

Project Dissertation

Analysis of consumers' perception towards safety while purchasing a car.

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CERTIFICATE FROM THE INSTITUTE

This is to certify that the Project Report titled '**Analysis of consumers' perception towards safety while purchasing a car**' is a bona fide work carried out by **Mr. Ashish Taneja** of MBA 2013-15 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Degree of Masters of Business Administration.

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DECLARATION

I hereby declare that the project entitled '**Analysis of consumers' perception towards safety while purchasing a car**' submitted for the MBA Degree is my original work and the project has not formed the basis for the award of any degree, associate ship, fellowship or any other similar titles. It is the result of the project carried out by me under the guidance and supervision of **Dr Vikas Gupta**.

I further declare that I or any other person has not previously submitted this project report to any other institution/university for any other degree/ diploma or any other person.

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Ashish Taneja

EXECUTIVE SUMMARY

The automobile sector in India was established in 1980s with the advent of multinational automakers such as Suzuki, Toyota and Hyundai. As the liberalization began, many companies initiated JVs with incumbent Indian companies. Since then the number of automobile companies, offerings, price range, features and quality of offerings have seen multi fold increase. But it seems both the regulatory body and carmakers have overlooked to enhance the safety standards and features of cars produced in the nation.

Deaths due to road accidents have been extremely high in India. Since 2006, 230000 people have died annually in India. The road deaths per year in India is more than any other nation. Hence, Indian automotive safety standards have drawn a lot of flak and are considered as insufficient and ineffective.

Despite being the world's fifth largest car market, India is the only market among top ten global car markets without new car safety regulations or crash testing programs. GNCAP had to import some of the top selling Indian cars to expose the dismal safety levels of these cars. They tested popular Indian cars and reports showed how unsafe they are with high chances of major injuries to the occupants in case of a crash.

After the GNCAP reports the government rose from slumber and instituted Bharat New Car Assessment Program which will give safety ratings to cars produced in India. These ratings will be based on performance of safety features installed in the car during crash tests. They will be enforced from late 2017 and Indian consumers will continue to be at risk till then.

Carmakers said that their cars abide with the safety regulations of the country. The Indian regulation for crash test is the same as UN's regulation for the crash test. But when GNCAP executed the crash tests based on UN regulation some of the cars failed miserably. The GNCAP crash test reports clearly raised a question mark on the safety regulations and its implementation in the country.

Moreover, some of the cars tested are also exported to European countries and Japan. These countries have strict safety regulations and unsafe cars cannot be sold. This means that the cars exported meet the safety standards while those produced for domestic consumption are unsafe.

There were reactions from the carmakers and experts. They criticized GNCAP in numerous ways. GNCAP conducted crash tests at the speed of 64Kmph. Industry executives questioned it and said that average speed in India is 48Kmph. This study showed that 81.6% respondents often drive above 60Kmph. 51.9 % of respondents say that they drive on highways often and cars are generally driven at high speeds on highways. This justified the speed at which GNCAP conducted the crash tests and also necessitated installation of safety equipment even in the low priced entry level hatchbacks.

Also the carmakers estimate that cars will cost 8-15% more if basic safety features such as ABS, Airbags are provided. They felt that Indians are too price sensitive to shell out extra money for these features. It was found that while price and safety features did influence purchase decision it but respondents will be willing to accept moderate price elevation if safety features are installed in the models available. In case of entry level hatchbacks, 42.6% respondents said they are likely or highly likely to spend 35 to 45 thousand extra for safety features and 37% respondents said they were unlikely or highly unlikely to spend that amount for safety features. The consumer for these cars seemed highly price sensitive. Unlike consumers of this segment, consumers of other segments of cars like Mid Level Hatchback, Premium Hatchback, Entry Level Sedans, Hybrids, Jeeps and MPV/MUVs were very less price sensitive and willing to expend extra for safety features.

92.6% of the respondents were aware of the various safety features and asked the dealers about them in the chosen model of car. Dealers or manufacturers of cars also provided information to the respondents about basic safety features like ABS, Airbags and seatbelt warning indicators.

51.9% of respondents agreed that their car lacks adequate safety standards. Respondents were aware about the safety features as well as dismal safety standards of their car but they are/were forced to but it because safety features were either not available in the chosen model or models with safety features are exorbitantly expensive.

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CHAPTER 1

1. INTRODUCTION

1.1 Automobile Industry In Indian: Story so far

The first car ran on Indian roads in 1897. They were imported directly in very small numbers till 1930s. An infinitesimal automotive industry came into existence in India in the 1940s with the launch of Hindustan in 1942 and Premier in 1944 which built GM and Fiat products respectively. Mahindra & Mahindra was established by two brothers in 1945. It began assembly of Jeep CJ-3A utility vehicles.

The industry growth was relatively slow till 1960s because of hampered private sector caused by nationalization and the license raj. After 1970 the automotive industry showed growth which was mainly driven by scooters, commercial vehicles and tractors. Cars were a luxury and the market was dominated by Hindustan and Premier till 80s. They sold superannuated products in fairly miniscule numbers.

In due course, multinational automakers such as Suzuki, Hyundai and Toyota were permitted to enter the Indian market resulting in the establishment of an automotive industry. Maruti Suzuki had the first mover advantage and is still the most successful of these new entrants. Liberalization of automobile market began in 1991 and foreign firms initiated JVs with incumbent domestic companies. The arrays of products available to the consumer saw an increase in the nineties. There were 12 large automobile companies in the Indian market by 2000. Most of them were subsidiaries of global companies. As of Jan'15 there are 38 automotive companies, 180+ different models to choose from and price ranging from 2 Lakhs to 20Cr. Over 2.5 Million cars were sold in 2013-14. Refer to Exhibit 9.1.

Exports were initially laggard. Few vehicles were exported to tertiary markets and neighboring countries initially. In 1987 Maruti Suzuki shipped 480 cars to Hungary, Europe. After growth in the mid-nineties, exports again dropped as the antiquated platforms given to Indian manufacturers by multinationals were uncompetitive. This lasted for a short time and today India manufactures low-priced cars for many global markets. Just under 600,000 cars were exported in 2013-14. Refer to Exhibit 9.2.

The figures clearly show the pace at which the automobile industry has grown. With the industry, the quality of offerings has improved and the features offered in cars have also

increased. But the safety standards, as it seems, still date back to the 1990s. Industry and the regulatory body have overlooked the need to enhance safety standards and features and the carmakers have focused more on other attributes. The Transportation Research & Injury Prevention Program (TRIPP) surveyed prices of all car models in the Indian market in 2013 and observed that a consumer had to shell out extra Rs 1,00,000 or more to buy the same model vehicle with the safety features. The safety features were packaged with premium features like chrome, leather, stereos etc. Safety features were not available for their actual price and customer was being forced to buy less safe products. TRIPP also analyzed print and TV ads of the cars and found that all manufacturers focused on speed, acceleration, mileage etc. but none focused on safety standards of their offerings.

1.2 New Car Assessment Program (NCAP)

The New Car Assessment Program (NCAP) is an autonomous organization that tests vehicles for safety and publishes ratings for each vehicle based on their performance in these tests. It evaluates new automobile designs for safety performance against various safety threats. The purpose of the organization is to spread awareness and empower consumers so they can make an informed choice while buying a new car.

NCAPs promote a 'market for safety' by increasing awareness of consumers and rewarding manufacturers who build safe cars. There are 9 NCAPs active in Australia, Asia, Latin America, Europe and the USA. Global NCAP provides a platform for cooperation among NCAPs and supports their development in rapidly motorizing regions.

United States National Highway Traffic Safety Administration started the first NCAP in 1979. This program was established to motivate manufacturers to produce safe vehicles and provide safety information to consumers. The agency improved the program by facilitating access to test results, adding rating programs and revising the format of the information to make it easier for consumers to understand.

1.2.1 Objectives

The objectives of the Global New Car Assessment Program (Global NCAP) are for the promotion of public safety and public health, for the protection and preservation of human life and for the conservation, protection and improvement of the physical and natural environment in particular by:

(a) promoting and conducting independent research and testing programs that will assess the safety and environmental characteristics of motor vehicles and their comparative performance and disseminating the results to the public; and

(b) Promoting the development of new car assessment programs, by providing financial support and technical assistance, and facilitating international co-operation with and between such programs.

1.2.2 Mission Statement

Global NCAP Trustees have adopted the following Mission Statement:

Global NCAP aims to support the development of new consumer crash test programs in emerging markets where vehicle growth is strong but independent consumer information on crashworthiness is frequently not readily available.

To achieve this Global NCAP will offer support to New Car Assessment Programs in emerging economies and regions by offering technical support guidance and quality assurance.

Global NCAP will also provide a platform for cooperation for NCAPs and like organizations around the world to share best practice, to further exchange information, and to promote the use of consumer information to encourage the manufacture of safer cars across the global automotive market.

Global NCAP will carry out research on innovations in vehicle safety technologies, their application in global markets, the range of policies that will accelerate their use and monitor the progress of vehicle safety across the globe.

Global NCAP will also develop a global awards scheme to recognize achievement in vehicle safety, innovation in safety related technologies, and products.

Global NCAP is a member of the UN Road Safety Collaboration and supports the UN Decade of Action for Road Safety 2011-2020.

List of NCAPs around the world: Exhibit 9.3.

1.2.3 What are the crash tests they perform?

A frontal offset test and a side impact test is performed on the cars. The front offset collision test is performed at a speed of 64kph with an obstacle as barrier which replicates the front end of another car. It is placed at a 40 percent offset i.e it covers 40 percent of the car's width. This

might seem to be an unconventional setup but most fatal accidents occur in this configuration in the real world.

The side impact tests are set up to mimic another car smashing into the car from the side. A trolley moving at a speed of 40kph hits the vehicle just above the door sill area. The center point is the place where the hip of the driver would be.

The main objective of these tests is to assess the degree of injury sustained by the occupants in the event of the crash, thus rating the level of safety provided by the car. The human body is replicated with crash-test dummies loaded with sensors. The size of the dummy is same as the size of an average adult or a small child to test the level of injury sustained by a real human. After the test is performed, the readings from the sensors are taken and analyzed to predict the level of injury that might be sustained in a real-life crash.

1.2.4 How is the score decided?

The scoring is done based on the level of injury sustained by the crash-test dummy measured with the help of sensors. The Adult Occupant Protection is rated on a scale of 0-16, 16 being the safest. Child occupants' ratings are given by the performance of Child Restraint System. The star ratings awarded are based on a percent compliance scale. 100 percent is the best. The readings from the crash-test-dummy clearly manifest the importance of ABS, Airbags, and structural integrity.

1.3 Objectives of the Research

Research objectives are statements that define the information needed. They should be framed in a way to ensure the information obtained fulfils the purpose of research.

Three components of Research objectives are:

1. **Research Question:** It specifies the information required for making decisions. Research question should be very specific and precise. It elicits specific information required to accomplish the purpose of the research or solve the problem. The information obtained aids the decision maker only if the research questions are answered comprehensively.
2. **Development of hypothesis:** A possible answer to a question may be termed as hypothesis. Hypotheses are developed to generate substitute answers to research questions. Which of the hypotheses is correct is determined by the research. Efforts should be made to develop hypotheses though sometimes it is just not possible.

3. Scope or boundaries of the research: To ensure precision and accuracy of the result, it is essential to define the scope and boundaries. The researcher should define the initial variables associated with the decision problem. These variables should be converted into questionnaire format to get the required information from target audience.
 - How
 - What
 - Where
 - When
 - Why

The research objectives for the project undertaken can be defined as follows:

1. To examine the awareness level of car safety features among consumers.
2. To analyze their belief about the safety standard of their existing car.
3. To analyze their perception towards safety while making purchase decision.
4. To assess their reaction on price elevation caused by installation of safety features like ABS and Airbags in the new cars.

1.4 Scope of the study

The study aims to examine the awareness of car safety features among Indian consumers and understand their perception towards these safety features. It examines how price sensitive a customer is while buying different segment cars.

CHAPTER 2

2. LITERATURE REVIEW

2.1 Global NCAP's Crash Tests on Indian Cars

An independent crash test on India's hot selling small cars have showed a high-risk of life threatening injuries in case of a crash. All the cars tested by Global NCAP in a frontal impact at 64km/h received 0-star adult protection ratings.

The cars tested included Maruti Suzuki Alto 800, Tata Nano, Ford Figo, Hyundai i10, Volkswagen Polo, Maruti Swift and Datsun Go. Aggregated sales of these cars accounted for around 23% of all the new cars sold in India in December 2014. Global NCAP used the entry-level variant of each car hence they lacked Airbags which are available in the top versions.

Absence of Airbags was an integral reason why these cars failed the test. Even more important reason was the unstable structures of these cars except Polo and Figo. If a car has a weak body shell, even fitting airbags won't help.

See the performance in crash tests in Exhibit 9.4.

2.1.1 Maruti Suzuki Alto 800

In Alto 800, the vehicle structure proved inadequate and collapsed resulting in high risks of life-threatening injuries to the occupants. The structure was so weak that even fitting Airbags would not be effective in reducing the risk of serious injury. The vehicle structure or body shell was rated as unstable.

Protection offered to the driver's head was poor due to hard contact with the steering wheel. Also Driver's neck and chest received poor protection. Passenger's chest protection was adequate. Front passengers' knees could impact with dangerous structures in the dashboard. In the 64km/h NCAP test, the Maruti Suzuki Alto 800 achieved a zero-star rating for its adult occupant protection.

Using the child seats recommended by Maruti Suzuki, the Alto 800 achieved a two-star rating for child protection. The child seat for the 3 year old child was unable to prevent excessive forward movement during the impact. The dynamic performance of the child restraint system was adequate but the installation instructions on both child seats were insufficient and not

permanently attached to the seat. The recommended Child Restraint System did not show incompatibilities with the belt system on the vehicle.

The Alto was also not able to meet the UN's minimum safety requirements in the 56km/h crash test.

2.1.2 Tata Nano

In Tata Nano, the vehicle structure proved inadequate and collapsed resulting in high risks of life-threatening injuries to the occupants. The structure was so weak that even fitting Airbags would not be effective in reducing the risk of serious injury. The structure of vehicle or body shell was rated as unstable.

The protection offered to the driver's head, neck, and chest was poor due to hard contact with the steering wheel as well as for the high decelerations. Also Passenger's chest protection was marginal. Front passengers' knees could impact with dangerous structures in the dashboard and also the shock Absorber mounts offered potential risk. In the 64km/h NCAP test, Tata Nano achieved a zero-star rating for its adult occupant protection.

Tata did not recommend a CRS for the test and GNCAP had to recommend a CRS instead but this car has 2 point static belts in the rear seat. GNCAP could not find a CRS in India that is compatible with a 2 point belt. As it is not possible to find a Child Restraint System to be used, according to Indian market availability criteria this model is not capable of transporting children in a safe way. The car achieved a zero-star rating for its child protection because it was not possible to install child seats in the car.

The Nano was also not able to meet the UN's minimum safety requirements in the 56km/h crash test.

2.1.3 Hyundai i10

In Hyundai i10, the vehicle structure proved inadequate and collapsed resulting in high risks of life-threatening injuries to the occupants. The structure was so weak that even fitting Airbags would not be effective in reducing the risk of serious injury. The vehicle structure or body shell was rated as unstable.

In the 64km/h NCAP test, Hyundai i10 achieved a zero-star rating for its adult occupant protection. The protection offered to the driver's head and chest was poor. Passenger's chest protection was marginal. Front passengers' knees could impact with dangerous structures in the dashboard.

Hyundai recommended the child seats and i10 achieved a one-star rating for child protection. The child seat for the 3 year old child was unable to prevent excessive forward movement. The 3 years old dummy had high loading in its chest and head. The heads of the dummies contacted the front backrests. The recommended CRS for the 18 months dummy was compatible while for the 3 year old dummy was found to be incompatible with the belt system on the vehicle. The installation instructions on both child seats were insufficient and not permanently attached to the seat. The 3 year-old dummy indicated a high risk of serious injury.

Even the i10 was unable to meet the UN's minimum safety requirements in the 56km/h crash test.

2.1.4 Ford Figo

The Ford Figo had a structure that remained stable and therefore protection for the driver and front passenger could be improved with Airbags.

In the 64km/h NCAP test, the Ford Figo achieved a zero-star rating for its adult occupant protection. Though the vehicle structure was rated "stable", but in the absence of safety equipment such as Airbags the impact on the occupants was high and direct. Protection offered to the driver's head was poor and driver's and passenger's chest protection was weak. Passengers' knees could impact with dangerous structures in the dashboard.

The car achieved a two-star rating for child protection using the child seats recommended by Ford. Dynamic performance of the child restraints was adequate but the child seat for the 3 year old child was unable to prevent excessive forward movement. Installation instructions on both child seats were insufficient and not permanently attached to the seat. Recommended CRS for the 18 months dummy was compatible but CRS for the 3 year old dummy was found to be incompatible with the belt system on the vehicle.

The Figo met the UN's minimum safety requirements in the 56km/h crash test as the driver's head narrowly avoided direct contact with the steering wheel.

2.1.5 Volkswagen Polo

The structure of Volkswagen Polo remained stable and protection for the driver and front passenger would be much improved with Airbags fitted.

In the 64km/h NCAP test, the Volkswagen Polo without Airbags achieved a zero-star rating for its adult occupant protection. Though the structure of the vehicle was stable, but dummy readings indicated a high risk of life-threatening injuries without safety equipment such as

Airbags. The protection offered to the driver's head was poor due to hard contact with the steering. Also Driver's neck and chest received weak protection. Passenger's chest protection was adequate and head protection was good. Front passengers' knees could impact with dangerous structures in the dashboard. The body shell was rated as stable and it can withstanding further loading which is a critical baseline to add Airbags.

Polo achieved a three-star rating for child protection using the child seats recommended by Volkswagen. The child seat for the 3 year old child was able to prevent excessive forward movement during the impact and presented high chest decelerations. The belted CRS for the 18 months old child was able to prevent excessive forward movement during the impact and protected adequately. The installation instructions on both child seats were sufficient and permanently attached to the seat.

Without Airbags, Polo was not able to meet the UN's minimum safety requirements in the 56km/h crash test.

Global NCAP agreed to a request from VW to assess a version of the Polo that has two Airbags fitted. The protection proved much better and this airbag-equipped model received a four-star rating for adult occupant protection. With driver and front passenger airbags, the Volkswagen Polo achieved a four-star rating for adult occupant protection in the test. The protection offered to the driver's and passenger's head and neck was good thanks to the airbag, Driver's and passenger's chest received adequate protection. Front passenger's knees could impact with dangerous structures in the dashboard.

The child seat for the 3 year old child was able to prevent excessive forward movement during the crash. The belted CRS for the 18 months old child was able to prevent excessive forward movement during the impact and protected adequately. The installation instructions on both child seats were sufficient and permanently attached to the seat. The car gave warnings on hazards associated with installing a rearward facing child seat on the front passenger seat with an active airbag but its marking is not enough to meet the protocol criteria.

2.1.6 Maruti Suzuki Swift

Swift's vehicle structure showed signs of collapsing in the crash and was rated as unstable. The car lacked Airbags so driver's head made direct contact with the steering wheel – the dummy readings indicate a high probability of life threatening injuries.

Maruti Suzuki Swift scored zero stars for adult occupant protection. The protection offered to the driver's head and chest was poor. Driver's chest protection was weak due to contact with the steering wheel. Front passenger's knees could impact with dangerous structures in the dashboard.

Maruti Suzuki Swift scored just one star for child occupant protection. Poor child protection score is due mainly to the poor performance of the Child Restraint System. The child seat for 3 year old child was unable to prevent excessive forward movement during the crash. The 18 months dummy had high loading in its chest and the 3 years old child showed high loadings in head and chest. The instructions for installation on both child seats were insufficient and not permanently attached to the seat.

2.1.7 Datsun Go

Datsun GO's vehicle structure collapsed in the crash and was rated "unstable". The car's lack of Airbags meant that the driver's head makes direct contact with the steering wheel and dashboard – the dummy readings indicate a high probability of life-threatening injuries. The structure was so weak that even fitting Airbags would not be effective in reducing the risk of serious injury.

The Datsun Go scored zero stars for adult occupant protection and just two stars for child occupant protection. The protection offered to the driver's head was poor due to hard contact with the steering wheel. Also driver's chest protection was poor but passenger's chest protection was adequate. Front passengers' knees could impact with dangerous structures in the dashboard.

The two-star rating for child protection is mainly due to the poor performance of the Child Restraint System. The child seat for the 3 year old child was unable to prevent excessive forward movement during the crash. The dynamic performance of the child restraints was adequate. The instructions for installation on both child seats were insufficient and not permanently attached to the seat. The recommended CRS was incompatible with the belt system on the vehicle.

2.2 Are these tests relevant to India?

Many more factors, which these tests don't really account for, come into play in Indian driving conditions but these tests are still the least.

2.2.1 How much importance should you attest to the Global NCAP score?

Crash-testing broadly covers a variety of real-life crashes and indicates how safe a car truly is in case it is involved in a crash. Hence it should be taken seriously. It will always be wise to buy a car that passes these tests with good scores.

India is a major production hub as well as global market for small cars and it is disappointing to see safety standards that are decades behind the 5-star standards now implemented in Europe, North America and Japan. Indian consumers are at risk because of poor structural integrity of cars and absence of Airbags.

2.3 **Reaction of the Government**

Rohit Baluja, President of India's Institute of Road Traffic Education (IRTE) said consumers are unaware of the safety aspects of the vehicles they purchase and believe that the vehicles they are buying have best safety standards. He added that safety is not a deciding parameter for the Indian consumers yet and manufacturers and sellers should provide this information to the consumers and create awareness regarding safety of the cars they sell.

He also said that with the introduction of crash safety standards, awareness about safety of the cars on sale and clear information available to the consumers will enormously benefit India. Cars exported from the nation already meet these standards so India's automobile industry has the know-how and capability but lacks the incentives to use it for domestic market.

After these cars failed the crash tests the government pulled its socks up and started working on ways to improve the vehicular safety. The Bharat New Vehicle Safety Assessment Program is a proposed New Car Assessment Program for India and is the 10th NCAP in the world. It will be set up by the Institute of Road Traffic Education and the Federal Government of India. It began in mid-2014 and is being executed. Mandatory star rating of all new cars will start from October 2017. However, for existing models, architectural changes such as a full body redesign or reinforcing the chassis and body cage are required, companies get a year extra to make them compliant.

Under this program, cars sold in the country will need to undergo offset front crash, side and rear impact tests and will be assigned star ratings based on the performance of their safety features, such as ABS with electronic brake distribution, airbag deployment and seatbelt reminders. Bharat NCAP will perform these tests at 56km/h in 3 crash test facilities under NATRIP by the end of 2016.

All cars will have Safety features like seat belt reminders, Airbags and ABS. Cars will eventually have to meet strict norms such as whiplash injury, child restraint systems standards and requirements and pedestrian protection.

Hence in the next couple of years, the government regulations will ensure vehicles provide safety according to global standards for occupants as well as pedestrians.

2.4 Reactions from the Industry

Automakers have procrastinated installing safety features and executing rigorous safety tests because these increase manufacturing costs and cars' market prices or erode profits. They are of the view that Indian consumers are price sensitive and unwilling to pay for safety features such as Airbags and antilock brakes that pad the cost of the car.

Also, some carmakers feel that the findings of GNCAP are unfair because the study didn't take Indian conditions into account. Society of Indian Automobile Manufacturers (SIAM) accused GNCAP of trying to scare Indian consumers. One of the senior executives said that the testing was conducted without using any scientific data on accident analysis in India. He said that Indian cars meet the minimum required standards in the markets they are manufactured for.

RC Bhargava, chairman of Maruti Suzuki India said the safety standards of the company's offerings are more than adequate for the Indian driving conditions and also meet the rules of the markets where they are exported to. Though he agreed that the safety standards in India need to be improved but important factors like driving condition, average speed, purchasing power and how many times the airbag is deployed need to be considered.

Some industry people questioned the rationale of crash-testing entry-level variants at the speed of 64Kmph whereas the Indian average speed is 46Kmph.

An industry spokesman even said that these tests are biased so that western world cars can be promoted in India.

Tim Leverton, Tata Motors Head - Advanced and Product Engineering, Engineering Research Centre, said that all Tata vehicles, including the Tata Nano meet all Indian safety regulations, including the frontal barrier crash test at 48 kmph, as mandated by the government. All Tata cars on Indian roads, including the Nano are engineered for safety in view of Indian road and traffic conditions.

Response from Hyundai India was “Hyundai Motor India affirms that Hyundai vehicles are designed and built to meet all the prescribed safety standards set by Indian regulatory authorities”.

A Ford spokesperson stated, "Our vehicles consistently meet or exceed applicable industry safety standards. We are monitoring the progress of this review and will work with Indian authorities, GNCAP and the other relevant stake holders as appropriate". Ford introduced a driver airbag on the ZXI variants of the Figo prompted by duck scored by it without airbags.

Volkswagen too made 2 airbags standard on the Polo & Vento prompted by the Polo Trendline without airbags scoring a zero.

Toyota also offers two airbags as standard on the Liva, Etios and Innova now. It is also planning to make ABS as standard. An indirect one that can be attributed to GNCAP.

And the biggest strike, Datsun went back to the drawing board to make its cars safer. To improve the body shell, Datsun will use steel with higher tensile strength, employ side beams and offer ABS and Airbags by mid 2015.

CHAPTER 3

3. RESEARCH METHODOLOGY

A research process includes steps that guide the research from its inception to final analysis and recommendations. It provides a planned and systematic approach to the research and ensures that all aspects are consistent with each other.

This chapter aims to establish a research methodology and a framework for evaluating primary and secondary research. The techniques used for primary research, analysis, results and findings are also elaborated.

3.1 Research Design

This research was carried out in 2 phases, exploratory followed by descriptive research.

3.1.1 Exploratory Research:

The exploratory research attempts to discover general information on a subject a researcher is less aware of. For example, a researcher has read news reports about a new Internet technology that is helping competitors but the researcher is not unaware of the technology and needs to research to learn it.

Exploratory research is used if the primary goal is gaining insight on a problem or an opportunity.

Phase 1: First Phase of the research was qualitative analysis of external secondary data.

Secondary data is the data that exists already and is collected for a purpose other than the research at hand. Sources include trade publications, subscription services, Internet, Newspaper, census reports, Industry Reports etc. There are two types of secondary data: Internal and External. Internal data is data gathered from within the organization for e.g. Sales reports. External data is data collected from outside the organizational boundaries for e.g. Internet, Gov. Data etc.

Qualitative Analysis is examination of non-measurable data such as a customer's feelings about a product, a brand's image or a firm's reputation. It can be used to discover what is inside the consumers' minds. Face-to-face interviews and focus groups provide precious insights into customers, products and markets. It helps in finding out what people think and why they do so. People express their opinions and researchers can understand their feelings and motivations.

Group discussions and Face-to-face interviews are the best way to get in-depth feedback. Qualitative research is valuable when one is developing new products or new marketing initiatives and wants to refine the approach by analyzing data already available on similar products.

In this research, secondary data was collected on the concerns raised on safety standards of cars sold in India. These concerns were raised by GNCAP. Various articles on GNCAP Crash Tests and GNCAP reports on Indian cars were analyzed from the Internet. These articles and GNCAP reports gave an insight on the crash safety performance of several hot selling Indian cars. There were reactions from the manufacturers of these cars. Several articles containing the manufacturer's reactions were recorded and analyzed in the case. These reactions varied from defamation of GNCAP and its methods to blaming consumer of being too price sensitive to afford safety equipment in the cars. These reactions raised many questions that could give an insight into what consumers feel about the safety equipment in the cars. These insights can be a game changer in the passenger car industry which is majorly captured by Maruti and Hyundai although several players are competing. The players can differentiate themselves on the safety their products offer. They can use safety standards as a marketing tool and attract customers and use it as weapon to grab market share from leaders.

3.1.2 Descriptive Research:

The focus is to provide a description for something that is happening. For e.g. how many competitors a company faces, a product's market share within a certain industry, target age group for a particular brand. Descriptive Research is the most widely used type of market research and is extensively used when the purpose of the research is to test hypotheses, to help in predictions and for discovery.

Descriptive research must be conducted with a structured research plan which must be developed with utmost care. The researchers must be adept in research methods and data analysis techniques.

Case studies, job analyses, document analyses, Surveys and correlational studies are a form of descriptive marketing research.

STEPS in the descriptive research:

1. Statement of the problem.
2. Identification of information needed to solve the problem.
3. Selection or development of instruments for gathering the information.
4. Identification of target population and determination of sampling Plan.
5. Design of procedure for information collection.
6. Collection of information.
7. Analysis of information.
8. Generalizations and/or predictions.

Exploratory and descriptive research differ in design of the research. Exploratory research is less structured and more flexible than descriptive research. It works well when the researcher wants to understand a new topic and get a direction for proceeding with the research. It provides basic information on a topic and direction for a more formal research effort to the researcher. For instance, exploratory research might tell us what variables influence buying behavior of a consumer thus enabling a more structured descriptive study targeted towards the impact of these variables. However the results will be less useful in making a marketing decision.

Phase 2: In the second phase, questions raised after exploratory research were transformed into a survey. The consumer was alleged as price sensitive but is the consumer so price sensitive that he prefers cost over well-being and overlooks safety? Or he is unaware of the available safety equipment? Or he is under the impression that the car he is driving is absolutely safe? Or he gives more priority to brand, mileage, looks or other non-safety attributes of the car? To get answers to above questions, a survey was designed to gather primary data from car owners and analyze it.

Primary Data: It is the fresh data that is gathered to solve the problem. Original information is gathered from people which includes information gathered from surveys, focus groups, independent observations, experimentation and test results. This can be Qualitative or Quantitative data for example information gathered by a questionnaire. Unlike secondary research, where data is initially obtained for another purpose, the responsibility of collecting data under primary research falls to the researcher.

3.2 Universe of the Study

Universe are the total population, market or group of interest. The Universe of the study were all the people who reside in India and own a car or planning to purchase one.

3.3 Sampling Frame:

It is a list of all those within a population who can be sampled. A sampling frame is the source list from which a sample is drawn. In this research the sampling frame includes people who live in Tier 1 Cities of India and own a car or planning to purchase one.

3.4 Sampling Technique

Sampling Techniques are methods used to select samples from the sampling frame. The sampling technique used was stratified sampling followed by judgment and snowball sampling.

Stratified sampling involves the division of a population into smaller groups known as strata. These are formed based on shared attributes or characteristics of the members.

The stratum in this research were

1. People who own a car.
2. People who are planning to own a car.
3. People who do not own a car and not planning to purchase a car.

Target audience was 1st and 2nd Stratum and judgment and snowball sampling was used to select samples.

Judgmental sampling is a non-probability sampling technique where the researcher selects units to be sampled based on their knowledge and professional judgment.

Snowball sampling is a non-probability sampling technique where existing study subjects recruit future subjects from among their acquaintances.

3.5 Sample Size

For the purpose of market research, a subset of the population called a sample is selected from the universe to be investigated. This involves figuring out how many samples one need. The numbers of samples you need are affected by the following factors:

- Research goals
- Plan for data analysis
- Variability of data
- Desired Precision or Accuracy
- Amount of resources

The sample size for the study was 56.

3.6 Data Collection Methods

For exploratory research, secondary data was gathered from the internet, newspapers and relevant research papers and articles on the subject.

For Descriptive research a survey was designed and primary data was collected through telephonic interviews, meetings and emails.

CHAPTER 4

4. ANALYSIS

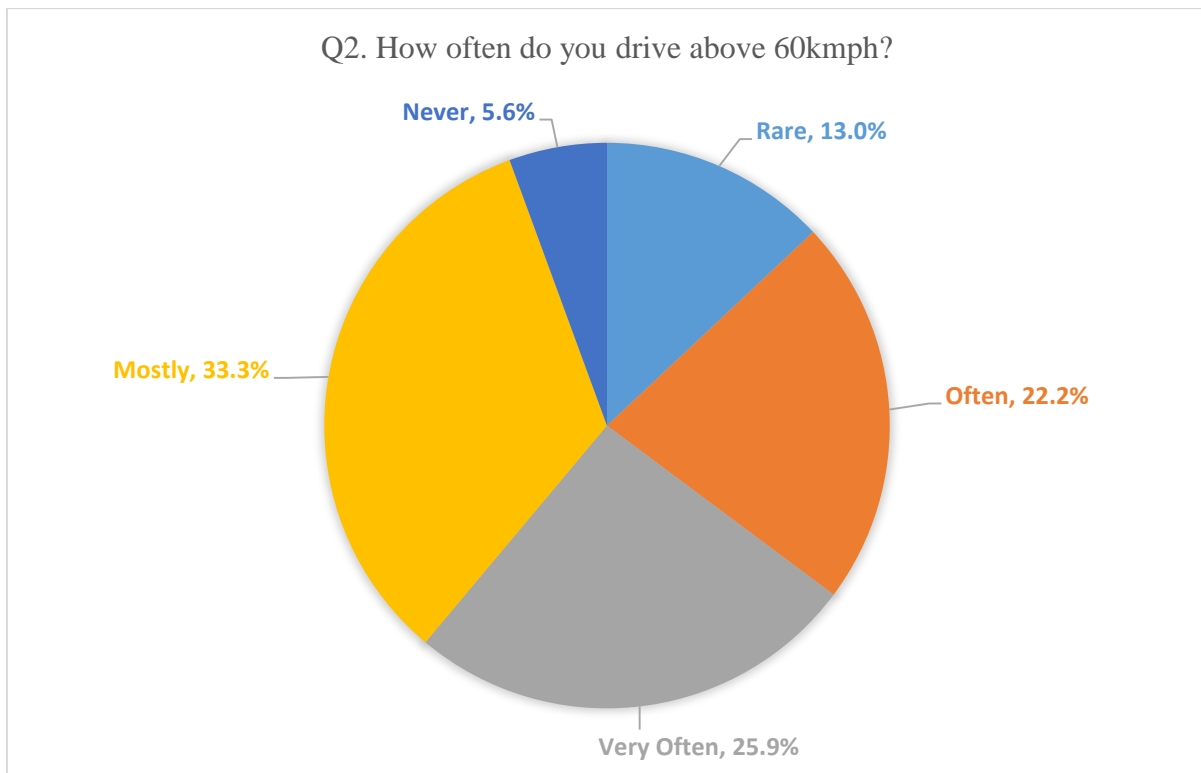
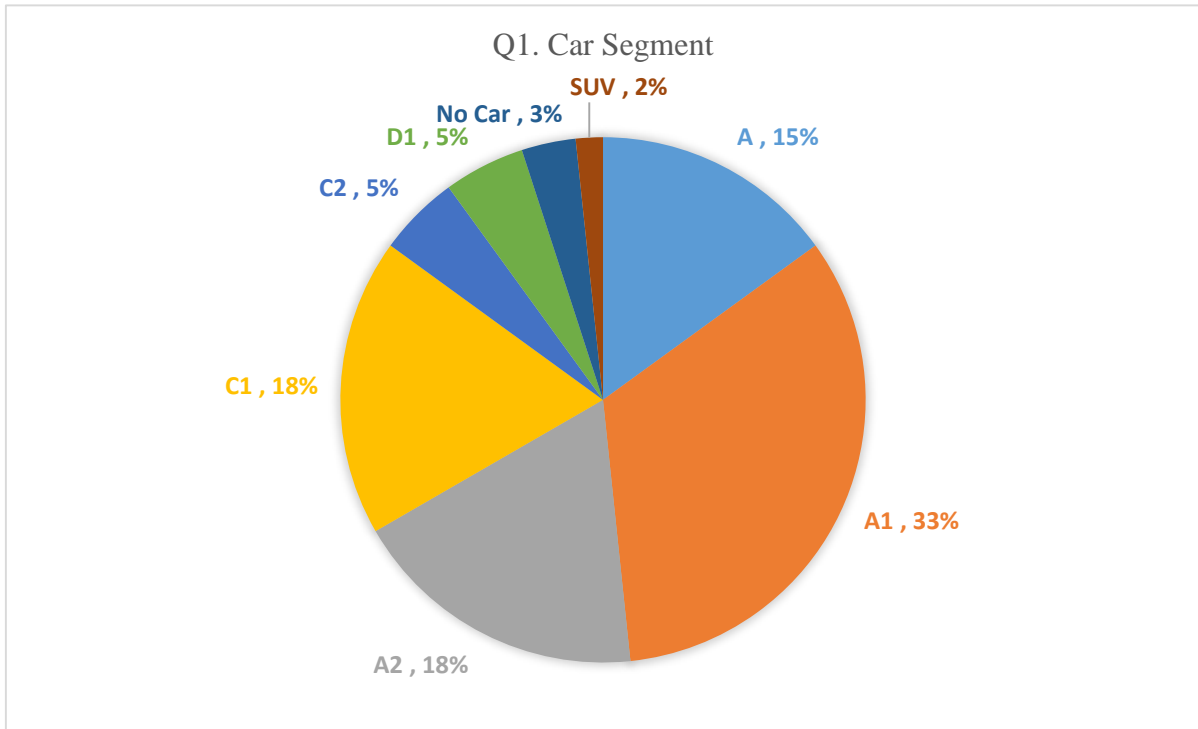
4.1 Analysis of Responses:

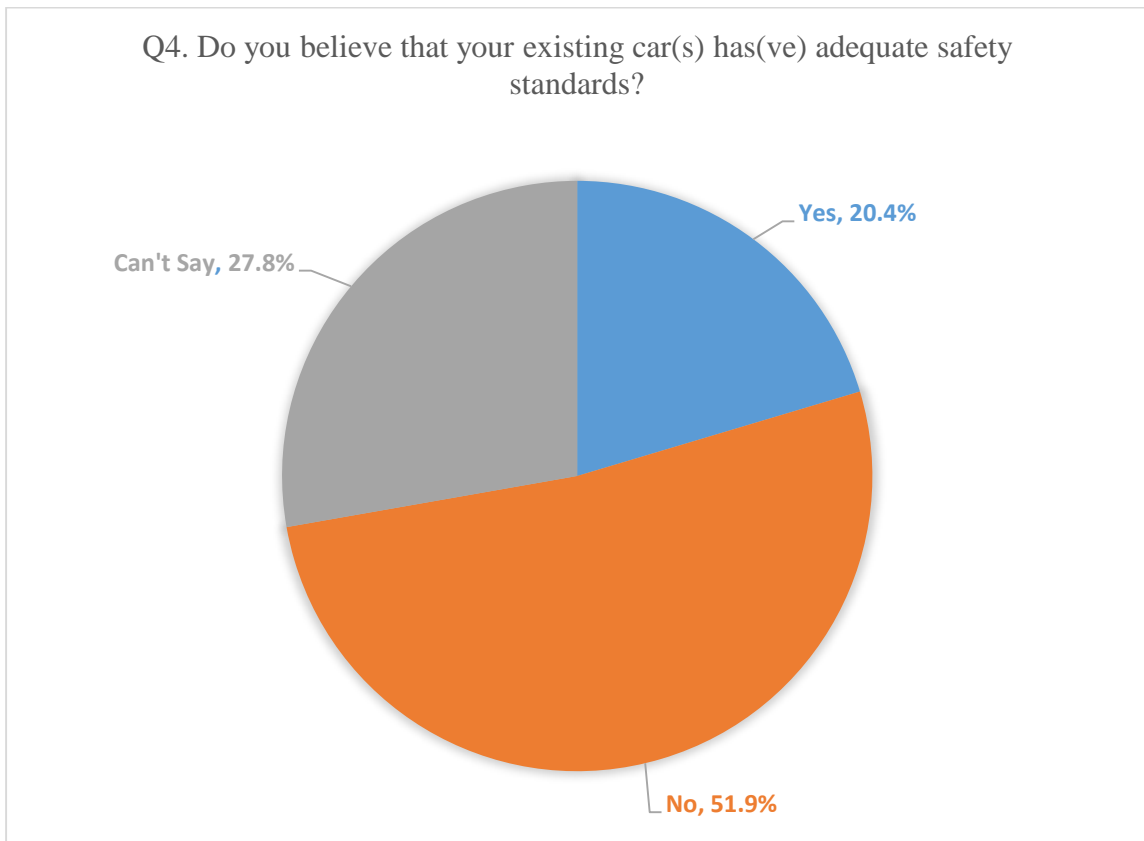
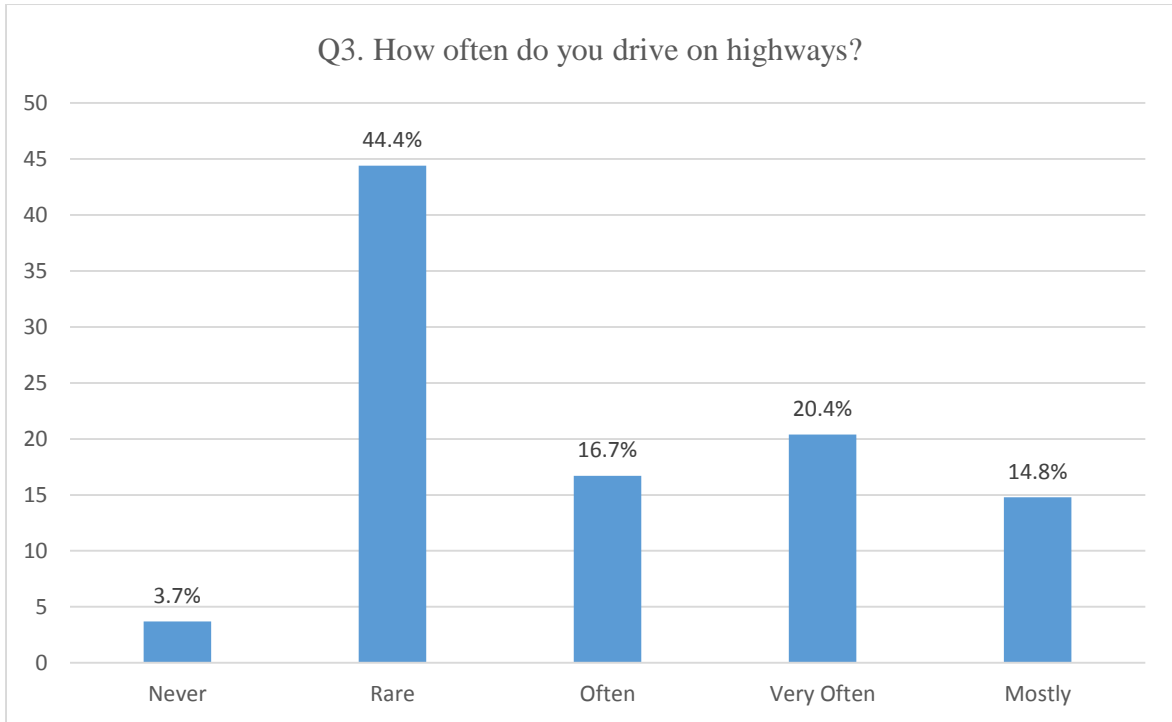
Total Responses	56
Usable Responses	54
Unusable Responses	2
Usable Response Rate	96.43%

4.1.1 Demographic Data

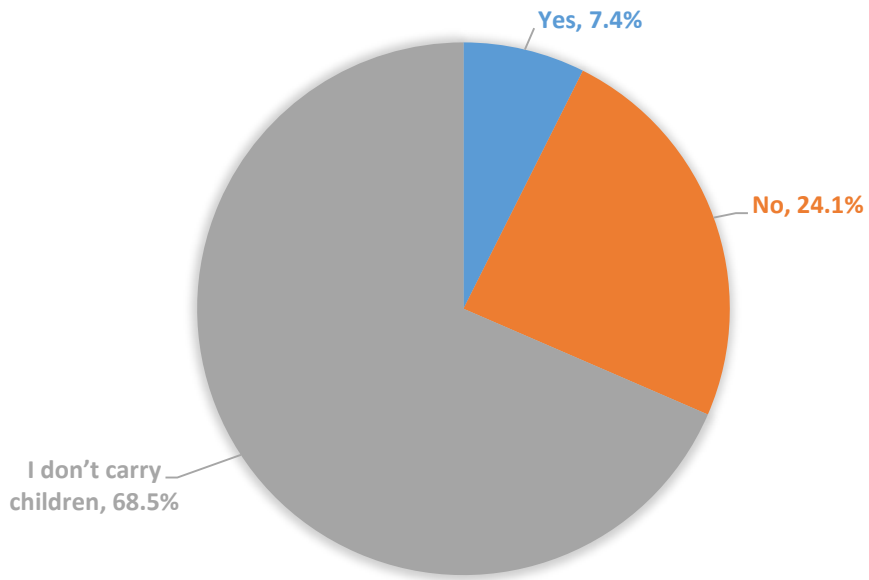
Variables	Percentage	
Q1. Gender	Male	72.2
	Female	27.8
Q2. Age	Less Than 25	33.3
	25 To 30	66.7
Q3. Marital Status	Single	85.2
	Married	14.8
Q4. Education	High School	5.6
	Graduate	29.6
	Post Graduate	64.8
Q5. Employment Status	Self-Employed / Business	7.4
	Service In Private Sector	38.9
	Service In Public Sector	7.4
	Student	46.3
Q6. City	Bangalore	1.9
	Chandigarh	1.9
	Delhi	64.8
	Faridabad	1.9
	Ghaziabad	1.9
	Gurgaon	1.9
	Gurgaon	5.6
	Hyderabad	19
Q7. Annual Household Income	Under 5 Lakhs	13
	5.01 Lakhs To 10 Lakhs	59.3
	10.01 Lakhs To 15 Lakhs	14.8
	15.01 Lakhs And Above	13

4.1.2 Driving Behaviour

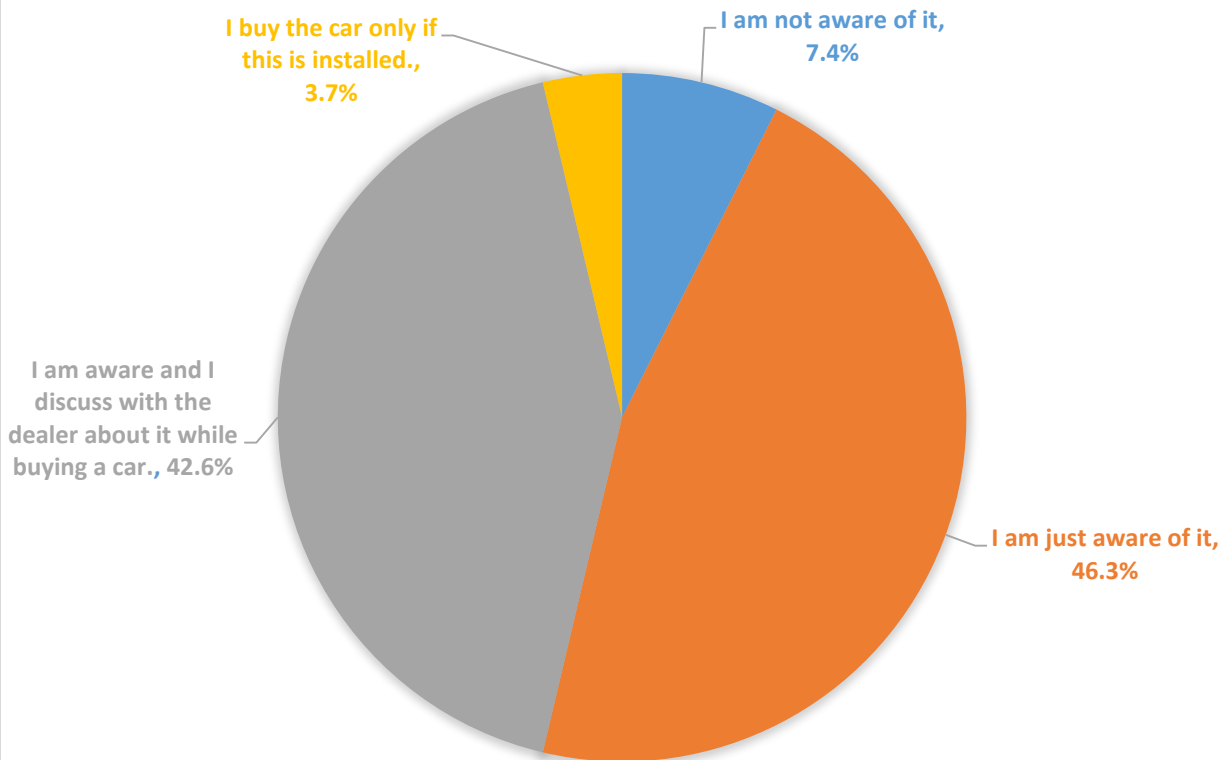




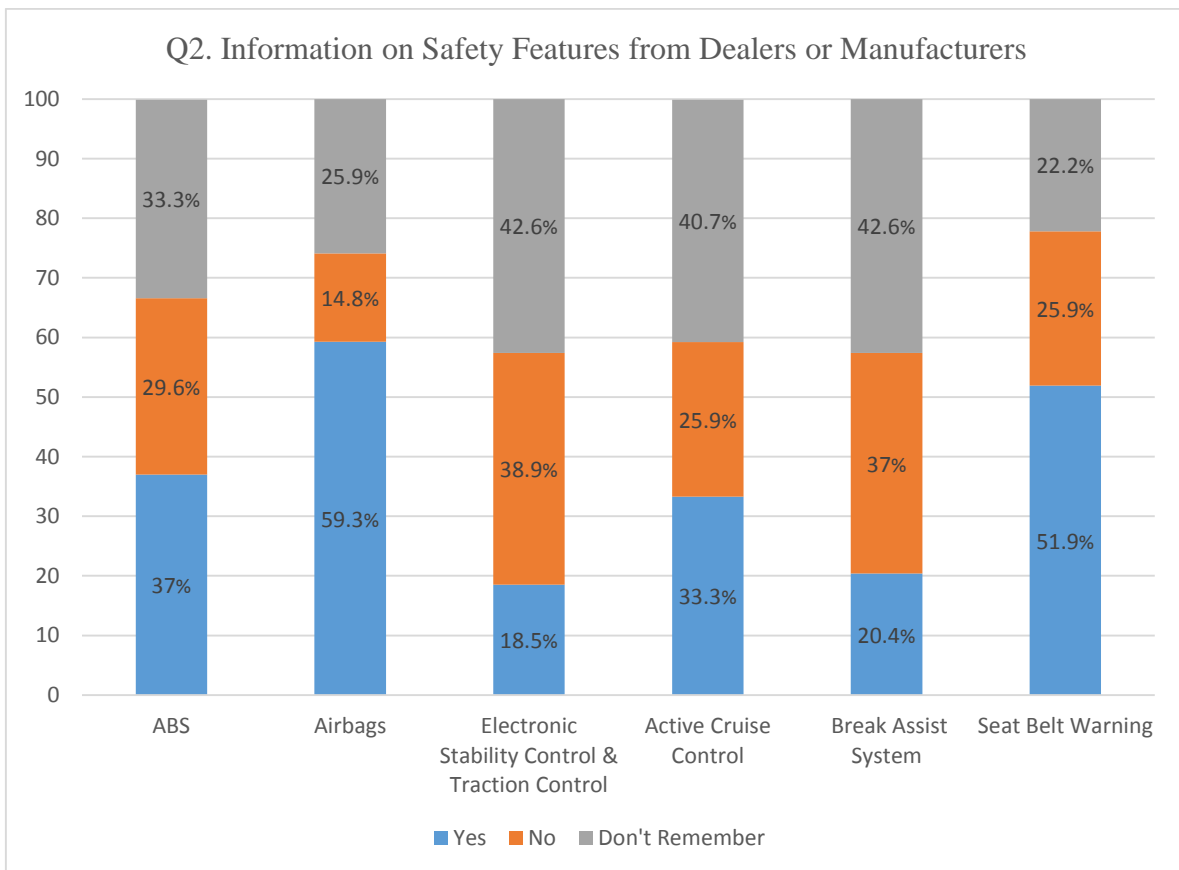
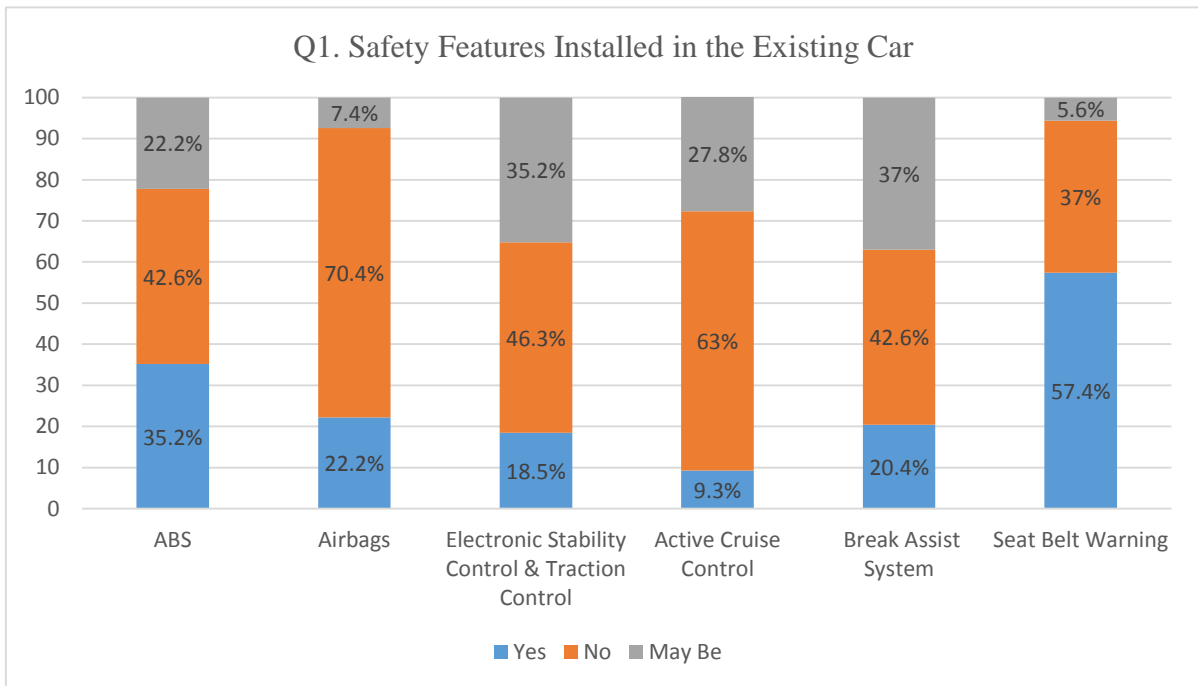
Q5. Do you use A child seat while carrying A child?



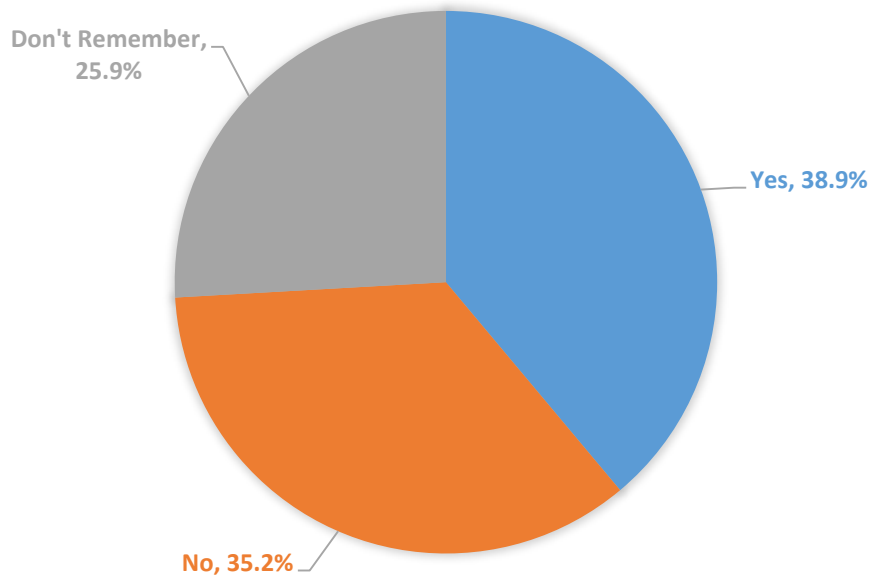
Q6. Awareness Level Of Various Safety Features



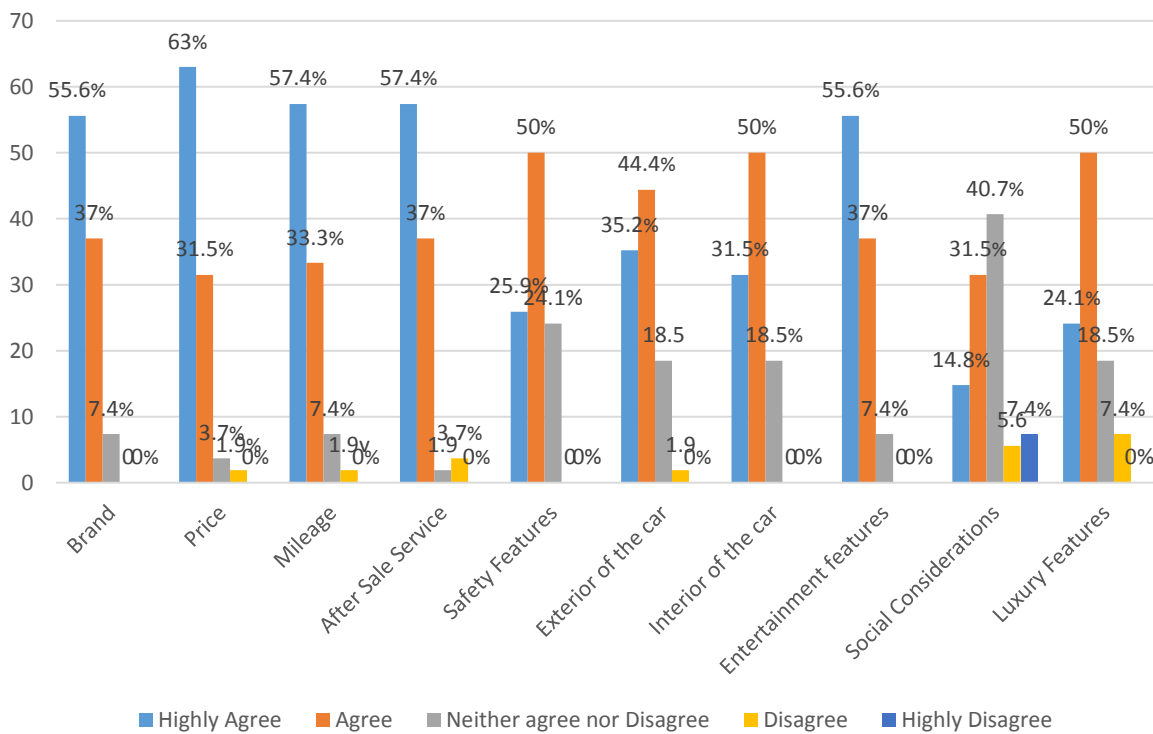
4.1.3 Car Safety Features



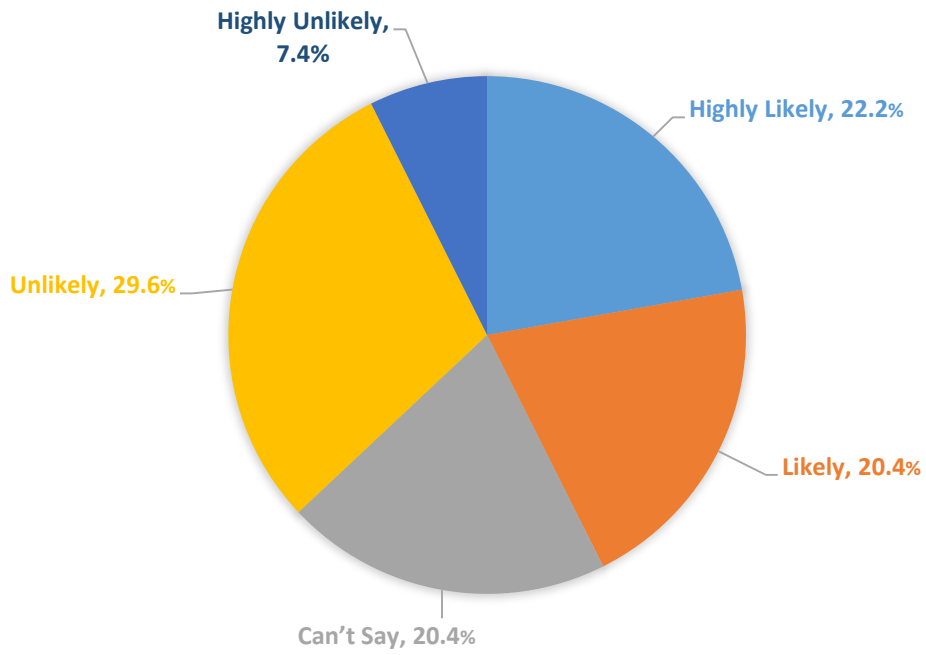
Q3. Did you ask the car dealer about the safety level/standard of your existing car while purchasing it?



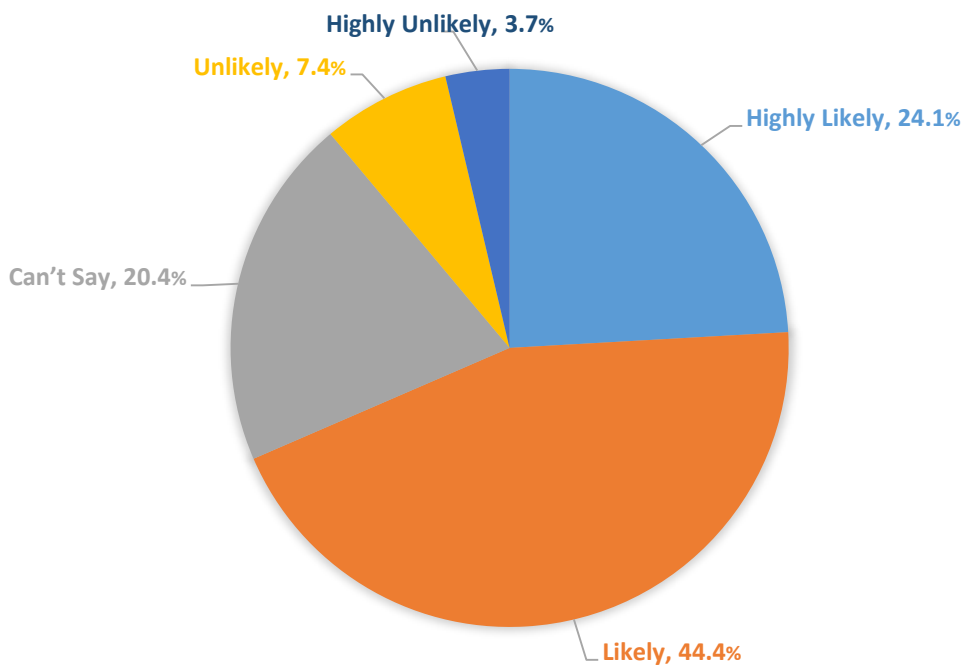
Q4. The factors which influenced your purchase decision



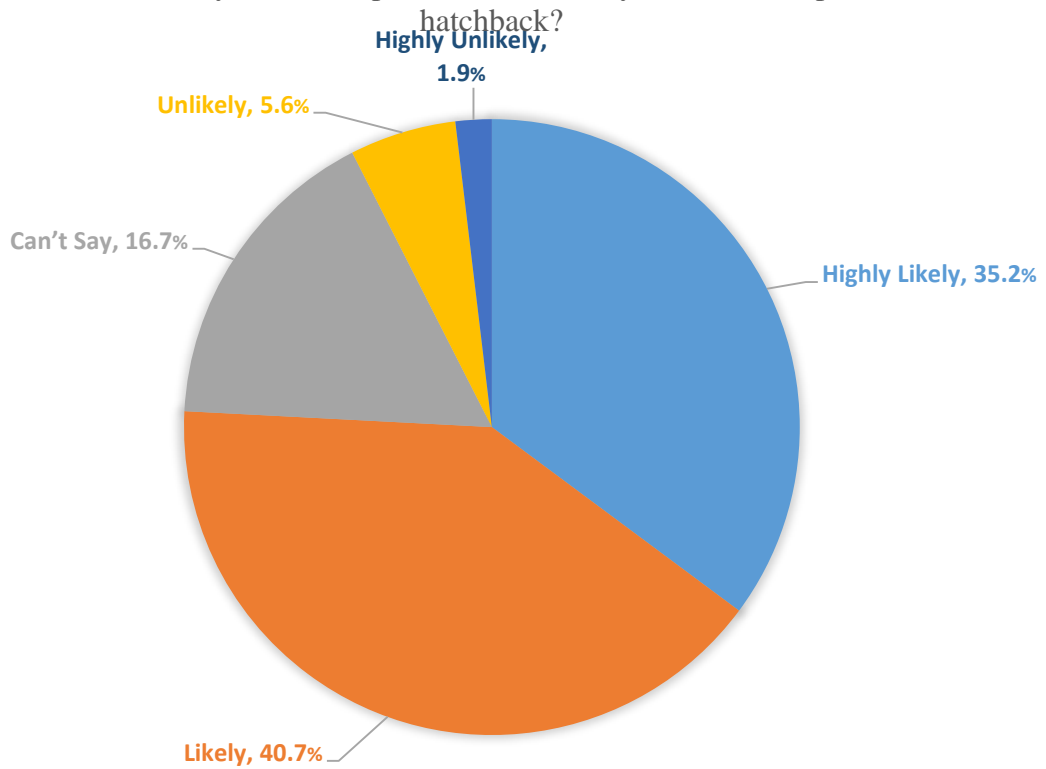
Q5.1 Would you like to spend extra for safety features in an entry level hatchback?



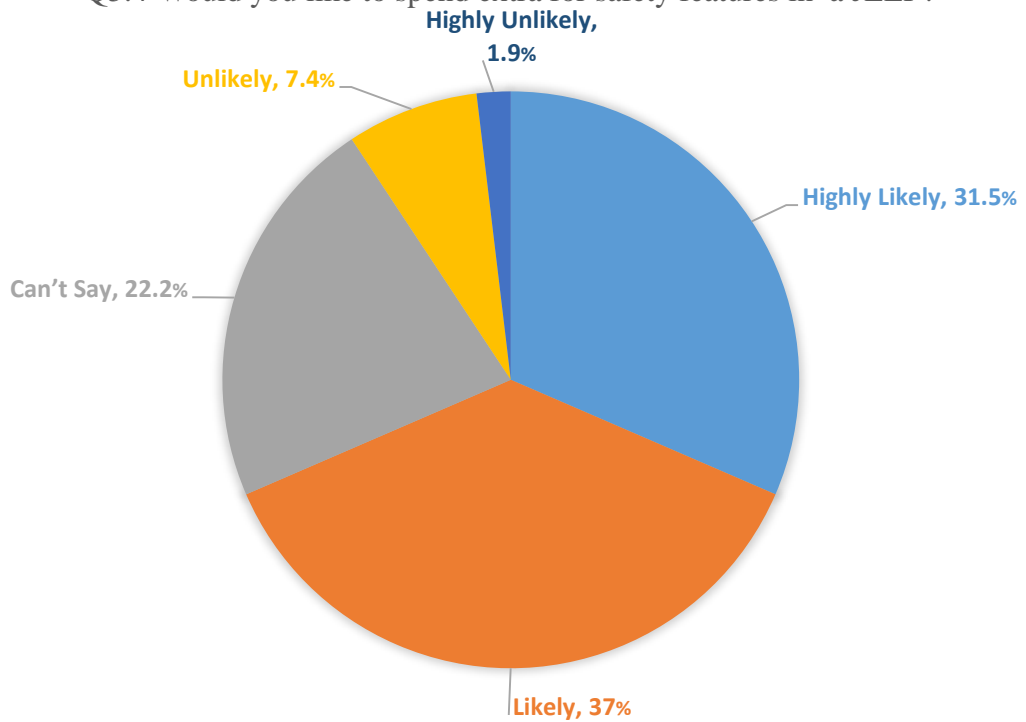
Q5.2 Would you like to spend extra for safety features in a mid-size hatchback?



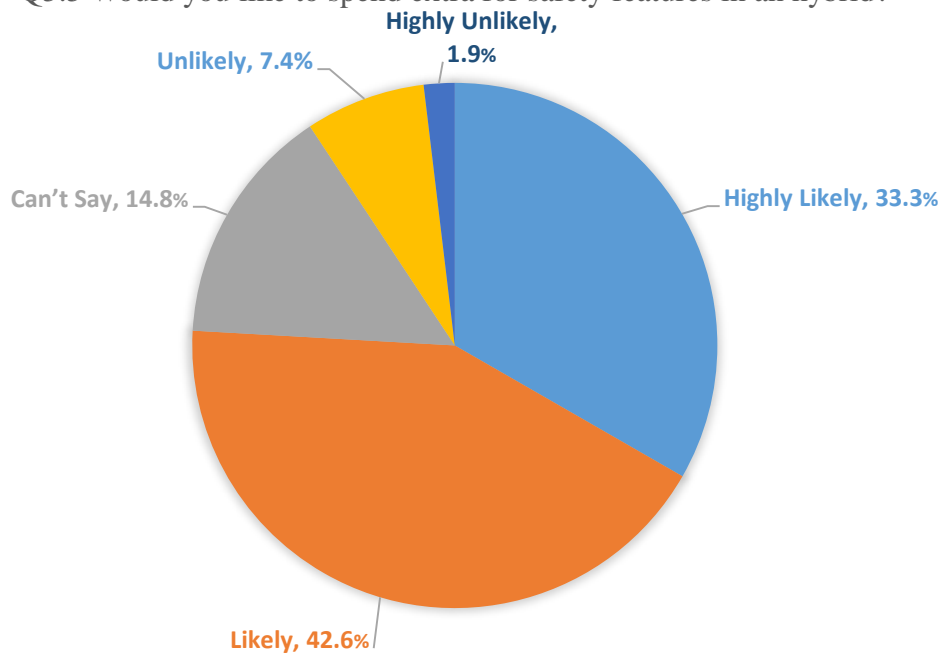
Q5.3 Would you like to spend extra for safety features in a premium hatchback?



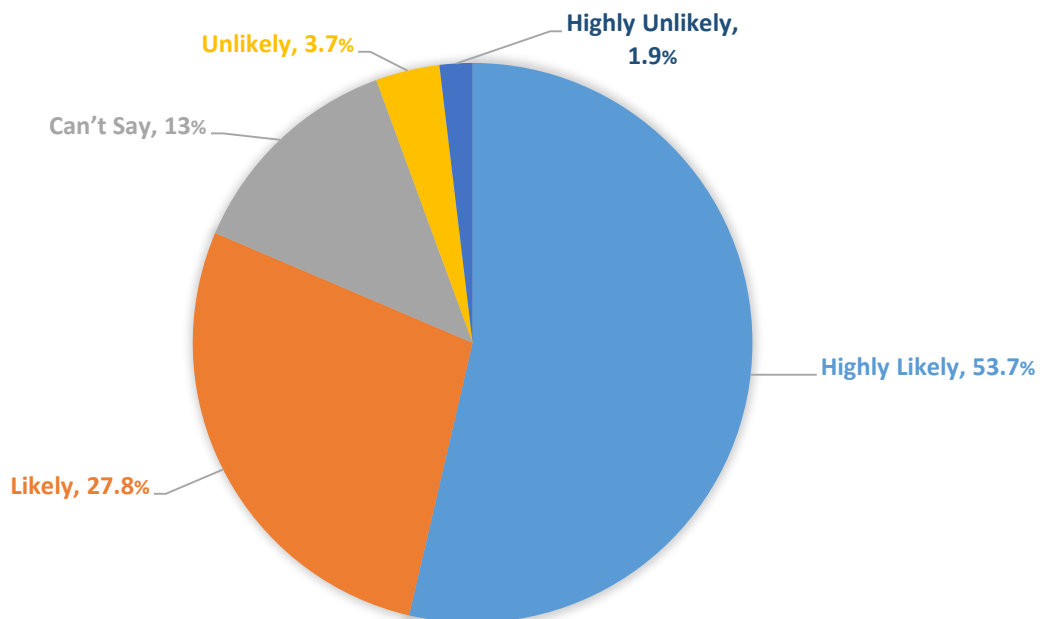
Q5.4 Would you like to spend extra for safety features in a JEEP?



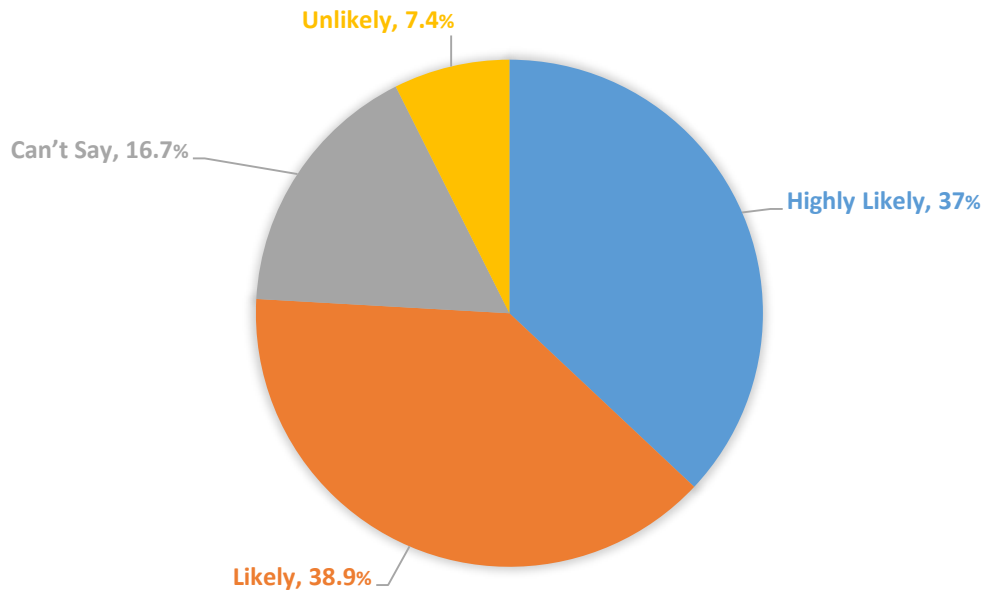
Q5.5 Would you like to spend extra for safety features in an hybrid?



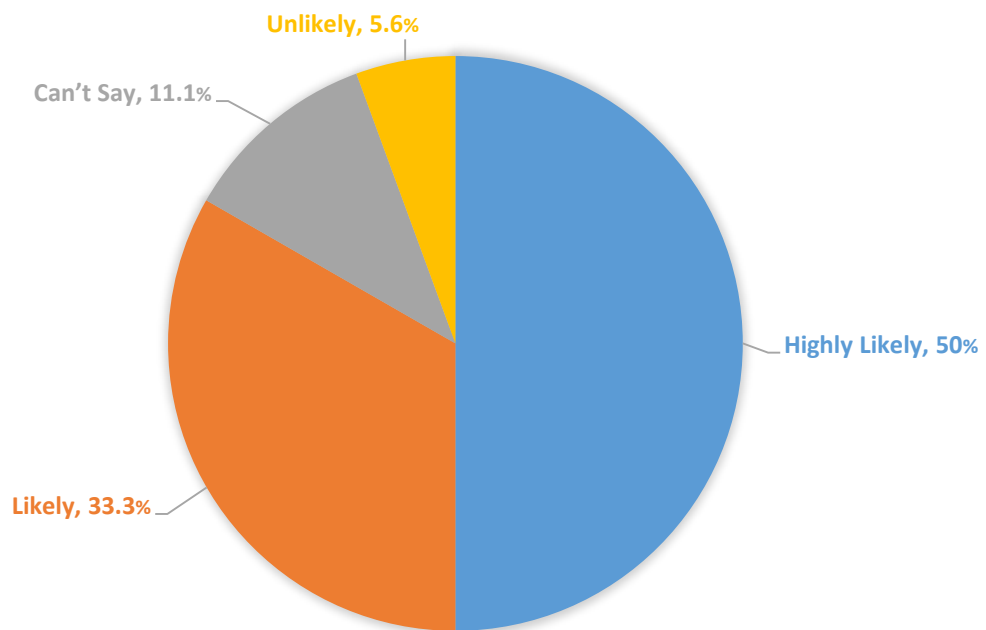
Q5.6 Would you like to spend extra for safety features in an MPV/MUV?



Q5.7 Would you like to spend extra for safety features in an entry level sedan?



Q5.8 Would you like to spend extra for safety features in a compact SUV?



4.1.4 Factor Analysis

Data Analysis is the process of converting data into useful information. Data collected from the questionnaire needs to be processed to make it useful in drawing conclusions. Since numerous data analysis techniques are available and planning should be done at the time of preparing the questionnaire, it should be designed accordingly.

There are more than 3 variables simultaneously involved in this project and data is collected in ordinal scale hence multivariate techniques have been used.

Under the multivariate technique interdependence technique has been used to check variables that the consumer focuses on while purchasing a car. Interdependence techniques help in identifying variables highly related to each other and thus

1. Group these variables together.
2. Reduce the number of variables hence complexity of data.

To achieve the above two objectives of data reduction Factor Analysis has been used. Factor analysis reduces the number of variables being studied thereby reducing the complexity of data. Factor analysis analyses correlations between variables and groups them into fewer factors which explain much of the original data more economically.

H₀₁: Safety features do not influence consumers' purchase decision.

KMO Test: To proceed with Factor Analysis check Sampling Adequacy is checked, which is measured by the Kaiser-Meyer-Olkin (KMO) statistics. The KMO predicts if data will factor well based on correlation and partial correlation. KMO can be used to identify which variables to drop from the factor analysis because of lack multicollinearity.

There is a KMO statistic for each individual variable, and their sum is the KMO overall statistic.

KMO varies from 0 to 1.0. Overall KMO should be 0.50 or higher to proceed with factor analysis. If it is not, remove the variable with the lowest individual KMO statistic value one at a time until KMO overall rises above 0.50, and each individual variable KMO is above 0.50.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.685
Bartlett's Test of Sphericity	Approx. Chi-Square 225.686
	Df 45
	Sig. .000

In the above table of KMO & Bartlett's test the KMO value 0.685. It is greater than 0.5 so factor analysis can be done. Also the significance of Bartlett's test is less than 0.05 so sufficient correlations exist between the variables factor analysis can be applied.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.572	35.720	35.720	3.572	35.720	35.720
2	2.095	20.950	56.670	2.095	20.950	56.670
3	1.167	11.672	68.342	1.167	11.672	68.342
4	.796	7.955	76.297			
5	.655	6.546	82.843			
6	.606	6.064	88.906			
7	.489	4.888	93.794			
8	.313	3.134	96.928			
9	.171	1.710	98.638			
10	.136	1.362	100.000			

Extraction Method: Principal Component Analysis.

First step: Observe the factors extracted, their Eigen values and the cumulative percentage of variance as shown in the above table. The cumulative percentage column depicts that the 3

factors extracted together account for 68.34% of the total variance (information contained in the original 10 variables). You can reduce the number of variables from 10 to 3 and lose only about 31.66% of the information content.

Component Matrix^a

	Component		
	1	2	3
Brand influenced your purchase decision?	.435	.288	-.683
Price influenced your purchase decision?	.500	.630	-.164
Mileage influenced your purchase decision?	.375	.807	.275
After Sale Service influenced your purchase decision?	.256	.742	.341
Safety Features influenced your purchase decision?	.744	-.144	-.199
Exterior of the car influenced your purchase decision?	.824	-.373	.095
Interior of the car influenced your purchase decision?	.783	-.368	-.016
Entertainment features of the car influenced your purchase decision?	.755	-.188	-.051
Social Considerations influenced your purchase decision?	.350	-.288	.642
Luxury Features influenced your purchase decision?	.623	.018	.136

Extraction Method: Principal Component Analysis.

Observing the above table, interpretation of these 3 extracted factors can be represented.

The 3 factors are:

1. Cost related factors: Includes Price (0.630), Mileage (0.807) and After sales service (0.742).
2. Social factors: Includes Brand(0.683) and Social consideration(0.642).
3. Design and Features related factors: Includes, safety features(0.744), exterior, interior and Entertainment features(0.755) and luxury features(0.623).

Hence it is concluded that safety features do influence consumers buying behaviour and H_{01} is rejected.

4.1.5 Correlation Analysis

Correlation is a statistical technique that shows whether pairs of variables are correlated. It also shows how strongly they are related. For example, height and weight are related; taller people tend to be heavier than shorter people. There are several different correlation techniques. The most common type is the Pearson or product-moment correlation.

Correlation between Annual Household Income and Above 3 factors

Correlation between Annual Household Income and

1. Cost related factors: Includes Price, Mileage and After sales service.
2. Social factors: Includes Brand and Social consideration.
3. Design and Features related factors: Includes, safety features, exterior, interior and Entertainment features and luxury features.

H_{02} : There is no relationship between Annual Household Income and Cost related factors.

H_{03} : There is no relationship between Annual Household Income Social factors.

H_{04} : There is no relationship between Annual Household Income and Features related factors.

Correlations

		7. Annual Household Income	A	B	C
7. Annual Household Income	Pearson Correlation	1	.286*	.254	.182
	Sig. (2-tailed)		.036	.064	.188
	N	54	54	54	54
A	Pearson Correlation	.286*	1	.166	.446**
	Sig. (2-tailed)	.036		.231	.001
	N	54	54	54	54
B	Pearson Correlation	.254	.166	1	.189
	Sig. (2-tailed)	.064	.231		.171
	N	54	54	54	54
C	Pearson Correlation	.182	.446**	.189	1
	Sig. (2-tailed)	.188	.001	.171	
	N	54	54	54	54

*. Correlation is significant at the 0.05 level (2-tailed).

The table shows that Annual Household income is positively correlated to Cost related factors which Includes Price, Mileage and After sales service. Hence **H₀₂** is rejected.

However there is no relation between Annual Household income and Social factors and Design and Features related factors. Hence **H₀₃** and **H₀₄** is accepted.

Correlation between Education and Above 3 factors

Establish correlation between Education and

1. Cost related factors: Includes Price, Mileage and After sales service.
2. Social factors: Includes Brand and Social consideration.
3. Design and Features related factors: Includes, safety features, exterior, interior and Entertainment features and luxury features.

H₀₅: There is no relationship between Education and Cost related factors.

H₀₆: There is no relationship between Education Social factors.

H₀₇: There is no relationship between Education and Features related factors.

Correlations

		4. Education	A	B	C
4. Education	Pearson Correlation	1	.071	-.081	.254
	Sig. (2-tailed)		.609	.561	.064
	N	54	54	54	54
A	Pearson Correlation	.071	1	.120	.292*
	Sig. (2-tailed)	.609		.386	.032
	N	54	54	54	54
B	Pearson Correlation	-.081	.120	1	.115
	Sig. (2-tailed)	.561	.386		.409
	N	54	54	54	54
C	Pearson Correlation	.254	.292*	.115	1
	Sig. (2-tailed)	.064	.032	.409	
	N	54	54	54	54

*. Correlation is significant at the 0.05 level (2-tailed).

The table shows that Education level is positively correlated to Design and Features related factors which includes safety features, exterior, interior and Entertainment features and luxury features. Hence **H₀₇** is rejected.

However there is no relation between Education level and Social factors and Cost related factors. Hence **H₀₆** and **H₀₅** are accepted.

4.2 Qualitative Analysis:

It is perplexing to look at the Automotive Research Association of India's (ARAI) rule for Indian cars when it comes to offset frontal crash tests. The ARAI's procedure says that a car needs to be crashed into a barrier at a speed of 56kmph like the UN basic safety test. But the cars tested by GNCAP clear the Indian test and fail the UN test. Automobile manufacturers export cars from India to European markets and these cars meet the NCAP safety standards but not the ones sold in domestic market. Only top variants of cars are equipped with safety features and these variants are sold at exorbitant premiums.

Reactions from the industry when analysed in conjunction with GNCAP findings leave many questions unanswered. These are:

Are Indians price sensitive while buying safety?

Are automobile companies focusing more on revenues and profits or market share and less on manufacturing safer products?

Are the companies only looking at sales figures and not on the wellbeing of their customers?

Can they shirk from the responsibility of keeping the occupants of their cars' safe?

The average speed in India is 46Kmph. Do accidents always happen at average speed?

Don't we drive over 60Kmph?

Do the Indian car safety standards still hold good ?

Should the companies meet only minimum safety standards?

Should the companies be reactive rather than proactive?

Are safety features such as the airbags, ABS and rear windshield wipers really that expensive?

CHAPTER 5

5. CONCLUSIONS

1. Inline with the market shares of various segments, 66% of the respondents own Hatchbacks.(A, A1, A2).
2. 81.6% respondents say that they drive above 60Kmph often. Only 18.6% say that they rarely or never drive above 60Kmph. This justifies the speed at which GNCAP conducted the crash tests. This also necessitates installation of safety equipment even in the low priced entry level vehicles.
3. 51.9 % of respondents say that they drive on highways often. Cars are generally driven at high speeds on highways and hence make safety features imperative.
4. Only 7.4% of the respondents are unaware of the safety features.
5. Respondents asked the dealers about the safety features installed in the chosen model of car.
6. Dealers or manufacturers of cars provided information to the respondents about basic safety features like ABS, Airbags and seatbelt warning indicators.
7. 51.9% of respondents agree that their car lacks adequate safety standards while 27.8 % respondents have no idea about it. Combined with the above 3 conclusion and knowledge of available models, this indicates that though people are aware about dismal safety standards of their car they are/were forced to buy them because safety features are either not available in the models or models with safety features are exorbitantly expensive.
8. Factors that influenced the purchase decision of respondents were Cost related factors like Price, Mileage and After sales service, Social factors like Brand and Social consideration and Design and Features related factors like safety features, exterior, interior and Entertainment features and luxury features. Since price and safety features influence purchase decision it can be concluded that respondents will be willing to accept moderate price elevation if safety features are installed in the models available.
9. 22.2% of the respondents are highly likely and 20.4% of respondents are likely to spend 35000 to 45000 extra while buying an entry level hatchback. While 29.6% of the respondents are unlikely and 7.4% are highly unlikely to spend that amount. Entry level hatchbacks have the highest market share in the passenger car industry. This implies 2 things are necessary to ensure that consumers have a positive perception towards safety

features. One is information and education about these and secondly lesser price elevation.

10. 24.1% of the respondents are highly likely and 44.4% of respondents are likely to spend 35000 to 45000 extra while buying an mid-level hatchback. While 7.4% of the respondents are unlikely and 3.7% are highly unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
11. 35.2% of the respondents are highly likely and 40.7% of respondents are likely to spend 35000 to 45000 extra while buying premium hatchback. While 5.6% of the respondents are unlikely and 1.9% are highly unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
12. 31.5% of the respondents are highly likely and 37% of respondents are likely to spend 35000 to 45000 extra while buying Jeep. While 7.4% of the respondents are unlikely and 1.9% are highly unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
13. 33.3% of the respondents are highly likely and 42.6% of respondents are likely to spend 35000 to 45000 extra while buying Hybrid like E2O. While 7.4% of the respondents are unlikely and 1.9% are highly unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
14. 53.7% of the respondents are highly likely and 27.8% of respondents are likely to spend 35000 to 45000 extra while buying MPV/MUV. While 3.7% of the respondents are unlikely and 1.9% are highly unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
15. 37% of the respondents are highly likely and 38.9% of respondents are likely to spend 35000 to 45000 extra while buying Entry Level Sedan. While 7.4 % of the respondents are unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.
16. 50% of the respondents are highly likely and 33.3% of respondents are likely to spend 35000 to 45000 extra while buying Compact SUV. While 5.6 % of the respondents are

unlikely to spend that amount. It can be concluded that consumers who choose to buy these cars are lesser price sensitive and would like to opt for safety features.

17. Annual Household income is positively correlated to Cost related factors which Includes Price, Mileage and After sales service which influence purchase decision. Hence consumers with higher household income will be less sensitive to price elevation caused by installation of safety features.
18. Education level is positively correlated to Design and Features related factors which includes safety features, exterior, interior and Entertainment features and luxury features. Hence consumers with high education level will also be less sensitive to price elevation caused by installation of safety features.

CHAPTER 6

6. LIMITATIONS OF STUDY

Below are some limitations of this study

1. The respondents chosen might not own a car and do not even plan to buy one. Hence they might be inappropriate for the study.
2. The respondents are humans and humans have a tendency to behave artificially when they are aware that their attitudes, beliefs, views, etc are being observed.
3. The demographics of the respondents are can limit the applicability of the conclusions to entire population. All the respondents were less than 30 years old. 65% of the respondents were Post Graduates. 46.3% of the respondents were students.

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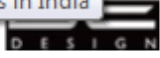













8. ADHERENCE SHEET

Particulars	Last Date	Signature of Mentors	
		Dr. Vikas Gupta	Ms. Karishma Gulati
Title of the Project/Area of Topic Finalization	19-Jan-15		
Literature Review/Objectives of the study	02-Feb-15		
Methodology	16-Feb-15		
Questionnaire/Data Collection tools	02-Mar-15		
Data Collection	23-Mar-15		
Analysis	13-Apr-15		
Conclusion and Recommendations	20-Apr-15		
First Draft	27-Apr-15		
Final Report/Binding and Submission	02-May-15		

9. ANNEXURE

9.1 Exhibit 1

ALL CAR BRANDS IN INDIA

 Maruti Cars	 Hyundai Cars	 Honda Cars	 Toyota Cars	 Mahindra Cars
 Tata Cars	 Ford Cars	 Chevrolet Cars	 Renault Cars	 Volkswagen Cars
 Audi Cars	 Nissan Cars	 BMW Cars	 Datsun Cars	 Skoda Cars
 Mercedes-Benz Cars	 Fiat Cars	 Jaguar Cars	 Ferrari Cars	 Land Rover Cars
 Rolls-Royce Cars	 Porsche Cars	 Bentley Cars	 Mitsubishi Cars	 DC Cars
 Bugatti Cars	 Force Cars	 Hindustan Motors Cars	 ICML Cars	 Isuzu Cars
 Lamborghini Cars	 Mahindra Ssangyong Cars	 Mini Cars	 Aston Martin Cars	 Premier Cars
 Ashok Leyland Cars	 San Motors Cars	 Volvo Cars		

9.2 Exhibit 2

Category	Passenger Vehicles	Passenger Vehicles Exported
2008-09	1552703	335729
2009-10	1951333	446145
2010-11	2501542	444326
2011-12	2629839	508783
2012-13	2665015	559414
2013-14	2503685	593507

Source: SIAM Website

9.3 Exhibit 3

1. ANCAP: Australia and New Zealand
2. C-NCAP: China
3. Euro-NCAP: Europe
4. JNCAP: Japan
5. KNCAP: Korea
6. Latin NCAP: Latin America
7. ASEAN NCAP: South East Asia: Malaysia , Philippines , Singapore
8. NHTSA: USA.
9. Insurance Institute for Highway Safety (IIHS) , Highway Loss Data Institute (HLDI)

9.4 Exhibit 4

SAFER CARS FOR INDIA by  GLOBAL NCAP

RESULTS 2013

			
 Volkswagen POLO	✓ 2	★★★★☆	★★★☆☆
 Volkswagen POLO	✗	☆☆☆☆☆	★★★☆☆
 Maruti Suzuki ALTO 800	✗	☆☆☆☆☆	★★☆☆☆
 Ford FIGO	✗	☆☆☆☆☆	★★☆☆☆
 Hyundai i10	✗	☆☆☆☆☆	★☆☆☆☆
 Tata NANO	✗	☆☆☆☆☆	☆☆☆☆☆

RESULTS 2014

			
 Datsun Go	✗	☆☆☆☆☆	★★☆☆☆
 Maruti Suzuki Swift	✗	☆☆☆☆☆	★☆☆☆☆

9.5 Questionnaire

Demographics

1. Gender:
 - Male
 - Female

2. Age: (In Years)
 - Less than 25
 - 25 to 30
 - 30 to 35
 - 35 to 40
 - 40 to 50
 - Above 50

3. Education
 - High School
 - Graduate
 - Post Graduate

4. Marital Status
 - Single
 - Married

5. Employment Status
- Service in Public Sector
 - Service in Private Sector
 - Self-employed / Business
 - Homemaker
 - Student

6. Which city do you reside in?

7. Annual Household Income
- Under 5 Lakhs
 - 5.01 Lakhs to 10 Lakhs
 - 10.01 Lakhs to 15 Lakhs
 - 15.01 Lakhs and Above

Driving Behaviour

1. Please name the car(s) you own:

2. How often do you drive above 60Kmph?

- Rare
- Often
- Very Often
- Mostly
- Never

3. How often do you drive on highways?

- Rare
- Often
- Very Often
- Mostly
- Never

4. Do you believe that your existing car(s) has(ve) adequate safety standards?

- Yes
- No
- Can't say

5. Do you use a child seat while carrying a child?

- Yes
- No
- I don't carry children

6. Are the following safety features installed in the car(s) you are using?

Safety Features	Yes	No	May Be
ABS(Antilock Breaking System)			

Airbags			
Electronic Stability Control& Traction Control			
Active Cruise Control			
Break Assist System			
Seat Belt Warning			

Car Safety Features

1. Mark an appropriate option

Features	I am not aware of it	I am just aware of it	I am aware and I discuss with the dealer about it while buying a car.	I buy the car only if this is installed.
ABS(Antilock Breaking System)				
Airbags				

Electronic Stability Control & Traction Control				
Active Cruise Control				
Break Assist System				
Seat Belt Warning				

2. Did the car manufacturer or dealer tell you about the below mentioned safety features while purchasing the car?

Safety Features	Yes	No	May Be
ABS(Antilock Breaking System)			
Airbags			
Electronic Stability Control& Traction Control			
Active Cruise Control			
Break Assist System			
Seat Belt Warning			

3. Did you ask the car dealer about the safety level/standard of your existing car while purchasing it?

- Yes
 No
 Don't Remember

4. The below factors influenced your purchase decision

Factors	Highly Agree	Agree	Neither agree nor Disagree	Disagree	Highly Disagree
Brand					
Price					
Mileage					
After Sale Service					
Safety Features					
Exterior of the car					
Interior of the car					
Entertainment features of the car influenced your purchase decision?					
Social Considerations					
Luxury Features such as upholstery, Alloy wheels, Automatic windows & mirrors					

5. Suppose you plan to buy each of the type of cars described below, would you like to spend 8 to 15% more depending upon the cost and category of the car to get basic safety features like ABS and airbags installed in your new car?

Type of Car	Highly Likely	Likely	Can't Say	Unlikely	Highly Unlikely
Entry Level Hatchback for E.g. Maruti Alto or Hyundai Eon which costs below 3.5 Lakhs					

Mid-Size Hatchback for E.g. Maruti WagonR or Hyundai i10 which costs 3.5 Lakhs to 5 Lakhs					
Premium Hatchback for E.g. Maruti Swift or VolksWagon Polo which costs 5 to 7.5 Lakhs					
Jeep for E.g. Mahindra Thar which costs 5.5 to 8 Lakhs					
Hybrid car For E.g. Mahindra E2O which costs 6.5 to 7 Lakhs					
MUV/MPV for E.g. Maruti Ertiga or Honda Mobilio which costs 7 to 12 Lakhs					
Entry Level Sedan For E.g. Maruti Dzire or Honda Amaze which costs 5.5 to 8.5 Lakhs					
Compact SUV For E.g. Ford Ecosport or Renault Duster which costs 7 to 10 Lakhs					