand repertoire. A customer will also be able to influence the purchase decision of others because he will likely feel compelled to share his feelings about the purchase.

Cognitive dissonance, another form of buyer's remorse, is common at this stage. This is when the customer may experience feelings of post-purchase psychological tension or anxiety. For example, the customer might feel compelled to question whether he has made the right decision. They may also be exposed to advertising for a competitive product or brand which could put into question the product that they have chosen. A customer may also have a change of heart and decide that he no longer has a need for this particular product. Some companies now opt to engage their consumers with post-purchase communications in an effort to influence their feelings about their purchase and future purchases. Offering money back guarantees also serve to extend and enrich post-purchase communications between the company and its consumers.

 Other examples include VIP invitations to become part of a club or special and select group of consumers who buy a particular product. Another example is when customers are asked for their contact information at the point of purchase so they can be targeted later with a follow-up call that surveys the product's performance and consumer satisfaction. This approach could help influence or alleviate feelings of cognitive dissonance or "buyer's remorse" following a product purchase.

CHAPTER II: LITERATURE REVIEW

1. Satya Sundaram (2008) analysed how the competition makes the automobile manufacturer to launch at least one new model or a variant of the model every year. This survey also pointed out that diesel cars are becoming popular in India and the announcement of reductions in excise duties by the government has helped to some extent to boost the demand.

2. Clement Sudhakar and Venkatapathy (2009) studied the influence of peer group in the purchase of car with reference to Coimbatore District. It was also found that the influence of friends is higher for the purchase of small sized and mid-sized cars.

3. Brown et al (2010) analysed the consumers" attitude towards European, Japanese and the US cars. The country-of-origin plays a significant role in the consumers" behaviour. The brand name, lower price and distributor"s reputation completely have a significant impact on the sale of passengers" car.

4. Manish Kumar Srivastava, A.K. Tiwari, studies the consumer behavior for A3 segment vehicles such as Honda City and SX4 in a particular region Jaipur. Data collected from 100 respondents 50 each from Honda City and Maruti SX4. Respondents were considered from various backgrounds like Gender, Occupation, Income class. Also customer purchase parameters considered for study are Price, Safety, Comfort, Power & Pickup, Mileage, Max Speed, Styling, After Sales Service, Brand Name and Spare Parts Cost. Based on above parameters and analysis made in this it revealed that, while purchasing A3 segment car Customer give much importance to Safty, Brand Name and seating and driving comfort. Also word of mouth publicity and advertisements in car magazines are more effective communication medium for promotion of Cars.

5. Prasanna Mohan Raj, studied the factors influencing customers brand preference of the economy segment SUV's and MUV's. Data collection was made through direct interaction and customer intercept survey using questionnaire. Descriptive analysis was used to transform data into understand format and factor analysis was used for identification of factors influencing customer preference. In light of study findings, the preference of a given brand can be explained in terms of six factors namely Product reliability, monetary factor, trendy appeal, frequency of non-price promotions offered, trustworthiness and customer feeling or association towards brand. There is need for marketers to take these factors into consideration when crafting product innovations in the SUV segment of Automobile market.

6. Nikhil Monga, Bhuvender Chaudhary, Saurabh Tripathi, this research attempts to answer some of the questions regarding brand personality of selected cars in India by conducting the market research. This personality sketching will help in knowing what a customer (or a potential customer) thinks about a given brand of car and what are the possible factors guiding a possible purchase. Similarly, the idea of measuring the customer satisfaction will serve the same purpose of determining the customer perception. The study shows that brand perception is something which starts building up before a car is purchased and goes on with its use and is reflected in the recommendations. The customer makes to his acquaintances for the same car. Also it is seen that the customer might not be using the car still he holds the perceptions about it. Brand personality of a car is enforced by the sellers in the mind-set of the customers and customers react to it by forming their perception about the car and this reflects in the overall brand image of the car. As per the study findings, dealers play a very important role in building up the brand perceptions of the cars.

7. Samin Rezvani, Goodarz Javadian Dehkordi, Muhammad Sabbir Rahman, this paper reviews the country of origin and different variables that influence consumer purchase intention, also highlight the relationship of variables and customer purchase intention. Study demonstrate that people care about which country products come from and where they are made and consider these factors when evaluating the quality of product. There are many factors that have an impact on consumer purchase intention. Research and methodologies have shown that even when consumers can evaluate all the intrinsic product characteristics by expressing the product, the effect of extrinsic cues has more influence on consumer product evaluation. Country of origin is one of the extrinsic cues; in addition, there is no doubt that country of origin has considerable influence on the purchase intention process.

8. K.Vidyavathi, the study throws light on various aspects that the manufactures should concentrate on to attract the prospective buyers. The demand for the small Automobile segment is increasing because of the growing number of nuclear families as well as parking problems. Hence the manufactures should find out the needs, wants, tastes and preferences of consumers in order to design the products. Also fuel economy and driving comfort are the most important parameters followed by availability of spares and their price.

9. Balakrishnan Menon, Jagathy Raj V.P., study findings shows that due to price difference in Gasoline and Diesel, about one third of the car owners were having diesel vehicles. The research results showed that about one seventh of car for the city drive for family usage, while using the second car for office and business usage. Foreign brand cars show clear preference in the Kerala car market. Also it was observed that in the information gathering and consumer purchase initiation stage, TV commercials on car models and brands, search on internet website of the manufacturer and visit to dealers / distributors were the prime sources where customers gathers information on car models.

10. Ramita Verma, Shubhkamana Rathore , studied the luxury car segment of India. Researches and studies have revealed that the luxury car market is growing at a steady

speed of 25% per annum with more and more numbers of luxury cars entering Indian car market. Luxury cars are preferred by HNI (High Net worth Individuals). HNI wants to differentiate themselves from crowd for various reasons. Change in attitude of the customer accounts for the sudden acceleration in the Luxury car Market in India, as the emphasis has been shifted from price consideration and affordability to design, quality and pleasure

11. Dr.H.S.Adithya (January 2013) describe consumer behaviour of making purchase decisions based on all human behaviour. By understanding the concept of consumer behaviour marketer can make marketing decisions which helps them to suit with consumer needs and wants .There are four major classes of consumer behaviour factors are involved namely, cultural, socio-economic, personal and psychological The socio-economic factors of consumer behaviour consist of age, marital status, profession, education, income, family size etc. Understanding the importance of passenger car industry in the current economic condition, the researcher has examined the perceptions and behaviour of consumers related to this product .

12. Shailesh K. Kaushal (March 2014) analysis the buyer behaviour in reference to car purchase intentions and automobile marketing strategies in Uttar Pradesh . The paper identified five dimensions of car buyers' purchase objectives which are labelled as safety & security, quality, performance, value and technology . The car buyers purchase intention influenced by several factors . But from this study it will help the automobile manufacturer and car dealers to understand the buyers buying behaviour and help them to make their marketing strategies accordingly on the following factors .

13. Pooja G. Luniya and Dr. Manoj Verghese (August 2013) mention from their study that there are various factors which are responsible and influence the consumer to make their purchase decision like Mileage, Easy mode of financing and model. As with the rapid and consistent growth in the price of the fuel consumer are more conscious about the mileage and accordingly companies are also modify their engines. So they highly prefer mileage while buying a car. The study also found that consumer also prefer easy mode of financing while purchasing a car . With the growing competition in automobile sector, companies and various financial institutes are proving easy financing facility to grab the maximum consumers. It was also found that consumer also prefer model while purchasing a car. As we know that there is a wonderful change in the standard of living of the consumers, people are more conscious about the interior and exterior look, style-shape and amenities of a car which varies from model to model in cars

14. Shiv Prasad Joshi (February 2013) study exposes that purchasing of car is mainly been influenced by the advertisements and secondly by recommendation of family and friends. When they measured the level of satisfaction, it revealed that nearly fifty percent

consumers are fully satisfied from their brand which they have selected, while around sixteen percent of respondents are not satisfied from their purchasing decision. The study also describe that price factor is also one of the important factor in selection of car and in India safety measures in car are least preferred criteria

15. Truong et al. (2008) and Gardyn (2002) note that luxury goods have become more accessible and therefore more consumers are willing and able to pay a price premium for status goods.

16. Indian consumers are motivated to buy luxury products, as these products act as a symbol or marker of status and class that Indian consumers like to display (Chadha & Husband, 2006; Debnam & Svinos, 2006; Thomas, 2007).

CHAPTER III: OBJECTIVES OF THE RESEARCH

1. **To identify the key factors which influences people to purchase a passenger car in Nagpur**:- Towards the end of our research we will get to know what are the factors/features which consumers are most likely to look out for before purchasing it.

2. **To identify the differentiating parameters influencing the purchase of a passenger car in Nagpur**:- After analysing the data collected from the respondents we will be having a clear picture on how a consumer differentiates between two or more cars.

3. **To identify if the demographic factors affect the choice of a car**:- We are most likely to know how the demographic factors (age, gender, occupation and income) affect a consumer before they purchase a car.

HYPOTHESIS: -

H1- To identify if the key factors affect the purchase of a passenger car.

H2- To identify if the demographic factors affect the purchase of a passenger car.

CHAPTER IV: RESEARCH METHODOLOGY

4.1 SUMMARY:-

Consumer buying behaviour are actions, steps or processes followed by the consumers in a marketplace before (and after) buying a product or a service. These actions are the result of the attitudes, preferences, intentions and decisions. These actions or steps can be both online and offline given the modern business paradigm. Consumer Buying Behaviour just not only covers the purchase part but also covers the usability and even the disposal of the products or services.

The main purpose of this research paper is to find out the various parameters or factors which influence a consumer to purchase a passenger car in Nagpur city and to perform discriminant analysis on the same. So we've identified the top running passenger car brands of Nagpur city i.e. Maruti Suzuki, KIA, Honda, Hyundai and Tata. Also we've identified some major parameters which an individual looks out for before purchasing a car (Price, Safety, Looks, Mileage, etc. The scope of our research is limited to Nagpur city only.

By preparing a proper structured questionnaire, a survey of 150 people of Nagpur city was collected. The responses were measured on a five point Likert scale so that it can be accurately measured. So, demographic information like the respondent's gender, age, occupation and income of the respondents were collected. An additional question related to the parameters was included in the questionnaire i.e. specific factors were identified and they respondents were asked to fill it i.e. do they think that price is an neither extremely important/important/neither important nor unimportant/unimportant/Extremely unimportant while purchasing a car, etc.

4.2 POPULATION:-

The target population for this research are the people of **Nagpur** city only. It is so because our research is limited to Nagpur only.

4.3 SAMPLE SIZE:-

It will be approximately around **150** people of Nagpur city only. It is so because this size will cover almost every aspect of our research and we can draw an appropriate conclusion of our research with this particular sample size.

4.4 SAMPLING TECHNIQUE:-

A sample design is a road map that serves as the basis for the selection of a survey sample. A suitable sample design method ensures that the samples you invest your time and money into collecting can support the inferences you want to make. The sampling technique which is going to be used in this research is **Judgemental Sampling**.

Judgemental sampling also called as purposive sampling or authoritative sampling, is a non-probability sampling technique in which the sample members are chosen only on the basis of the researcher's knowledge and judgment.

4.5 HYPOTHESIS:-

H1- To identify if the key factors affect the purchase of a passenger car.

H2- To identify if the demographic factors affect the purchase of a passenger car.

4.6 STATISTICAL TOOLS:-

1. **Descriptive statistics (Mean, Standard Deviation):-** Descriptive statistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. So, from the given sample size we chose, descriptive statistics will help in summarising the data set we've collected.

2. **Regression:-** It helps to measure the relation between the mean value of one variable and corresponding values of other variables. For ex:- income of an individual and the car they are most likely to purchase.

3. **Discriminant Analysis:-** It is a statistical technique used for classifying a set of observations into pre-defined groups. It helps us to understand group differences and to predict the likelihood that a particular entity will belong to a particular group based on independent variables.

CHAPTER V: DATA COLLECTION

PROFILE OF THE RESPONDENTS											
	Female Respondents				Male Respondents						Total
	No.		Percentage		No.			Percentage			150
	73		48.7%		77			51.3%			
Age Group	Below 25		25-34		35-44		45-54		Above 55		150
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	
	120	80%	16	10.7%	5	3.3%	5	3.3%	4	2.7%	
Monthly income	0-25,000		25,000-35,000		35,000-45,000		45,000-55,000		Above 55,000		150
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	
	84	55.7%	16	10.7%	6	4%	6	4%	38	25.5%	
Occupation	Student		Job		Business		Professional		Others		150
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	
	84	56%	29	19.3%	3	2%	26	17.3%	8	5.3%	

SUMMARY CHARTS

Gender

150 responses

- Male
- Female
- Others

48.7%

51.3%

A total of 150 respondents were asked to fill the questionnaire.
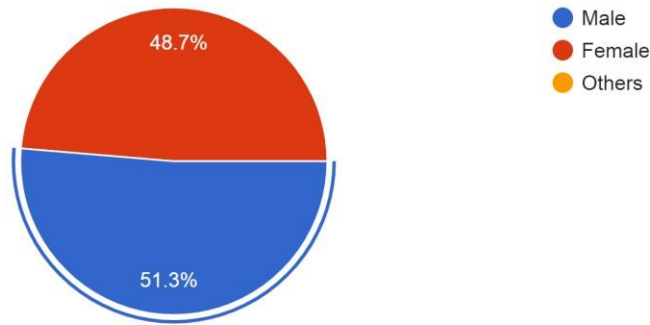
51.3 % of them i.e. 77 were men and rest 48.7% are women.
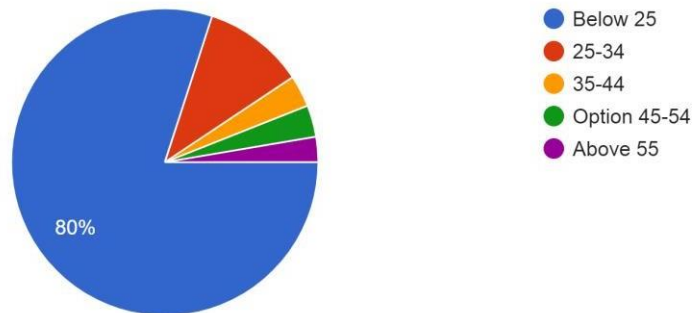
Age group of the respondent

150 responses

- Below 25
- 25-34
- 35-44
- Option 45-54
- Above 55

80%

80% of the total respondents are below 25 years of ages. 10.7% are between 25-34. 3.3% lie between 35-44. 3.3% are between 45-54 and rest 2.7% are above 55.

Monthly income of the respondent?
149 responses

Legend:
- 0-25,000
- 25,000-35,000
- 35,000-45,000
- 45,000-55,000
- Above 55,000
- Option 6

25.5%
55.7%
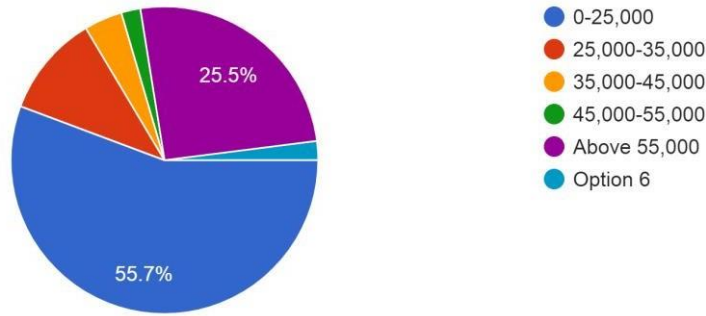
Then, respondents were asked about their monthly income. 55.7% have an income between "0-25,000". 10.7% of them have an income between "25,000-35,000". 4% have income of "35,000-45,000". 2% have an income of "45,000-55,000" and rest 25.5% has an income above 55,000.

Current occupation of the respondent.
150 responses

Legend:
- Student
- Job
- Business
- Professional
- Others

19.3%
17.3%
56%
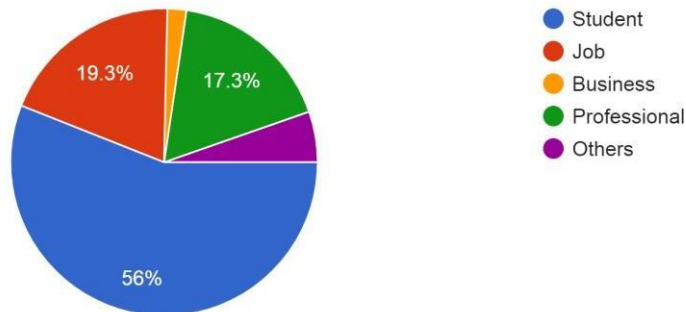
Most of the respondents were students. A quarter of them have their jobs, some of them are professionals. 2% of them have their businesses and rest have some other profession.

Which company's passenger car do you own at present? (If you own more than one car, select the brand which you frequently use.)

150 responses

- ● Maruti Suzuki
- ● Hyundai
- ● Honda
- ● Tata
- ● KIA
- ● Others
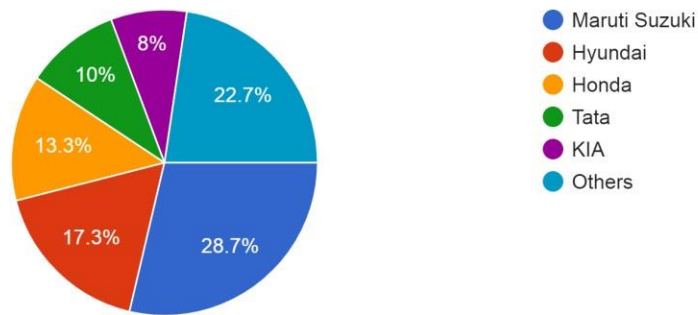
Most of the people own Maruti Suzuki's(43) car at present. Hyundai(26) and Honda(20) are the next most common owned automobile brand follwed by Tata(12) and KIA(12) are also owned by a couple of people. And rest of the brands (34), which includes various other passenger car brands is also owned by the some of the people of the people of Nagpur.

Which of the following parameters influence you to purchase a car? (1=Extremely important, 2=Important, 3= Neither important nor unimportant, 4= Unimportant, 5= Extremely unimportant)
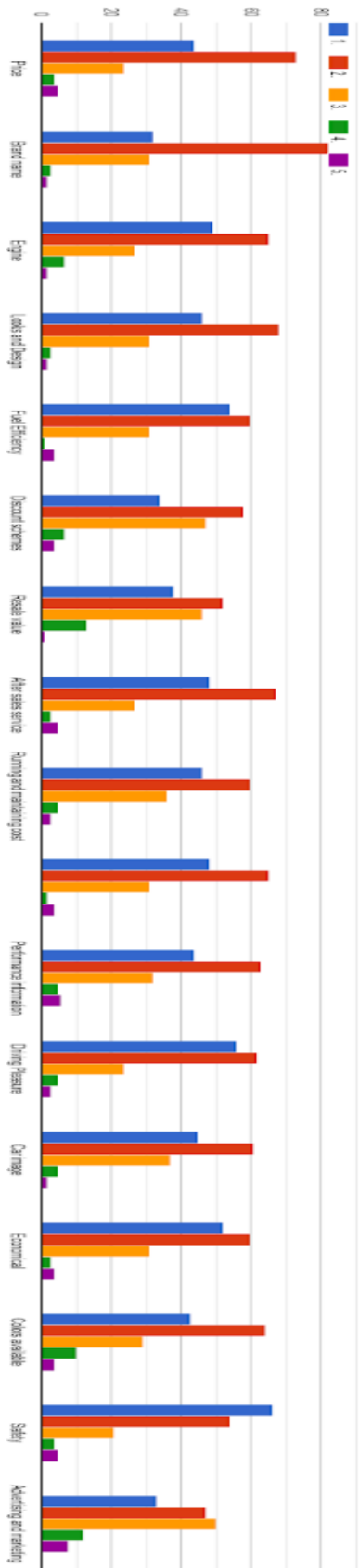
Respondent's behaviour towards different parameters they look out for

Parameters	Extremely Important (1)	Important (2)	Neither Important nor Unimportant (3)	Unimportant (4)	Extremely Unimportant (5)	TOTAL
Price	44	73	24	4	5	150
Brand Name	32	82	31	3	2	150
Engine	39	65	27	7	2	150
Looks and Design	46	68	31	3	2	150
Fuel Efficiency	54	60	31	1	4	150
Discount Schemes	34	58	47	7	4	150
Resale Value	38	52	46	13	1	150
After sales service	48	67	27	3	5	150
Running and Maintaining cost	46	60	36	5	3	150
Convenience Features	48	65	31	2	4	150
Performance information	44	63	32	5	6	150
Driving Pleasure	56	62	24	5	3	150
Car Image	45	61	37	5	2	150
Economical	52	60	31	3	4	150
Colors available	43	64	29	10	4	150
Safety	66	54	21	4	5	150
Advertising and Marketing	33	47	50	12	8	150

INTERPRETATION OF DATA

The study was about to find out that which are the most important parameters which customer usually look for before purchasing a passenger car in Nagpur city. Some parameters were identified and the respondents were asked to rate on a Likert scale (1 stands for extremely important, stands for important, 3 stands for neither important nor unimportant, 4 stands for unimportant and 5 stands for extremely unimportant)

1. Price came out to be the important factor as most of the respondents market it as a crucial factor. Not every, but most of the individuals do look out for price before purchasing any good. So, price plays a crucial role before purchasing a car.
2. Brand name also came as an important factor. Most of the people in Nagpur city purchase a car while looking at the brand name. The brand they trust the is mostly preferred by them.
3. Engine is also a factor which people usually look out for. Engine is the most important feature of your car. It's so because mileage, performance and everything depends on the cc only.
4. Everybody in this entire world wants their car to be a high profile and also it's designing should be up to the mark. So looks and design comes out to be an important factor.
5. Most of the people of Nagpur city want their car to be fuel efficient. Not only in Nagpur city, but in the entire earth everybody wants their vehicle to be fuel efficient. So fuel efficiency is an important factor too.
6. Also discount schemes turn out to be an essential factor as people of Nagpur city like to purchase car during festival seasons so that they may avail better discounts and offers on a passenger car.
7. Resale value seems out to be comparatively less important than the rest of the parameters. It's so because usually people don't tend to sale out a car which they buy and during purchase, no one actually thinks of the resale value.
8. After sales services comes out to be extremely important factor as post car purchase, the customer's want to extract the best and convenient services whether in terms of servicing of the car or in case an untimely car failure.
9. Running and maintaining cost is also an essential factor as the servicing cost of the vehicle should always be pocket friendly, so that post purchase you don't mind to spend some money on your servicing and day to day fuel costs.
10. Convenience features comes out to be a very necessary factor as people must feel comfortable while riding a car. Every car should consist of power steering, brakes, windows so that it's comfortable to drive a car.
11. Performance information is comparatively not that important and also not that unimportant as people don't usually have knowledge about what performance is all about.
12. Driving pleasure is a very important factor as customers want to drive their respective vehicles peacefully, whether it is in terms of seat cushioning or steering adjustments, cutting off unnecessary road noises, etc.

13. Car image is also an important factor that people look out for. People don't want to purchase those cars which doesn't have a good customer review, They generally avoid those kinds of car models

14. Economical turns out to be an important factor as obviously if the car's giving good mileage and average, customers tend out to purchase those cars only.

15. Colors available seems to be comparatively less important factor as compared to others, Actually, it should be considered as an important factor always because every customer usually wants the car should of their color choice only.

16. Safety also seems to be a crucial factor as everybody wants to be protected while they are inside the car. Sufficient airbags and good quality of tyres. It is the most important parameter after price as everyone wants to be safe.

17. Advertising and marketing seem to be comparatively less important than the others. It's of course an important factor as how an individual will know about a car if it's not being advertised? So as per responses it's less important.

CHAPTER VI: DATA ANALYSIS

6.1 FACTOR ANALYSIS

Factor analysis is a technique that is used to reduce a large number of variables into fewer numbers of **factors**. This technique extracts maximum common variance from all variables and puts them into a common score. As an index of all variables, we can use this score for further **analysis**. We had a total of seventeen variables identified for our study, so we reduced it to four variables.

The seventeen variables are:-
1   Price
2   Brand Name
3   Engine
4   Looks and Design
5   Fuel Efficiency
6   Discount Schemes
7   Resale Value
8   After Sales Service
9   Running and Maintaining Cost
10   Convenience Features
11   Performance Information
12   Driving Pleasure
13   Car Image
14   Economical
15   Colours Available
16   Safety
17   Advertising and Marketing

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	8.624	50.730	50.730	8.624	50.730	50.730	4.937	29.040	29.040
2	1.655	9.735	60.465	1.655	9.735	60.465	3.430	20.174	49.213
3	1.060	6.236	66.701	1.060	6.236	66.701	2.973	17.487	66.701
4	1.015	4.851	71.552	1.015	4.851	71.552	2.087	15.485	**71.552**
5	.700	4.119	75.671						
6	.602	3.539	79.210						
7	.519	3.052	82.262						
8	.494	2.903	85.165						

9	.398	2.339	87.504								
10	.390	2.294	89.799								
11	.349	2.052	91.851								
12	.292	1.717	93.568								
13	.263	1.547	95.115								
14	.253	1.487	96.602								
15	.216	1.271	97.873								
16	.193	1.134	99.007								
17	.169	.993	100.000								

Extraction Method: Principal Component Analysis.

Percentage variance explained by these four factors is **71.552 %**

Rotated Component Matrix

	Component			
	1	2	3	4
PRICE			.801	
BRAND_NAME		.513		
ENGINE	.666			
LOOKS		.750		
FUEL	.765			
DISCOUNT			.805	
RESALE				.786
AFTER_SALES				.631
MAINTAIN_COST			.661	
CONVENIENCE_FEATURES		.599		
PERFORMANCE	.529			
PLEASURE		.535		
IMAGE		.637		
ECONOMICAL			.666	
COLOURS		.733		
SAFETY	.686			
ADVERTISING			.660	

Factor 1: Performance & safety

Factor 2: Brand & Features

Factor 3: Price & Cost

Factor 4: After sale services

This is how we've used the factor analysis for reducing the total number of variables as shown in the above table. The total of 17 variables has been merged up into a total of 4 variables as shown above.

Maruti Suzuki

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	43	2.1395	.96563
Brand and Features	43	2.1163	.73060
Price and Cost	43	2.1860	.79450
After Sales Service	43	2.3953	.76031
Valid N (listwise)	43		

People who own a Maruti Suzuki's car usually purchase it because of its brand name and convenience features followed by the performance and safety.

Hyundai

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	26	2.1154	.95192
Brand and Features	26	2.1154	1.03255
Price and Cost	26	2.2692	1.11562
After Sales Service	26	2.2692	1.07917
Valid N (listwise)	26		

People who own a Hyundai do look at every variable mentioned above but majorly they look at the performance and convenience features.

Honda

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	20	2.4000	.59824
Brand and Features	20	2.2500	.63867
Price and Cost	20	2.2000	.61559
After Sales Service	20	2.3000	.47016
Valid N (list wise)	20		

People who own a Honda car looks at the price, followed by the brand name and features.

TATA

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	15	1.9333	.88372
Brand and Features	15	2.0667	.79881
Price and Cost	15	2.2667	.88372
After sales Service	15	2.2000	1.01419
Valid N (list wise)	15		

Respondents who own a TATA car usually look out at the performance and safety followed by the brand name and convenience features.

KIA

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	12	1.9167	.66856
Brand and Features	12	1.9167	.79296
Price and Cost	12	1.8333	.57735
After Sales Service	12	2.3333	.88763
Valid N (list wise)	12		

People who own a KIA car majorly look at the price of the car followed by the performance and brand name while purchasing it.

Other Car Brands (Luxury Cars, Toyota, Mahindra, etc.)

Descriptive Statistics

	N	Mean	Std. Deviation
Performance and Safety	34	1.9412	.64860
Brand and Features	34	2.0588	.64860
Price and Cost	34	2.1765	.62622
After Sales Service	34	2.2941	.79884
Valid N (list wise)	34		

People who own a passenger car of other brands mainly look out at the performance and brand name followed by the price and after sale services.

Objective 1: To identify the key factors influencing people to purchase a car.

H1- Performance and safety is an important factor influencing the purchase of a car.
H2- Brand and features is an important factor influencing the purchase of a car.
H3- Price and cost is an important factor influencing the purchase of a car.
H4- After sales service is an important factor influencing the purchase of a car.
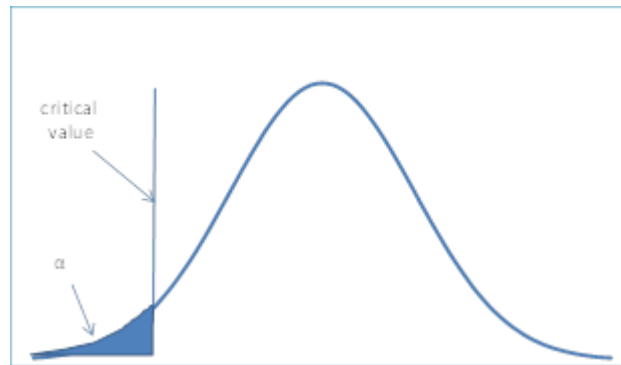
Z-test

	Performance and Safety	Brand and Features	Price and Cost	After Sale Services
M	3	3	3	3
$\bar{x}$	1.97	2.02	2.15	2.12
Σ	0.79	0.705	0.708	0.81
N	150	150	150	150
A	0.05	0.05	0.05	0.05
Decision (Null Hypo.)	Rejected	Rejected	Rejected	Rejected

After analysing four of the factors (Performance, Brand, Price and After sales service), we can say that four of the factors can be identified as the key factors which influences people of Nagpur city to purchase a passenger car. Four of the above factors are almost equally important.

OBJECTIVE 2: To identify if demographic factors affect the choice of a car.

H1: If gender affects the purchase of a car.
H2: If income affects the purchase of a car.

CAR BRAND * GENDER Cross tabulation

| | | | GENDER | | |
			Male	Female	Total
CAR BRAND	Maruti Suzuki	Count	**18**	**25**	43
		% within GENDER	**23.4%**	**34.2%**	28.7%
	Hyundai	Count	17	9	26
		% within GENDER	22.1%	12.3%	17.3%
	Honda	Count	6	**14**	20
		% within GENDER	7.8%	**19.2%**	13.3%
	Tata	Count	7	8	15
		% within GENDER	9.1%	11.0%	10.0%
	KIA	Count	7	5	12
		% within GENDER	9.1%	6.8%	8.0%
	Others	Count	**22**	12	34
		% within GENDER	**28.6%**	16.4%	22.7%
Total		Count	77	73	150
		% within GENDER	100.0%	100.0%	100.0%

So, we can say that most of the males in Nagpur city prefer Maruti Suzuki followed by Others (Luxury or other car brands) as these two are the highest selected car brands. Then they are followed by Hyundai, TATA, KIA and Honda. Whereas in case of females too, Maruti Suzuki is the most frequent owned brand followed by Hyundai. Then it is followed by other car brands, Honda, TATA and KIA. So, there's a relation between the gender and preferred car brand.

CAR BRAND * INCOME Cross tabulation

			INCOME					
			0-25,000	25,000-35,000	35,000-45,000	45,000-55,000	Above 55,000	Total
CAR BRAND	Maruti Suzuki	Count	**29**	3	1	3	7	43
		% within INCOME	**34.9%**	18.8%	16.7%	50.0%	18.4%	28.9%
	Hyundai	Count	**18**	3	0	0	4	25
		% within INCOME	**21.7%**	18.8%	.0%	.0%	10.5%	16.8%
	Honda	Count	9	3	**4**	1	3	20
		% within INCOME	10.8%	18.8%	**66.7%**	16.7%	7.9%	13.4%
	TATA	Count	6	**4**	1	1	3	15
		% within INCOME	7.2%	**25.0%**	16.7%	16.7%	7.9%	10.1%
	KIA	Count	4	1	0	**1**	6	12
		% within INCOME	4.8%	6.3%	.0%	**16.7%**	15.8%	8.1%
	Other car brands	Count	17	2	0	0	**15**	34
		% within INCOME	20.5%	12.5%	.0%	.0%	**39.5%**	22.8%
Total		Count	83	16	6	6	38	149
		% within INCOME	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

So, as per our analysis, Maruti Suzuki is owned by respondents who are having a monthly income of 0-25,000. Most of the people owning a Hyundai are also having a monthly salary of 0-25,000. People owning Honda cars are having an income of 35,000-45,000 per month. Tata is owned by the income group of 25,000-35,000. KIA is majorly owned by the people having salary between "45,000-55,000". And people having a monthly income of above 55,000 own other car brands (Luxury cars, Toyota, Mahindra, Chevrolet, etc.) So, there's a relation between the income and car brand.

Objective 3:- To identify the differentiating parameters influencing the purchase of a passenger car in Nagpur

Out of total of 116 sample size, 75 respondent data has been used for predicting the discriminant model and the remaining 41 respondents as hold out sample data for testing the predicted membership

Group statistics

Group Statistics[a]		Mean	Std. Deviation	Valid N (list wise)	
CAR_BRAND				Unweighted	Weighted
Maruti	PERFORMANCE	2.1395	.96563	28	28.000
	BRAND	2.1163	.73060	28	28.000
	PRICE	2.1860	.79450	28	28.000
	AFTERSALES	2.3953	.76031	28	28.000
Hyundai	PERFORMANCE	2.1154	.95192	19	19.000
	BRAND	2.1154	1.03255	19	19.000
	PRICE	2.2692	1.11562	19	19.000
	AFTERSALES	2.2692	1.07917	19	19.000
Honda	PERFORMANCE	2.4000	.59824	14	14.000
	BRAND	2.2500	.63867	14	14.000
	PRICE	2.2000	.61559	14	14.000
	AFTERSALES	2.3000	.47016	14	14.000
TATA	PERFORMANCE	1.9333	.88372	9	9.000
	BRAND	2.0667	.79881	9	9.000
	PRICE	2.2667	.88372	9	9.000
	AFTERSALES	2.2000	1.01419	9	9.000
KIA	PERFORMANCE	1.9167	.66856	5	5.000
	BRAND	1.9167	.79296	5	5.000
	PRICE	1.8333	.57735	5	5.000
	AFTERSALES	2.3333	.88763	5	5.000

Perceptual Positioning of Five Passenger Car Brands on Four Parameter Determinants
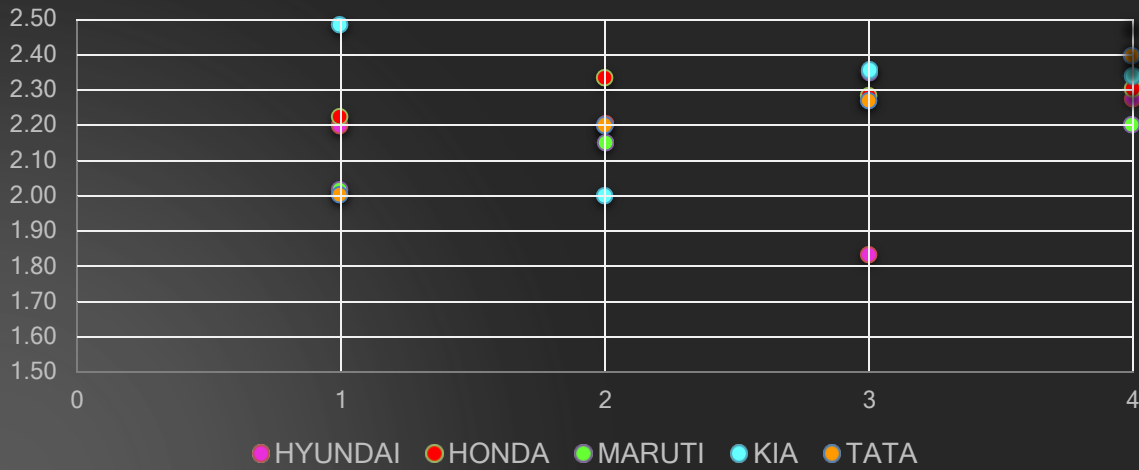
FACTOR 1: PERFORMANCE & SAFETY

FACTOR 2: BRAND & FEATURES

FACTOR 3: PRICE & COST

FACTOR 4: AFTER SALES SERVICE

It is evident that TATA and Maruti Suzuki are ahead on 'Performance and Safety', while KIA is perceived to be the best on 'Brand and Features'. Hyundai is on top when it comes to Price and cost features. Maruti Suzuki takes the lead in 'After sales service', followed by Hyundai.

Conclusion Table

		TATA	HYUNDAI	HONDA	MARUTI	KIA
PERFORMANCE & SAFETY	Mean	1.92	2.12	2.14	1.93	2.40
	Rank	**1**	**3**	**4**	**2**	**5**
BRAND & FEATURES	Mean	2.12	2.12	2.25	2.07	1.92
	Rank	**3**	**3**	**4**	**2**	**1**
PRICE & COST	Mean	2.19	1.83	2.20	2.27	2.27
	Rank	**2**	**1**	**3**	**4**	**4**
AFTER SALES SERVICE	Mean	2.40	2.27	2.30	2.20	2.33
	Rank	**5**	**2**	**3**	**1**	**4**
	Average of Ranks	2.75	2.25	3.50	2.25	3.50

CHAPTER 07-CONCLUSION

Maruti Suzuki is the most preferred passenger car brand in Nagpur city. It's rated first on only one parameter- after sales service. However, it is perceived to be the best in other two parameters- Brand and Features, Performance and Safety and is rated fourth on the basis of Price and Cost.

 Hyundai is the second most owned car brand in Nagpur city. It's rated first (in terms of price and cost). It is rated second in terms of its after sales service followed by brand and features and performance and safety on third.

Honda is the third most owned car brand. It's not rated first, neither second in any of the parameters. It's rated third on two parameters – Price and Cost, After sales service and is rated fourth in the remaining two parameters- Performance and Safety and Brand and Features.

Tata is the fourth most owned automobile brand in Nagpur city. It's rated first on the basis of performance and safety. Then, rated second on price and cost. It's rated
third on the basis of - brand and features and rated fifth on the basis of after sales service.

KIA stands fifth for the most owned car brands in Nagpur city. It's rated first on the basis of brand and features. It's rated fourth on two parameters- Price and Cost, after sales service and is rated fifth on the basis of performance and safety.

Performance and Safety, brand and features, price and after sales service, all of these factors came out to be an important factor while purchasing a passenger car in Nagpur city and it's very common as every individual always looks out for all these factors before purchasing it.

Also, income and gender came out to be the important demographic factors as they directly affect the purchase of an automobile. As people of higher income group are preferring KIA and other car brands (luxury and others) and people with lower income prefer Maruti Suzuki and Hyundai.

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APPENDIX

QUESTIONNAIRE

This questionnaire is just for academic survey and this won't be used for any commercial purpose.

1. Email address

   _____

2. Name of the respondent

   _____

3. Gender

   - Male
   - Female
   - Others

4. Age group of the respondent *

   - Below 25
   - 25-34
   - 35-44
   - 45-54
   - Above 55

5. Monthly income of the respondent? *

○   0-25,000

○   25,000-35,000

○   35,000-45,000

○   45,000-55,000

○   Above 55,000

6. Current occupation of the respondent. *
- Student
- Job
- Business
- Professional
- Others.

7. Which company's passenger car do you own at present? (If you own more than one car, select the brand which you frequently use.)

- Maruti Suzuki

- Hyundai

- Honda

- Tata

- KIA

- Other brands

Q.8) Which of the following parameters influence you to purchase a car? (1- Extremely important, 2-Important, 3- Neither important nor unimportant, 4- Unimportant, 5- Extremely unimportant)

- Price
- Brand name
- Engine
- Looks and Design
- Fuel Efficiency
- Discount schemes
- Resale value
- After sales service
- Running and maintaining cost
- Convenience features(power steering/windows)
- Performance information
- Driving Pleasure
- Car image
- Economical
- Colors available
- Safety
- Advertising and Marketing