

A Comparative Study of Maruti Suzuki and Kia Based on Comfort of Cars, Driving Experience, Public Opinion, etc.

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Abstract: With the number of car dealerships in the market today, it becomes difficult to narrow down the best alternative and the most suitable car for you, keeping in mind various factors like price range, attractiveness, driving experience, after sales services, colour of the vehicle, age of the customer, fuel choices, gear preference, etc. No customer wants to spend so much money only to regret their decision later. This study, analyses two of the most popular brands of vehicles – Maruti Suzuki and Kia. These are brands accessible to all individuals and are the most common vehicles purchased.

Keywords: cars, Maruti Suzuki, Kia, attractiveness, age, budget, colour, fuel, advertisement, driving experience, after sales service, vehicle, Spearman's Rank Coefficient of Correlation, Histograms, Pie charts, survey.

I. INTRODUCTION

In today's time purchasing a car has become an extremely tedious and difficult task for the customers due to a variety of reasons, it can be due to the rising prices of petrol or the introduction of electric cars or not being able to get all the desired features in one car itself etc. Also, considering the current situation of COVID-19 people have become prudent regarding their decision to own a car as : Some customers lost their jobs or suffered an impeccable amount of loss in their respective businesses which directly impacted their financial capabilities to purchase a car and also negatively affected their will to buy the same, on the other hand people are also of a mindset that since covid has caused them to be placed at their homes which mean that they don't have to go to their offices or drop their kids off to school or attend any formal/informal meets etc., their primary purpose of buying a car has been eradicated thus dejecting them from buying a car. Such situations often lead customers into a state of dilemma as nobody wishes to spend a havoc amount of money only to regret their decision later. Therefore, this study was carried out with the aim of examining two car brands on the basis of diverse features. In order to gain an insight about what people comprehend of the two brands a

questionnaire was developed on the basis of certain features which customers may desire from their car in today's time.

The independent variables include: Attractiveness (as for some customers "looks do matter"), Driving experience (which is an important factor that customers take in consideration while buying a car therefore, it's imperative for car brands to continuously enhance this factor), Advertisement (customers buy what they see and remember so, if the advertisement of a brand gets deeply inculcated into the minds of customer it's quite difficult for them to shift to any other brand), After sale services (needless to say it's one of the most important factors of a company that a customer looks up to), Age group, Budget (perhaps the most important factor which a customer would ponder upon), Colour (black, pearl white, intense red, silver, intelligency blue, other), fuel (the introduction of electric cars has led to make companies innovate more and shift towards electric form as it is considered to be cheaper than the regular fuels-petrol and diesel) and type of vehicle (automatic, manual) while the dependent variables were Maruti and Kia.

This research adopted descriptive and explanatory research design. It also employed the use of cross-sectional survey method using survey questionnaires that contains 4 items with a Likert Scale (1- Excellent and 5- Not Satisfactory).

The sample of 430 customers was selected using convenient sampling method in order to arrive at the desired conclusions. The data collected was analysed with the help of Spearman’s Rank Correlation Coefficient, Regression Analysis, Pie charts and Histograms.

II. FACTORS AND STATISTICS

1. Colour Preference

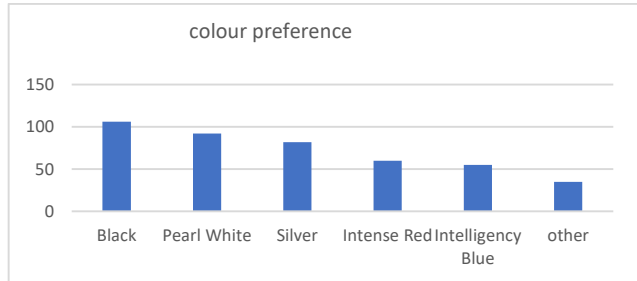


Figure 1 – colour preference of the respondents

In general, the colour of a car is a personal choice of the consumer and reflects his/her taste and preferences. However, there are practical reasons associated with choosing certain colours. As many of us know, lighter colours reflect more light and darker colours absorb more light so light colours might be a good choice for cars in hot and sunny areas while dark colours might be a more practical choice for colder areas. Also, another good reason for going with a light colour is that they are more visible in dim conditions such as during fog, overcast or night because it reflects more light. From an aesthetic point of view darker colours tend to look richer and more royal, making the car look more appealing.

The blue bars as shown in the figure, represents the preferences of colour, between – black, pearl white, silver, intense red, intellegency blue, others (from left to right), of the group of customers who took our survey.

Most customers purchasing cars prefer to go for more conservative and easier to maintain colours like black, pearl white and silver. In the case of Kia, the most preferred choice is Black whereas in the case of Maruti it is Pearl White and Silver. More vibrant colours like Intense Red, Intellegency Blue, etc. are not preferred by all customers. Overall, among all the colours, demand for black- coloured automobiles is the highest maybe because it is a common colour and easily available in both the given brands.

2. Age Groups

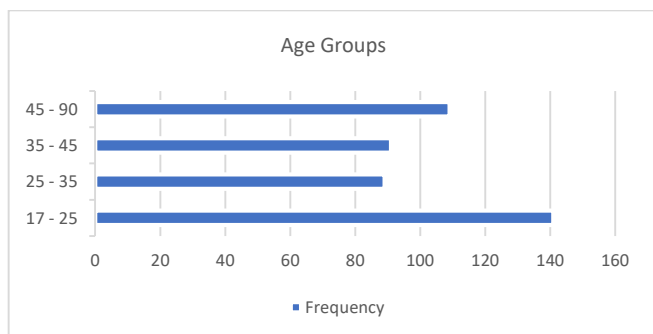


Figure 2 – age group of the respondents

As per the data collected through our survey, younger customers (17-25) prefer to purchase Kia over Maruti and so do people between the ages of 35 and 45. People between the ages 25-35 and over 45 prefer to go in for Maruti Suzuki over Kia. Moreover, the highest frequency of all is that of Kia amongst the 17-25 years age group. Overall, the total demand for Kia is approximately 4% higher which is just slightly higher than that of its competitor Maruti Suzuki.

The horizontal bar graph represents the age groups of the consumers who took the survey. Most of the consumers are from the 17-25 age group. However, there are large numbers of customers from the other age groups as well to represent the economy as a whole.

3. Brand Preference

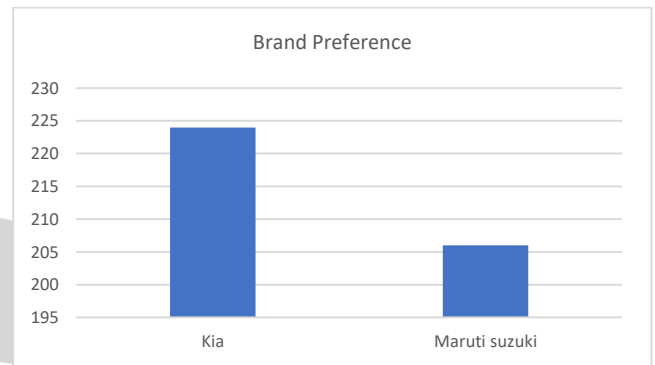


Figure 3 – brand preference of the respondents

The biggest dilemma that customers face while purchasing a car, is choosing the right brand for them. Customers know what to expect from a company from its brand value and brand name. That is why what a company claims their brand message is must match how the company operates every day. Positive thoughts or experiences with a brand lead to brand loyalty which frequently results in an increase in sales. The fight for customers attention is getting more and more competitive.

The bar chart displays the number of consumers that prefer each brand. The result of our survey shows that Kia has captured the market. The number of customers who prefer Kia are way more than those who prefer Maruti Suzuki, evidently visible in the bar graph.

4. Budget

Two commonly known rules while purchasing a car are:

1. Don't spend more than half of your annual income on a car
2. Using the 20/4/10 rule of thumb, you should be able to pay 20% of the price as the down payment. The loan tenure should be for a maximum of 4 years and the equated monthly installment (EMI) should not be more than 10% of the monthly income.

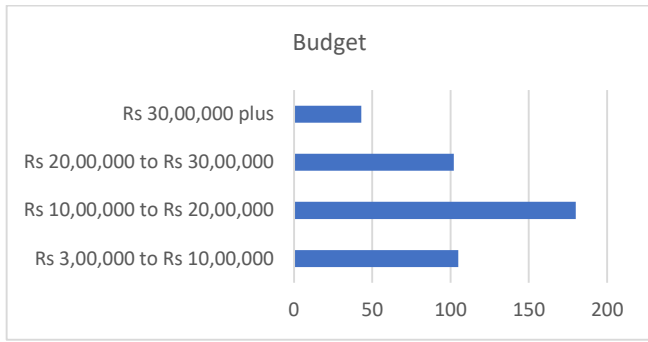


Figure 4 – budget of the respondents

The horizontal blue bar graph depicts the preferred budget range of the customers who have taken the survey as represented through the diagram, our survey shows that the budget that most people are comfortable with is between 10 lakhs and 20 lakhs.

5. Fuel Type

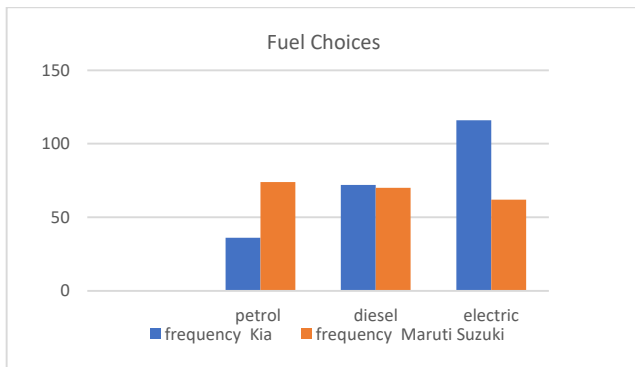


Figure 5 – fuel choice of the respondents

Our statistical analysis highlights that customers are tending towards a more sustainable environment. Most customers prefer choosing electric vehicles being the most environmentally friendly option available in the market. The second most preferred alternative is diesel followed by petrol, as diesel is more fuel efficient and emits less carbon dioxide into the atmosphere, and hence is better for the environment.

The multiple bar graph – with blue representing Kia and orange representing Maruti Suzuki give visuals to understand the preference of the consumers regarding each fuel type and the car brand as well.

The shift towards electric cars from petrol and diesel cars is more in the case of Kia as compared to Maruti Suzuki. One of the reasons for this could be that people might be expecting Kia to adopt this modern technology in a faster and efficient way as compared to its rival. The regular customer of Maruti Suzuki still prefers fuel backed cars rather than electric cars. According to the official figures number of electric stations in India are way less than petrol and diesel stations which might be a cause for less demand of electric vehicles among Maruti Suzuki customers.

6. Preference – Manual or Automatic

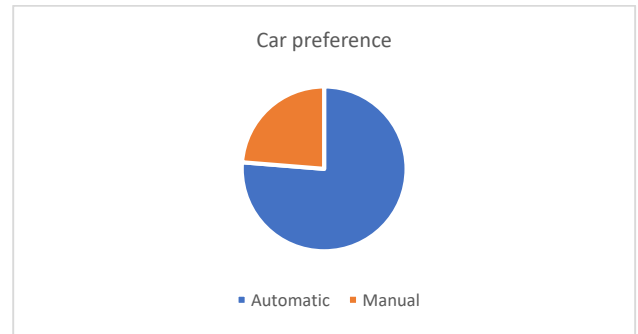


Figure 6 – car type preference of the respondents

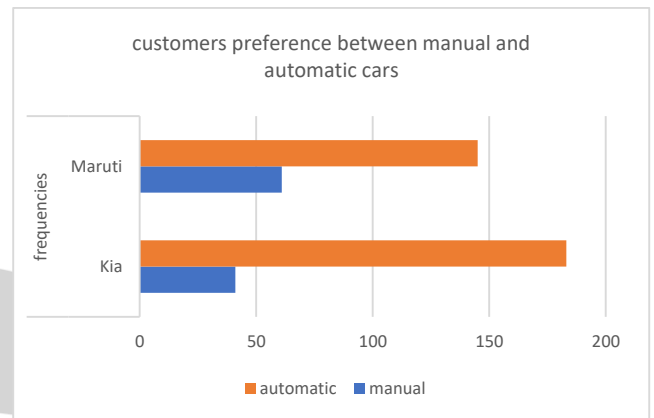


Figure 7 – customers preference between manual and automatic cars

Times have changed and technology has advanced. Who doesn't want the best for themselves? Automatic cars entered the market and changed the driving experience forever. The ease and comfort of using automatic vehicles is the primary reason behind which a large volume of customers buying cars opt for automatic cars.

With newer emerging technologies, people prefer automatic cars as compared to manual cars irrespective of their age due to the ease and convenience of driving automatic cars. Overall, the demand for automatic cars is approximately 76% and for manual cars it is approximately 23%. This shows that the demand for automatic cars is 53% more than the demand of manual cars. The inclination towards automatic cars can be observed in the case of BOTH Maruti Suzuki and Kia.

In the pie chart, orange represents manual cars whereas blue represents automatic cars.

On the other hand, in the horizontal multiple bar graph blue represents manual cars and orange represents automatic.

The bar graphs depict the choices of the consumer in terms of each brand as well whereas the pie chart gives a more holistic view.

7. Driving Experience and Comfort Level

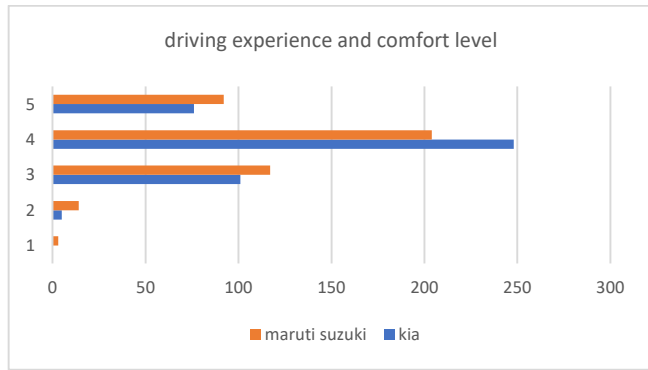


Figure 8 –driving experience and comfort level rating by the respondents

When it comes to a decision about buying a car many consumers aside from the safety and performance of a car also evaluate it based on vehicle comfort which can include aspects like driving position, front and rear seats, ride, noise, etc. depending on the consumer’s choice. A comfortable car also allows the driver to be fatigue-free and relaxed while driving the car which allows him to pay much more attention to driving as compared to a driver irritated by a stiff ride and road noise.

The horizontal bar graphs depict the customer’s rating on a scale of 5, with 5 being the highest. The blue bars represent the customers experience with Kia whereas the orange bars represent that of Maruti Suzuki and the number of customers at each rating.

Through the data collected through our survey, we have come to the conclusion that customers find BOTH Kia and Maruti extremely comfortable and have a good driving experience.

This shows us that the cars are both popular among its customers and both the cars are very enjoyable to drive as both the brands try to maintain certain standards in this area for their products. This is because if a car is more comfortable, better will be the demand will be for the brand. It also shows that both the brands are trying to innovate and continue to improve their performance in this area as well and are moving in the same direction.

8. Attractiveness (Design)

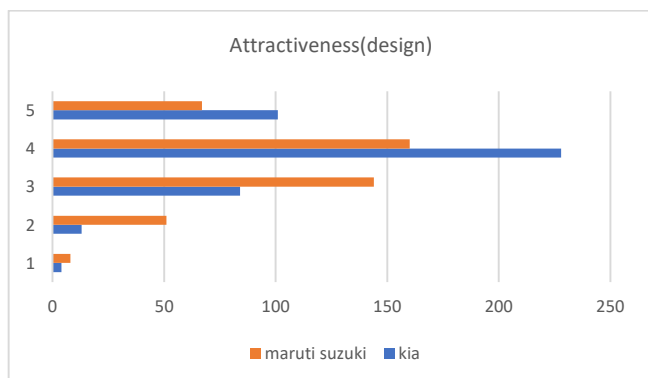


Figure 9 – attractiveness rating by the respondents

The cars we buy often represent us and our choice. So, the car one buys represents him/her and because of this the attractiveness becomes one of the factors that the consumers like to weigh on before buying a car. For the rich and highly influential people cars are a status symbol and are many times bought solely because they want to impress someone.

The design of the car is one of the key factors that one takes into account while purchasing a new vehicle. Customers are giving increasingly more importance to exterior styling whole making a purchasing decision.

The horizontal bar graphs depict the customer’s rating on a scale of 5, with 5 being the highest. The blue bars represent the customers opinions in terms of attractiveness of Kia whereas the orange bars represent that of Maruti Suzuki and the number of customers at each rating.

Although the responses obtained through our survey show that customers find the design of both cars extremely attractive, the numbers for Kia are marginally higher. Customers find the cars appealing. The demand for both the cars will be high and this shows that both the brands are moving in the same direction.

9. Rating of After Sales Services

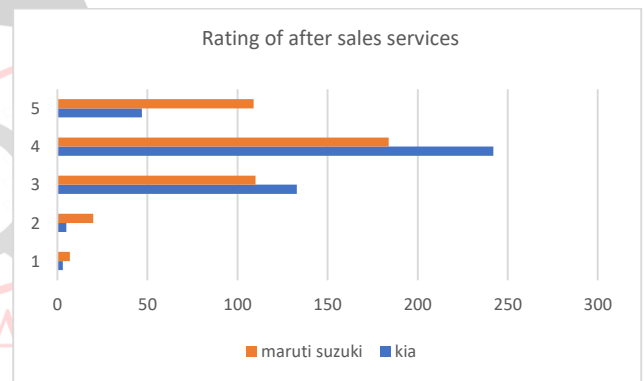


Figure 10 – after sales services rating by the respondents

With high degree of competition and standardization across car brands, especially at base quality level and features, aftersales support can be a credible differentiator between various brands. Therefore, dealers are going to an extra mile to provide memorable and satisfying consumer experiences.

The horizontal bar graphs depict the customer’s rating on a scale of 5, with 5 being the highest. The blue bars represent the customers experience with the after sales service in terms of Kia whereas the orange bars represent that of Maruti Suzuki and the number of customers at each rating.

There is a strong positive relation between the after sales services of Maruti Suzuki and Kia which shows that the after sales services of both the companies are moving in the same direction and people have a similar opinion of both the companies.

10. Frequency of Advertisements

Before a customer makes the effort to visit your dealership, they are going to spend time online, researching different dealers and browsing through available inventory. It all starts with typing a few keywords into a search engine, but if the company hasn't put the effort into building an online presence through inbound marketing, then your business won't show up on the first page of results. Similar, is the case with other forms of advertisements. It becomes very important for any car brand to be visible to the consumers.

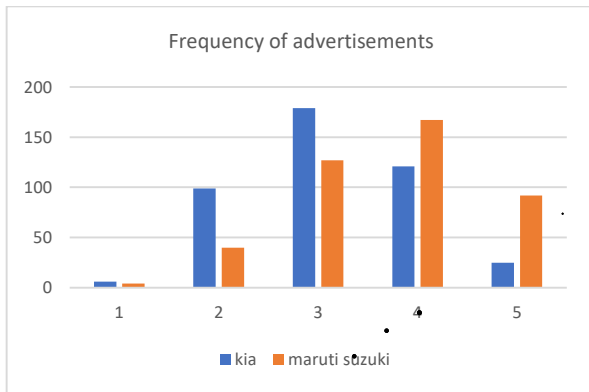


Figure 11 – frequency of advertisements seen by the respondents rating

The multiple bar graphs depict the customer's rating on a scale of 5, with 5 being the highest. The blue bars represent the frequency at which customers see the advertisements of Kia whereas the orange bars represent that of Maruti Suzuki and the number of customers at each rating.

There is a strong positive relation between the frequency of advertisements seen in Maruti Suzuki and Kia which shows that the number of advertisements is around the same in the case of both the companies. We observe this trend among the two competitors, as they compete against each other for a larger market share. And to achieve that, one of the routes is to focus on advertisement of the brand. Therefore, when one of them increases advertisements for their products the other also increases their promotional activities.

III. SPEARMAN'S RANK CORRELATION COEFFICIENT

In Statistics, Spearman's Rank Correlation Coefficient is a nonparametric measure of rank correlation (statistical dependence between the rankings of two variables). It assesses how well the relationship between two variables can be described using a monotonic function. Spearman's coefficient is appropriate for both continuous and discrete ordinal variables.

We have found the correlation coefficient between Maruti and Kia based on factors such as attractiveness of the vehicle, driving experience, frequency of advertisements and after sales services.

From our survey, we asked consumers to each of the factors on a scale from 1 to 5 (with 5 being the highest). With the help of the collected data, we computed the Spearman's Rank Correlation to assess the relationship between Maruti and Kia based on the given factors.

Correlation	attractiveness	driving experience	advertisements	after sales service
Kia and Maruti	0.8679	0.8264	0.8991	0.8991

In each of the cases, we obtained a highly positive correlation coefficient. Correlation is a form of dependency where a shift in one variable means a change is likely in the other, or that a certain known variables produce specific results. A positive correlation is a relationship between two variables in which both variables move in the same direction. Therefore, when one variable increases as the other variable increases, or one variable decrease while the other decreases.

- There is a high positive correlation between the attractiveness of Maruti Suzuki and Kia which means that customers find the design of the cars equally appealing.
- There is a strong positive correlation between Kia and Maruti Suzuki in terms of the driving experience which shows us that the cars are both popular among its customers and both the cars are very enjoyable to drive

as both the brands try to maintain certain standards in this area for their products. This is because if a car is more comfortable, better will be the demand will be for the brand. A positive correlation also shows that both of the brands try to innovate and continue to improve their performance in this area as well and are moving in the same direction.

There is a strong positive correlation between the frequency of advertisements seen in Maruti Suzuki and Kia which shows that the number of advertisements is around the same in the case of both the companies. A positive correlation is a relationship between two variables in which both variables move in the same direction, and we observe this trend among the two competitors, as they compete against each other for a larger market share. And to achieve that, one of the routes is to focus on advertisement of the brand.

Therefore, when one of them increases advertisements for their products the other also increases their promotional activities.

- There is a strong positive correlation between the after sales services of Maruti Suzuki and Kia which shows that the after sales services of both the companies are moving in the same direction and people have a similar opinion of both the companies and their service.

V. LIMITATIONS

This project makes use of a variety of statistical methods to analyse the data that was collected through the survey that we conducted such as:

1. Histograms
2. Pie Charts
3. Spearman's Rank Correlation Coefficient

1. **HISTOGRAM:** A histogram is a graphical representation that organizes a group of data points into user-specified ranges. Similar in appearance to a bar graph, the histogram condenses a data series into an easily interpreted visual by taking many data points and grouping them into logical ranges or bins.

The demerits of using a histogram are:

- Not allow you to read exact values because data is grouped into categories.
- It uses only with continuous data.
- In Histogram, it is not easy to compare two data sets.
- The use of intervals in the Histogram prevents the calculation of an exact measure of central tendency.
- It depends (too much) on the number of bins.
- It depends (too much) on variable's maximum and minimum.
- It doesn't allow to discern continuous from discrete variables.
- It makes it hard to compare distributions.
- It's hard to make if you don't have all the data in memory.

2. **PIE CHARTS:** A pie chart (or a circle chart) is a circular statistical graphic, which is divided into slices to illustrate numerical proportion. In a pie chart, the arc length of each slice (and consequently its central angle and area), is proportional to the quantity it represents. While it is named for its resemblance to a pie which has been sliced, there are variations on the way it can be presented.

The demerits of using a pie chart are:

- If too many pieces of data are used, pie chart becomes less effective.

• They themselves may become crowded and hard to read if there are too many pieces of data, and even if you add data labels and numbers may not help here.

• You need a series to compare multiple sets as this chart only represents one data set.

• To analyse and assimilate information quickly, this may make it more difficult for readers.

• As the reader has to factor in angles and compare non-adjacent slices, it has its problems in comparing the data slices.

• To make decisions based on visual impact rather than data analysis leads readers to draw inaccurate conclusions

• Negative Pie / positive Pie cannot be understood until I hover the pointer on the pie. So, when negative data present, pie chart is a bad option.

3. **SPEARMAN'S RANK CORRELATION COEFFICIENT:** In Statistics, Spearman's Rank Correlation Coefficient is a nonparametric measure of rank correlation (statistical dependence between the rankings of two variables). It assesses how well the relationship between two variables can be described using a monotonic function. Spearman's coefficient is appropriate for both continuous and discrete ordinal variables.

The demerits of using Spearman's Rank Correlation Coefficient are:

- For large samples, it is not a convenient method.
- Combined 'R' of different series cannot be obtained as in case of mean and S.D.
- Can be difficult to work out
- It is only an calculate measure as actual values are not used for calculations.
- Quite a complicated formula
- Only non-linear data can be computed
- Regression cannot be computed.
- When data has higher values, it is difficult to compute
- Can be misinterpreted
- Need two sets of variable data so the test can be performed

VI. CONCLUSION

By conducting our survey and analysing the data, we aimed to achieve the following objectives:

1. To compare preferences of people of various ages for two automobile manufacturers in terms of vehicle type, fuel type, vehicle colour, customer budget, driving pleasure, and after-sales services.
2. To provides insight into the demand for Maruti Suzuki and Kia among buyers.
3. To depict popular sentiment about Kia and Maruti Suzuki utilising a variety of graphs such as histograms, pie charts, and so on.

4. To denote the competition between a newcomer to the market and an established player.
5. To instil a feeling of comparison between the numerous features of an automobile that different buyers require.

Both Kia and Maruti Suzuki have a high demand.

- Customers find both the cars attractive, feel that they both have a good driving experience and have good after sales service
- Customers have also seen numerous advertisements for both the companies
- The 17-25 and 35+ age groups prefer Kia over Maruti, whereas customers between 25 and 35 prefer more of Maruti Suzuki, perhaps because the base price of Maruti Suzuki cars is much lesser than that of Kia cars.
- Most consumers prefer to buy cars that can be acquired within a lower price range as it is cost effective and perhaps it gives them the scope of changing their cars or upgrading their cars more frequently.
- As new technology is emerging, consumers across all age groups are preferring to buy the latest technology of cars i.e. automatic cars. With the soaring prices of petrol and diesel, a large percentage of customers are choosing electric cars as it is more cost effective and is very environmentally friendly.
- In terms of colour of the vehicle, most people are choosing more generic colours like black or silver over loud, vibrant colours like red and yellow.
- However, purchasing a car is based on personal preference as the car should perfectly suit the requirements of the customer for total satisfaction.

VII. RECOMMENDATIONS

- Response bias is a term for when respondents don't tell you the full truth when answering your survey questions. If a person is extremely biased towards one company, their response might be misguided, and it could affect the survey and analysis as a whole. Biases are not always intentional; it is just human nature.
- While filling in a survey, people might randomly click on answers to finish filling it quickly. As a respondent, it may not make much of a difference, but this dramatically effects the integrity of the data collected on the other end.
- Another shortcoming could be that the survey may not have reached the whole audience concerned. Feedback may have been received from only certain sections of the audience, ignoring the rest.

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